Invalidity Claim Chart Against U.S. Patent No. 11,124,027 ("'027 Patent")
Based on Patches from the Patch Rubber Company ("PRC Patches")

Patches from the Patch Rubber Company ("PRC Patches") include all patches sold by the Patch Rubber Company prior to the earliest priority date of the '027 patent, April 26, 2016, including all patches found at:

- https://web.archive.org/web/20070812184948/http://www.patchrubber.com/tire%5Frepair/
- https://web.archive.org/web/20130328095223/http://www.patchrubber.com/tire_repair/tire_repair.html
- https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html
- https://web.archive.org/web/20120212090846/http://www.patchrubber.com/tire_repair/14208.html
- https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf
- https://web.archive.org/web/20120425211121/http://www.patchrubber.com/tire_repair/dual_vs_heat.html
- https://web.archive.org/web/20120216170849/http://www.patchrubber.com/tire_repair/radial_tires.html
- https://web.archive.org/web/20131109143040/http://www.patchrubber.com/tire_repair/16450.html
- https://web.archive.org/web/20120724032455/http://www.patchrubber.com/tire_repair/12000.html
- https://web.archive.org/web/20090820190340/http://www.patchrubber.com/tire_repair/14201.html
- https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf
- https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process
- https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf
- https://www.youtube.com/watch?v=Ot1elhj3OVE
- https://web.archive.org/web/20131115072827/http://www.patchrubber.com/tire_repair/glossary.html
- https://web.archive.org/web/20140816040656/http://www.myerstiresupply.com/shop/shopdisplaycategories.asp?id=54&cat=Tire+Repair)

PRC Patches qualify as prior art under at least 35 U.S.C. § 102(a)(1). PRC Patches anticipate and/or render obvious the Asserted Claims of the '027 Patent (at least as Revvo understands Plaintiff's application of the Asserted Claims in an effort to show infringement).

To the extent Plaintiff argues that any element below is not disclosed by PRC Patches, a person of ordinary skill in the art would have found it obvious to combine the teachings of PRC Patches with the background knowledge of a person of ordinary skill in the art and/or the additional references and exemplary teachings set forth in the chart below, to arrive at the claim limitation with a reasonable expectation of success. The chart below provides representative examples of where each element of each claim is found within the PRC Patches. Citations are meant to be exemplary, not exhaustive, and Revvo reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by Plaintiff. Citations to figures, drawings, tables, and the link include reference to any accompanying or related text. All internal cross-references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Revvo's position that Plaintiff's October 30, 2024 Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Revvo's statements below should not be treated as an admission, implication, or suggestion that Revvo agrees with Plaintiff regarding either the scope, construction, or interpretation of any of the Asserted Claims or the infringement theories advanced by Plaintiff in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Revvo has specified non-limiting examples of where its application of the prior art is based on Plaintiff's apparent application of the claim element. These statements are not intended to suggest that Revvo agrees with Plaintiff's application of any claim element, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or propose claim constructions until a later date.

Plaintiff has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by the PRC Patches. Revvo therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if Plaintiff makes any such contention.

Where Revvo states that the PRC Patches "disclose" a limitation, that disclosure may be express, implicit, and/or inherent.

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
1[pre]. An assembly for attachment with a vulcanized rubber article comprising:	*To the extent that the preamble is limiting, PRC Patches disclose, teach, and/or suggest a display assembly for attachment with a vulcanized rubber article comprising. For example:*  (PRC Patches, https://web.archive.org/web/20070812184948/http://www.patchrubber.com/tire%5Frepair/)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

TIRE/TUBE REPAIR MATERIALS

Patch Rubber manufactures a complete line of tire & tube repair materials for any size injury, from pinhole repairs in tubes through section repairs in Giant/OTR tires.



Puncture Repair: Any injury localized to the crown/tread area, with a diameter of 1/4" or less in passenger tires and 3/8" or less in larger tires, requires a puncture repair. This section includes:
- Inserts & Plugs, Puncture Repair Units, and One-Piece , Patch Plugs as well as the recommended cement for each application.
- Use "Patch Selector" to find the proper repair unit for any puncture repair.



Section Repair: Any injury larger than 1/4" diameter in passenger tires and over 3/8" in truck tires, requires a section repair.
- Radial and bias repair units for passenger, truck, tractor and giant/OTR tires.
- Plugs, fillers, repair materials
- Heat Cure, Dual Cure, & Uncured(green) definitions
- Use "Patch Selector" to find the proper repair unit for any section repair.



Tire Repair Tools: Features a listing of basic tire repair tools including insert tools, cement tools, probe & rasp tools, and a dispenser cabinet for storage of tools and repair materials.



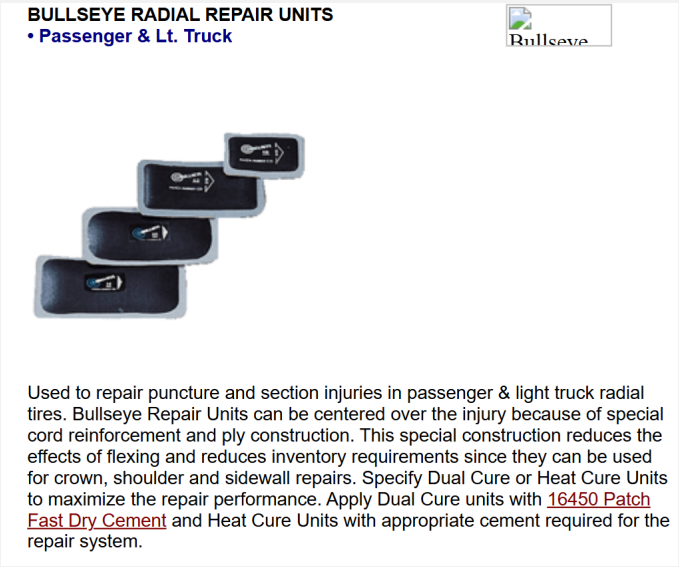
Tube Repair: All the necessary repair materials and cements to repair damaged inner tubes. Dual or Chemical Cure.

(PRC Patches, https://web.archive.org/web/20130328095223/http://www.patchrubber.com/tire_repair/tire_repair.html)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://web.archive.org/web/20140816040656/http://www.myerstiresupply.com/shop/shopdisplaycategories.asp?id=54&cat=Tire+Repair)



(PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

CHEMICAL CURE TUBE PATCHES



Available in round and oval shapes for any size tube repair...from bicycle to off-the-road tubes. Popular sizes are available in cost-saving Patch Packs. Chemical Cure Repair Units are molded to a feather edge and feature a chemical curing base gum with the ultimate in green tack, along with extended poly backing for ease of removal and installation. Apply with 16450 Patch Fast Dry Cement.

(PRC Patches, https://web.archive.org/web/20120724032455/http://www.patchrubber.com/tire_repair/12000.html)

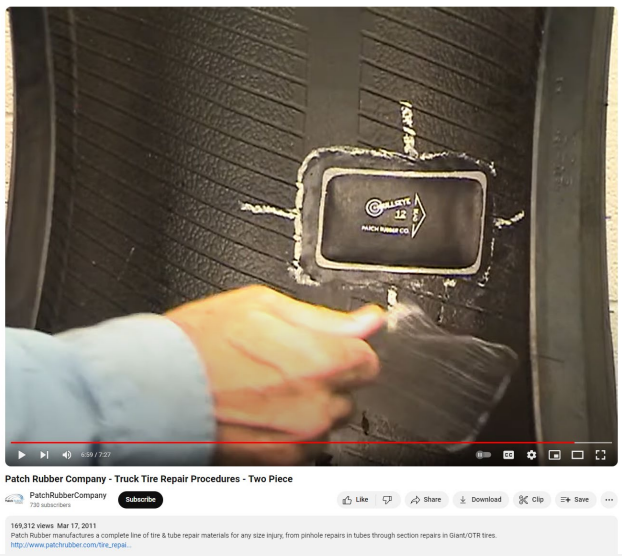
'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

DUAL CURE TUBE REPAIR UNITS



Available in round and oval shapes for any size tube repair...from bicycle to off-the-road tubes. Popular sizes are available in cost-saving Patch Packs. Dual Cure Repair Units feature a base gum that will cure chemically or with heat. This soft, high-tack gum is less prone to problems associated with moisture, handling and cement drying time. Apply with 16450 Patch Fast Dry Cement.

(PRC Patches, https://web.archive.org/web/20090820190340/http://www.patchrubber.com/tire_repair/14201.html)



(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) *See also following limitations.*
[1a] an outer layer of elastomeric material having a visual feature; and	*PRC Patches disclose, teach, and/or suggest an outer layer of elastomeric material having a visual feature. For example:*  **9.** Making sure the bead arrows of the repair unit are pointing to the beads, center the repair unit over the injury. Use a tire crayon and outline an area 1/2" larger than the repair unit. (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)  (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)
[1b] an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a	*PRC Patches disclose, teach, and/or suggest an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition. For example:*

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
barrier material composition, and	 **13.** Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the entire buffed area. Allow cement to dry until tacky. Never use blow dryers, compressed air, or heat lamps to facilitate drying. Drying time is affected by temperature and humidity. **13.** Aplicar el cemento de secado rápido y vulcanizante marca Patch Rubber a toda el area raspada o pulida. Dejar secar el cemento hasta que pegue. Nunca use secadores de aire, compressor de aire o secar com lámparas calientes para facilitar el secado. El tiempo de secado es afectado por la temperatura y la humidad.  **14.** When cement is dry, partially remove the poly backing from the patch leaving just enough to hold the patch. Do not touch the back of the patch. With the beads of the tire in the relaxed position, apply the patch to the buffed area making sure the bead arrow points to the bead. Remove the remaining poly from under the patch. **14.** Cuando el cemento esté seco, quite parciamente el respaldo de polietileno del parche dejando sólo lo necesario como para sostener el mismo. No toque la parte posterior del parche. Con los talones de la llanta en posición relajada, coloque el (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.) **BULLSEYE RADIAL REPAIR UNITS** **• Passenger & Lt. Truck**  Used to repair puncture and section injuries in passenger & light truck radial tires. Bullseye Repair Units can be centered over the injury because of special cord reinforcement and ply construction. This special construction reduces the effects of flexing and reduces inventory requirements since they can be used for crown, shoulder and sidewall repairs. Specify Dual Cure or Heat Cure Units to maximize the repair performance. Apply Dual Cure units with 16450 Patch Fast Dry Cement and Heat Cure Units with appropriate cement required for the repair system. (PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

UNIVERSAL PATCH UNITS
• Dual Cure

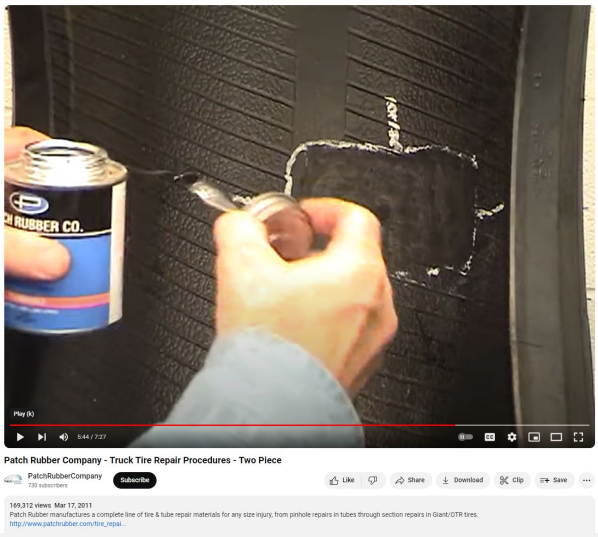


Seal the innerliner and reinforce the injury to prevent air loss, completing an industry-approved puncture repair. A layer of Dual Cure Bonding Gum provides optimal adhesion and simplifies application. Universally used for puncture injures in every type of tire: passenger, light truck, truck, bias, radial, tubeless or tube-type. Special compound formulation makes a simplified repair for everything from pinholes to 3/8" punctures. Apply with 16450 Patch Fast Cement.

(PRC Patches, https://web.archive.org/web/20120212090846/http://www.patchrubber.com/tire_repair/14208.html)

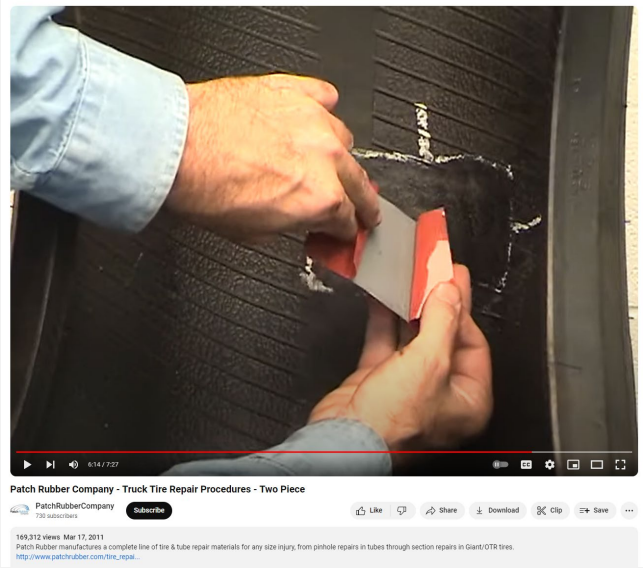
Cushion Gum (Bonding Gum)	A tacky, rubber compound used for adhesion of tread rubber, under-tread repair, build-up of other repairs, or on the bottom of some repair units. See PRECURED TREAD CUSHION GUM.

(PRC Patches, https://web.archive.org/web/20131115072827/http://www.patchrubber.com/tire_repair/glossary.html)



"Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…"

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



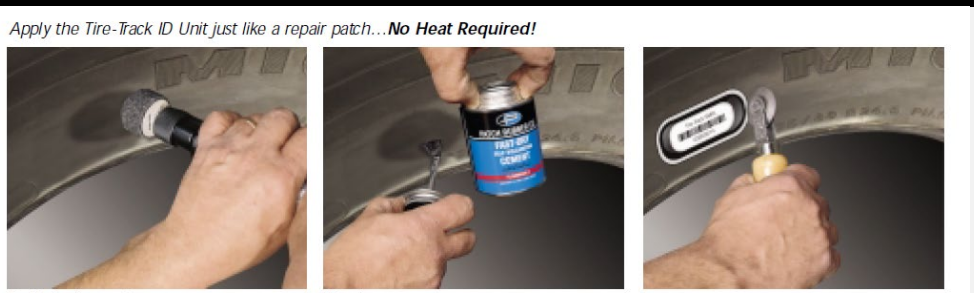
(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

FAST-DRY CEMENT



Fast-Dry Self-Vulcanizing Cement eliminates the most common cause of failed repairs - lack of proper drying time. Fast-Dry Cement activates the chemical vulcanization process to bond repair units to the tire casing. **Flammable. Flash point -4° F. Shelf life 1 year.**
Fast-Dry Cement MSDS (PDF)

(PRC Patches, https://web.archive.org/web/20131109143040/http://www.patchrubber.com/tire_repair/16450.html)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[1c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.	*PRC Patches disclose, teach, and/or suggest wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article. For example:*  (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

BULLSEYE RADIAL REPAIR UNITS
• Passenger & Lt. Truck



Used to repair puncture and section injuries in passenger & light truck radial tires. Bullseye Repair Units can be centered over the injury because of special cord reinforcement and ply construction. This special construction reduces the effects of flexing and reduces inventory requirements since they can be used for crown, shoulder and sidewall repairs. Specify Dual Cure or Heat Cure Units to maximize the repair performance. Apply Dual Cure units with 16450 Patch Fast Dry Cement and Heat Cure Units with appropriate cement required for the repair system.

(PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.)

UNIVERSAL PATCH UNITS
• Dual Cure

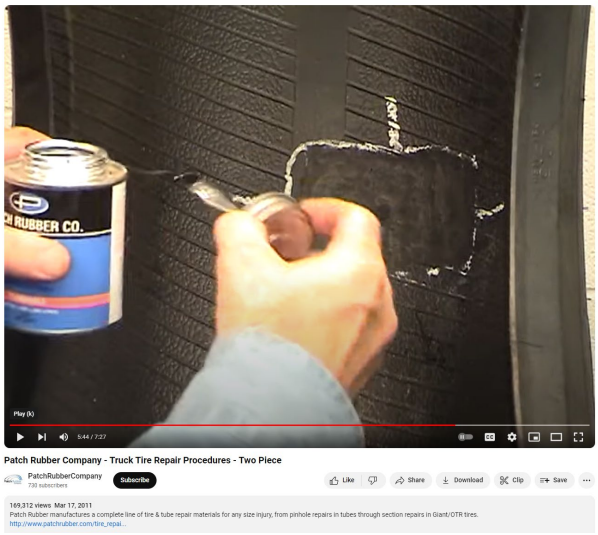
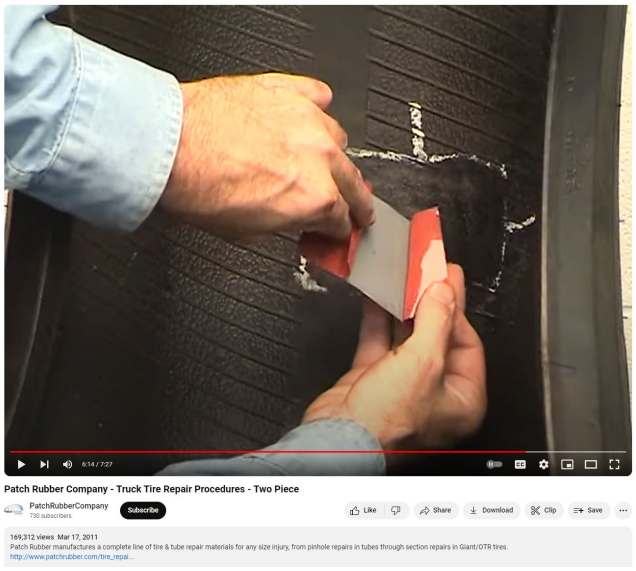


Seal the innerliner and reinforce the injury to prevent air loss, completing an industry-approved puncture repair. A layer of Dual Cure Bonding Gum provides optimal adhesion and simplifies application. Universally used for puncture injures in every type of tire: passenger, light truck, truck, bias, radial, tubeless or tube-type. Special compound formulation makes a simplified repair for everything from pinholes to 3/8" punctures. Apply with 16450 Patch Fast Cement.

(PRC Patches, https://web.archive.org/web/20120212090846/http://www.patchrubber.com/tire_repair/14208.html)

Dual Cure Repair Units

Dual Cure Repair Units chemically vulcanize at room temperature or when heat and pressure are applied. Dual Cure Repair Units provide many benefits to the tire repairman:

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	(PRC Patches, https://web.archive.org/web/20120425211121/http://www.patchrubber.com/tire_repair/dual_vs_heat.html.)  “Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…”  (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	FAST-DRY CEMENT  Fast-Dry Self-Vulcanizing Cement eliminates the most common cause of failed repairs - lack of proper drying time. Fast-Dry Cement activates the chemical vulcanization process to bond repair units to the tire casing. **Flammable. Flash point -4° F. Shelf life 1 year.** Fast-Dry Cement MSDS (PDF) (PRC Patches, https://web.archive.org/web/20120215062844/http://www.patchrubber.com:80/tire_repair/16450.html) *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
5. The assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when	*PRC Patches disclose, teach, and/or suggest the assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article. For example:*

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
the assembly is attached to a vulcanized rubber article.	 **13.** Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the entire buffed area. Allow cement to dry until tacky. Never use blow dryers, compressed air, or heat lamps to facilitate drying. Drying time is affected by temperature and humidity. **13.** Aplicar el cemento de secado rápido y vulcanizante marca Patch Rubber a toda el area raspada o pulida. Dejar secar el cemento hasta que pegue. Nunca use secadores de aire, compressor de aire o secar com lámparas calientes para facilitar el secado. El tiempo de secado es afectado por la temperatura y la humidad. **14.** When cement is dry, partially remove the poly backing from the patch leaving just enough to hold the patch. Do not touch the back of the patch. With the beads of the tire in the relaxed position, apply the patch to the buffed area making sure the bead arrow points to the bead. Remove the remaining poly from under the patch. **14.** Cuando el cemento esté seco, quite parciamente el respaldo de polietileno del parche dejando sólo lo necesario como para sostener el mismo. No toque la parte posterior del parche. Con los talones de la llanta en posición relajada, coloque el (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.) **BULLSEYE RADIAL REPAIR UNITS** **• Passenger & Lt. Truck**  Used to repair puncture and section injuries in passenger & light truck radial tires. Bullseye Repair Units can be centered over the injury because of special cord reinforcement and ply construction. This special construction reduces the effects of flexing and reduces inventory requirements since they can be used for crown, shoulder and sidewall repairs. Specify Dual Cure or Heat Cure Units to maximize the repair performance. Apply Dual Cure units with 16450 Patch Fast Dry Cement and Heat Cure Units with appropriate cement required for the repair system. (PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

UNIVERSAL PATCH UNITS
• Dual Cure

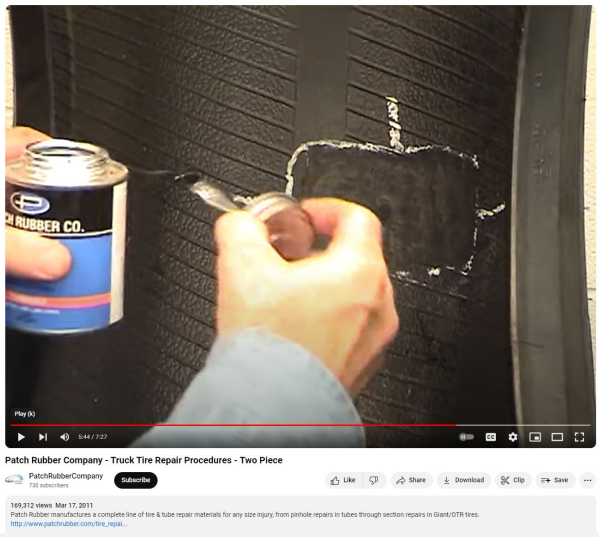


Seal the innerliner and reinforce the injury to prevent air loss, completing an industry-approved puncture repair. A layer of Dual Cure Bonding Gum provides optimal adhesion and simplifies application. Universally used for puncture injures in every type of tire: passenger, light truck, truck, bias, radial, tubeless or tube-type. Special compound formulation makes a simplified repair for everything from pinholes to 3/8" punctures. Apply with 16450 Patch Fast Cement.

(PRC Patches, https://web.archive.org/web/20120212090846/http://www.patchrubber.com/tire_repair/14208.html)

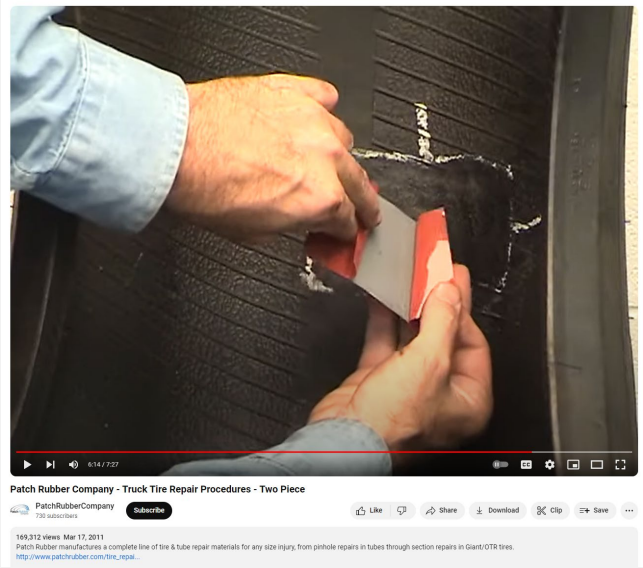
Cushion Gum (Bonding Gum)	A tacky, rubber compound used for adhesion of tread rubber, under-tread repair, build-up of other repairs, or on the bottom of some repair units. See PRECURED TREAD CUSHION GUM.

(PRC Patches, https://web.archive.org/web/20131115072827/http://www.patchrubber.com/tire_repair/glossary.html)



"Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…"

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



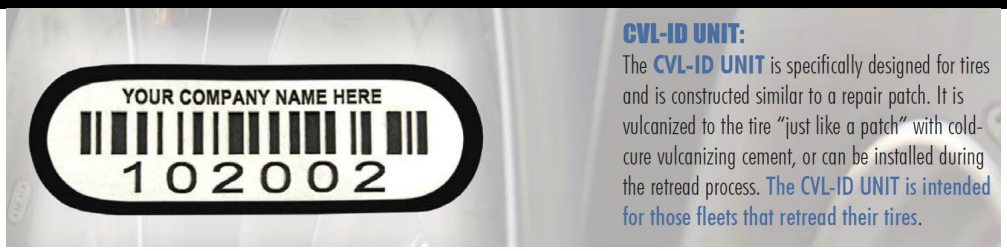
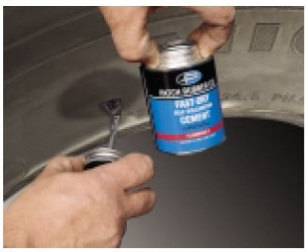
(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)



The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels.

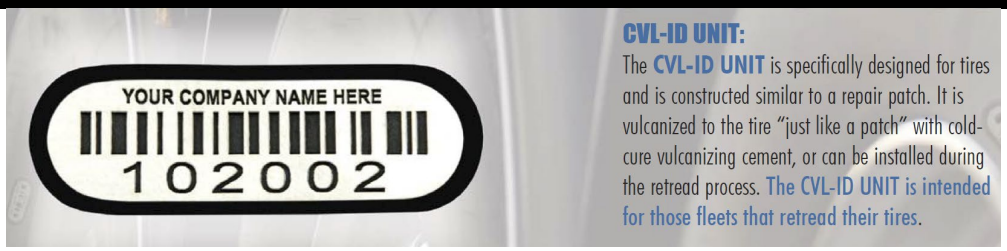
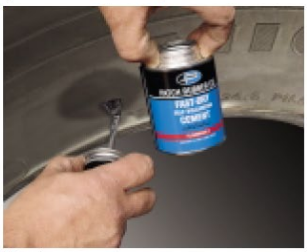
(PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 *The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.* *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.*  *Brush on cement.*  *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) **2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label?** Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
7. The assembly as recited in claim 1 further comprising a	*PRC Patches disclose, teach, and/or suggest the assembly as recited in claim 1 further comprising a cavity disposed therein. For example:*

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
cavity disposed therein.	 The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels. (PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)  *The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.* *Apply the Tire-Track ID Unit just like a repair patch…**No Heat Required!***  *Buff the tire surface.*  *Brush on cement.*  *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label? Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
8. The assembly as recited in claim 7 further comprising an element disposed within the cavity.	*PRC Patches disclose, teach, and/or suggest the assembly as recited in claim 7 further comprising an element disposed within the cavity. For example:*  The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels. (PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 *The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.* *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.*  *Brush on cement.*  *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) **2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label?** Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
9. The assembly as recited in claim 7 wherein the cavity is	*PRC Patches disclose, teach, and/or suggest the assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer. For example:*

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
disposed beneath the outer layer.	 The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels. (PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)  *The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.* *Apply the Tire-Track ID Unit just like a repair patch…**No Heat Required!***  *Buff the tire surface.*  *Brush on cement.*  *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label? Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
11[pre]. A method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of:	*To the extent that the preamble is limiting, PRC Patches disclose, teach, and/or suggest a method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of. For example:*  (PRC Patches, https://web.archive.org/web/20070812184948/http://www.patchrubber.com/tire%5Frepair/)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://web.archive.org/web/20140816040656/http://www.myerstiresupply.com/shop/shopdisplaycategories.asp?id=54&cat=Tire+Repair)

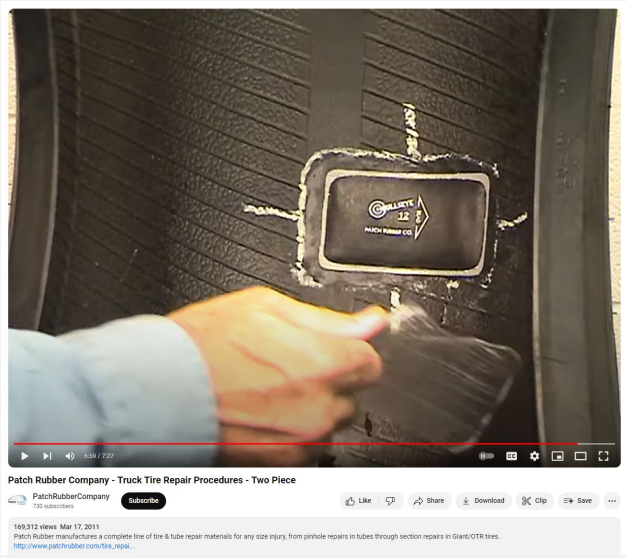


'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

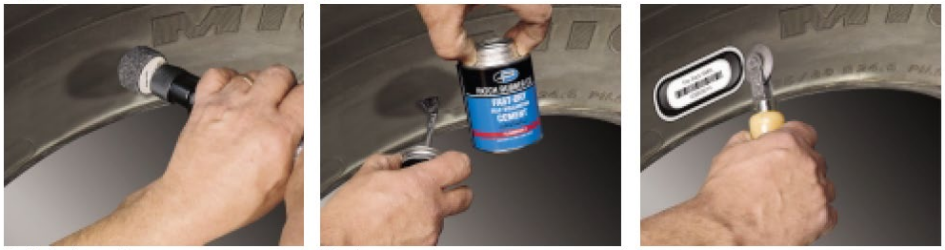


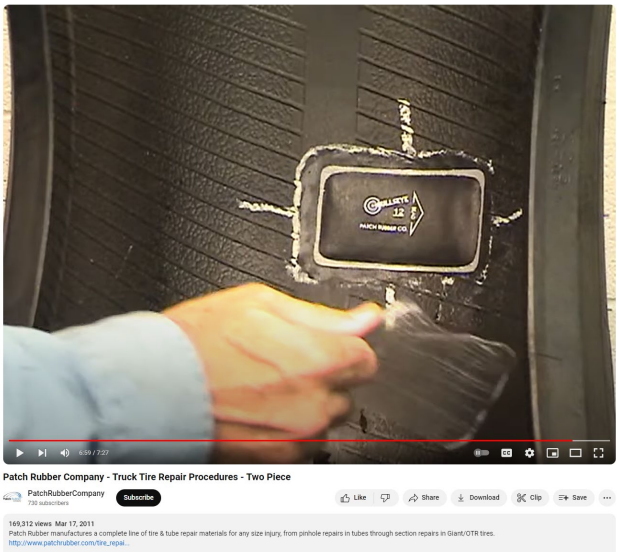


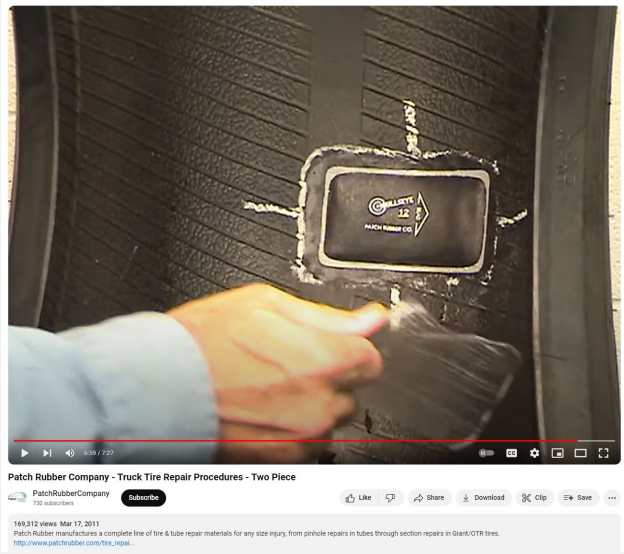
(PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)



(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) *See also following limitations.*
[11a] identifying a surface of a vulcanized rubber article;	*PRC Patches disclose, teach, and/or suggest identifying a surface of a vulcanized rubber article. For example:*   (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	pass_puncture.pdf.)  (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)  (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[11b] placing an assembly into contact with the identified surface, wherein the assembly comprises:	*PRC Patches disclose, teach, and/or suggest placing an assembly into contact with the identified surface, wherein the assembly comprises. For example:*

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)  (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[11c] an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the	*PRC Patches disclose, teach, and/or suggest an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article. For example:*

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
assembly that bonds the assembly to the vulcanized rubber article, and	 **13.** Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the entire buffed area. Allow cement to dry until tacky. Never use blow dryers, compressed air, or heat lamps to facilitate drying. Drying time is affected by temperature and humidity. **13.** Aplicar el cemento de secado rápido y vulcanizante marca Patch Rubber a toda el area raspada o pulida. Dejar secar el cemento hasta que pegue. Nunca use secadores de aire, compressor de aire o secar com lámparas calientes para facilitar el secado. El tiempo de secado es afectado por la temperatura y la humidad.  **14.** When cement is dry, partially remove the poly backing from the patch leaving just enough to hold the patch. Do not touch the back of the patch. With the beads of the tire in the relaxed position, apply the patch to the buffed area making sure the bead arrow points to the bead. Remove the remaining poly from under the patch. **14.** Cuando el cemento esté seco, quite parciamente el respaldo de polietileno del parche dejando sólo lo necesario como para sostener el mismo. No toque la parte posterior del parche. Con los talones de la llanta en posición relajada, coloque el (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.) **BULLSEYE RADIAL REPAIR UNITS** **• Passenger & Lt. Truck**   Used to repair puncture and section injuries in passenger & light truck radial tires. Bullseye Repair Units can be centered over the injury because of special cord reinforcement and ply construction. This special construction reduces the effects of flexing and reduces inventory requirements since they can be used for crown, shoulder and sidewall repairs. Specify Dual Cure or Heat Cure Units to maximize the repair performance. Apply Dual Cure units with 16450 Patch Fast Dry Cement and Heat Cure Units with appropriate cement required for the repair system. (PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

UNIVERSAL PATCH UNITS
• Dual Cure



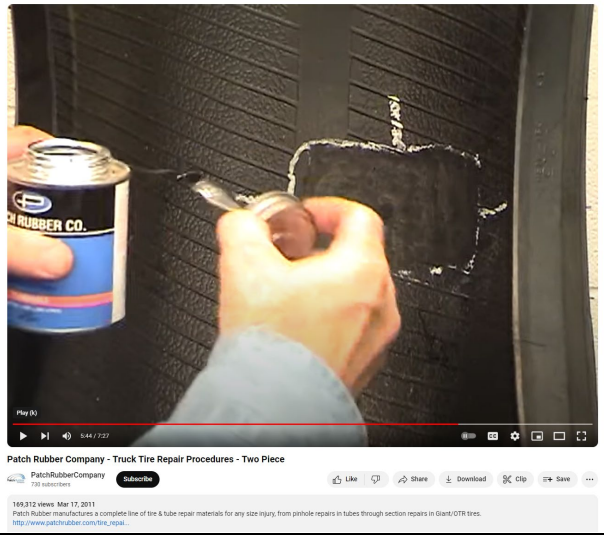
Seal the innerliner and reinforce the injury to prevent air loss, completing an industry-approved puncture repair. A layer of Dual Cure Bonding Gum provides optimal adhesion and simplifies application. Universally used for puncture injures in every type of tire: passenger, light truck, truck, bias, radial, tubeless or tube-type. Special compound formulation makes a simplified repair for everything from pinholes to 3/8" punctures. Apply with 16450 Patch Fast Cement.

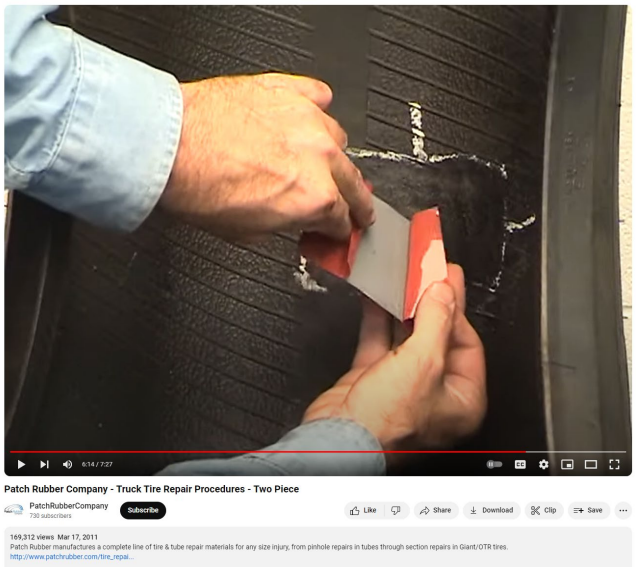
(PRC Patches, https://web.archive.org/web/20120212090846/http://www.patchrubber.com/tire_repair/14208.html)

Dual Cure Repair Units

Dual Cure Repair Units chemically vulcanize at room temperature or when heat and pressure are applied. Dual Cure Repair Units provide many benefits to the tire repairman:

(PRC Patches, https://web.archive.org/web/20120425211121/http://www.patchrubber.com/tire_repair/dual_vs_heat.html.)



'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	"Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…"  (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)  (PRC Patches, https://web.archive.org/web/20120215062844/http://www.patchrubber.com:80/tire_repair/16450.html)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	*Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[11d] wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article.	*PRC Patches disclose, teach, and/or suggest wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article. For example:*  **13.** Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the entire buffed area. Allow cement to dry until tacky. Never use blow dryers, compressed air, or heat lamps to facilitate drying. Drying time is affected by temperature and humidity. **13.** Aplicar el cemento de secado rápido y vulcanizante marca Patch Rubber a toda el area raspada o pulida. Dejar secar el cemento hasta que pegue. Nunca use secadores de aire, compressor de aire o secar com lámparas calientes para facilitar el secado. El tiempo de secado es afectado por la temperatura y la humidad. **14.** When cement is dry, partially remove the poly backing from the patch leaving just enough to hold the patch. Do not touch the back of the patch. With the beads of the tire in the relaxed position, apply the patch to the buffed area making sure the bead arrow points to the bead. Remove the remaining poly from under the patch. **14.** Cuando el cemento esté seco, quite parciamente el respaldo de polietileno del parche dejando sólo lo necesario como para sostener el mismo. No toque la parte posterior del parche. Con los talones de la llanta en posición relajada, coloque el (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

BULLSEYE RADIAL REPAIR UNITS
• Passenger & Lt. Truck



Used to repair puncture and section injuries in passenger & light truck radial tires. Bullseye Repair Units can be centered over the injury because of special cord reinforcement and ply construction. This special construction reduces the effects of flexing and reduces inventory requirements since they can be used for crown, shoulder and sidewall repairs. Specify Dual Cure or Heat Cure Units to maximize the repair performance. Apply Dual Cure units with 16450 Patch Fast Dry Cement and Heat Cure Units with appropriate cement required for the repair system.

(PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.)

UNIVERSAL PATCH UNITS
• Dual Cure

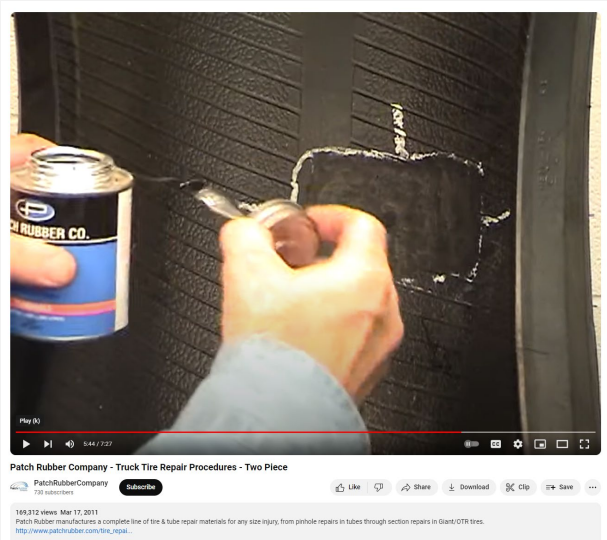
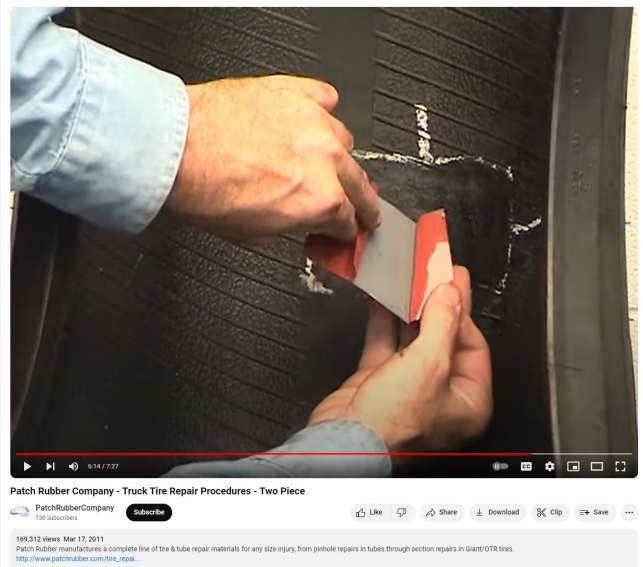


Seal the innerliner and reinforce the injury to prevent air loss, completing an industry-approved puncture repair. A layer of Dual Cure Bonding Gum provides optimal adhesion and simplifies application. Universally used for puncture injures in every type of tire: passenger, light truck, truck, bias, radial, tubeless or tube-type. Special compound formulation makes a simplified repair for everything from pinholes to 3/8" punctures. Apply with 16450 Patch Fast Cement.

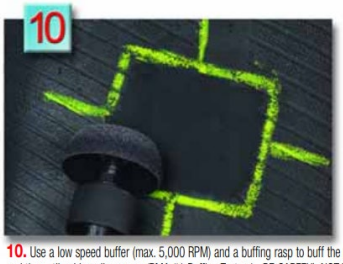
(PRC Patches, https://web.archive.org/web/20120212090846/http://www.patchrubber.com/tire_repair/14208.html)

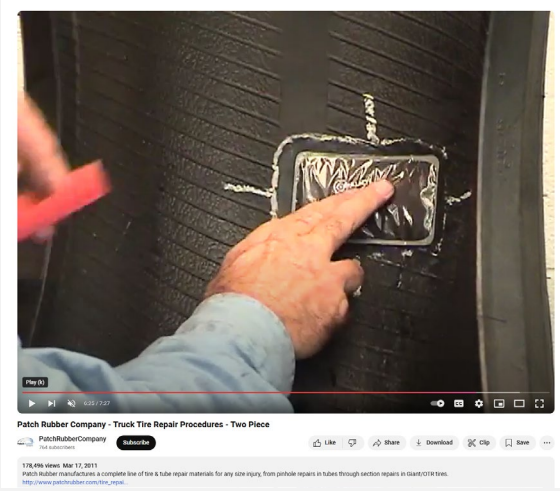
Dual Cure Repair Units

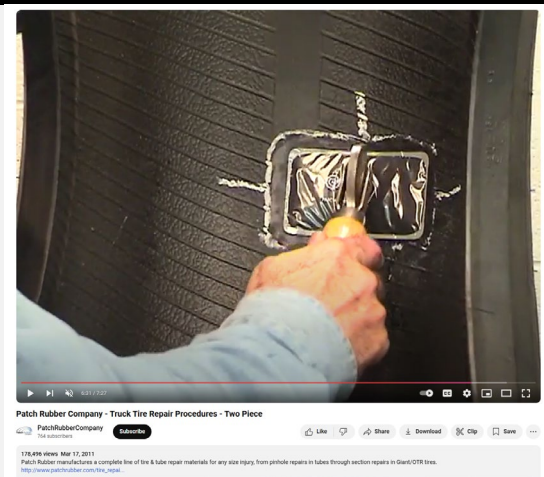
Dual Cure Repair Units chemically vulcanize at room temperature or when heat and pressure are applied. Dual Cure Repair Units provide many benefits to the tire repairman:

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	(PRC Patches, https://web.archive.org/web/20120425211121/http://www.patchrubber.com/tire_repair/dual_vs_heat.html.)  “Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…”  (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	FAST-DRY CEMENT  Fast-Dry Self-Vulcanizing Cement eliminates the most common cause of failed repairs - lack of proper drying time. Fast-Dry Cement activates the chemical vulcanization process to bond repair units to the tire casing. **Flammable. Flash point -4° F. Shelf life 1 year.** Fast-Dry Cement MSDS (PDF) (PRC Patches, https://web.archive.org/web/20120215062844/http://www.patchrubber.com:80/tire_repair/16450.html) *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
12. The method as recited in claim 11 further comprising preparing the identified surface before the step of placing.	*PRC Patches disclose, teach, and/or suggest the method as recited in claim 11 further comprising preparing the identified surface before the step of placing. For example:*

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 **4.** Clean the area around the injury with Patch Rubber Cleaner Fluid and a scraper. **4.** Limpie el área alrededor de la parte dañada con Patch Rubber Cleaner Fluid y un raspador.  **10.** Use a low speed buffer (max. 5,000 RPM) and a buffing rasp to buff the plug and the outlined innerliner area. (RMA #1 Buffing Texture). BE CAREFUL NOT TO BUFF THROUGH THE INNERLINER. **10.** Utilice un pulidor de baja velocidad (máximo de 5,000 RPM) y una raspadora pulidora para pulir el área marcada del revestimineto interno. (textura de pulido R.M.A. Nº 1). Tenga cuidado de no perforar el revestimiento interno cuando esté puliendo.  **11.** Use a vacuum to remove the buffing dust. **11.** Utilice una aspiradora para quitar el polvillo del pulido.  **12.** Apply a light coat of Patch Rubber Cleaner Fluid to the buffed area, scrape clean and allow to dry. **12.** Aplique una capa liviana de Patch Rubber Cleaner Fluid en el área pulida, limpie con un raspador y deje que se seque. (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)
13. The method as recited in claim 11 further	*PRC Patches disclose, teach, and/or suggest the method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing. For example:*

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
comprising applying pressure to the assembly after the step of placing.	 (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.) 

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)  (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
15[pre] A vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, PRC Patches disclose, teach, and/or suggest a vulcanized rubber tire comprising. For example:*

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://web.archive.org/web/20070812184948/http://www.patchrubber.com/tire%5Frepair/)

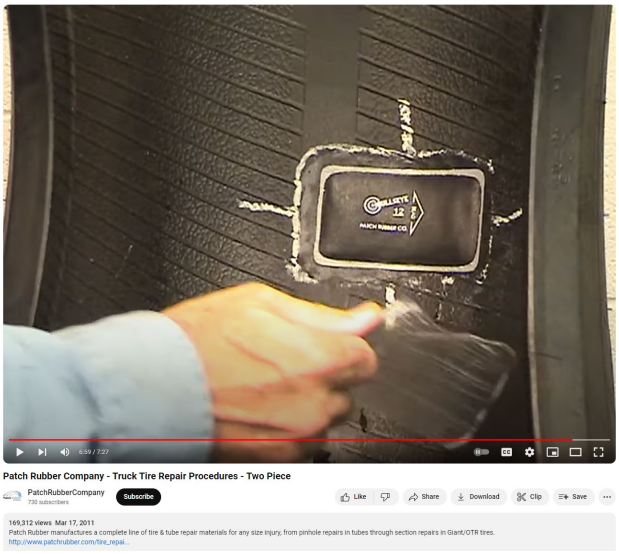




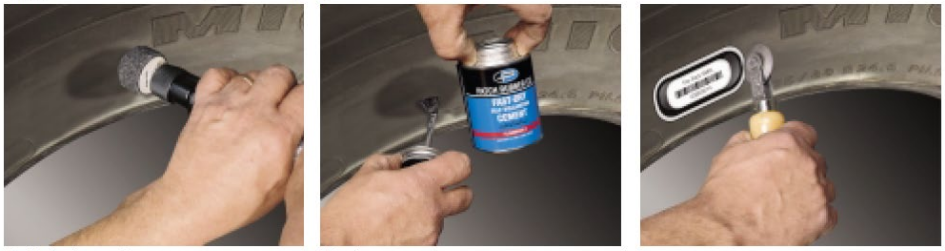
'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

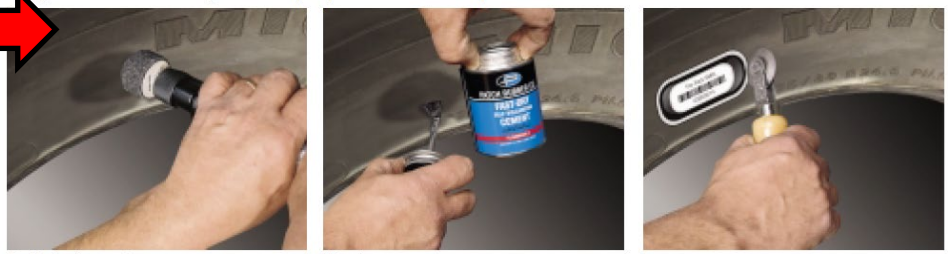


(PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)



(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	*Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) *See also following limitations.*
[15a] a target surface disposed along a portion of the rubber tire;	*PRC Patches disclose, teach, and/or suggest a target surface disposed along a portion of the rubber tire. For example:*  16. Apply Patch Rubber Repair Sealer to the overbuff area. 16. Aplique Rubber Repair Sealer sobre el área pulida. (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)
	*Apply the Tire-Track ID Unit just like a repair patch…**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[15b] an assembly disposed onto the target surface and comprising:	*PRC Patches disclose, teach, and/or suggest an assembly disposed onto the target surface and comprising. For example:*

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

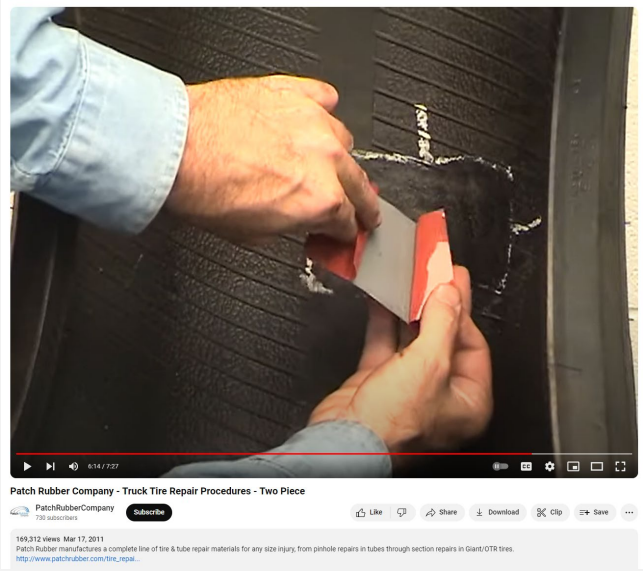


(PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)



(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)



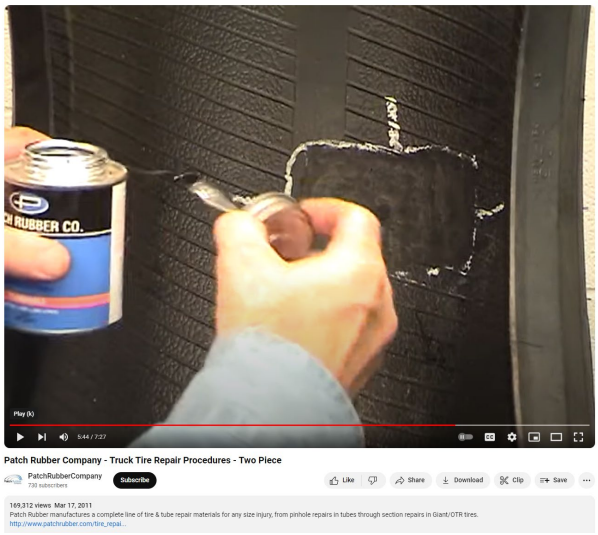
'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	(PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[15c] an outer layer of elastomeric material; and	*PRC Patches disclose, teach, and/or suggest an outer layer of elastomeric material. For example:*  (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)
[15d] an adhesive layer connected with the outer layer;	*PRC Patches disclose, teach, and/or suggest an adhesive layer connected with the outer layer. For example:*  13. Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the entire buffed area. Allow cement to dry until tacky. Never use blow dryers, compressed air, or heat lamps to facilitate drying. Drying time is affected by temperature and humidity. 13. Aplicar el cemento de secado rápido y vulcanizante marca Patch Rubber a toda el area raspada o pulida. Dejar secar el cemento hasta que pegue. Nunca use secadores de aire, compressor de aire o secar com lámparas calientes para facilitar el secado. El tiempo de secado es afectado por la temperatura y la humidad. 14. When cement is dry, partially remove the poly backing from the patch leaving just enough to hold the patch. Do not touch the back of the patch. With the beads of the tire in the relaxed position, apply the patch to the buffed area making sure the bead arrow points to the bead. Remove the remaining poly from under the patch. 14. Cuando el cemento esté seco, quite parciamente el respaldo de polietileno del parche dejando sólo lo necesario como para sostener el mismo. No toque la parte posterior del parche. Con los talones de la llanta en posición relajada, coloque el

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	(PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.) **BULLSEYE RADIAL REPAIR UNITS** **• Passenger & Lt. Truck**  Used to repair puncture and section injuries in passenger & light truck radial tires. Bullseye Repair Units can be centered over the injury because of special cord reinforcement and ply construction. This special construction reduces the effects of flexing and reduces inventory requirements since they can be used for crown, shoulder and sidewall repairs. Specify Dual Cure or Heat Cure Units to maximize the repair performance. Apply Dual Cure units with 16450 Patch Fast Dry Cement and Heat Cure Units with appropriate cement required for the repair system. (PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.) **UNIVERSAL PATCH UNITS** **• Dual Cure**  Seal the innerliner and reinforce the injury to prevent air loss, completing an industry-approved puncture repair. A layer of Dual Cure Bonding Gum provides optimal adhesion and simplifies application. Universally used for puncture injures in every type of tire: passenger, light truck, truck, bias, radial, tubeless or tube-type. Special compound formulation makes a simplified repair for everything from pinholes to 3/8" punctures. Apply with 16450 Patch Fast Cement. (PRC Patches, https://web.archive.org/web/20120212090846/http://www.patchrubber.com/tire_repair/14208.html)

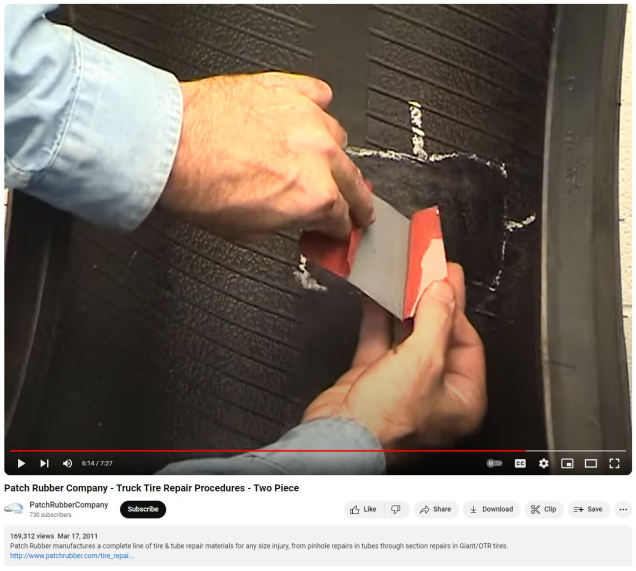
'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

Cushion Gum (Bonding Gum)	A tacky, rubber compound used for adhesion of tread rubber, under-tread repair, build-up of other repairs, or on the bottom of some repair units. See PRECURED TREAD CUSHION GUM.

(PRC Patches, https://web.archive.org/web/20131115072827/http://www.patchrubber.com/tire_repair/glossary.html)



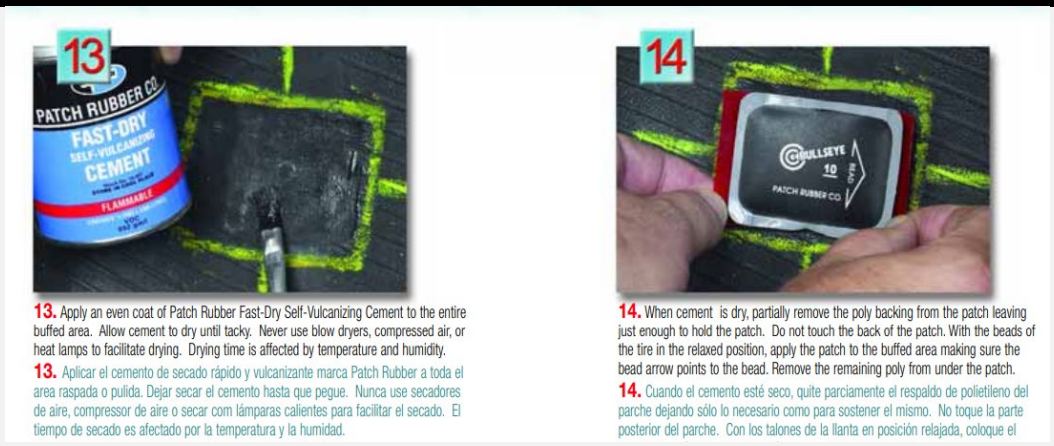
"Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…"



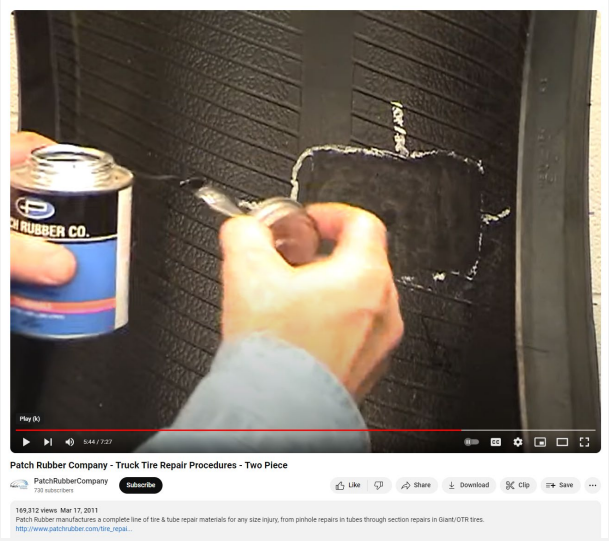
(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	FAST-DRY CEMENT  Fast-Dry Self-Vulcanizing Cement eliminates the most common cause of failed repairs - lack of proper drying time. Fast-Dry Cement activates the chemical vulcanization process to bond repair units to the tire casing. **Flammable. Flash point -4° F. Shelf life 1 year.** Fast-Dry Cement MSDS (PDF) (PRC Patches, https://web.archive.org/web/20131109143040/http://www.patchrubber.com/tire_repair/16450.html) *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[15e] wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire.	*PRC Patches disclose, teach, and/or suggest wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire. For example:*

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)



“Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…”

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

FAST-DRY CEMENT



Fast-Dry Self-Vulcanizing Cement eliminates the most common cause of failed repairs - lack of proper drying time. Fast-Dry Cement activates the chemical vulcanization process to bond repair units to the tire casing. **Flammable. Flash point -4° F. Shelf life 1 year.**
Fast-Dry Cement MSDS (PDF)

(PRC Patches, https://web.archive.org/web/20131109143040/http://www.patchrubber.com/tire_repair/16450.html)



'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels.

(PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)

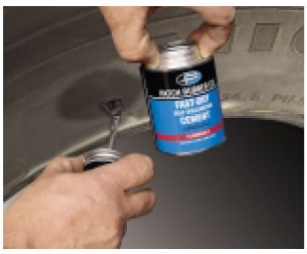


The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.

*Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***



Buff the tire surface.



Brush on cement.

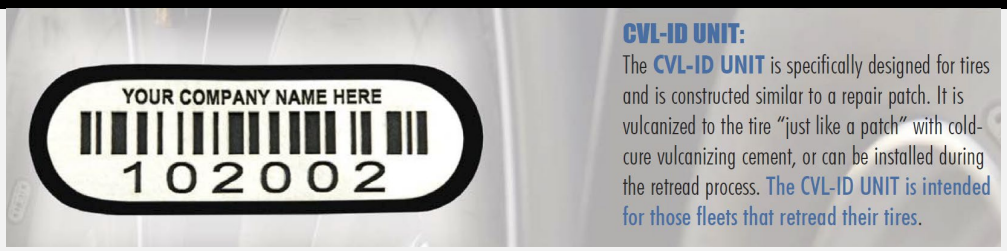


Apply the Tire-Track ID Unit.

(PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label? Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
16. The rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein.	*PRC Patches disclose, teach, and/or suggest the rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein. For example:*  The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels. (PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 *The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.* *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.*  *Brush on cement.*  *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) **2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label?** Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
17. The rubber tire as recited in claim 16 wherein an element is	*PRC Patches disclose, teach, and/or suggest the rubber tire as recited in claim 16 wherein an element is disposed within the cavity. For example:*

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
disposed within the cavity.	 The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels. (PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)  *The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.*  (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label? Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
18. The rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer.	*PRC Patches disclose, teach, and/or suggest the rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer. For example:*  The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels. (PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 *The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.* *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.*  *Brush on cement.*  *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) **2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label?** Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
19[pre] An assembly for attachment to a vulcanized	*To the extent that the preamble is limiting, PRC Patches disclose, teach, and/or suggest an assembly for attachment to a vulcanized rubber tire comprising. For example:*

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
rubber tire comprising:	 (PRC Patches, https://web.archive.org/web/20070812184948/http://www.patchrubber.com/tire%5Frepair/)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

TIRE/TUBE REPAIR MATERIALS

Patch Rubber manufactures a complete line of tire & tube repair materials for any size injury, from pinhole repairs in tubes through section repairs in Giant/OTR tires.



Puncture Repair: Any injury localized to the crown/tread area, with a diameter of 1/4" or less in passenger tires and 3/8" or less in larger tires, requires a puncture repair. This section includes:
- Inserts & Plugs, Puncture Repair Units, and One-Piece , Patch Plugs as well as the recommended cement for each application.
- Use "Patch Selector" to find the proper repair unit for any puncture repair.



Section Repair: Any injury larger than 1/4" diameter in passenger tires and over 3/8" in truck tires, requires a section repair.
- Radial and bias repair units for passenger, truck, tractor and giant/OTR tires.
- Plugs, fillers, repair materials
- Heat Cure, Dual Cure, & Uncured(green) definitions
- Use "Patch Selector" to find the proper repair unit for any section repair.



Tire Repair Tools: Features a listing of basic tire repair tools including insert tools, cement tools, probe & rasp tools, and a dispenser cabinet for storage of tools and repair materials.



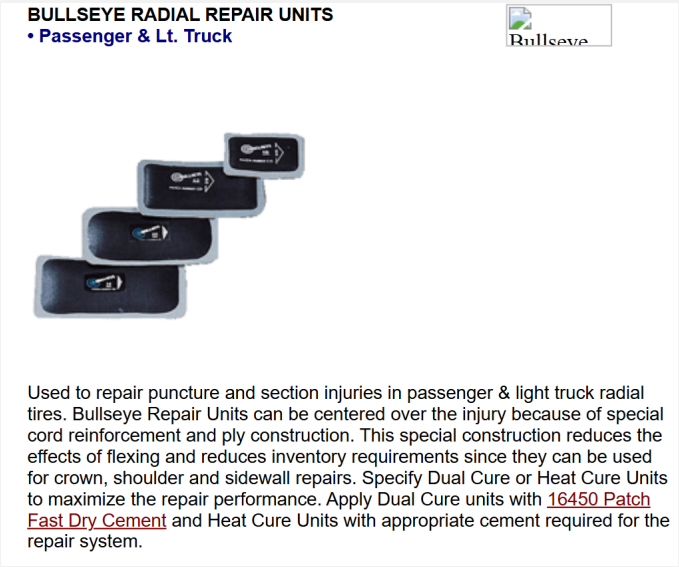
Tube Repair: All the necessary repair materials and cements to repair damaged inner tubes. Dual or Chemical Cure.

(PRC Patches, https://web.archive.org/web/20130328095223/http://www.patchrubber.com/tire_repair/tire_repair.html)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://web.archive.org/web/20140816040656/http://www.myerstiresupply.com/shop/shopdisplaycategories.asp?id=54&cat=Tire+Repair)



(PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

CHEMICAL CURE TUBE PATCHES



Available in round and oval shapes for any size tube repair...from bicycle to off-the-road tubes. Popular sizes are available in cost-saving Patch Packs. Chemical Cure Repair Units are molded to a feather edge and feature a chemical curing base gum with the ultimate in green tack, along with extended poly backing for ease of removal and installation. Apply with 16450 Patch Fast Dry Cement.

(PRC Patches, https://web.archive.org/web/20120724032455/http://www.patchrubber.com/tire_repair/12000.html)

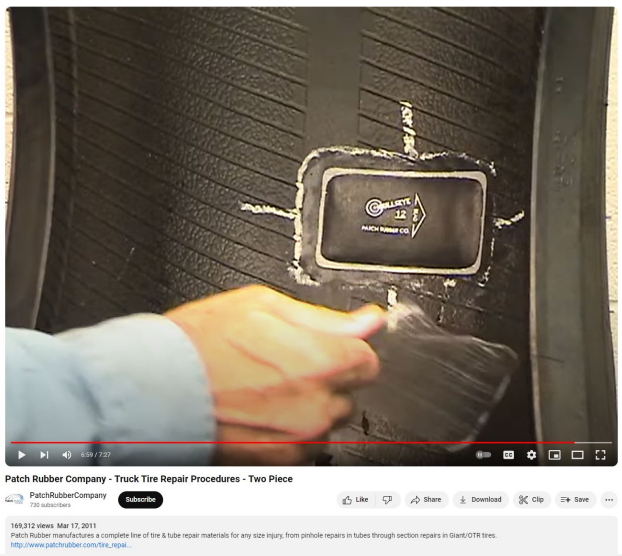
'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

DUAL CURE TUBE REPAIR UNITS

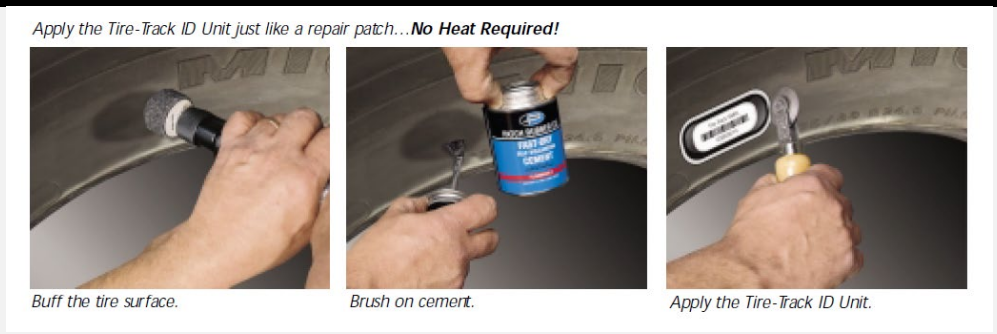


Available in round and oval shapes for any size tube repair...from bicycle to off-the-road tubes. Popular sizes are available in cost-saving Patch Packs. Dual Cure Repair Units feature a base gum that will cure chemically or with heat. This soft, high-tack gum is less prone to problems associated with moisture, handling and cement drying time. Apply with 16450 Patch Fast Dry Cement.

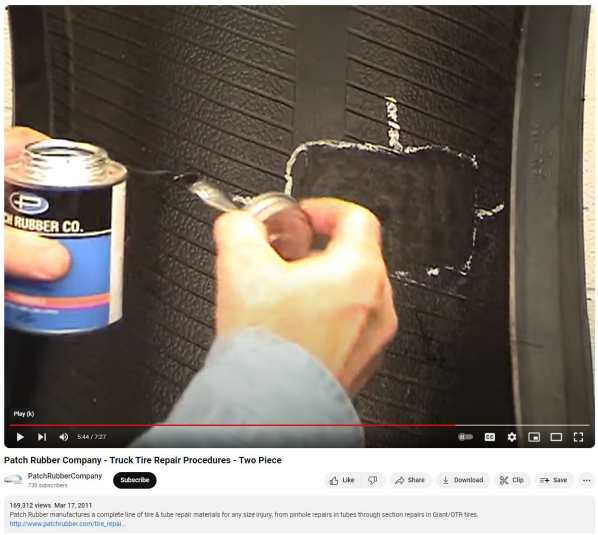
(PRC Patches, https://web.archive.org/web/20090820190340/http://www.patchrubber.com/tire_repair/14201.html)



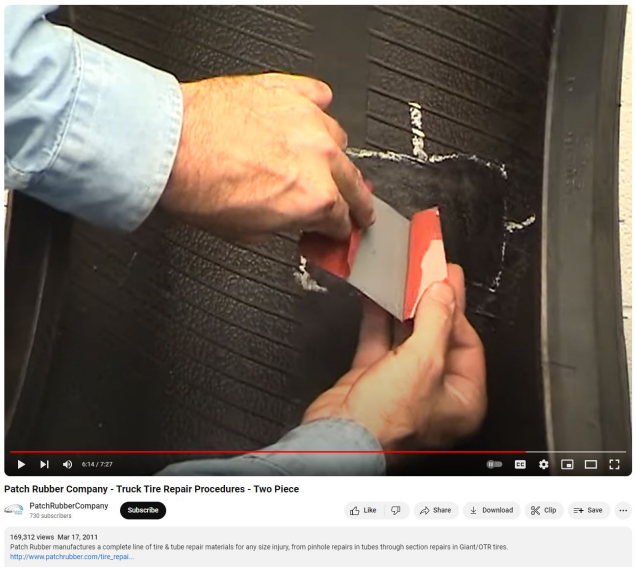
(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) *See also following limitations.*
[19a] an outer layer formed from an elastomeric material;	*PRC Patches disclose, teach, and/or suggest an outer layer formed from an elastomeric material. For example:*  (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

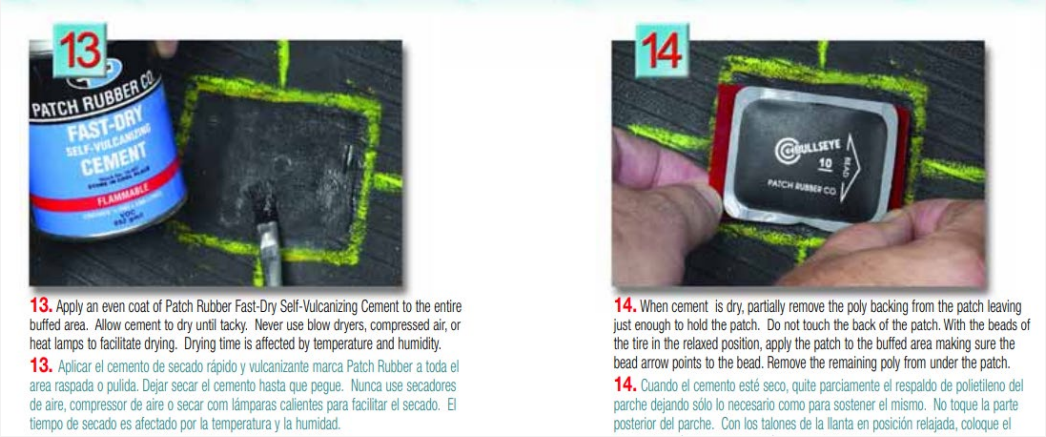
’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



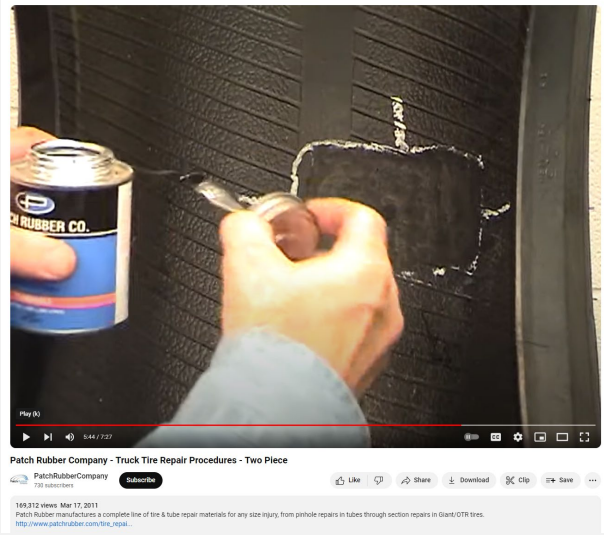
“Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…”



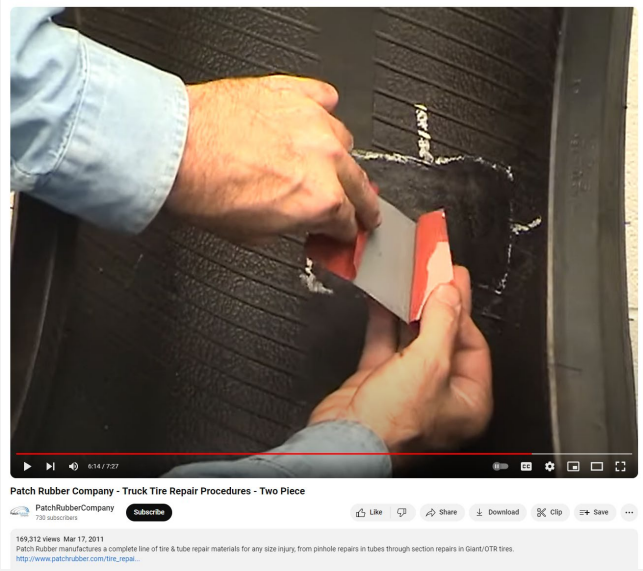
(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	*Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[19b] an adhesive layer bonding the assembly to portion of a vulcanized rubber tire; and	*PRC Patches disclose, teach, and/or suggest an adhesive layer bonding the assembly to portion of a vulcanized rubber tire. For example:*  **13.** Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the entire buffed area. Allow cement to dry until tacky. Never use blow dryers, compressed air, or heat lamps to facilitate drying. Drying time is affected by temperature and humidity. **13.** Aplicar el cemento de secado rápido y vulcanizante marca Patch Rubber a toda el area raspada o pulida. Dejar secar el cemento hasta que pegue. Nunca use secadores de aire, compressor de aire o secar com lámparas calientes para facilitar el secado. El tiempo de secado es afectado por la temperatura y la humidad. **14.** When cement is dry, partially remove the poly backing from the patch leaving just enough to hold the patch. Do not touch the back of the patch. With the beads of the tire in the relaxed position, apply the patch to the buffed area making sure the bead arrow points to the bead. Remove the remaining poly from under the patch. **14.** Cuando el cemento esté seco, quite parciamente el respaldo de polietileno del parche dejando sólo lo necesario como para sostener el mismo. No toque la parte posterior del parche. Con los talones de la llanta en posición relajada, coloque el (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



“Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…”



(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	FAST-DRY CEMENT  Fast-Dry Self-Vulcanizing Cement eliminates the most common cause of failed repairs - lack of proper drying time. Fast-Dry Cement activates the chemical vulcanization process to bond repair units to the tire casing. **Flammable. Flash point -4° F. Shelf life 1 year.** Fast-Dry Cement MSDS (PDF) (PRC Patches, https://web.archive.org/web/20131109143040/http://www.patchrubber.com/tire_repair/16450.html) *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
[19c] a cavity disposed within the assembly for accommodating an element therein;	*PRC Patches disclose, teach, and/or suggest a cavity disposed within the assembly for accommodating an element therein. For example:* 

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels.

(PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)

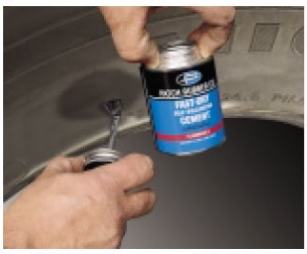


The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.

*Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***



Buff the tire surface.



Brush on cement.



Apply the Tire-Track ID Unit.

(PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label? Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
[19d] wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire.	*PRC Patches disclose, teach, and/or suggest wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire. For example:*  **13.** Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the entire buffed area. Allow cement to dry until tacky. Never use blow dryers, compressed air, or heat lamps to facilitate drying. Drying time is affected by temperature and humidity. **13.** Aplicar el cemento de secado rápido y vulcanizante marca Patch Rubber a toda el area raspada o pulida. Dejar secar el cemento hasta que pegue. Nunca use secadores de aire, compressor de aire o secar com lámparas calientes para facilitar el secado. El tiempo de secado es afectado por la temperatura y la humidad. **14.** When cement is dry, partially remove the poly backing from the patch leaving just enough to hold the patch. Do not touch the back of the patch. With the beads of the tire in the relaxed position, apply the patch to the buffed area making sure the bead arrow points to the bead. Remove the remaining poly from under the patch. **14.** Cuando el cemento esté seco, quite parciamente el respaldo de polietileno del parche dejando sólo lo necesario como para sostener el mismo. No toque la parte posterior del parche. Con los talones de la llanta en posición relajada, coloque el (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)

BULLSEYE RADIAL REPAIR UNITS
• Passenger & Lt. Truck



Used to repair puncture and section injuries in passenger & light truck radial tires. Bullseye Repair Units can be centered over the injury because of special cord reinforcement and ply construction. This special construction reduces the effects of flexing and reduces inventory requirements since they can be used for crown, shoulder and sidewall repairs. Specify Dual Cure or Heat Cure Units to maximize the repair performance. Apply Dual Cure units with 16450 Patch Fast Dry Cement and Heat Cure Units with appropriate cement required for the repair system.

(PRC Patches, https://web.archive.org/web/20120403202603/http://www.patchrubber.com/tire_repair/12117-pass.html.)

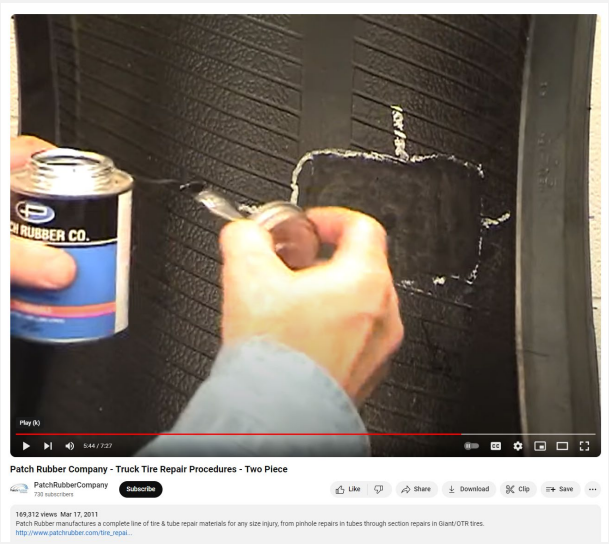
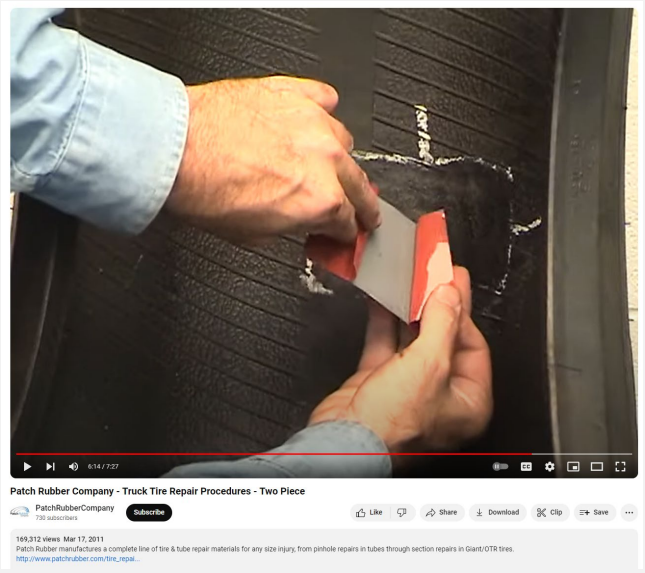
UNIVERSAL PATCH UNITS
• Dual Cure



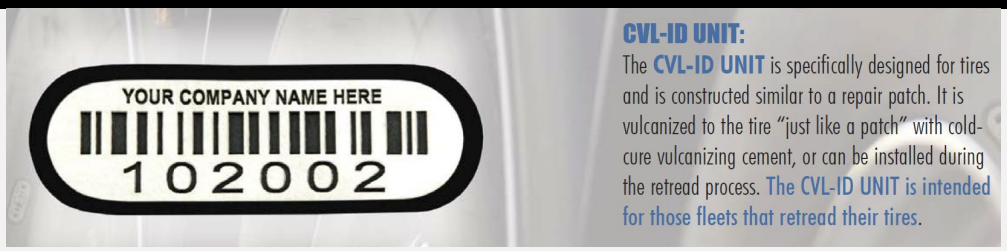
Seal the innerliner and reinforce the injury to prevent air loss, completing an industry-approved puncture repair. A layer of Dual Cure Bonding Gum provides optimal adhesion and simplifies application. Universally used for puncture injures in every type of tire: passenger, light truck, truck, bias, radial, tubeless or tube-type. Special compound formulation makes a simplified repair for everything from pinholes to 3/8" punctures. Apply with 16450 Patch Fast Cement.

(PRC Patches, https://web.archive.org/web/20120212090846/http://www.patchrubber.com/tire_repair/14208.html)

Cushion Gum (Bonding Gum)	A tacky, rubber compound used for adhesion of tread rubber, under-tread repair, build-up of other repairs, or on the bottom of some repair units. See PRECURED TREAD CUSHION GUM.

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	(PRC Patches, https://web.archive.org/web/20131115072827/http://www.patchrubber.com/tire_repair/glossary.html)  "Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…"  (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels.

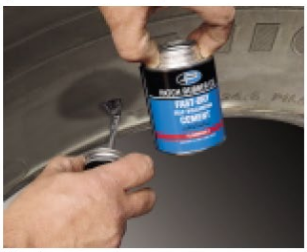
(PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)



The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.

*Apply the Tire-Track ID Unit just like a repair patch…**No Heat Required!***


Buff the tire surface.

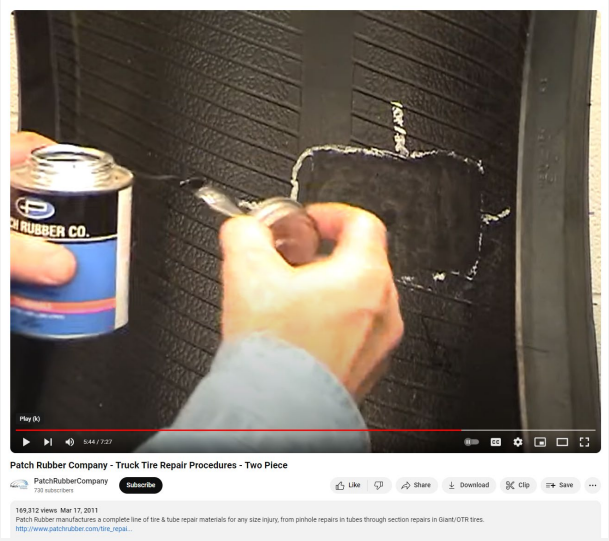

Brush on cement.


Apply the Tire-Track ID Unit.

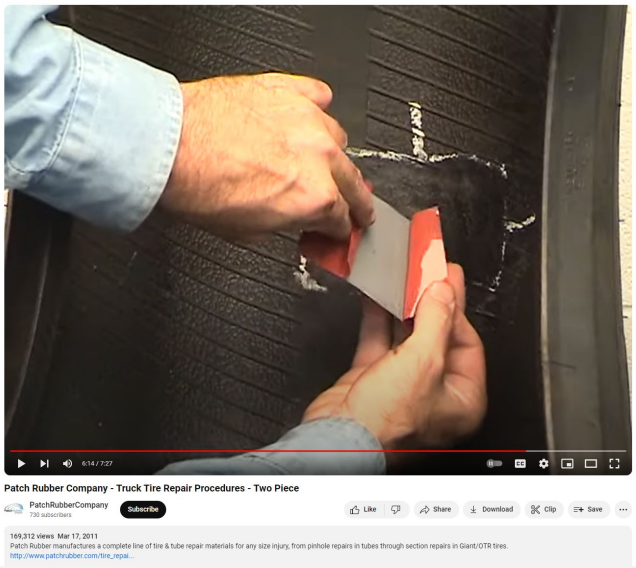
(PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label? Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
20. The assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer.	*PRC Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer. For example:*  The **TIRE-TRACK ID UNIT** ™ is a **multi-layered** black & white rubber label specifically designed for tires & other harsh environments. The bar code and other information is engraved through the white rubber to expose the contrasting black rubber; so there's no "paint" or ink to rub-off. In addition, it resists UV light and won't "brown-out" like other bar code labels. (PRC Patches, https://web.archive.org/web/20110304053609/http:/www.tire-track.com/PDFs/Tire-Track_Brochure.pdf)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 *The barcode is cut deeply into the rubber for permanent identification, so it cannot wear off.* *Apply the Tire-Track ID Unit just like a repair patch...**No Heat Required!***  *Buff the tire surface.*  *Brush on cement.*  *Apply the Tire-Track ID Unit.* (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf) **2) What is the difference between the Tire-Track ID Unit and a silk-screened or ink printed label?** Silk-screened or ink printed tire identification labels have been available for some time. They are similar in that both products place "paint" or ink on the surface of the rubber. Although their initial appearance is very good, they can be easily damaged. *Therefore, silk-screened or ink printed identification labels do not perform well and do not last in harsh environments*. The Tire-Track ID Unit was co-developed by The Patch Rubber Company and Tracking Systems LLC. It is a multi-layer rubber "patch" specifically constructed to have a bar code cut into the rubber itself; therefore, there is no paint or ink to rub off. It resists UV light, which causes other white patches to turn brown. This "Brown-out" effect prevents a scanner from decoding a bar code. *The Tire-Track ID Unit is specifically designed for harsh environments*. (PRC Patches, https://web.archive.org/web/20140323095328/http://www.patchrubber.com/tire_repair/tire_track_faq.html#Does%20the%20Tire-Track%20I.D.%20Unit%20survive%20the%20retreading%20process)
21. The assembly as recited in claim 19 wherein the adhesive layer	*PRC Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer. For example:*

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
is connected with the outer layer.	 **13.** Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the entire buffed area. Allow cement to dry until tacky. Never use blow dryers, compressed air, or heat lamps to facilitate drying. Drying time is affected by temperature and humidity. **13.** Aplicar el cemento de secado rápido y vulcanizante marca Patch Rubber a toda el area raspada o pulida. Dejar secar el cemento hasta que pegue. Nunca use secadores de aire, compressor de aire o secar com lámparas calientes para facilitar el secado. El tiempo de secado es afectado por la temperatura y la humidad. **14.** When cement is dry, partially remove the poly backing from the patch leaving just enough to hold the patch. Do not touch the back of the patch. With the beads of the tire in the relaxed position, apply the patch to the buffed area making sure the bead arrow points to the bead. Remove the remaining poly from under the patch. **14.** Cuando el cemento esté seco, quite parciamente el respaldo de polietileno del parche dejando sólo lo necesario como para sostener el mismo. No toque la parte posterior del parche. Con los talones de la llanta en posición relajada, coloque el (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)  “Apply an even coat of Patch Rubber Fast-Dry Self-Vulcanizing Cement to the buffed area…”

’027 Claim Element	Disclosures from Prior Art (_REFERENCE_)



(PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

FAST-DRY CEMENT



Fast-Dry Self-Vulcanizing Cement eliminates the most common cause of failed repairs - lack of proper drying time. Fast-Dry Cement activates the chemical vulcanization process to bond repair units to the tire casing. **Flammable. Flash point -4° F. Shelf life 1 year.**
Fast-Dry Cement MSDS (PDF)

(PRC Patches, https://web.archive.org/web/20131109143040/http://www.patchrubber.com/tire_repair/16450.html)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://web.archive.org/web/20090902154005/http://www.patchrubber.com/training/tire_track.pdf)
22. The assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface.	*PRC Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface. For example:*  **9.** Making sure the bead arrows of the repair unit are pointing to the beads, center the repair unit over the injury. Use a tire crayon and outline an area 1/2" larger than the repair unit. (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)

'027 Claim Element	Disclosures from Prior Art (_REFERENCE_)
	 (PRC Patches, https://web.archive.org/web/20140207072057/http://www.patchrubber.com/training/pass_puncture.pdf.)  (PRC Patches, https://www.youtube.com/watch?v=Ot1elhj3OVE)

Invalidity Claim Chart Against U.S. Patent No. 11,124,027 ("'027 Patent")
Based on PREMA Patches

PREMA Patches include all patches sold by PREMA prior to the earliest priority date of the '027 patent, April 26, 2016, including all patches found at:

- https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf
- https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf
- https://web.archive.org/web/20160802135005/http://www.prema24.com/en/products/tyre-repair

PREMA Patches qualify as prior art under at least 35 U.S.C. § 102(a)(1). PREMA Patches anticipate and/or render obvious the Asserted Claims of the '027 Patent (at least as Revvo understands Plaintiff's application of the Asserted Claims in an effort to show infringement).

To the extent Plaintiff argues that any element below is not disclosed by PREMA Patches, a person of ordinary skill in the art would have found it obvious to combine the teachings of PREMA Patches with the background knowledge of a person of ordinary skill in the art and/or the additional references and exemplary teachings set forth in the chart below, to arrive at the claim limitation with a reasonable expectation of success. The chart below provides representative examples of where each element of each claim is found within the PREMA Patches. Citations are meant to be exemplary, not exhaustive, and Revvo reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by Plaintiff. Citations to figures, drawings, tables, and the link include reference to any accompanying or related text. All internal cross-references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Revvo's position that Plaintiff's October 30, 2024 Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Revvo's statements below should not be treated as an admission, implication, or suggestion that Revvo agrees with Plaintiff regarding either the scope, construction, or interpretation of any of the Asserted Claims or the infringement theories advanced by Plaintiff in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Revvo has specified non-limiting examples of where its application of the prior art is based on Plaintiff's apparent application of the claim element. These statements are not intended to suggest that Revvo agrees with Plaintiff's application of any claim element, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or propose claim constructions until a later date.

Plaintiff has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by the PREMA Patches. Revvo therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if Plaintiff makes any such contention.

Where Revvo states that the PREMA Patches "disclose" a limitation, that disclosure may be express, implicit, and/or inherent.

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
1[pre]. An assembly for attachment with a vulcanized rubber article comprising:	*To the extent that the preamble is limiting, PREMA Patches disclose, teach, and/or suggest a display assembly for attachment with a vulcanized rubber article comprising. For example:*

Radial Patches – Car / Truck
Series with Smooth Gray Bonding Layer
Pflaster für Radialreifen – PKW / LKW
Serie mit glatter, grauer Verbindungsschicht

PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system.

Please note the application instruction on page 7.

PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.

Beachten Sie den Anwendungshinweis auf Seite 7.



(PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

Radial Repairs – Passenger and Light Truck

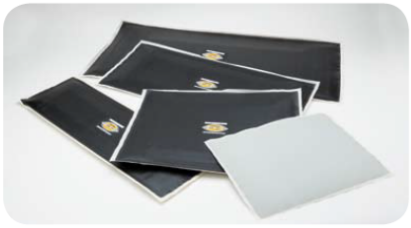
SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement.



'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	Giant Radial OTR Repairs (Chemical Cure) The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.) *See also following limitations.*
[1a] an outer layer of elastomeric material having a visual feature; and	*PREMA Patches disclose, teach, and/or suggest an outer layer of elastomeric material having a visual feature. For example:* **Radial Patches – Car / Truck Series with Smooth Gray Bonding Layer** *Pflaster für Radialreifen – PKW / LKW* *Serie mit glatter, grauer Verbindungsschicht* PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system. Please note the application instruction on page 7. *PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.* *Beachten Sie den Anwendungshinweis auf Seite 7.* (PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

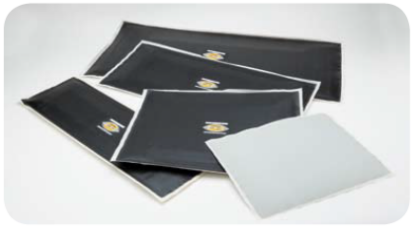
SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



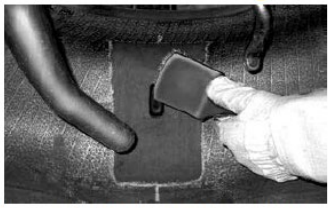


'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	Giant Radial OTR Repairs (Chemical Cure) The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 6, 7.)
[1b] an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and	*PREMA Patches disclose, teach, and/or suggest an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition. For example:*

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



Step 7 **Remove Buffing Dust**



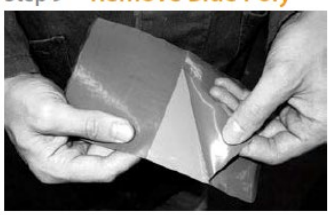
Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used.

Step 8 **Apply Prema Cement**



Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice.

Step 9 **Remove Blue Poly**

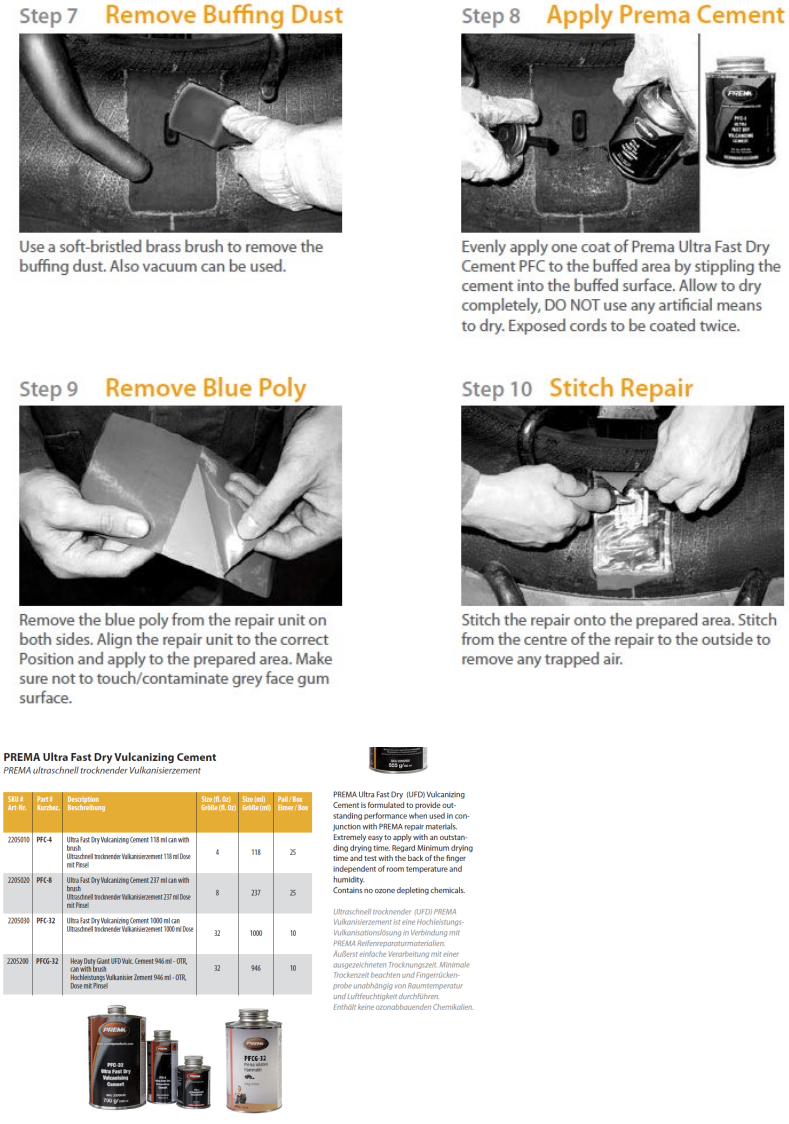


Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface.

Step 10 **Stitch Repair**

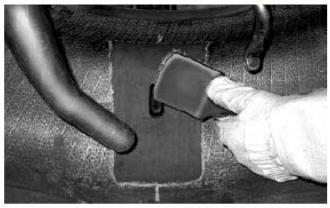


Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air.

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
[1c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.	*PREMA Patches disclose, teach, and/or suggest wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article. For example:*  (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13, 16.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
5. The assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article.	*PREMA Patches disclose, teach, and/or suggest the assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article. For example:*

Step 7 **Remove Buffing Dust**



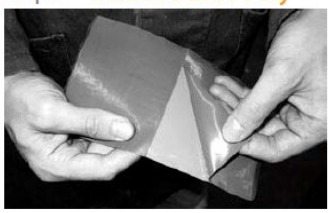
Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used.

Step 8 **Apply Prema Cement**



Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice.

Step 9 **Remove Blue Poly**



Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface.

Step 10 **Stitch Repair**



Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air.

(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)

Radial Patches – Car / Truck Series with Smooth Gray Bonding Layer

Pflaster für Radialreifen – PKW / LKW
Serie mit glatter, grauer Verbindungsschicht

PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system.

Please note the application instruction on page 7.

PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.

Beachten Sie den Anwendungshinweis auf Seite 7.



(PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	Giant Bias OTR Repairs (Chemical Cure) The new PREMA Giant OTR CROSSPLY Chemical Cure Repairs can be used in both chemical (cold cure and heat cure) vulcanizing systems. Tare manufactured with the same strong body ply construction as used in OTR Bias Tyres and with specially formulated rubber compounds. Because these repairs are constructed with a "chemical" bonding gum, they have an extended shelf-life. They are available in a full range of sizes for application in all types of injuries.These repairs may be used for either chemical (cold cure) or heat & pressure (heat cure) applications. These patches are designed to be installed with the PREMA Grey Self-Vulcanizing Floater Gum installed on the back of the repair using PREMA Giant OTR Cement. When using a cold cure process, use PREMA Giant OTR Chemical Cement. When using a heat cure process, use PREMA Black Vulc Cement. PREMA Cut-Resistant Rope Rubber should be used to properly fill the injury channel. Refer to the PREMA Bias OTR Repair Chart for the right selection of the repair unit. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf)
7. The assembly as recited in claim 1 further comprising a cavity disposed therein.	*PREMA Patches disclose, teach, and/or suggest the assembly as recited in claim 1 further comprising a cavity disposed therein. For example:* **Radial Patches – Car / Truck Series with Smooth Gray Bonding Layer** *Pflaster für Radialreifen – PKW / LKW* *Serie mit glatter, grauer Verbindungsschicht* PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system. Please note the application instruction on page 7. *PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.* *Beachten Sie den Anwendungshinweis auf Seite 7.* (PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2004210	PBG-1	Giant CROSSPLY 1	9,6	9,6	240	240	4	5
2004211	PBG-1HD	Giant CROSSPLY 1 Heavy Duty	9,6	9,6	240	240	6	5
2004215	PBG-2	Giant CROSSPLY 2	14,4	14,4	360	360	6	5
2004216	PBG-2HD	Giant CROSSPLY 2 Heavy Duty	14,4	14,4	360	360	8	5
2004220	PBG-3	Giant CROSSPLY 3	19,2	19,2	480	480	8	2
2004221	PBG-3HD	Giant CROSSPLY 3 Heavy Duty	19,2	19,2	480	480	10	2
2004225	PBG-4	Giant CROSSPLY 4	26,4	26,4	660	660	10	2
2004226	PBG-4HD	Giant CROSSPLY 4 Heavy Duty	26,4	26,4	660	660	12	2
2004227	PBG-4S	Giant CROSSPLY 4 Sidewall	26,4	26,4	660	660	10	2
2004228	PBG-4SHD	Giant CROSSPLY 4 Sidewall HD	26,4	26,4	660	660	12	2
2004230	PBG-5	Giant CROSSPLY 5	32,4	32,4	810	810	12	1
2004231	PBG-5HD	Giant CROSSPLY 5 Heavy Duty	32,4	32,4	810	810	14	1
2004232	PBG-5S	Giant CROSSPLY 5 Sidewall	32,4	32,4	810	810	12	1
2004233	PBG-5SHD	Giant CROSSPLY 5 Sidewall HD	32,4	32,4	810	810	14	1
2004235	PBG-6	Giant CROSSPLY 6	40,4	40,4	1010	1010	14	1
2004236	PBG-6HD	Giant CROSSPLY 6 Heavy Duty	40,4	40,4	1010	1010	16	1
2004237	PBG-6S	Giant CROSSPLY 6 Sidewall	40,4	40,4	1010	1010	14	1
2004238	PBG-6SHD	Giant CROSSPLY 6 Sidewall HD	40,4	40,4	1010	1010	16	1





'027 Claim Element	Disclosures from Prior Art (PREMA Patches)

Radial Repairs – Passenger and Light Truck

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

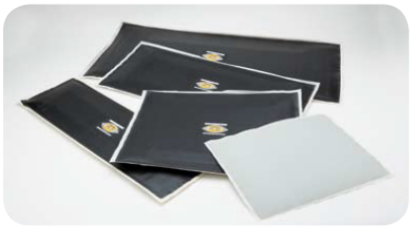
PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement.



Giant Radial OTR Repairs (Chemical Cure)

The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations.

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	PREMA Softgum Line Our PREMA Softgum Line contains a wide range of tyre repair materials. One of the highlights of PREMA Softgum Line is a laminated soft rubber patch. It offers excellent properties, it is easy to apply and it even equalizes tolerances on the buffered surface. You can use our Softgum Line patches for tubes, passenger car tyres, truck tyres and farm tractor tyres. This is what makes our Softgum Line unique: • designed and engineered in Germany • special cord construction • extremely short processing time with fast drying PFC cement • excellent adhesion when used with PFC cement • suitable for cold and hot vulcanization • laminated with a grey cushion gum ("green tack") You can look up all products of our Softgum Line online and order them straight away – please visit our web shop. (PREMA Patches, https://web.archive.org/web/20160802135005/http://www.prema24.com/en/products/tyre-repair)
8. The assembly as recited in claim 7 further comprising an element disposed within the cavity.	*PREMA Patches disclose, teach, and/or suggest the assembly as recited in claim 7 further comprising an element disposed within the cavity. For example:* **Radial Patches – Car / Truck** **Series with Smooth Gray Bonding Layer** *Pflaster für Radialreifen – PKW / LKW* *Serie mit glatter, grauer Verbindungsschicht* PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system. Please note the application instruction on page 7. *PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.* *Beachten Sie den Anwendungshinweis auf Seite 7.*  (PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)

Radial Repairs – Passenger and Light Truck

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

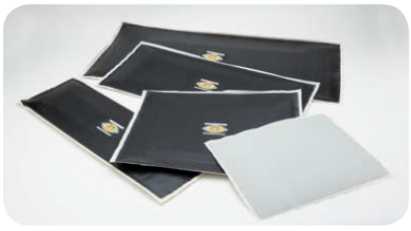
PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement.



Giant Radial OTR Repairs (Chemical Cure)

The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations.

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	PREMA Softgum Line Our PREMA Softgum Line contains a wide range of tyre repair materials. One of the highlights of PREMA Softgum Line is a laminated soft rubber patch. It offers excellent properties, it is easy to apply and it even equalizes tolerances on the buffered surface. You can use our Softgum Line patches for tubes, passenger car tyres, truck tyres and farm tractor tyres. This is what makes our Softgum Line unique: • designed and engineered in Germany • special cord construction • extremely short processing time with fast drying PFC cement • excellent adhesion when used with PFC cement • suitable for cold and hot vulcanization • laminated with a grey cushion gum ("green tack") You can look up all products of our Softgum Line online and order them straight away – please visit our web shop. (PREMA Patches, https://web.archive.org/web/20160802135005/http://www.prema24.com/en/products/tyre-repair)
9. The assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer.	*PREMA Patches disclose, teach, and/or suggest the assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer. For example:* **Radial Patches – Car / Truck** **Series with Smooth Gray Bonding Layer** *Pflaster für Radialreifen – PKW / LKW* *Serie mit glatter, grauer Verbindungsschicht* PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system. Please note the application instruction on page 7. *PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.* *Beachten Sie den Anwendungshinweis auf Seite 7.*  (PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)

Radial Repairs – Passenger and Light Truck

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

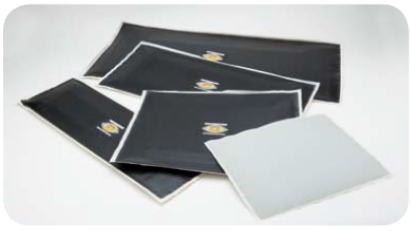
PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement.



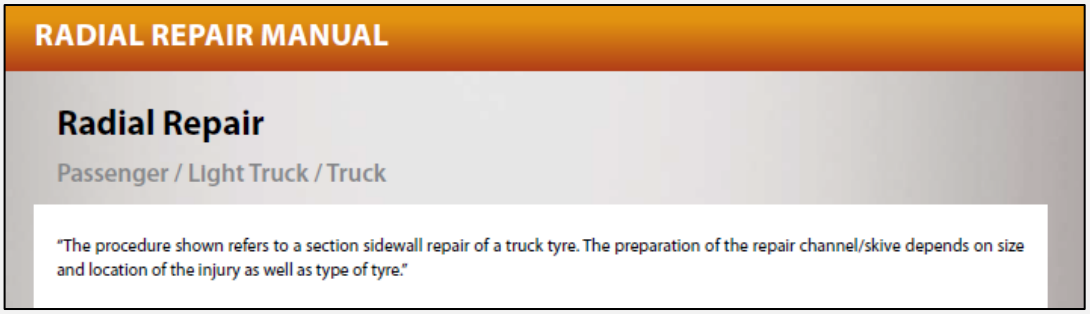
Giant Radial OTR Repairs (Chemical Cure)

The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations.

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	PREMA Softgum Line Our PREMA Softgum Line contains a wide range of tyre repair materials. One of the highlights of PREMA Softgum Line is a laminated soft rubber patch. It offers excellent properties, it is easy to apply and it even equalizes tolerances on the buffered surface. You can use our Softgum Line patches for tubes, passenger car tyres, truck tyres and farm tractor tyres. This is what makes our Softgum Line unique: • designed and engineered in Germany • special cord construction • extremely short processing time with fast drying PFC cement • excellent adhesion when used with PFC cement • suitable for cold and hot vulcanization • laminated with a grey cushion gum ("green tack") You can look up all products of our Softgum Line online and order them straight away – please visit our web shop. (PREMA Patches, https://web.archive.org/web/20160802135005/http://www.prema24.com/en/products/tyre-repair)
11[pre]. A method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of:	*To the extent that the preamble is limiting, PREMA Patches disclose, teach, and/or suggest a method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of. For example:* **Radial Patches – Car / Truck Series with Smooth Gray Bonding Layer** *Pflaster für Radialreifen – PKW / LKW* *Serie mit glatter, grauer Verbindungsschicht* PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system. Please note the application instruction on page 7. *PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.* *Beachten Sie den Anwendungshinweis auf Seite 7.*  (PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)  (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)

/files/PREMA_Katalog_Classic_final_25032014.pdf at 12-13.)

Radial Repairs – Passenger and Light Truck

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

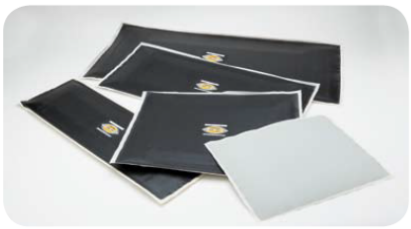
PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement.



Giant Radial OTR Repairs (Chemical Cure)

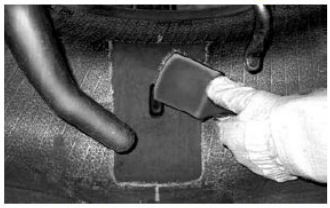
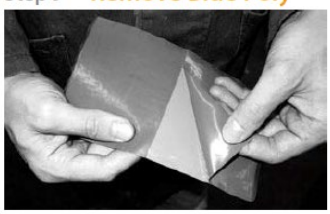
The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations.

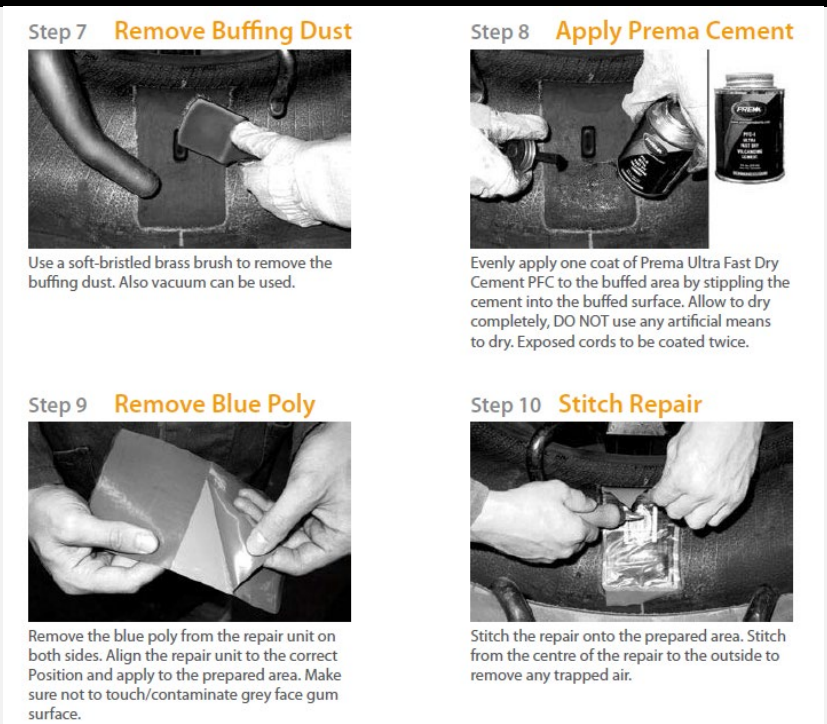
SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.)

See also following limitations.

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
[11a] identifying a surface of a vulcanized rubber article;	*PREMA Patches disclose, teach, and/or suggest identifying a surface of a vulcanized rubber article. For example:* Step 7 Remove Buffing Dust  Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used. Step 8 Apply Prema Cement  Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice. Step 9 Remove Blue Poly  Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface. Step 10 Stitch Repair  Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
[11b] placing an assembly into contact with the identified surface, wherein the assembly comprises:	*PREMA Patches disclose, teach, and/or suggest placing an assembly into contact with the identified surface, wherein the assembly comprises. For example:*

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	 (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
[11c] an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article, and	*PREMA Patches disclose, teach, and/or suggest an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article. For example:*

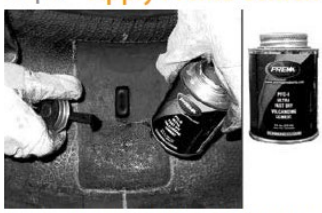
’027 Claim Element	Disclosures from Prior Art (PREMA Patches)

Step 7 **Remove Buffing Dust**



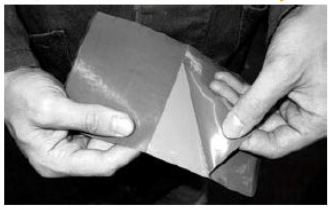
Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used.

Step 8 **Apply Prema Cement**



Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice.

Step 9 **Remove Blue Poly**



Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface.

Step 10 **Stitch Repair**



Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air.

PREMA Ultra Fast Dry Vulcanizing Cement

PREMA ultraschnell trocknender Vulkanisierzement

SKU # Art-Nr.	Part # Kurzbez.	Description Beschreibung	Size (fl. Oz) Größe (fl. Oz)	Size (ml) Größe (ml)	Pail / Box Eimer / Box
2205010	PFC-4	Ultra Fast Dry Vulcanizing Cement 118 ml can with brush Ultraschnell trocknender Vulkanisierzement 118 ml Dose mit Pinsel	4	118	25
2205020	PFC-8	Ultra Fast Dry Vulcanizing Cement 237 ml can with brush Ultraschnell trocknender Vulkanisierzement 237 ml Dose mit Pinsel	8	237	25
2205030	PFC-32	Ultra Fast Dry Vulcanizing Cement 1000 ml can Ultraschnell trocknender Vulkanisierzement 1000 ml Dose	32	1000	10
2205200	PFCG-32	Heay Duty Giant UFD Vulc. Cement 946 ml - OTR, can with brush Hochleistungs Vulkanisier Zement 946 ml - OTR, Dose mit Pinsel	32	946	10

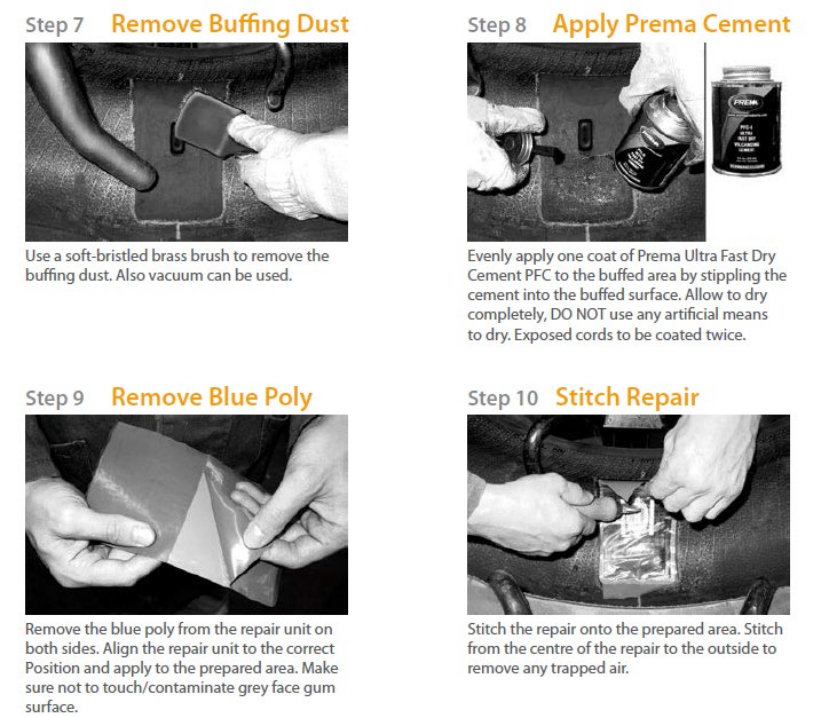


PREMA Ultra Fast Dry (UFD) Vulcanizing Cement is formulated to provide outstanding performance when used in conjunction with PREMA repair materials. Extremely easy to apply with an outstanding drying time. Regard Minimum drying time and test with the back of the finger independent of room temperature and humidity.
Contains no ozone depleting chemicals.

Ultraschnell trocknender (UFD) PREMA Vulkanisierzement ist eine Hochleistungs-Vulkanisationslösung in Verbindung mit PREMA Reifenreparaturmaterialien. Äußerst einfache Verarbeitung mit einer ausgezeichneten Trocknungszeit. Minimale Trockenzeit beachten und Fingerrücken-probe unabhängig von Raumtemperatur und Luftfeuchtigkeit durchführen. Enthält keine ozonabbauenden Chemikalien.



(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13, 16.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
[11d] wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article.	*PREMA Patches disclose, teach, and/or suggest wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article. For example:*  (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
12. The method as recited in claim 11 further comprising preparing the identified surface before the step of placing.	*PREMA Patches disclose, teach, and/or suggest the method as recited in claim 11 further comprising preparing the identified surface before the step of placing. For example:*

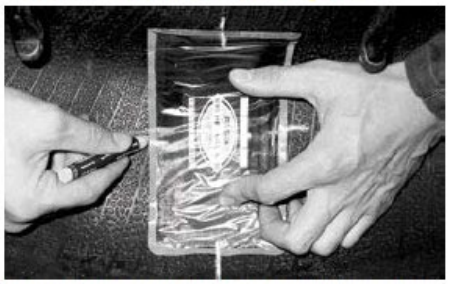
'027 Claim Element	Disclosures from Prior Art (PREMA Patches)

Step 3 Pre-Clean



Remove contaminants and silicone from the innerliner of the tyre prior to marking/buffing with PREMA Pre Buff Cleaner PPC.

Step 5 Mark out Repair



Centre the repair over the injury until the lines on the liner and the lines on the are coinciding. Mark the area around the repair with chalk.

Step 6 Buff Marked Area



Use a high grit buffing tool to buff the liner inside the marked area. (Buffer should be max. 5000 rpm)

Pre-Buff Cleaner

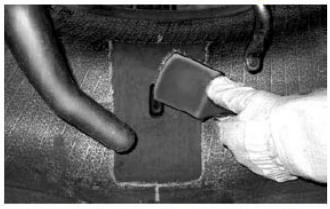
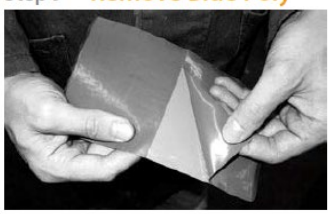
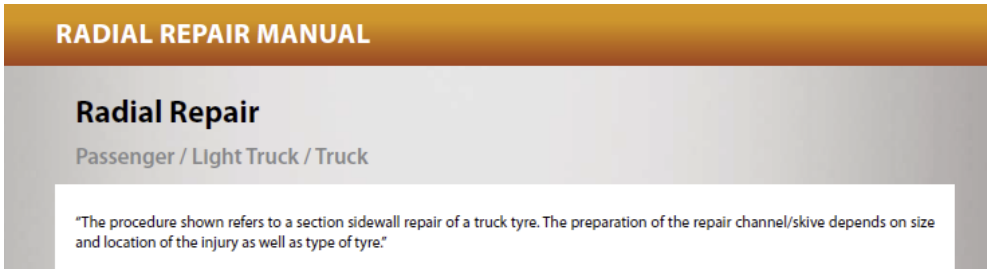
PREMA Pre-Buff Cleaner is formulated to remove all silicone and contaminations from the tyre innerliner prior to the buffing process.It contains no ozone depleting chemicals.

NOTE: *Only use Pre-Buff Cleaner before you buff.*
DO NOT apply it to an already buffed surface!

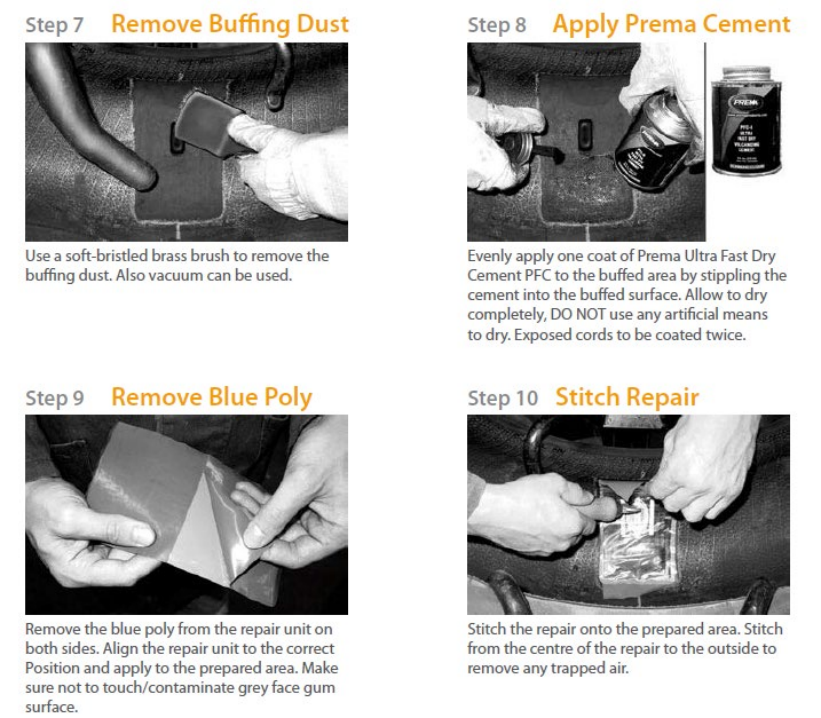
SKU #	Part #	Description	Size fl. Oz	Size ml	Qty/Box
2207010	PPC-16	Pre-Buff Cleaner „Aerosol" 473 ml in practical spray can	16	473	12
2207030	PPC-32	Pre-Buff Cleaner 946 ml can	32	946	12
2207050	PPC-5000	Pre-Buff Cleaner 5 l can	1.3 GAL	5000	1

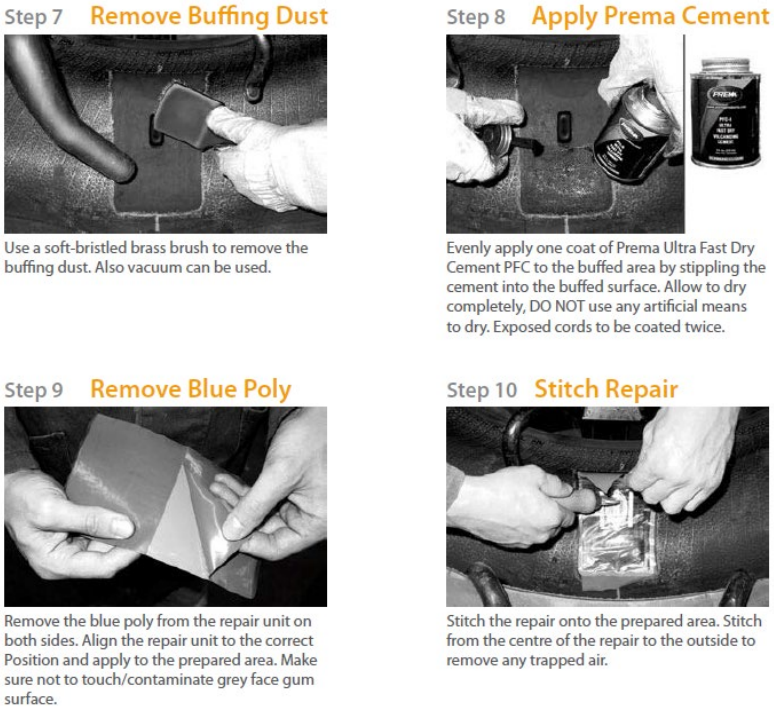


(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 12, 31.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
13. The method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing.	*PREMA Patches disclose, teach, and/or suggest the method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing. For example:* Step 7 Remove Buffing Dust  Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used. Step 8 Apply Prema Cement  Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice. Step 9 Remove Blue Poly  Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface. Step 10 Stitch Repair  Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
15[pre] A vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, PREMA Patches disclose, teach, and/or suggest a vulcanized rubber tire comprising. For example:* 

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	 (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.) *See also following limitations.*
[15a] a target surface disposed along a portion of the rubber tire;	*PREMA Patches disclose, teach, and/or suggest a target surface disposed along a portion of the rubber tire. For example:*  (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
[15b] an assembly disposed onto	*PREMA Patches disclose, teach, and/or suggest an assembly disposed onto the target surface and comprising. For example:*

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
the target surface and comprising:	 (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
[15c] an outer layer of elastomeric material; and	*PREMA Patches disclose, teach, and/or suggest an outer layer of elastomeric material. For example:* 

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
[15d] an adhesive layer connected with the outer layer;	*PREMA Patches disclose, teach, and/or suggest an adhesive layer connected with the outer layer. For example:* 

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	PREMA Ultra Fast Dry Vulcanizing Cement *PREMA ultraschnell trocknender Vulkanisierzement*  PREMA Ultra Fast Dry (UFD) Vulcanizing Cement is formulated to provide outstanding performance when used in conjunction with PREMA repair materials. Extremely easy to apply with an outstanding drying time. Regard Minimum drying time and test with the back of the finger independent of room temperature and humidity. Contains no ozone depleting chemicals. *Ultraschnell trocknender (UFD) PREMA Vulkanisierzement ist eine Hochleistungs-Vulkanisationslösung in Verbindung mit PREMA Reifenreparaturmaterialien. Äußerst einfache Verarbeitung mit einer ausgezeichneten Trocknungszeit. Minimale Trockenzeit beachten und Fingerrückenprobe unabhängig von Raumtemperatur und Luftfeuchtigkeit durchführen. Enthält keine ozonabbauenden Chemikalien.* (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13, 16.)
[15e] wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire.	*PREMA Patches disclose, teach, and/or suggest wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire. For example:*

SKU # Art-Nr.	Part # Kurzbez.	Description Beschreibung	Size (fl. Oz) Größe (fl. Oz)	Size (ml) Größe (ml)	Pail / Box Eimer / Box
2205010	PFC-4	Ultra Fast Dry Vulcanizing Cement 118 ml can with brush Ultraschnell trocknender Vulkanisierzement 118 ml Dose mit Pinsel	4	118	25
2205020	PFC-8	Ultra Fast Dry Vulcanizing Cement 237 ml can with brush Ultraschnell trocknender Vulkanisierzement 237 ml Dose mit Pinsel	8	237	25
2205030	PFC-32	Ultra Fast Dry Vulcanizing Cement 1000 ml can Ultraschnell trocknender Vulkanisierzement 1000 ml Dose	32	1000	10
2205200	PFCG-32	Heay Duty Giant UFD Vulc. Cement 946 ml - OTR, can with brush Hochleistungs Vulkanisier Zement 946 ml - OTR, Dose mit Pinsel	32	946	10



’027 Claim Element	Disclosures from Prior Art (PREMA Patches)

Giant Bias OTR Repairs (Chemical Cure)

The new PREMA Giant OTR CROSSPLY Chemical Cure Repairs can be used in both chemical (cold cure and heat cure) vulcanizing systems. Tare manufactured with the same strong body ply construction as used in OTR Bias Tyres and with specially formulated rubber compounds. Because these repairs are constructed with a "chemical" bonding gum, they have an extended shelf-life. They are available in a full range of sizes for application in all types of injuries.These repairs may be used for either chemical (cold cure) or heat & pressure (heat cure) applications. These patches are designed to be installed with the PREMA Grey Self-Vulcanizing Floater Gum installed on the back of the repair using PREMA Giant OTR Cement.

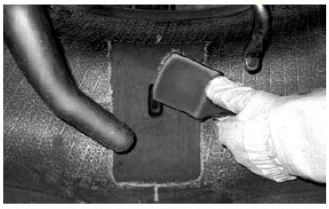
When using a cold cure process, use PREMA Giant OTR Chemical Cement. When using a heat cure process, use PREMA Black Vulc Cement. PREMA Cut-Resistant Rope Rubber should be used to properly fill the injury channel. Refer to the PREMA Bias OTR Repair Chart for the right selection of the repair unit.

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2004210	PBG-1	Giant CROSSPLY 1	9,6	9,6	240	240	4	5
2004211	PBG-1HD	Giant CROSSPLY 1 Heavy Duty	9,6	9,6	240	240	6	5
2004215	PBG-2	Giant CROSSPLY 2	14,4	14,4	360	360	6	5
2004216	PBG-2HD	Giant CROSSPLY 2 Heavy Duty	14,4	14,4	360	360	8	5
2004220	PBG-3	Giant CROSSPLY 3	19,2	19,2	480	480	8	2
2004221	PBG-3HD	Giant CROSSPLY 3 Heavy Duty	19,2	19,2	480	480	10	2
2004225	PBG-4	Giant CROSSPLY 4	26,4	26,4	660	660	10	2
2004226	PBG-4HD	Giant CROSSPLY 4 Heavy Duty	26,4	26,4	660	660	12	2
2004227	PBG-4S	Giant CROSSPLY 4 Sidewall	26,4	26,4	660	660	10	2
2004228	PBG-4SHD	Giant CROSSPLY 4 Sidewall HD	26,4	26,4	660	660	12	2
2004230	PBG-5	Giant CROSSPLY 5	32,4	32,4	810	810	12	1
2004231	PBG-5HD	Giant CROSSPLY 5 Heavy Duty	32,4	32,4	810	810	14	1
2004232	PBG-5S	Giant CROSSPLY 5 Sidewall	32,4	32,4	810	810	12	1
2004233	PBG-5SHD	Giant CROSSPLY 5 Sidewall HD	32,4	32,4	810	810	14	1
2004235	PBG-6	Giant CROSSPLY 6	40,4	40,4	1010	1010	14	1
2004236	PBG-6HD	Giant CROSSPLY 6 Heavy Duty	40,4	40,4	1010	1010	16	1
2004237	PBG-6S	Giant CROSSPLY 6 Sidewall	40,4	40,4	1010	1010	14	1
2004238	PBG-6SHD	Giant CROSSPLY 6 Sidewall HD	40,4	40,4	1010	1010	16	1



(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf)

Step 7 Remove Buffing Dust



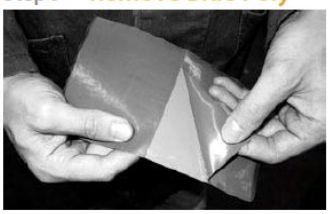
Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used.

Step 8 Apply Prema Cement



Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice.

Step 9 Remove Blue Poly



Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface.

Step 10 Stitch Repair



Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air.

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
16. The rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein.	*PREMA Patches disclose, teach, and/or suggest the rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein. For example:*

Radial Patches – Car / Truck
Series with Smooth Gray Bonding Layer
Pflaster für Radialreifen – PKW / LKW
Serie mit glatter, grauer Verbindungsschicht

PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system.

Please note the application instruction on page 7.

PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.

Beachten Sie den Anwendungshinweis auf Seite 7.



(PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

Radial Repairs – Passenger and Light Truck

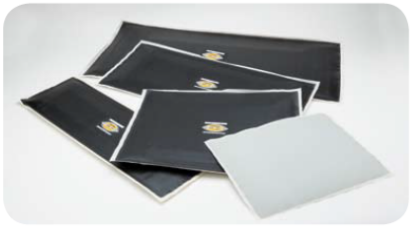
SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement.



'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	Giant Radial OTR Repairs (Chemical Cure) The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.) **PREMA Softgum Line** Our PREMA Softgum Line contains a wide range of tyre repair materials. One of the highlights of PREMA Softgum Line is a laminated soft rubber patch. It offers excellent properties, it is easy to apply and it even equalizes tolerances on the buffered surface. You can use our Softgum Line patches for tubes, passenger car tyres, truck tyres and farm tractor tyres. This is what makes our Softgum Line unique: • designed and engineered in Germany • special cord construction • extremely short processing time with fast drying PFC cement • excellent adhesion when used with PFC cement • suitable for cold and hot vulcanization • laminated with a grey cushion gum ("green tack") You can look up all products of our Softgum Line online and order them straight away – please visit our web shop. (PREMA Patches, https://web.archive.org/web/20160802135005/http://www.prema24.com/en/products/tyre-repair)
17. The rubber tire as recited in claim 16 wherein an element is disposed within the cavity.	*PREMA Patches disclose, teach, and/or suggest the rubber tire as recited in claim 16 wherein an element is disposed within the cavity. For example:*

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



’027 Claim Element	Disclosures from Prior Art (PREMA Patches)

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Series with Smooth Gray Bonding Layer
Pflaster für Radialreifen – PKW / LKW
Serie mit glatter, grauer Verbindungsschicht

PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system.

Please note the application instruction on page 7.

PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.

Beachten Sie den Anwendungshinweis auf Seite 7.



(PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

Radial Repairs – Passenger and Light Truck

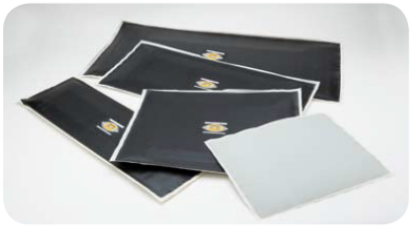
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2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

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18. The rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer.	*PREMA Patches disclose, teach, and/or suggest the rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer. For example:*

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



'027 Claim Element	Disclosures from Prior Art (PREMA Patches)

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(PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

Radial Repairs – Passenger and Light Truck

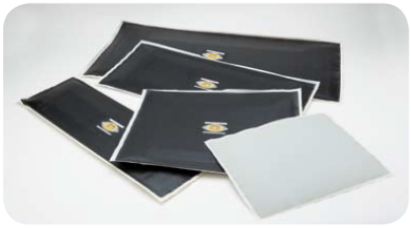
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2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

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19[pre] An assembly for attachment to a vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, PREMA Patches disclose, teach, and/or suggest an assembly for attachment to a vulcanized rubber tire comprising. For example:*

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
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Radial Repairs – Passenger and Light Truck

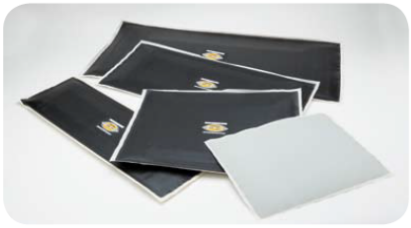
SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

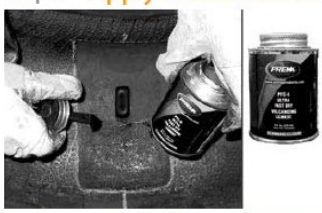
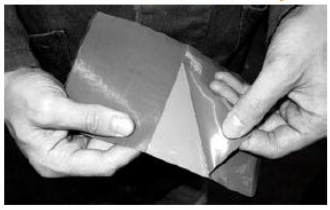
PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement.



'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	Giant Radial OTR Repairs (Chemical Cure) The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.) *See also following limitations.*
[19a] an outer layer formed from an elastomeric material;	*PREMA Patches disclose, teach, and/or suggest an outer layer formed from an elastomeric material. For example:*

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	Step 7 Remove Buffing Dust  Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used. Step 8 Apply Prema Cement  Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice. Step 9 Remove Blue Poly  Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface. Step 10 Stitch Repair  Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
[19b] an adhesive layer bonding the assembly to portion of a vulcanized rubber tire; and	*PREMA Patches disclose, teach, and/or suggest an adhesive layer bonding the assembly to portion of a vulcanized rubber tire. For example:*

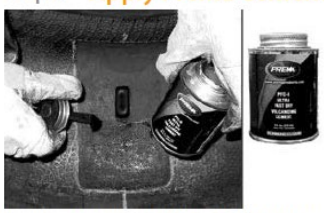
’027 Claim Element	Disclosures from Prior Art (PREMA Patches)

Step 7 **Remove Buffing Dust**



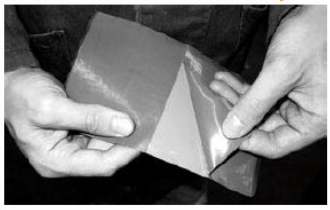
Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used.

Step 8 **Apply Prema Cement**



Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice.

Step 9 **Remove Blue Poly**



Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface.

Step 10 **Stitch Repair**



Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air.

PREMA Ultra Fast Dry Vulcanizing Cement

PREMA ultraschnell trocknender Vulkanisierzement



SKU # Art-Nr.	Part # Kurzbez.	Description Beschreibung	Size (fl. Oz) Größe (fl. Oz)	Size (ml) Größe (ml)	Pail / Box Eimer / Box
2205010	PFC-4	Ultra Fast Dry Vulcanizing Cement 118 ml can with brush Ultraschnell trocknender Vulkanisierzement 118 ml Dose mit Pinsel	4	118	25
2205020	PFC-8	Ultra Fast Dry Vulcanizing Cement 237 ml can with brush Ultraschnell trocknender Vulkanisierzement 237 ml Dose mit Pinsel	8	237	25
2205030	PFC-32	Ultra Fast Dry Vulcanizing Cement 1000 ml can Ultraschnell trocknender Vulkanisierzement 1000 ml Dose	32	1000	10
2205200	PFCG-32	Heay Duty Giant UFD Vulc. Cement 946 ml - OTR, can with brush Hochleistungs Vulkanisier Zement 946 ml - OTR, Dose mit Pinsel	32	946	10



PREMA Ultra Fast Dry (UFD) Vulcanizing Cement is formulated to provide outstanding performance when used in conjunction with PREMA repair materials. Extremely easy to apply with an outstanding drying time. Regard Minimum drying time and test with the back of the finger independent of room temperature and humidity.
Contains no ozone depleting chemicals.

Ultraschnell trocknender (UFD) PREMA Vulkanisierzement ist eine Hochleistungs-Vulkanisationslösung in Verbindung mit PREMA Reifenreparaturmaterialien. Äußerst einfache Verarbeitung mit einer ausgezeichneten Trocknungszeit. Minimale Trockenzeit beachten und Fingerrückenprobe unabhängig von Raumtemperatur und Luftfeuchtigkeit durchführen. Enthält keine ozonabbauenden Chemikalien.

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13, 16.)
[19c] a cavity disposed within the assembly for accommodating an element therein;	*PREMA Patches disclose, teach, and/or suggest a cavity disposed within the assembly for accommodating an element therein. For example:*

Radial Patches – Car / Truck
Series with Smooth Gray Bonding Layer
Pflaster für Radialreifen – PKW / LKW
Serie mit glatter, grauer Verbindungsschicht

PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system.

Please note the application instruction on page 7.

PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.

Beachten Sie den Anwendungshinweis auf Seite 7.



(PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

Radial Repairs – Passenger and Light Truck

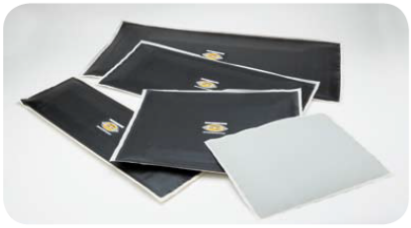
SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5

PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement.



'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	Giant Radial OTR Repairs (Chemical Cure) The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.) **PREMA Softgum Line** Our PREMA Softgum Line contains a wide range of tyre repair materials. One of the highlights of PREMA Softgum Line is a laminated soft rubber patch. It offers excellent properties, it is easy to apply and it even equalizes tolerances on the buffered surface. You can use our Softgum Line patches for tubes, passenger car tyres, truck tyres and farm tractor tyres. This is what makes our Softgum Line unique: • designed and engineered in Germany • special cord construction • extremely short processing time with fast drying PFC cement • excellent adhesion when used with PFC cement • suitable for cold and hot vulcanization • laminated with a grey cushion gum ("green tack") You can look up all products of our Softgum Line online and order them straight away – please visit our web shop. (PREMA Patches, https://web.archive.org/web/20160802135005/http://www.prema24.com/en/products/tyre-repair)
[19d] wherein the outer layer comprises a material composition that acts as a barrier to material migrating from	*PREMA Patches disclose, teach, and/or suggest wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire. For example:*

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



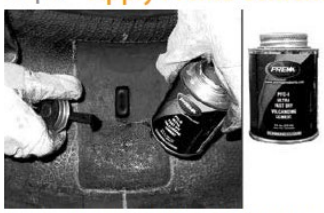
'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
the vulcanized rubber tire.	

Step 7 **Remove Buffing Dust**



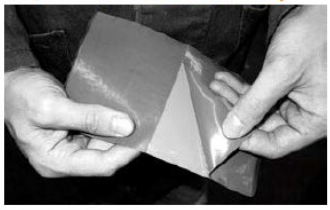
Use a soft-bristled brass brush to remove the buffing dust. Also vacuum can be used.

Step 8 **Apply Prema Cement**



Evenly apply one coat of Prema Ultra Fast Dry Cement PFC to the buffed area by stippling the cement into the buffed surface. Allow to dry completely, DO NOT use any artificial means to dry. Exposed cords to be coated twice.

Step 9 **Remove Blue Poly**



Remove the blue poly from the repair unit on both sides. Align the repair unit to the correct Position and apply to the prepared area. Make sure not to touch/contaminate grey face gum surface.

Step 10 **Stitch Repair**



Stitch the repair onto the prepared area. Stitch from the centre of the repair to the outside to remove any trapped air.

PREMA Ultra Fast Dry Vulcanizing Cement

PREMA ultraschnell trocknender Vulkanisierzement



SKU # Art-Nr.	Part # Kurzbez.	Description Beschreibung	Size (fl. Oz) Größe (fl. Oz)	Size (ml) Größe (ml)	Pail / Box Eimer / Box
2205010	PFC-4	Ultra Fast Dry Vulcanizing Cement 118 ml can with brush Ultraschnell trocknender Vulkanisierzement 118 ml Dose mit Pinsel	4	118	25
2205020	PFC-8	Ultra Fast Dry Vulcanizing Cement 237 ml can with brush Ultraschnell trocknender Vulkanisierzement 237 ml Dose mit Pinsel	8	237	25
2205030	PFC-32	Ultra Fast Dry Vulcanizing Cement 1000 ml can Ultraschnell trocknender Vulkanisierzement 1000 ml Dose	32	1000	10
2205200	PFCG-32	Heay Duty Giant UFD Vulc. Cement 946 ml - OTR, can with brush Hochleistungs Vulkanisier Zement 946 ml - OTR, Dose mit Pinsel	32	946	10

PREMA Ultra Fast Dry (UFD) Vulcanizing Cement is formulated to provide outstanding performance when used in conjunction with PREMA repair materials. Extremely easy to apply with an outstanding drying time. Regard Minimum drying time and test with the back of the finger independent of room temperature and humidity.
Contains no ozone depleting chemicals.

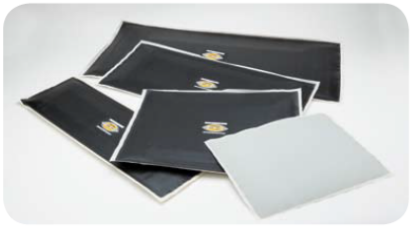
Ultraschnell trocknender (UFD) PREMA Vulkanisierzement ist eine Hochleistungs-Vulkanisationslösung in Verbindung mit PREMA Reifenreparaturmaterialien. Äußerst einfache Verarbeitung mit einer ausgezeichneten Trocknungszeit. Minimale Trockenzeit beachten und Fingerrücken-probe unabhängig von Raumtemperatur und Luftfeuchtigkeit durchführen. Enthält keine ozonabbauenden Chemikalien.

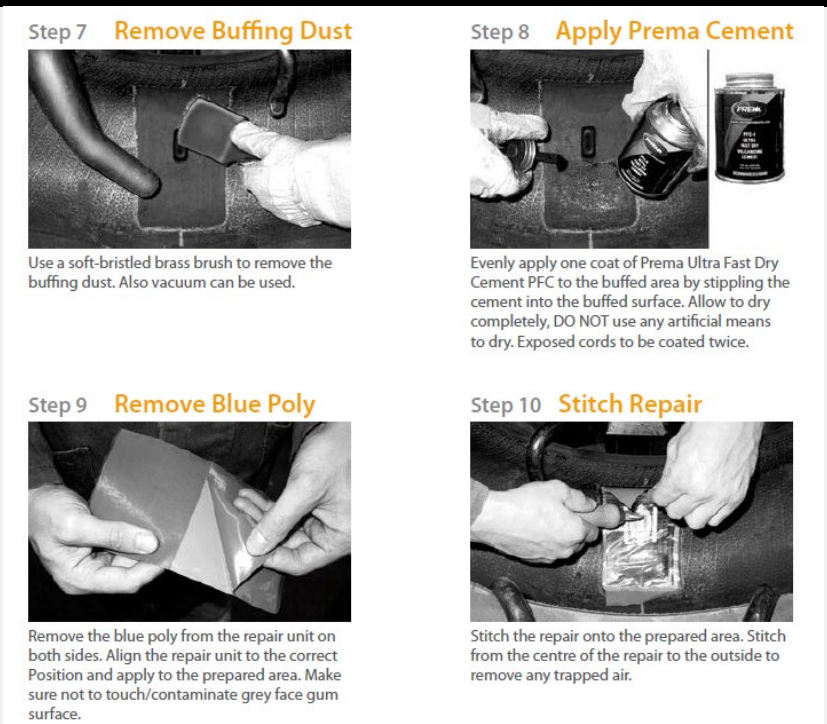


'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13, 16.)
20. The assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer.	*PREMA Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer. For example:* **Radial Patches – Car / Truck Series with Smooth Gray Bonding Layer** *Pflaster für Radialreifen – PKW / LKW* *Serie mit glatter, grauer Verbindungsschicht* PREMA GmbH was able to combine the best of hard gum patches and soft gum patches into one system. Please note the application instruction on page 7. *PREMA GmbH ist es gelungen, Hartgummi- und Weichgummi-Pflaster optimal in einem einzigen System zu kombinieren.* *Beachten Sie den Anwendungshinweis auf Seite 7.*  (PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.) **Radial Repairs – Passenger and Light Truck** PREMA Center-Over-Injury Repairs are designed for use in all radial tyres. The PREMA Radial Repair is intended for use in HOT or COLD applications. PREMA Radial Repairs are designed for use in the Crown, Sidewall and Shoulder of radial tyres. Refer to the PREMA Repair Chart for selection of the repair unit. Install with PREMA Ultra Fast Dry Vulcanizing Cement. For HOT cure application use PREMA Black Vulc Cement. | SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
---	---	---	---	---	---	---	---	---
2002090	PR-109	RADIAL Repair Patch PR-109	3	2	77	50	1	20
2002095	PR-109T	RADIAL Repair Patch PR-109T	3	2	77	50	1	80
2002100	PR-110	RADIAL Repair Patch PR-110	3 ¼	2 ¼	108	57	1	20
2002105	PR-110T	RADIAL Repair Patch PR-110T	3 ¼	2 ¼	108	57	1	80
2002110	PR-111	RADIAL Repair Patch PR-111						10
2002120	PR-112	RADIAL Repair Patch PR-112	4 ¼	3	108	76	1	10
2002125	PR-112T	RADIAL Repair Patch PR-112T	4 ¼	3	108	76	1	40
2002130	PR-113	RADIAL Repair Patch PR-113	5	3 ¼	127	83	1	10
2002140	PR-114	RADIAL Repair Patch PR-114	5 ¼	3 ½	133	89	1	10
2002150	PR-115	RADIAL Repair Patch PR-115	3 ¼	3	95	76	1	10
2002200	PR-120	RADIAL Repair Patch PR-120	5	3 ¼	127	83	2	10
2002220	PR-122	RADIAL Repair Patch PR-122	7	3 ¼	178	83	2	10
2002240	PR-124	RADIAL Repair Patch PR-124	8 ¾	3 ¼	222	83	2	10
2002250	PR-125	RADIAL Repair Patch PR-125	5 ¼	4 ¾	133	121	2	10
2002260	PR-126	RADIAL Repair Patch PR-126	10 ¾	3 ¼	273	83	3	10
2002350	PR-135	RADIAL Repair Patch PR-135	7 ½	5 ½	191	140	4	10
2002400	PR-140	RADIAL Repair Patch PR-140	7 ¾	4 ¼	197	108	3	10
2002420	PR-142	RADIAL Repair Patch PR-142	10 ¾	5 ½	273	140	4	5
2002440	PR-144	RADIAL Repair Patch PR-144	13 ¼	5 ½	337	140	4	5	 

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	Giant Radial OTR Repairs (Chemical Cure) The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations. (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 7.) **PREMA Softgum Line** Our PREMA Softgum Line contains a wide range of tyre repair materials. One of the highlights of PREMA Softgum Line is a laminated soft rubber patch. It offers excellent properties, it is easy to apply and it even equalizes tolerances on the buffered surface. You can use our Softgum Line patches for tubes, passenger car tyres, truck tyres and farm tractor tyres. This is what makes our Softgum Line unique: • designed and engineered in Germany • special cord construction • extremely short processing time with fast drying PFC cement • excellent adhesion when used with PFC cement • suitable for cold and hot vulcanization • laminated with a grey cushion gum ("green tack") You can look up all products of our Softgum Line online and order them straight away – please visit our web shop. (PREMA Patches, https://web.archive.org/web/20160802135005/http://www.prema24.com/en/products/tyre-repair)
21. The assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer.	*PREMA Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer. For example:*

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



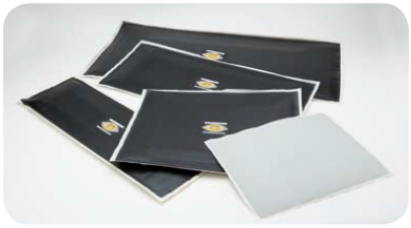
'027 Claim Element	Disclosures from Prior Art (PREMA Patches)
	 (PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 13.)
22. The assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface.	*PREMA Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface. For example:*  (PREMA Patches, https://web.archive.org/web/20100331030538/http://www.prema-gmbh.de/portal/resources/139.pdf at 4.)

'027 Claim Element	Disclosures from Prior Art (PREMA Patches)

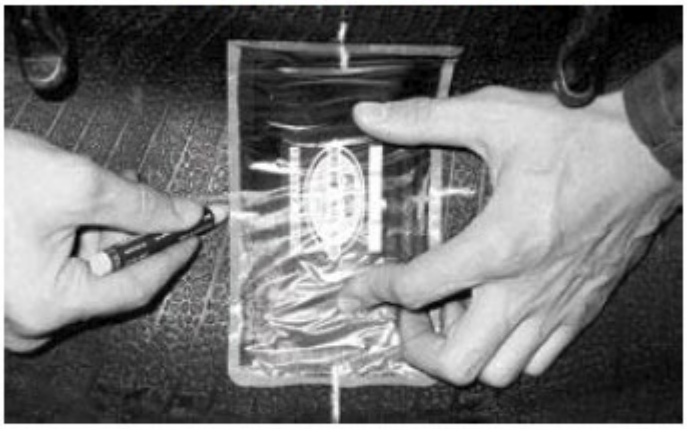
Giant Radial OTR Repairs (Chemical Cure)

The PREMA Giant OTR Radial Chemical Cure Repairs can be used in both chemical (cold cure) and heat & pressure (heat cure) vulcanizing systems. These repairs are manufactured with full body ply construction and specially formulated rubber compounds designed to provide excellent performance for the life of the OTR tyre. The repair units are avalable in a full range of sizes for application in any area of the tyre. These repairs are installed with the PREMA Grey Self-Vulcanising Floater Gum applied on the back of the repair using PREMA Giant OTR Cement. When installed for the cold cure process, use PREMA Giant OTR Chemical Cement. When installed for the heat cure process, use PREMA Black Vulc Cement. Prema Cut-Resistant Rope Rubber should be used to properly fill the injury on all installations.

SKU #	Part #	Description	L (in.)	W (in.)	L (mm)	W (mm)	PLIES #	Qty/ Box
2002610	PRG-146	OTR GIANT RADIAL Repair Patch PRG-146	17 ½	7 ¼	440	180	4	5
2002613	PRG-150	OTR GIANT RADIAL Repair Patch PRG-150	23 ¼	7 ¼	580	180	5	5
2002616	PRG-152	OTR GIANT RADIAL Repair Patch PRG-152	23 ¼	9 ½	580	240	5	5
2002619	PRG-155	OTR GIANT RADIAL Repair Patch PRG-155	13 ¼	10 ½	720	270	7	2
2002622	PRG-156	OTR GIANT RADIAL Repair Patch PRG-156	28 ¾	10 ¾	720	270	7	2
2002625	PRG-160	OTR GIANT RADIAL Repair Patch PRG-160	34 ½	10 ¾	860	270	7	1
2002628	PRG-162	OTR GIANT RADIAL Repair Patch PRG-162	41 ¼	13	1030	325	7	1
2002631	PRG-165	OTR GIANT RADIAL Repair Patch PRG-165	16 ¾	13 ¼	420	330	6	2
2002634	PRG-168	OTR GIANT RADIAL Repair Patch PRG-168	30 ½	14	760	350	7	2
2002637	PRG-175	OTR GIANT RADIAL Repair Patch PRG-175	21 ¼	18	530	450	8	2



Step 5 Mark out Repair



Centre the repair over the injury until the lines on the liner and the lines on the are coinciding. Mark the area around the repair with chalk.

(PREMA Patches, https://web.archive.org/web/20160220184434/http://www.prema24.com/files/PREMA_Katalog_Classic_final_25032014.pdf at 6, 7.)

Invalidity Claim Chart Against U.S. Patent No. 11,124,027 ("'027 Patent")
Based on REMA Tip Top Patches

REMA Tip Top Patches include all patches sold by REMA Tip Top prior to the earliest priority date of the '027 patent, April 26, 2016, including all patches found at:

- https://www.youtube.com/watch?v=uvHpSH64jYY
- https://www.youtube.com/watch?v=c-GF4FbtEAY
- https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf
- https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7
- https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6
- https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8
- https://web.archive.org/web/20160805070603/http:/rematiptop.com/part.php?pid=87&cid=10&sid=6
- https://web.archive.org/web/20111104115711/http:/www.rematiptop.com/parts.php?sid=16
- https://web.archive.org/web/20111104114102/http://www.rematiptop.com/parts.php?sid=11
- https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf
- https://web.archive.org/web/20060326142354fw_/http:/www.rematiptop.com/Technical_Sub_Training_Sub_TipTopTips.htm)
- https://web.archive.org/web/20080509124214/http:/rematiptop.com/

REMA Tip Top Patches qualify as prior art under at least 35 U.S.C. § 102(a)(1). REMA Tip Top Patches anticipate and/or render obvious the Asserted Claims of the '027 Patent (at least as Revvo understands Plaintiff's application of the Asserted Claims in an effort to show infringement).

To the extent Plaintiff argues that any element below is not disclosed by REMA Tip Top Patches, a person of ordinary skill in the art would have found it obvious to combine the teachings of REMA Tip Top Patches with the background knowledge of a person of ordinary skill in the art and/or the additional references and exemplary teachings set forth in the chart below, to arrive at the claim limitation with a reasonable expectation of success. The chart below provides representative examples of where each element of each claim is found within the REMA Tip Top Patches. Citations are meant to be exemplary, not exhaustive, and Revvo reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by Plaintiff. Citations to figures, drawings, tables, and the link include reference to any accompanying or related text. All internal cross-references are meant to incorporate the cross-referenced material as if fully set forth therein.

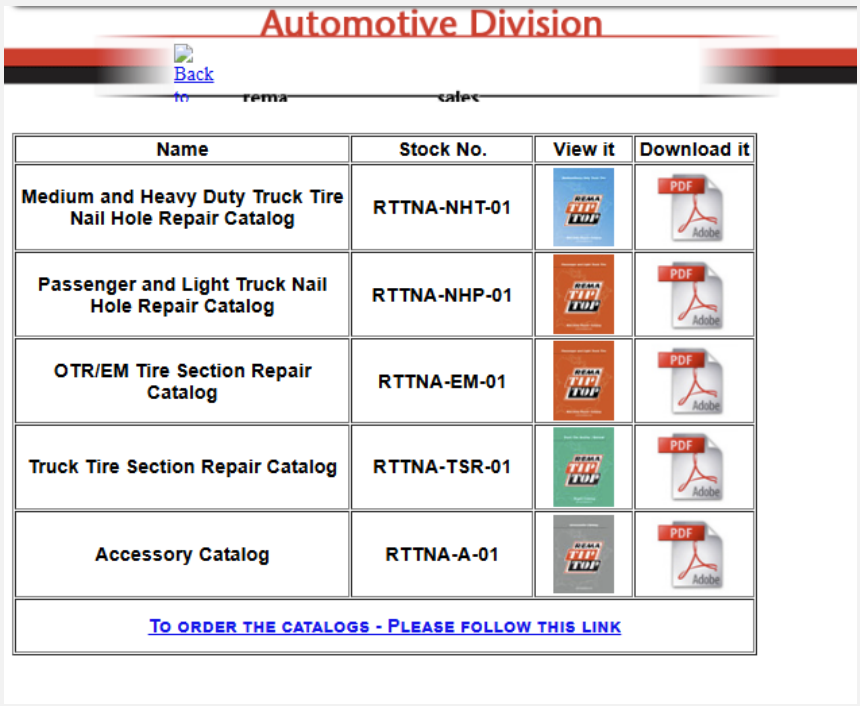
It is Revvo's position that Plaintiff's October 30, 2024 Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Revvo's

statements below should not be treated as an admission, implication, or suggestion that Revvo agrees with Plaintiff regarding either the scope, construction, or interpretation of any of the Asserted Claims or the infringement theories advanced by Plaintiff in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Revvo has specified non-limiting examples of where its application of the prior art is based on Plaintiff's apparent application of the claim element. These statements are not intended to suggest that Revvo agrees with Plaintiff's application of any claim element, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or propose claim constructions until a later date.

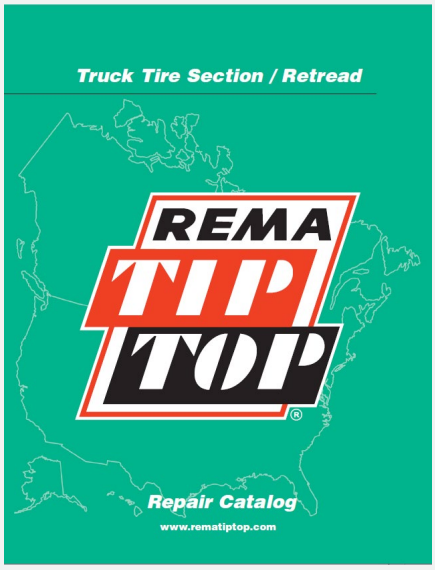
Plaintiff has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by the REMA Tip Top Patches. Revvo therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if Plaintiff makes any such contention.

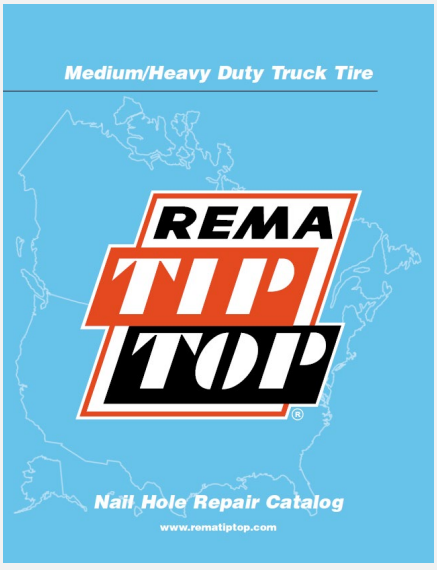
Where Revvo states that the REMA Tip Top Patches "disclose" a limitation, that disclosure may be express, implicit, and/or inherent.

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
1[pre]. An assembly for attachment with a vulcanized rubber article comprising:	*To the extent that the preamble is limiting, REMA Tip Top Patches disclose, teach, and/or suggest an assembly for attachment with a vulcanized rubber article comprising. For example:*

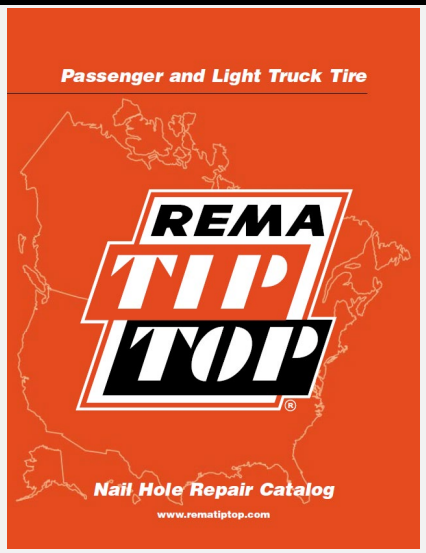


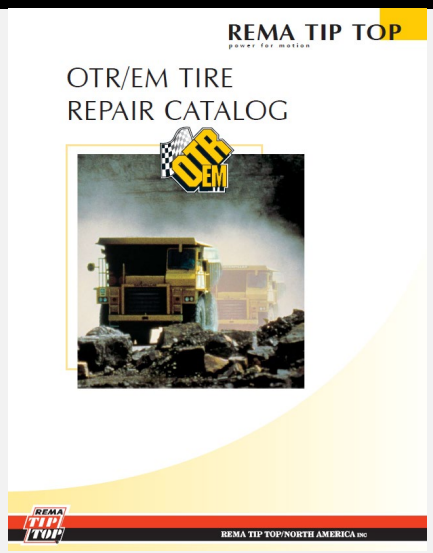
Name	Stock No.	View it	Download it
Medium and Heavy Duty Truck Tire Nail Hole Repair Catalog	RTTNA-NHT-01		
Passenger and Light Truck Nail Hole Repair Catalog	RTTNA-NHP-01		
OTR/EM Tire Section Repair Catalog	RTTNA-EM-01		
Truck Tire Section Repair Catalog	RTTNA-TSR-01		
Accessory Catalog	RTTNA-A-01		
TO ORDER THE CATALOGS - PLEASE FOLLOW THIS LINK			



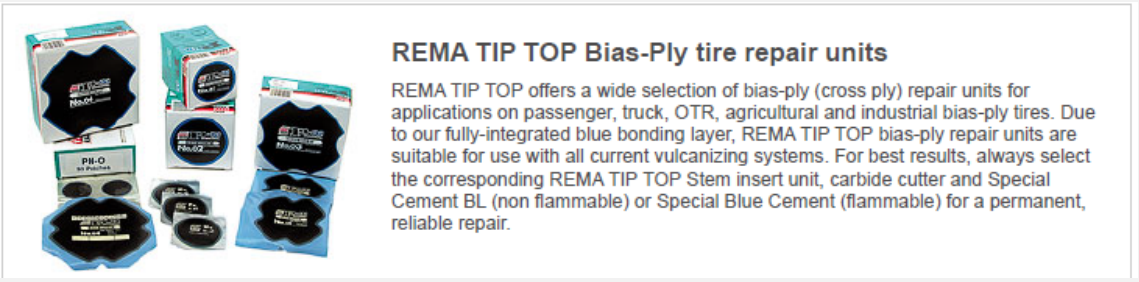


'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

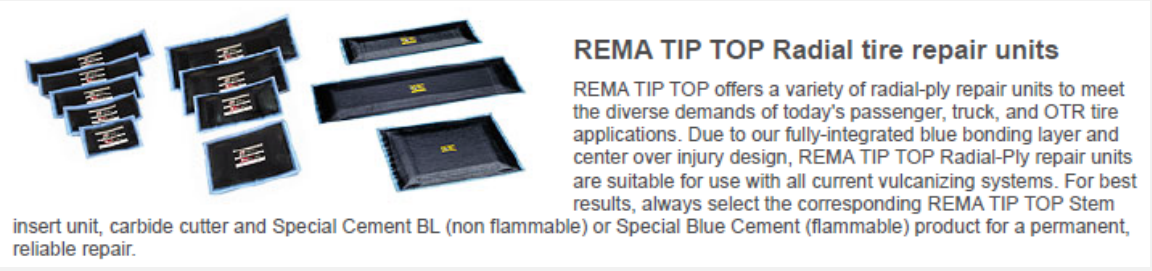




(REMA Tip Top Patches, https://web.archive.org/web/20080509124214/http:/rematiptop.com/)



(REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)



(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

REMA TIP TOP Radial tire repair units

REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

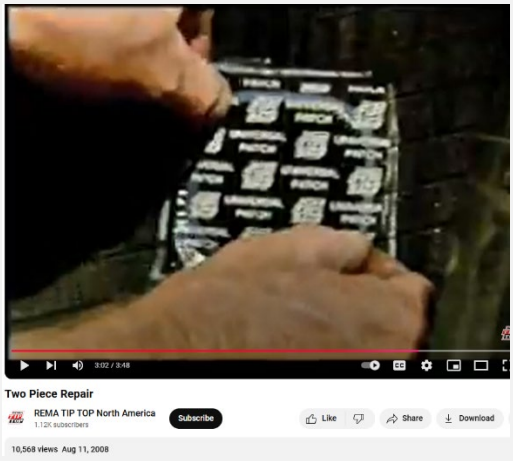
(REMA Tip Top Patches, https://web.archive.org/web/20160805070603/http:/rematiptop.com/part.php?pid=87&cid=10&sid=6.)



REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)



(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)

See also the following limitations.

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
[1a] an outer layer of elastomeric material having a visual feature; and	*REMA Tip Top Patches disclose, teach, and/or suggest an outer layer of elastomeric material having a visual feature. For example:*



REMA TIP TOP Bias-Ply tire repair units

REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)



REMA TIP TOP Radial tire repair units

REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

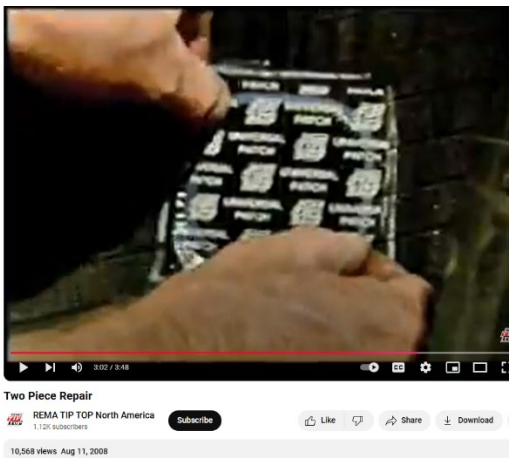
(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)



REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

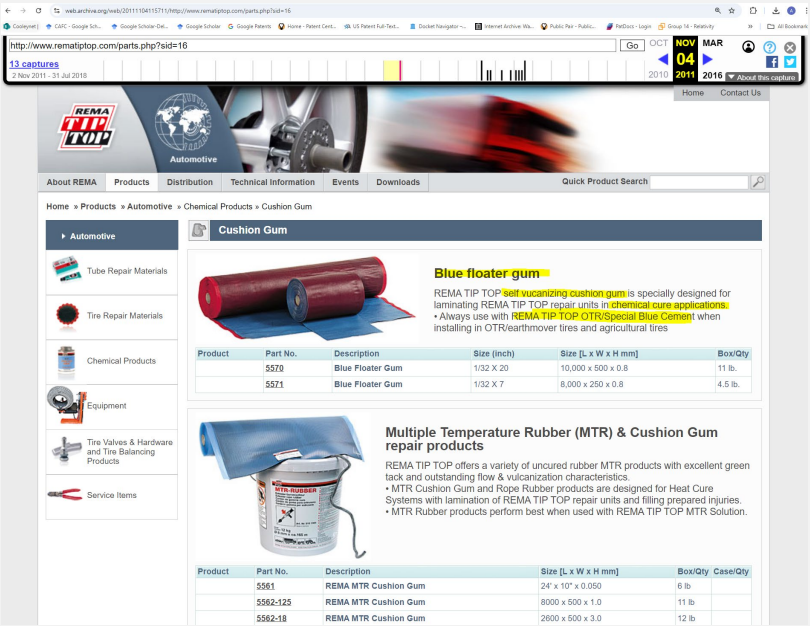
(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)
[1b] an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and	*REMA Tip Top Patches disclose, teach, and/or suggest an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7..)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)



(REMA Tip Top Patches, https://web.archive.org/web/20111104115711/http:/www.rematiptop.com/parts.php?sid=16.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)







’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)



’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://www.youtube.com/watch?v=uvHpSH64jYY.)
[1c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.	*REMA Tip Top Patches disclose, teach, and/or suggest wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article. For example:* 

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)







’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



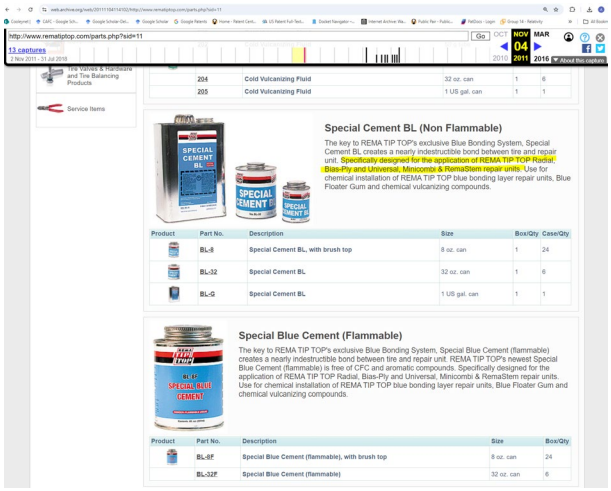
(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)





’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

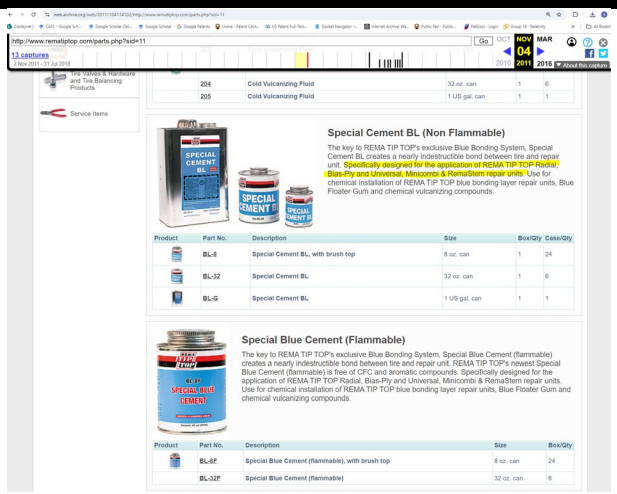
(REMA Tip Top Patches, https://www.youtube.com/watch?v=uvHpSH64jYY.)



(REMA Tip Top Patches, https://web.archive.org/web/20111104114102/http://www.rematiptop.com/parts.php?sid=11.)



(REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 7.)

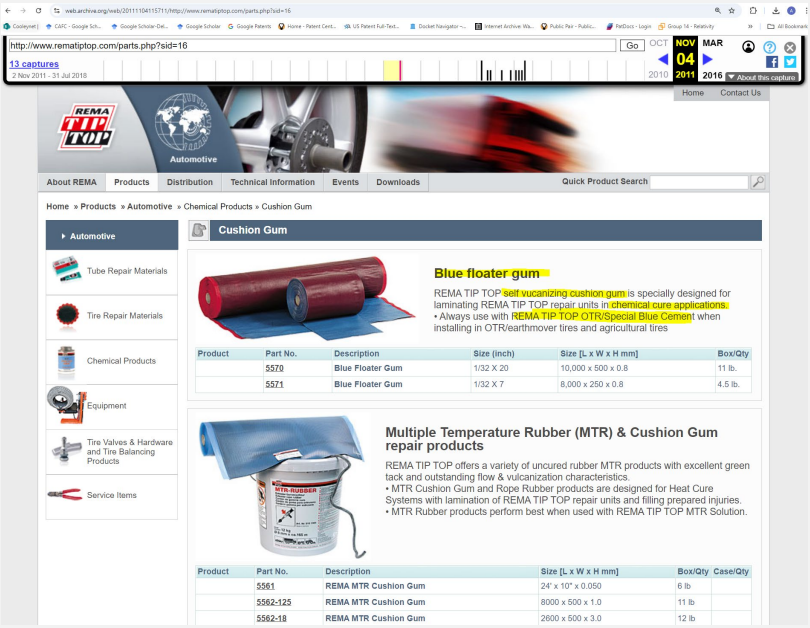
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://web.archive.org/web/20111104114102/http://www.rematiptop.com/parts.php?sid=11.)
5. The assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article.	*REMA Tip Top Patches disclose, teach, and/or suggest the assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

/parts.php?sid=6.)



(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)



(REMA Tip Top Patches, https://web.archive.org/web/20111104115711/http:/www.rematiptop.com/parts.php?sid=16.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)







(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	Technical Data Sheet **REMA TIP TOP RAD 100 SERIES REPAIRS** **TDS #: RTTNA – 019 Rev. # 1 Rev. Date: 4/14/2009** **UNIT SIZE & INJURY:** Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit **FIELD OF APPLICATION:** Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires. RAD-146 and larger sizes are for OTR repair only. They are capable of use in either a Chemical (Cold) or Hot vulcanizing process. **NOTE:** Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire. **PRODUCT ADVANTAGES:** Can be installed in either Chemical (Cold) or Hot vulcanization systems. Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit. Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires. Long shelf life. Air tight top layer of rubber minimizes the migration of air through the repair unit. Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions Construction reduces radial bulge and repair unit dimpling Can be "floated" using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems (REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)
7. The assembly as recited in claim 1 further comprising a cavity disposed therein.	*REMA Tip Top Patches disclose, teach, and/or suggest the assembly as recited in claim 1 further comprising a cavity disposed therein. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



REMA TIP TOP Radial tire repair units

REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)

REMA TIP TOP Radial tire repair units

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(REMA Tip Top Patches, https://web.archive.org/web/20160805070603/http:/rematiptop.com/part.php?pid=87&cid=10&sid=6.)



REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

Technical Data Sheet

REMA TIP TOP RAD 100 SERIES REPAIRS

TDS #: RTTNA – 019 **Rev. # 1** **Rev. Date: 4/14/2009**

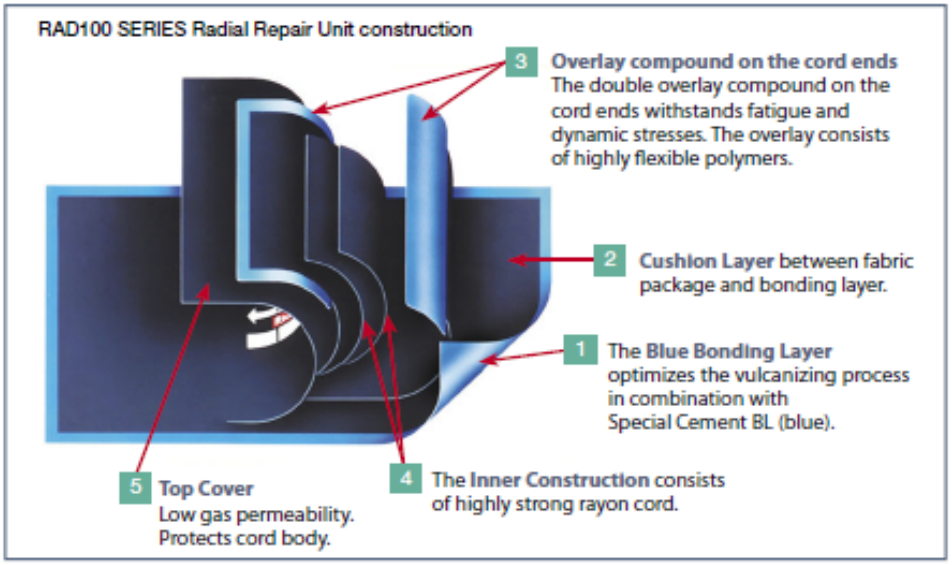
UNIT SIZE & INJURY: Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit

FIELD OF APPLICATION: Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires.
RAD-146 and larger sizes are for OTR repair only.
They are capable of use in either a Chemical (Cold) or Hot vulcanizing process.

NOTE: Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire.

PRODUCT ADVANTAGES: Can be installed in either Chemical (Cold) or Hot vulcanization systems.
Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit.
Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires.
Long shelf life.
Air tight top layer of rubber minimizes the migration of air through the repair unit.
Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions
Construction reduces radial bulge and repair unit dimpling
Can be "floated" using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems

(REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)



(REMA Tip Top, https://web.archive.org/web/20230603085821/https://www.rematiptop.com

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	/assets/literature/trm/REMA-TIP-TOP-RAD-100-Series-Radial-Repair-Units-v4.pdf.)
8. The assembly as recited in claim 7 further comprising an element disposed within the cavity.	*REMA Tip Top Patches disclose, teach, and/or suggest the assembly as recited in claim 7 further comprising an element disposed within the cavity. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.) **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20160805070603/http:/rematiptop.com/part.php?pid=87&cid=10&sid=6.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

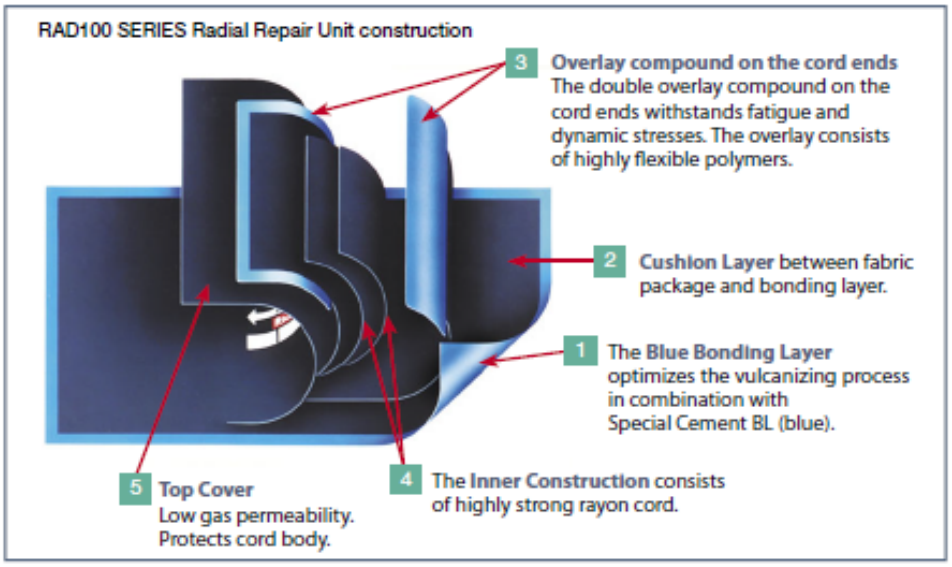
Technical Data Sheet

REMA TIP TOP RAD 100 SERIES REPAIRS

TDS #: RTTNA – 019 Rev. # 1 Rev. Date: 4/14/2009

UNIT SIZE & INJURY:	Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit
FIELD OF APPLICATION:	Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires. RAD-146 and larger sizes are for OTR repair only. They are capable of use in either a Chemical (Cold) or Hot vulcanizing process. **NOTE:** Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire.
PRODUCT ADVANTAGES:	Can be installed in either Chemical (Cold) or Hot vulcanization systems. Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit. Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires. Long shelf life. Air tight top layer of rubber minimizes the migration of air through the repair unit. Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions Construction reduces radial bulge and repair unit dimpling Can be “floated” using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems

(REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top, https://web.archive.org/web/20230603085821/https://www.rematiptop.com/assets/literature/trm/REMA-TIP-TOP-RAD-100-Series-Radial-Repair-Units-v4.pdf.)
9. The assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer.	*REMA Tip Top Patches disclose, teach, and/or suggest the assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.) **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20160805070603/http:/rematiptop.com/part.php?pid=87&cid=10&sid=6.)  **REMA TIP TOP Universal tire repair units** REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

Technical Data Sheet

REMA TIP TOP RAD 100 SERIES REPAIRS

TDS #: RTTNA – 019 **Rev. # 1** **Rev. Date: 4/14/2009**

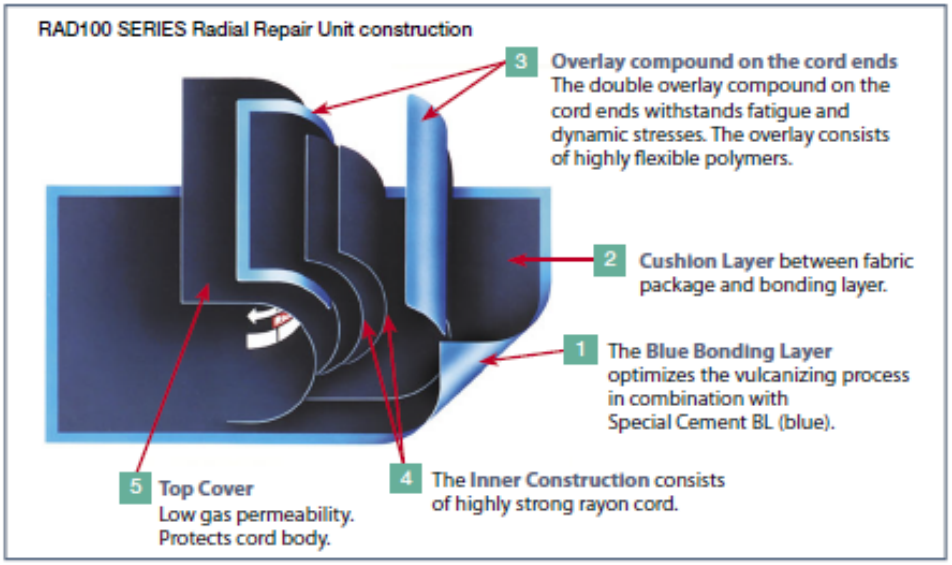
UNIT SIZE & INJURY: Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit

FIELD OF APPLICATION: Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires.
RAD-146 and larger sizes are for OTR repair only.
They are capable of use in either a Chemical (Cold) or Hot vulcanizing process.

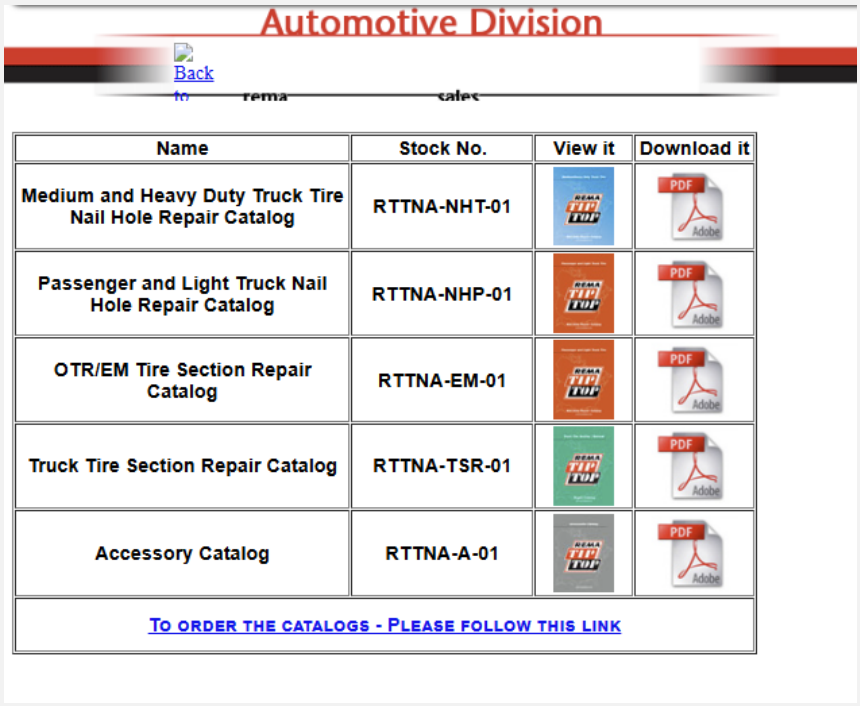
NOTE: Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire.

PRODUCT ADVANTAGES:
Can be installed in either Chemical (Cold) or Hot vulcanization systems.
Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit.
Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires.
Long shelf life.
Air tight top layer of rubber minimizes the migration of air through the repair unit.
Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions
Construction reduces radial bulge and repair unit dimpling
Can be "floated" using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems

(REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)



(REMA Tip Top, https://web.archive.org/web/20230603085821/https://www.rematiptop.com

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	/assets/literature/trm/REMA-TIP-TOP-RAD-100-Series-Radial-Repair-Units-v4.pdf.)
11[pre]. A method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of:	*To the extent that the preamble is limiting, REMA Tip Top Patches disclose, teach, and/or suggest a method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of. For example:*  Automotive Division Back to rema calec Name / Stock No. / View it / Download it Medium and Heavy Duty Truck Tire Nail Hole Repair Catalog — RTTNA-NHT-01 Passenger and Light Truck Nail Hole Repair Catalog — RTTNA-NHP-01 OTR/EM Tire Section Repair Catalog — RTTNA-EM-01 Truck Tire Section Repair Catalog — RTTNA-TSR-01 Accessory Catalog — RTTNA-A-01 TO ORDER THE CATALOGS - PLEASE FOLLOW THIS LINK (REMA Tip Top Patches, https://web.archive.org/web/20080509124214/http:/rematiptop.com/)

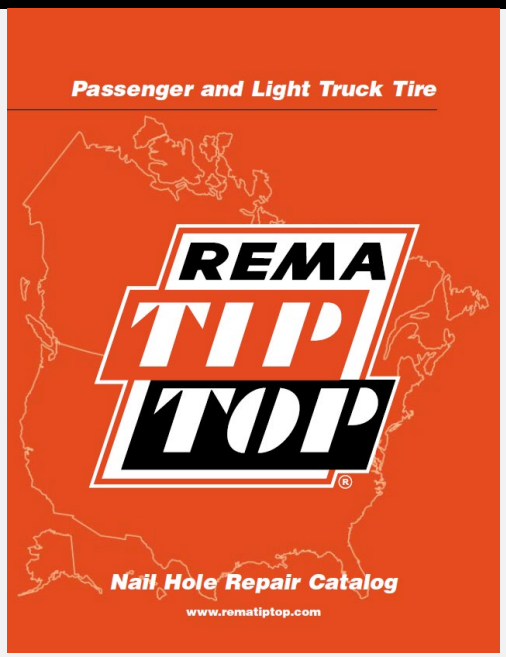
'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)





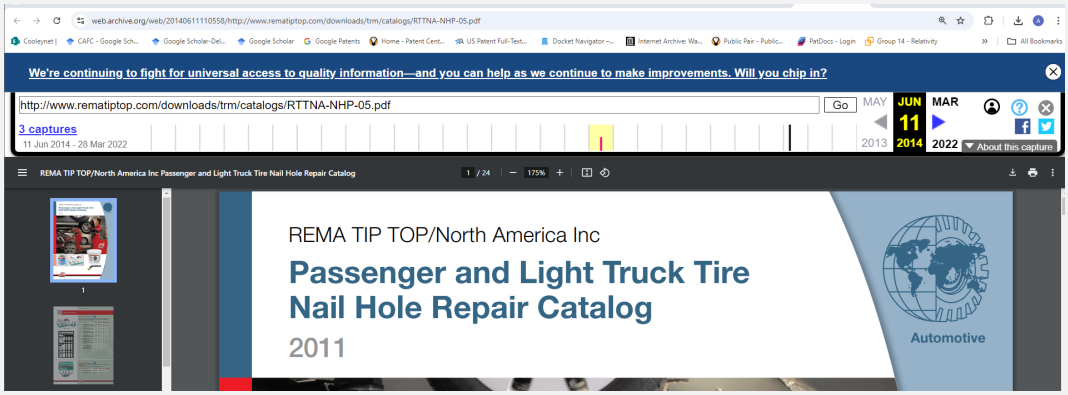
(REMA Tip Top Patches, https://web.archive.org/web/20080509124214/http:/rematiptop.com/)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)





(REMA Tip Top Patches, https://web.archive.org/web/20080509124214/http:/rematiptop.com/)



(REMA Tip Top, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



REMA TIP TOP Bias-Ply tire repair units

REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)



REMA TIP TOP Radial tire repair units

REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

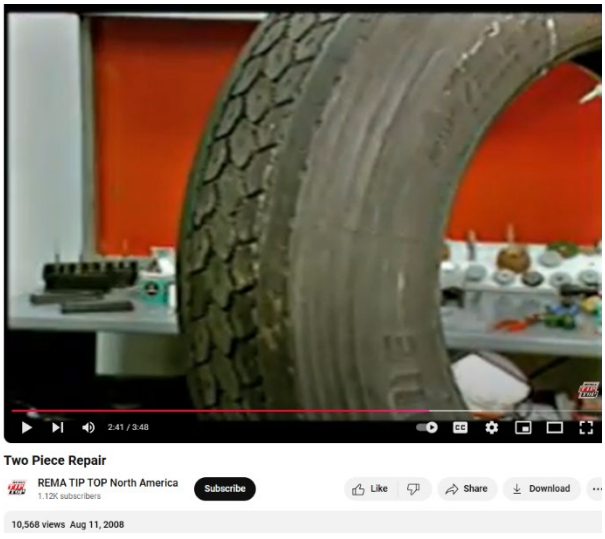
(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)



REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.) *See also the following limitations.*
[11a] identifying a surface of a vulcanized rubber article;	*REMA Tip Top Patches disclose, teach, and/or suggest identifying a surface of a vulcanized rubber article. For example:* 

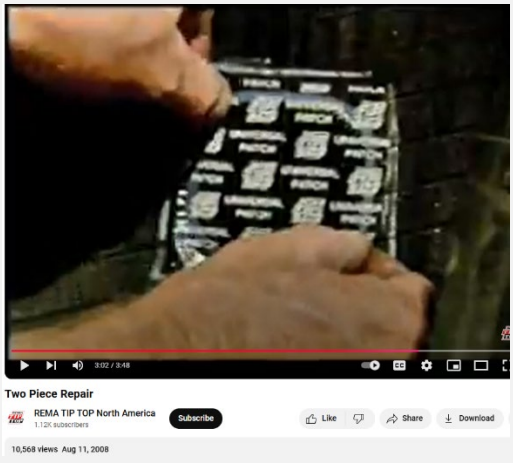
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	  (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)
[11b] placing an assembly into contact with the identified surface, wherein the assembly comprises:	*REMA Tip Top Patches disclose, teach, and/or suggest placing an assembly into contact with the identified surface, wherein the assembly comprises. For example:*

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)







'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)
[11c] an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article, and	*REMA Tip Top Patches disclose, teach, and/or suggest an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article. For example:* 

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



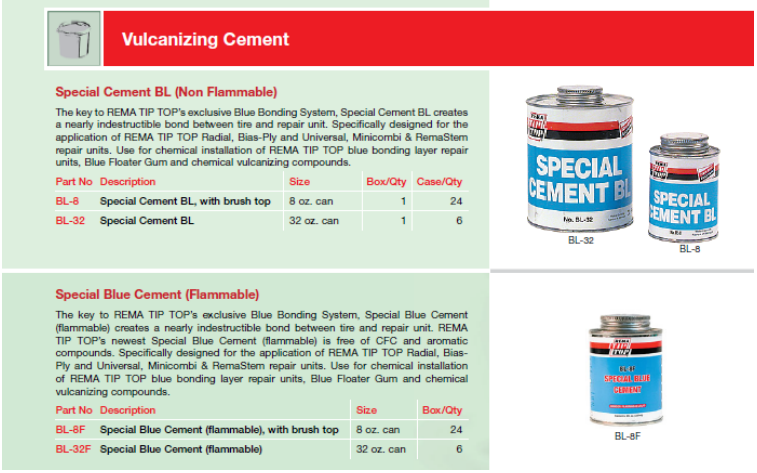




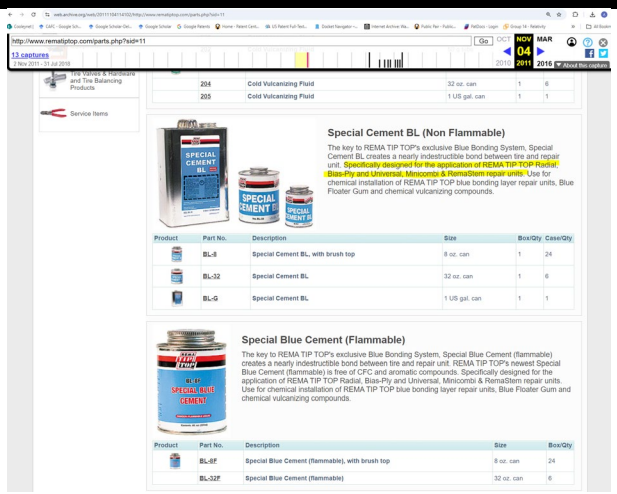
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)



(REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 7.)

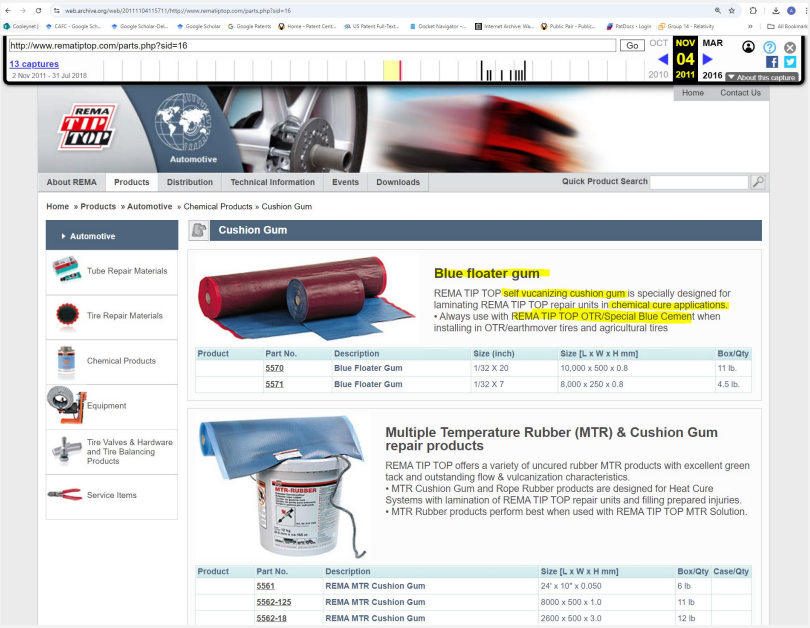
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://web.archive.org/web/20111104114102/http://www.rematiptop.com/parts.php?sid=11.)
[11d] wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article.	*REMA Tip Top Patches disclose, teach, and/or suggest wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article.*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

/parts.php?sid=6.)



(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com /parts.php?sid=8.)



(REMA Tip Top Patches, https://web.archive.org/web/20111104115711/http:/www.rematiptop.com /parts.php?sid=16.)

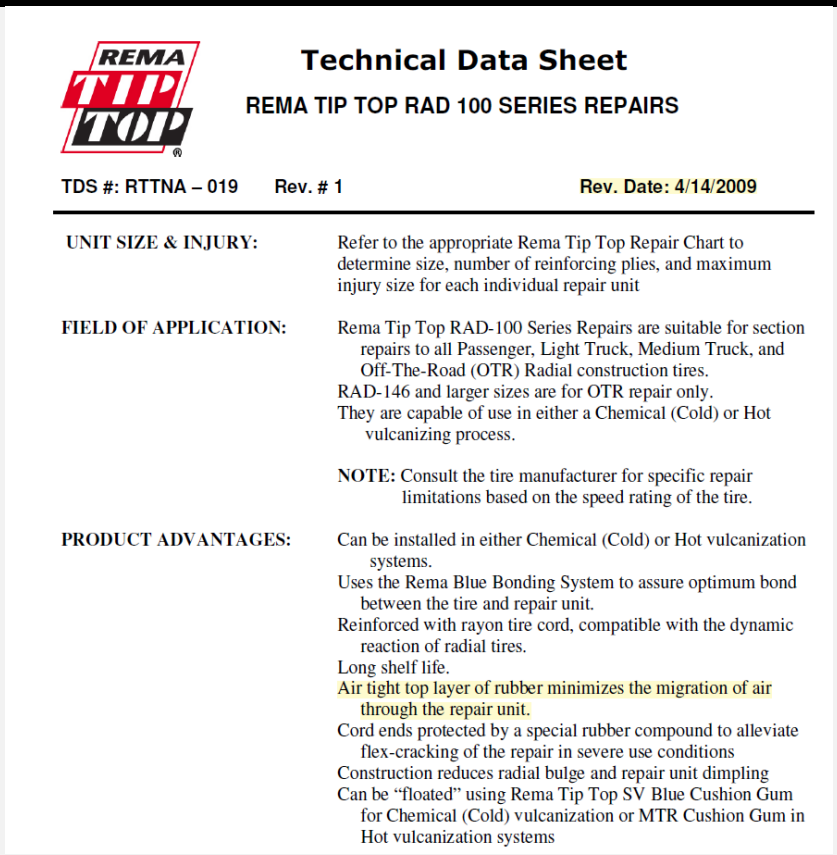
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)







(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 **Technical Data Sheet** **REMA TIP TOP RAD 100 SERIES REPAIRS** **TDS #: RTTNA – 019** **Rev. # 1** **Rev. Date: 4/14/2009** **UNIT SIZE & INJURY:** Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit **FIELD OF APPLICATION:** Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires. RAD-146 and larger sizes are for OTR repair only. They are capable of use in either a Chemical (Cold) or Hot vulcanizing process. **NOTE:** Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire. **PRODUCT ADVANTAGES:** Can be installed in either Chemical (Cold) or Hot vulcanization systems. Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit. Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires. Long shelf life. Air tight top layer of rubber minimizes the migration of air through the repair unit. Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions Construction reduces radial bulge and repair unit dimpling Can be "floated" using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems (REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)
12. The method as recited in claim 11 further comprising preparing the identified surface before the step of placing.	*REMA Tip Top Patches disclose, teach, and/or suggest the method as recited in claim 11 further comprising preparing the identified surface before the step of placing. For example:*

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

MSDS Sheets Schematics Sections Repair Charts Training Technical Data Sheets

REMA TIP TOP TIPS

1. WHY IS CLEANING OF THE INNERLINER IMPORTANT ?
2. WHY IS BUFFING THE INNERLINER IMPORTANT ?
3. WHEN SHOULD THE PRE-BUFF CLEANER BE USED ?
4. WHY IS PROPER CEMENT APPLICATION IMPORTANT ?
5. WHY IS CEMENT DRYING TIME IMPORTANT ?
6. WHY IS STITCHING IMPORTANT ?
7. WHY IS DRILLING AND FILLING OF THE INJURY IMPORTANT ?
8. WHY IS APPLICATION OF THE REPAIR SEALANT IMPORTANT ?
9. CAN A RADIAL REPAIR UNIT BE USED IN A BIAS TIRE ?

1. WHY IS CLEANING OF THE INNERLINER IMPORTANT ?

Improper cleaning of the innerliner may cause:

- Immediate lifting of the Repair Unit due to contamination
- Lifting of the Repair unit in the future
- Contamination of the buffing tool may cause immediate, and later tire Repair failures

PROPER CLEANING REMOVES

- Mold release lubricants
- Tire sealants
- Tire coolants
- Tire Ballast fluids
- Tire balancing compounds

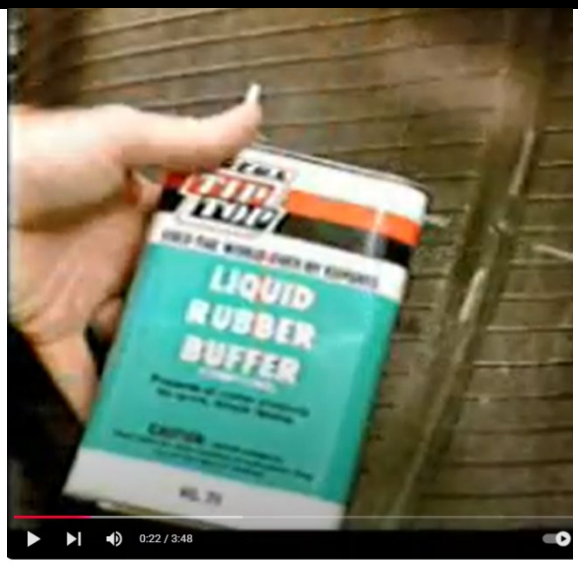
2. WHY IS BUFFING THE INNERLINER IMPORTANT ?

Improper buffing of the innerliner may cause:

- Repair failure to the lack of adhesion
- Separation of the Repair Unit from the innerliner due to an uneven surface

(REMA Tip Top, https://web.archive.org/web/20060326142354fw_/http:/www.rematiptop.com/Technical_Sub_Training_Sub_TipTopTips.htm.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



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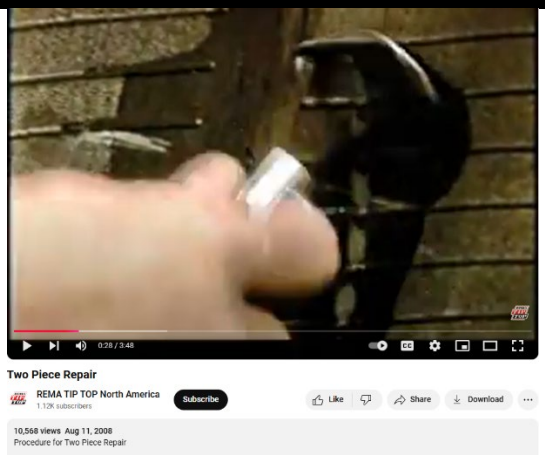


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'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)





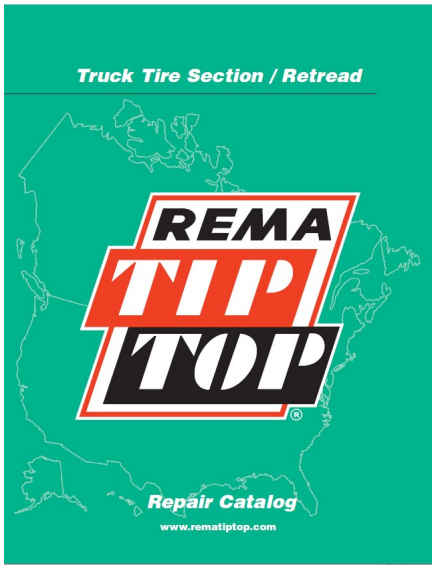


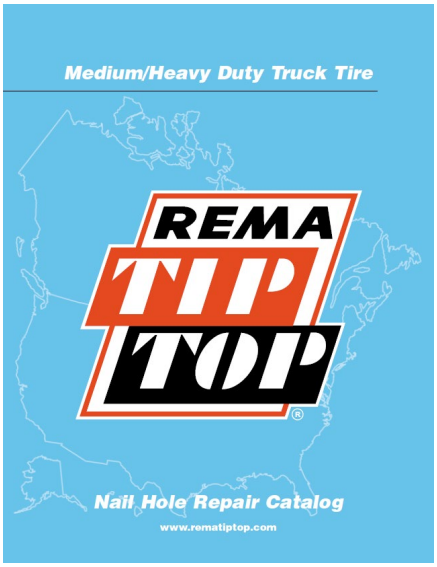


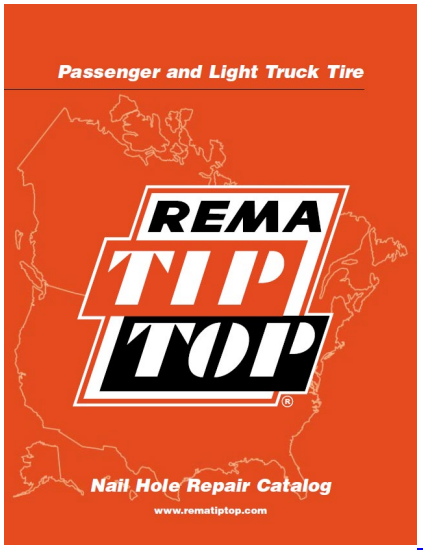
(REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 23.)

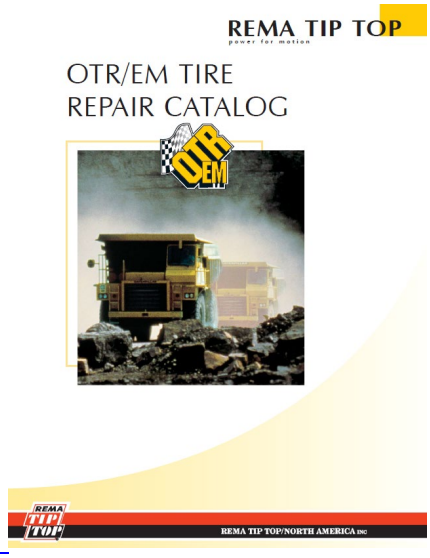
'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
13. The method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing.	*REMA Tip Top Patches disclose, teach, and/or suggest the method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing. For example:*  (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)
15[pre] A vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, REMA Tip Top Patches disclose, teach, and/or suggest a vulcanized rubber tire comprising. For example:*  Name / Stock No. / View it / Download it Medium and Heavy Duty Truck Tire Nail Hole Repair Catalog — RTTNA-NHT-01 Passenger and Light Truck Nail Hole Repair Catalog — RTTNA-NHP-01 OTR/EM Tire Section Repair Catalog — RTTNA-EM-01 Truck Tire Section Repair Catalog — RTTNA-TSR-01 Accessory Catalog — RTTNA-A-01 TO ORDER THE CATALOGS - PLEASE FOLLOW THIS LINK

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)





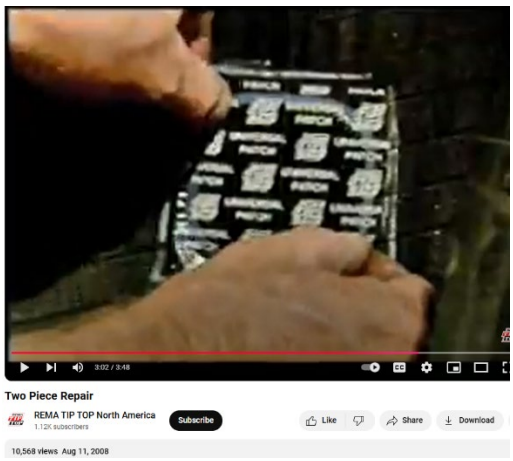


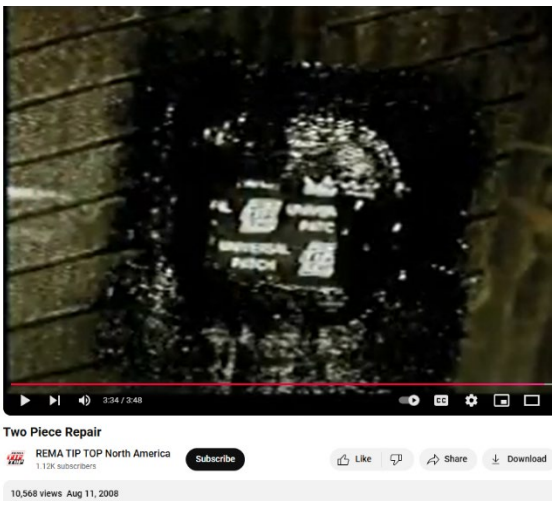


(REMA Tip Top Patches, https://web.archive.org/web/20080509124214/http:/rematiptop.com/)

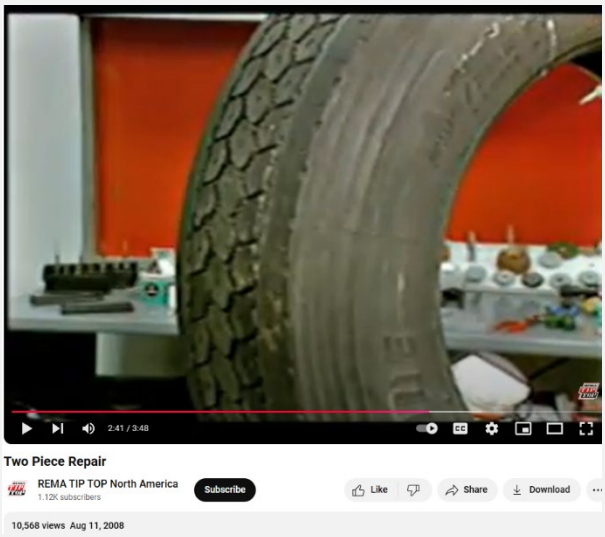
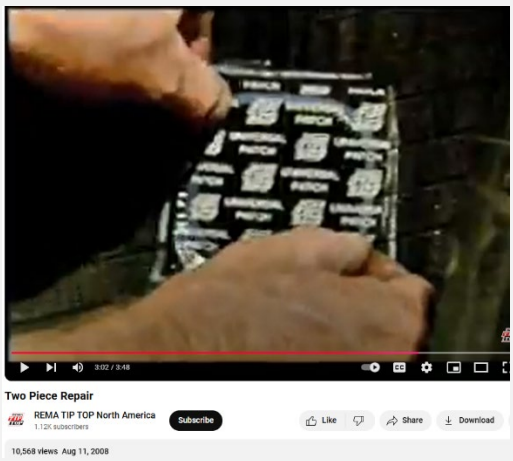
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

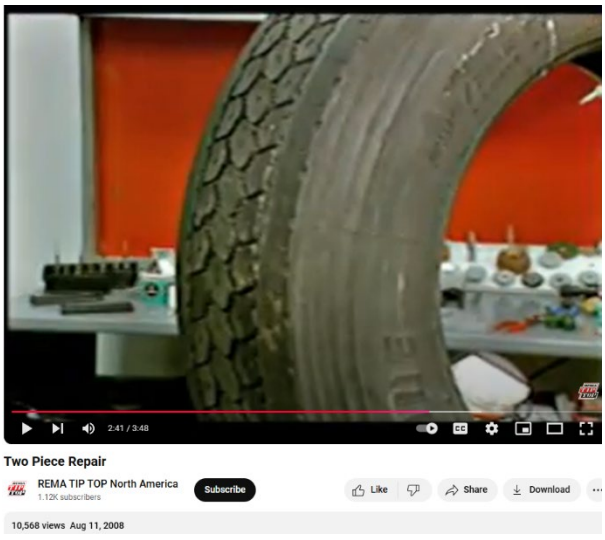


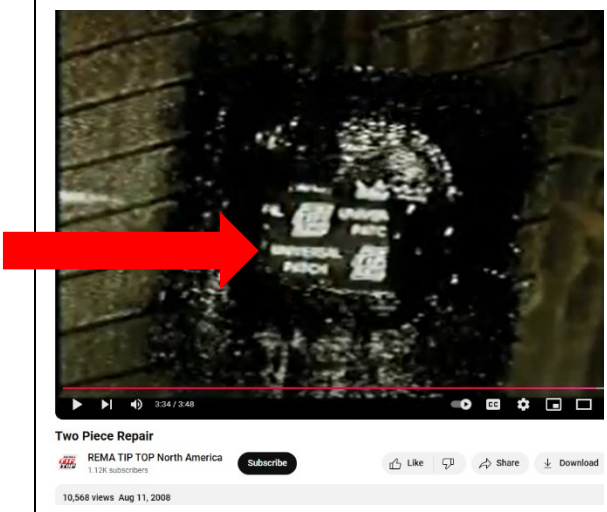




(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	See also the following limitations.
[15a] a target surface disposed along a portion of the rubber tire;	*REMA Tip Top Patches disclose, teach, and/or suggest a target surface disposed along a portion of the rubber tire. For example:*  

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)
[15b] an assembly disposed onto the target surface and comprising:	*REMA Tip Top Patches disclose, teach, and/or suggest an assembly disposed onto the target surface and comprising. For example:* 

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	  (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)
[15c] an outer layer of elastomeric material; and	*REMA Tip Top Patches disclose, teach, and/or suggest an outer layer of elastomeric material. For example:*

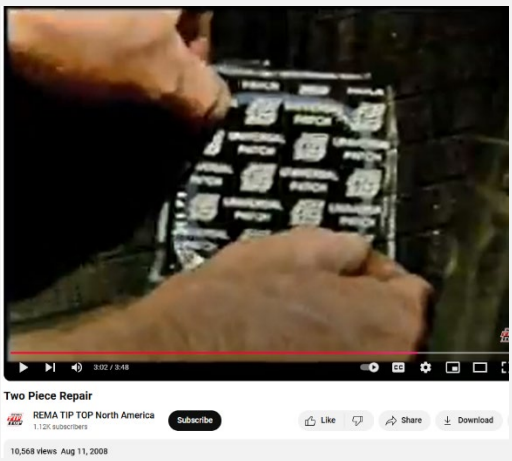
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)







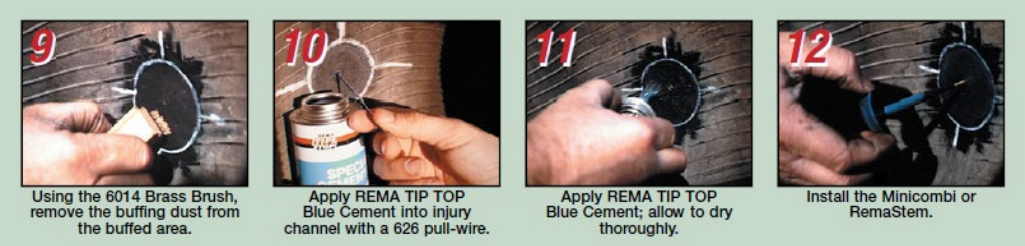
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)





(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)



’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://www.youtube.com/watch?v=uvHpSH64jYY.)  (REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 23.)
[15d] an adhesive layer connected with the outer layer;	*REMA Tip Top Patches disclose, teach, and/or suggest an adhesive layer connected with the outer layer. For example:*

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



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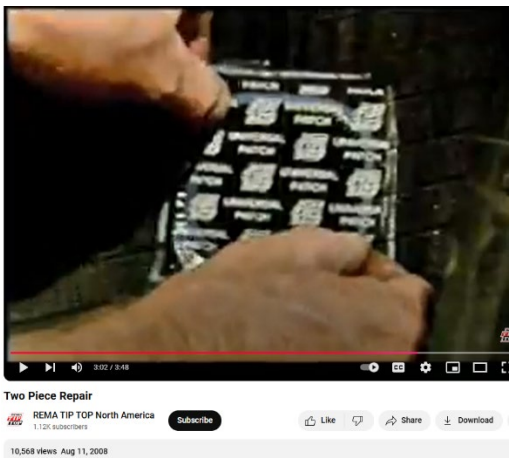


Two Piece Repair

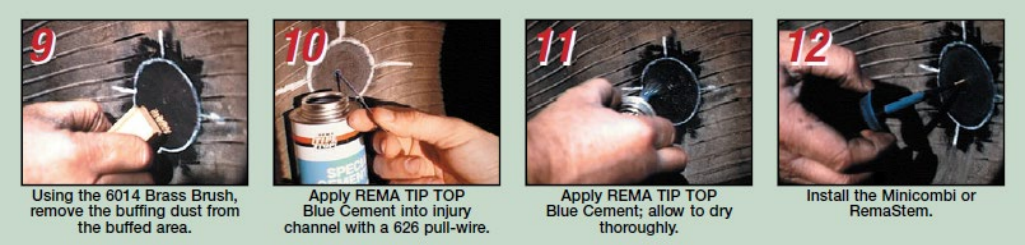
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’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



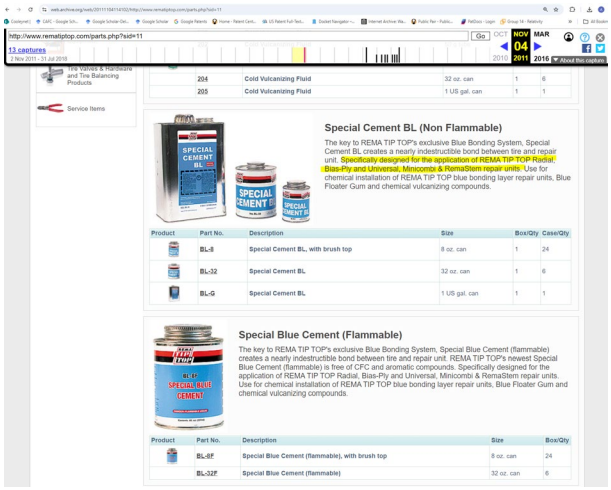
(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)



(REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 23.)



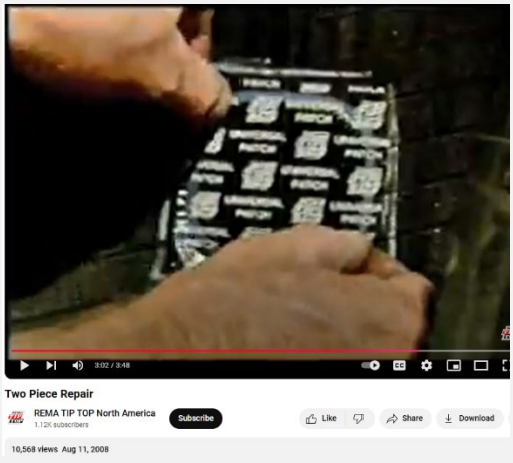
(REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 7.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://web.archive.org/web/20111104114102/http://www.rematiptop.com/parts.php?sid=11.)
[15e] wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire.	*REMA Tip Top Patches disclose, teach, and/or suggest wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire. For example:* 

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)





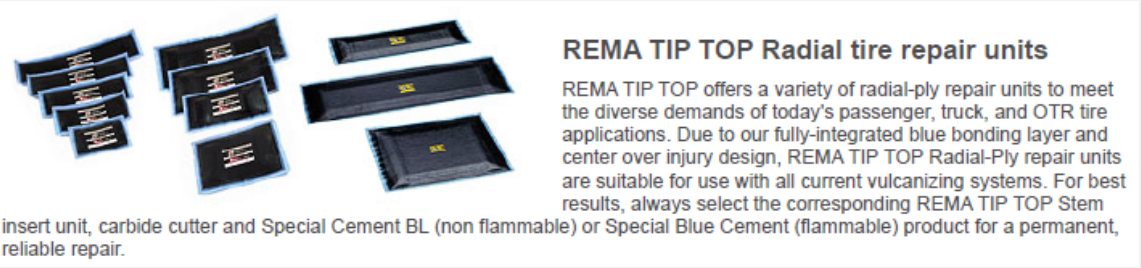


(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



(REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 23.)



(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	Technical Data Sheet **REMA TIP TOP RAD 100 SERIES REPAIRS** **TDS #: RTTNA – 019 Rev. # 1 Rev. Date: 4/14/2009** **UNIT SIZE & INJURY:** Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit **FIELD OF APPLICATION:** Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires. RAD-146 and larger sizes are for OTR repair only. They are capable of use in either a Chemical (Cold) or Hot vulcanizing process. **NOTE:** Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire. **PRODUCT ADVANTAGES:** Can be installed in either Chemical (Cold) or Hot vulcanization systems. Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit. Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires. Long shelf life. Air tight top layer of rubber minimizes the migration of air through the repair unit. Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions Construction reduces radial bulge and repair unit dimpling Can be "floated" using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems (REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)
16. The rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein.	*REMA Tip Top Patches disclose, teach, and/or suggest the rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



REMA TIP TOP Radial tire repair units

REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)



REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

Technical Data Sheet

REMA TIP TOP RAD 100 SERIES REPAIRS

TDS #: RTTNA – 019 **Rev. # 1** **Rev. Date: 4/14/2009**

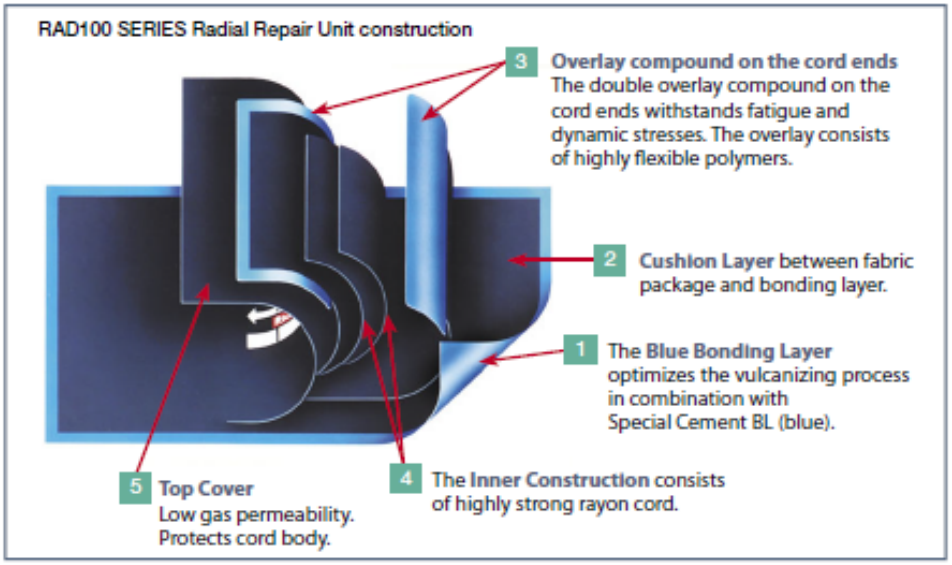
UNIT SIZE & INJURY: Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit

FIELD OF APPLICATION: Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires.
RAD-146 and larger sizes are for OTR repair only.
They are capable of use in either a Chemical (Cold) or Hot vulcanizing process.

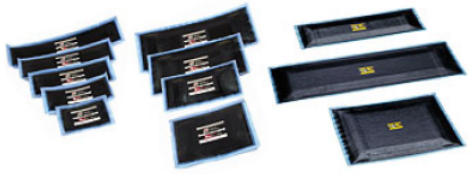
NOTE: Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire.

PRODUCT ADVANTAGES: Can be installed in either Chemical (Cold) or Hot vulcanization systems.
Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit.
Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires.
Long shelf life.
Air tight top layer of rubber minimizes the migration of air through the repair unit.
Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions
Construction reduces radial bulge and repair unit dimpling
Can be "floated" using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems

(REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)



(REMA Tip Top, https://web.archive.org/web/20230603085821/https://www.rematiptop.com

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	/assets/literature/trm/REMA-TIP-TOP-RAD-100-Series-Radial-Repair-Units-v4.pdf.)
17. The rubber tire as recited in claim 16 wherein an element is disposed within the cavity.	*REMA Tip Top Patches disclose, teach, and/or suggest the rubber tire as recited in claim 16 wherein an element is disposed within the cavity. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)  **REMA TIP TOP Universal tire repair units** REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

Technical Data Sheet

REMA TIP TOP RAD 100 SERIES REPAIRS

TDS #: RTTNA – 019 **Rev. # 1** **Rev. Date: 4/14/2009**

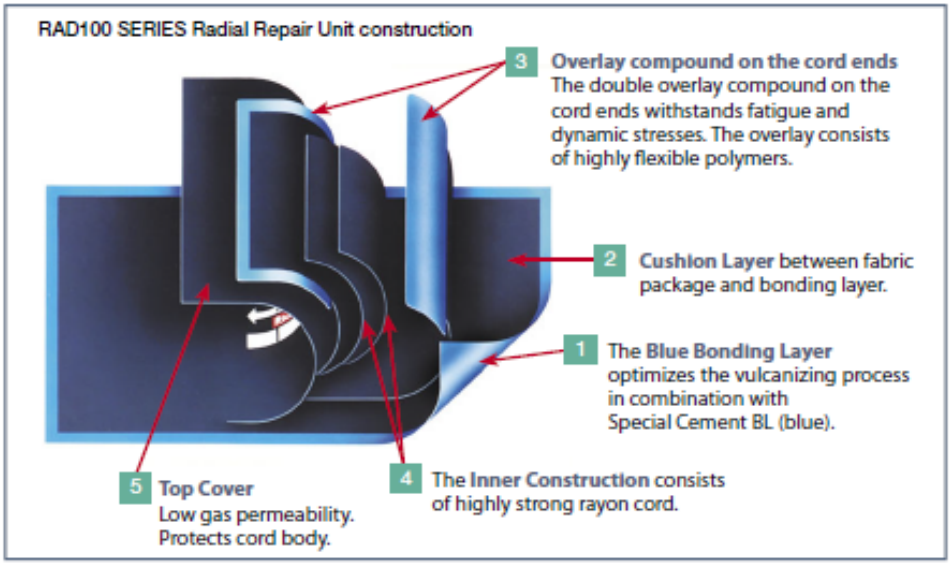
UNIT SIZE & INJURY: Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit

FIELD OF APPLICATION: Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires.
RAD-146 and larger sizes are for OTR repair only.
They are capable of use in either a Chemical (Cold) or Hot vulcanizing process.

NOTE: Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire.

PRODUCT ADVANTAGES:
Can be installed in either Chemical (Cold) or Hot vulcanization systems.
Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit.
Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires.
Long shelf life.
Air tight top layer of rubber minimizes the migration of air through the repair unit.
Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions
Construction reduces radial bulge and repair unit dimpling
Can be “floated” using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems

(REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)



(REMA Tip Top, https://web.archive.org/web/20230603085821/https://www.rematiptop.com

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	/assets/literature/trm/REMA-TIP-TOP-RAD-100-Series-Radial-Repair-Units-v4.pdf.)
18. The rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer.	*REMA Tip Top Patches disclose, teach, and/or suggest the rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)  **REMA TIP TOP Universal tire repair units** REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

Technical Data Sheet

REMA TIP TOP RAD 100 SERIES REPAIRS

TDS #: RTTNA – 019 **Rev. # 1** **Rev. Date: 4/14/2009**

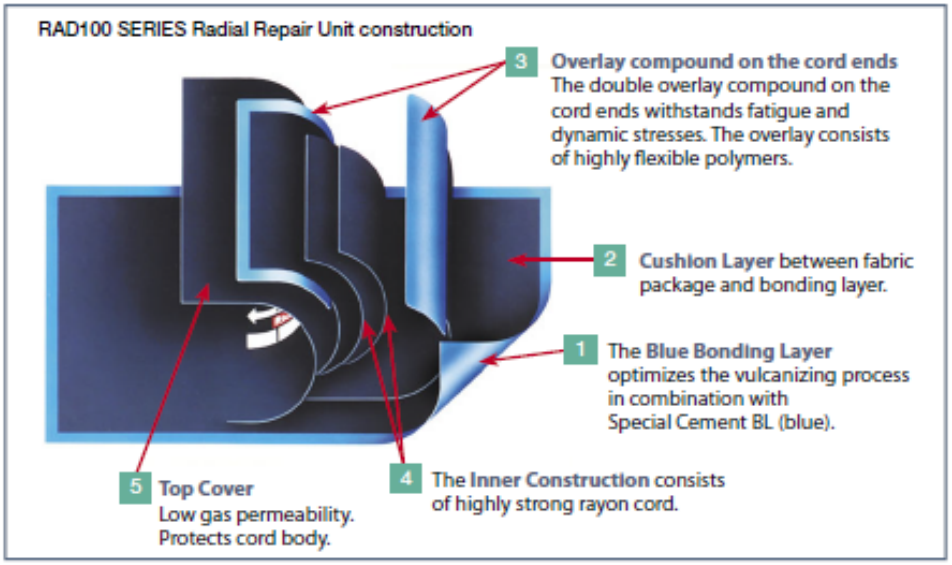
UNIT SIZE & INJURY: Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit

FIELD OF APPLICATION: Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires.
RAD-146 and larger sizes are for OTR repair only.
They are capable of use in either a Chemical (Cold) or Hot vulcanizing process.

NOTE: Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire.

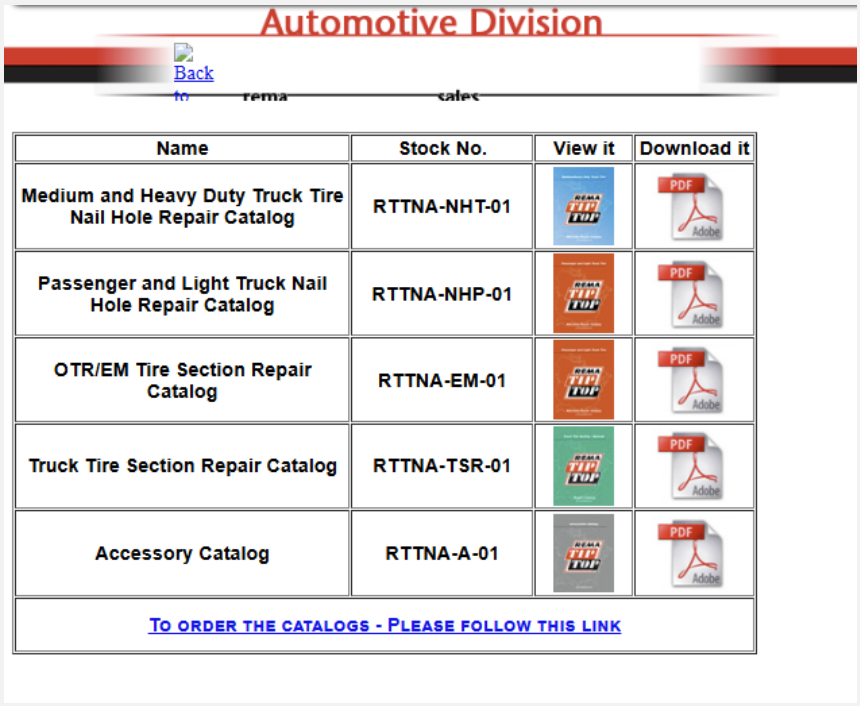
PRODUCT ADVANTAGES: Can be installed in either Chemical (Cold) or Hot vulcanization systems.
Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit.
Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires.
Long shelf life.
Air tight top layer of rubber minimizes the migration of air through the repair unit.
Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions
Construction reduces radial bulge and repair unit dimpling
Can be "floated" using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems

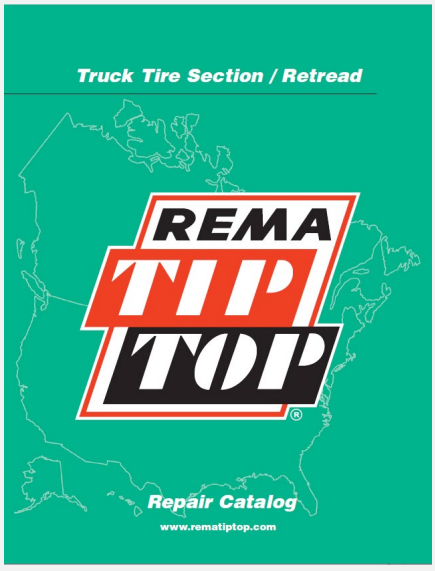
(REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)

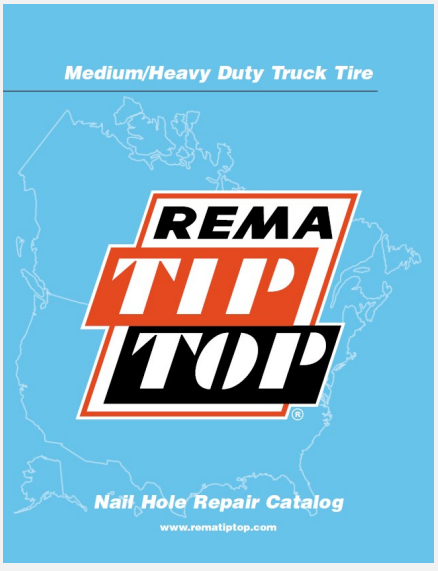


(REMA Tip Top, https://web.archive.org/web/20230603085821/https://www.rematiptop.com

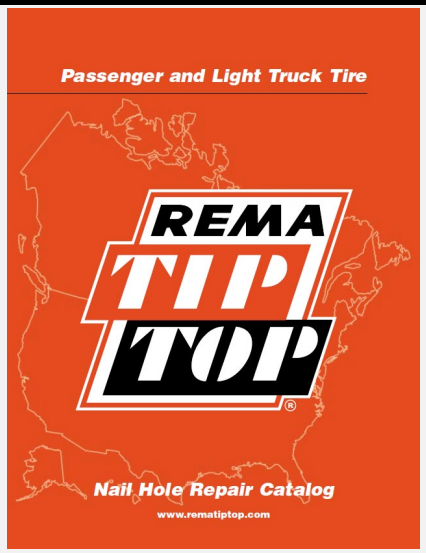
'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	/assets/literature/trm/REMA-TIP-TOP-RAD-100-Series-Radial-Repair-Units-v4.pdf.)
19[pre] An assembly for attachment to a vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, REMA Tip Top Patches disclose, teach, and/or suggest an assembly for attachment to a vulcanized rubber tire comprising. For example:*

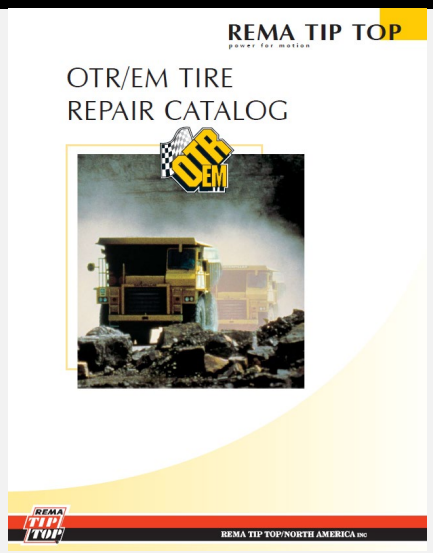




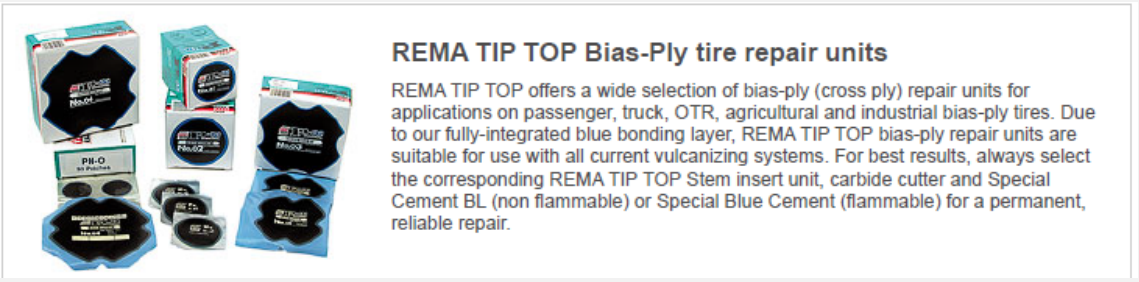


'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

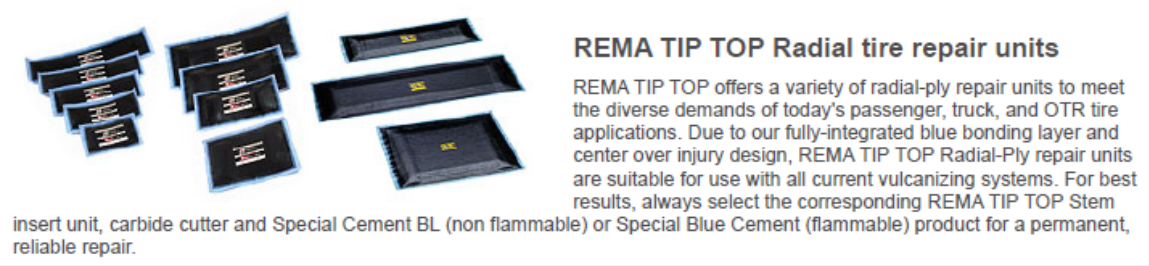




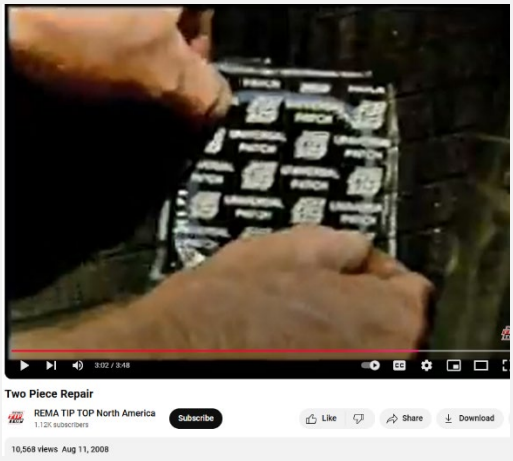
(REMA Tip Top Patches, https://web.archive.org/web/20080509124214/http:/rematiptop.com/)



(REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)



(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	REMA TIP TOP Radial tire repair units REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20160805070603/http:/rematiptop.com/part.php?pid=87&cid=10&sid=6.)  **REMA TIP TOP Universal tire repair units** REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)  (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)
[19a] an outer layer formed from an	*REMA Tip Top Patches disclose, teach, and/or suggest an outer layer formed from an elastomeric material. For example:*

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
elastomeric material;	 **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.) **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20160805070603/http:/rematiptop.com/part.php?pid=87&cid=10&sid=6.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



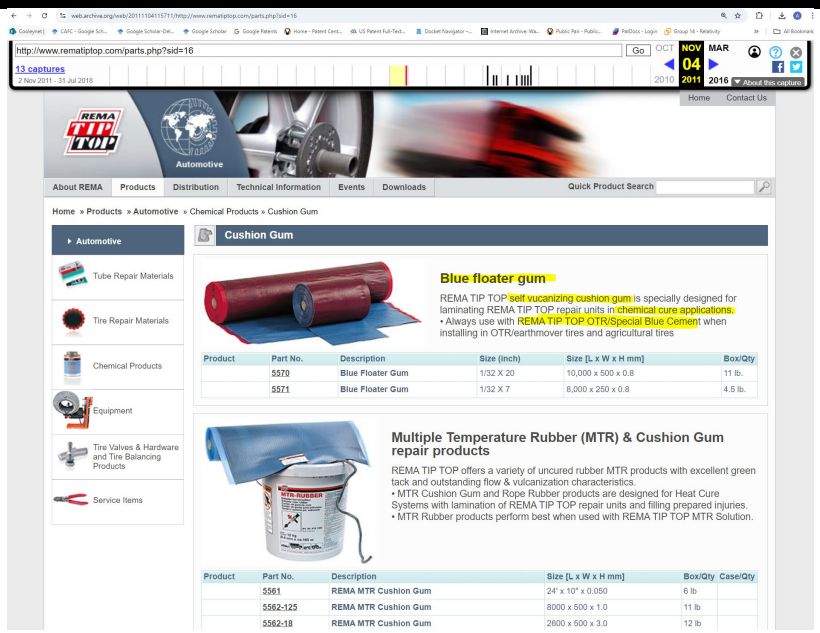
REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)



(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://web.archive.org/web/20111104115711/http:/www.rematiptop.com/parts.php?sid=16.) *See also the following limitations.*
[19b] an adhesive layer bonding the assembly to portion of a vulcanized rubber tire; and	*REMA Tip Top Patches disclose, teach, and/or suggest an adhesive layer bonding the assembly to portion of a vulcanized rubber tire. For example:* 

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)







’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



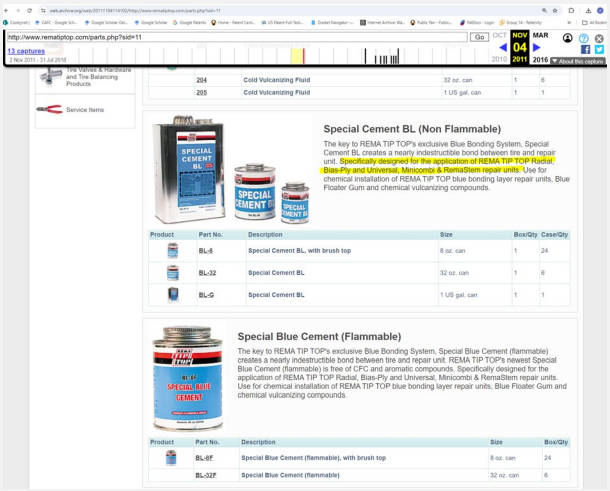
(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)



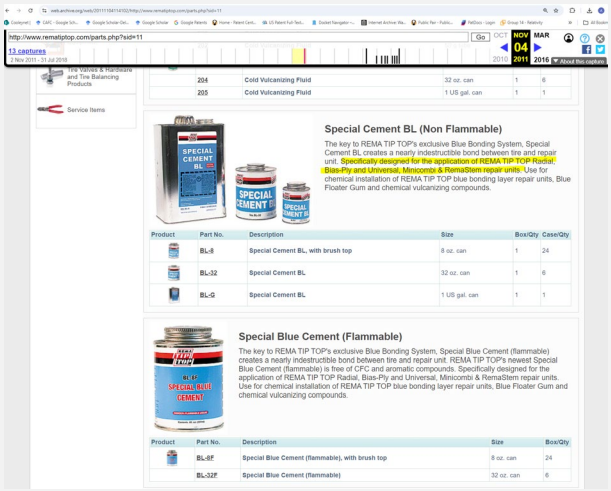
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



(REMA Tip Top Patches, https://www.youtube.com/watch?v=uvHpSH64jYY.)



(REMA Tip Top Patches, https://web.archive.org/web/20111104114102/http://www.rematiptop.com/parts.php?sid=11.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 7.)  (REMA Tip Top Patches, https://web.archive.org/web/20111104114102/http://www.rematiptop.com/parts.php?sid=11.)
[19c] a cavity disposed within the assembly for accommodating an element therein;	*REMA Tip Top Patches disclose, teach, and/or suggest a cavity disposed within the assembly for accommodating an element therein. For example:*

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



REMA TIP TOP Bias-Ply tire repair units

REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)



REMA TIP TOP Radial tire repair units

REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)

REMA TIP TOP Radial tire repair units

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(REMA Tip Top Patches, https://web.archive.org/web/20160805070603/http:/rematiptop.com/part.php?pid=87&cid=10&sid=6.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)

Technical Data Sheet

REMA TIP TOP RAD 100 SERIES REPAIRS

TDS #: RTTNA – 019 **Rev. # 1** **Rev. Date: 4/14/2009**

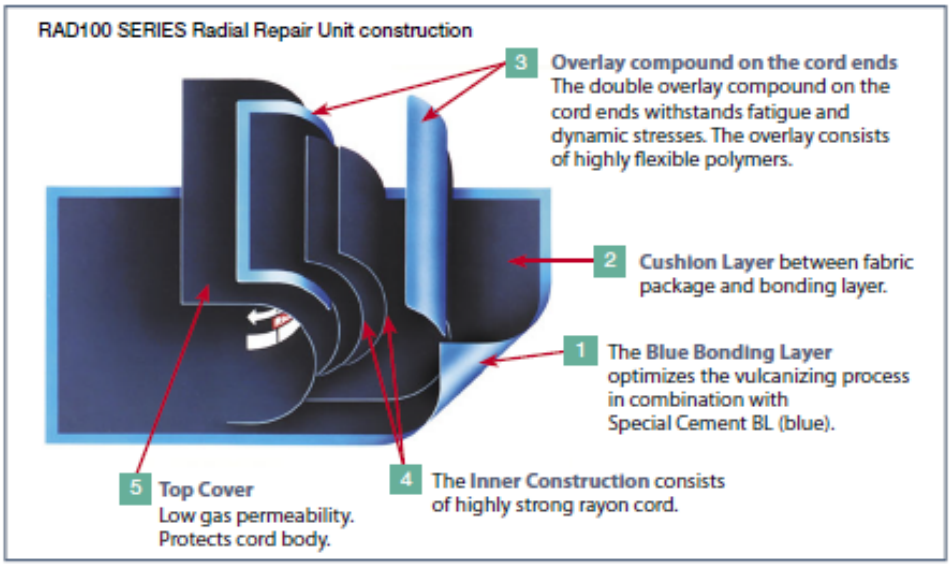
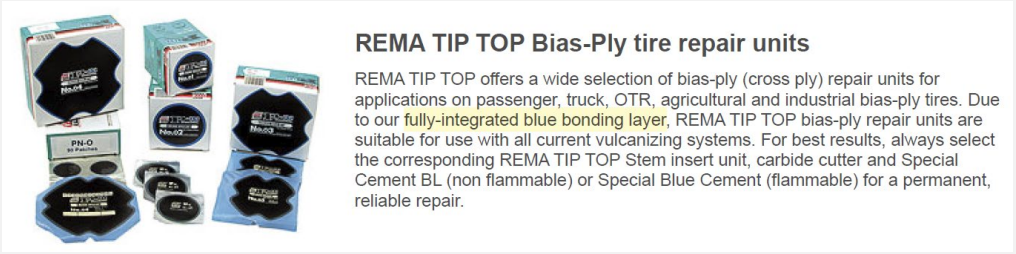
UNIT SIZE & INJURY: Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit

FIELD OF APPLICATION: Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires.
RAD-146 and larger sizes are for OTR repair only.
They are capable of use in either a Chemical (Cold) or Hot vulcanizing process.

NOTE: Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire.

PRODUCT ADVANTAGES:
Can be installed in either Chemical (Cold) or Hot vulcanization systems.
Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit.
Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires.
Long shelf life.
Air tight top layer of rubber minimizes the migration of air through the repair unit.
Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions
Construction reduces radial bulge and repair unit dimpling
Can be “floated” using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems

(REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	 (REMA Tip Top, https://web.archive.org/web/20230603085821/https://www.rematiptop.com/assets/literature/trm/REMA-TIP-TOP-RAD-100-Series-Radial-Repair-Units-v4.pdf.)
[19d] wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire.	*REMA Tip Top Patches disclose, teach, and/or suggest wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire. For example:* "[INSERT]" (REMA Tip Top Patches, cite.) Vulcanizing fluid application photo and peeling photo; MSDS on cushion gum and vulcanizing fluid and other stuff talking about the separate areas  (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



REMA TIP TOP Radial tire repair units

REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

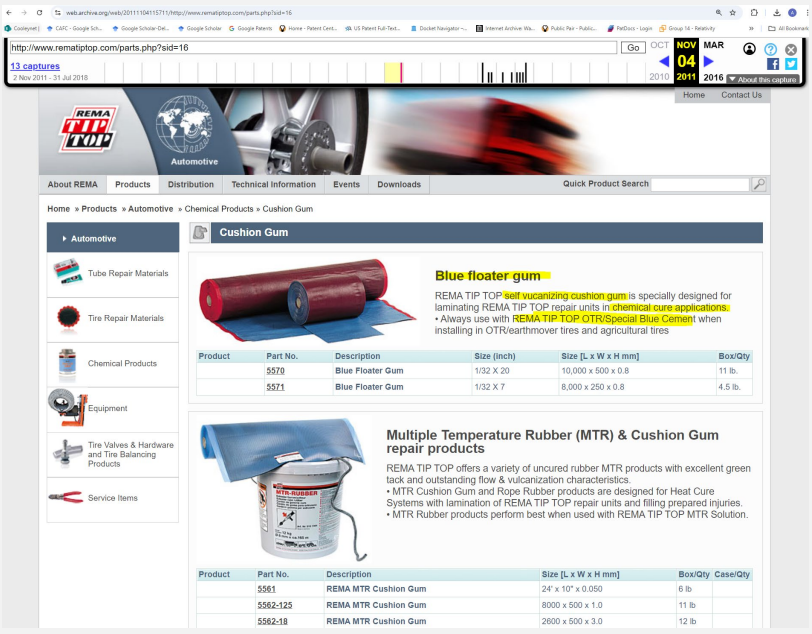
(REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)



REMA TIP TOP Universal tire repair units

REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)



’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	(REMA Tip Top Patches, https://web.archive.org/web/20111104115711/http:/www.rematiptop.com/parts.php?sid=16.)   

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.) **Technical Data Sheet** **REMA TIP TOP RAD 100 SERIES REPAIRS** **TDS #: RTTNA – 019 Rev. # 1 Rev. Date: 4/14/2009** **UNIT SIZE & INJURY:** Refer to the appropriate Rema Tip Top Repair Chart to determine size, number of reinforcing plies, and maximum injury size for each individual repair unit **FIELD OF APPLICATION:** Rema Tip Top RAD-100 Series Repairs are suitable for section repairs to all Passenger, Light Truck, Medium Truck, and Off-The-Road (OTR) Radial construction tires. RAD-146 and larger sizes are for OTR repair only. They are capable of use in either a Chemical (Cold) or Hot vulcanizing process. **NOTE:** Consult the tire manufacturer for specific repair limitations based on the speed rating of the tire. **PRODUCT ADVANTAGES:** Can be installed in either Chemical (Cold) or Hot vulcanization systems. Uses the Rema Blue Bonding System to assure optimum bond between the tire and repair unit. Reinforced with rayon tire cord, compatible with the dynamic reaction of radial tires. Long shelf life. Air tight top layer of rubber minimizes the migration of air through the repair unit. Cord ends protected by a special rubber compound to alleviate flex-cracking of the repair in severe use conditions Construction reduces radial bulge and repair unit dimpling Can be "floated" using Rema Tip Top SV Blue Cushion Gum for Chemical (Cold) vulcanization or MTR Cushion Gum in Hot vulcanization systems (REMA Tip Top Patches, https://web.archive.org/web/20180219223600/http://www.rematiptop.com/technical/trm/tds/RTTNA-019-TDS-RAD-100-Series-Repairs.pdf.)
20. The assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer.	*REMA Tip Top Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair.

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'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

Technical Data Sheet

REMA TIP TOP RAD 100 SERIES REPAIRS

TDS #: RTTNA – 019 Rev. # 1 Rev. Date: 4/14/2009

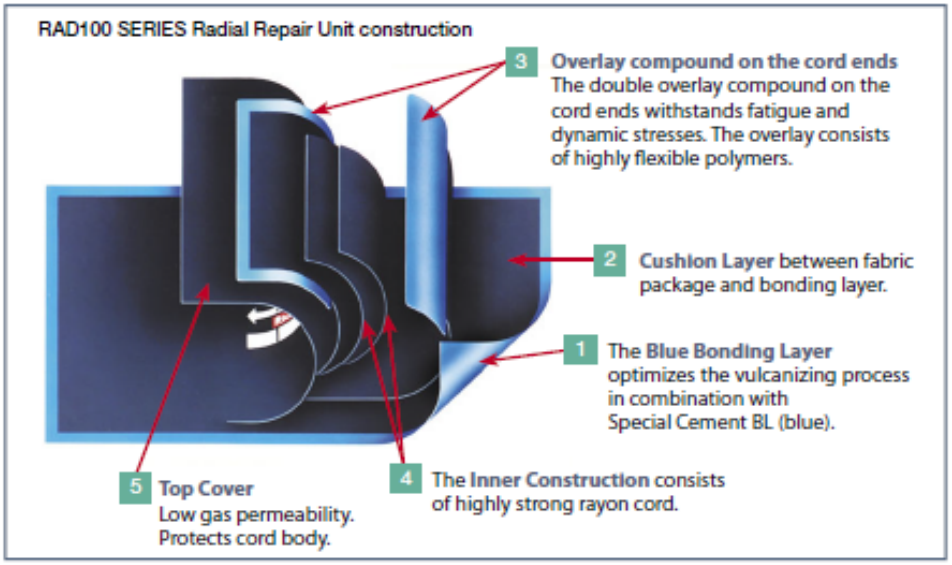
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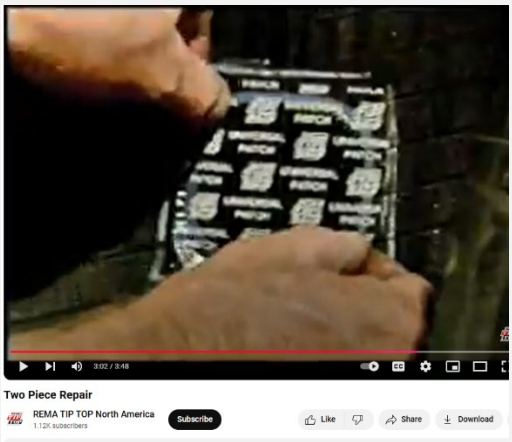


(REMA Tip Top, https://web.archive.org/web/20230603085821/https://www.rematiptop.com

'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	/assets/literature/trm/REMA-TIP-TOP-RAD-100-Series-Radial-Repair-Units-v4.pdf.)
21. The assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer.	*REMA Tip Top Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer. For example:*  

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)

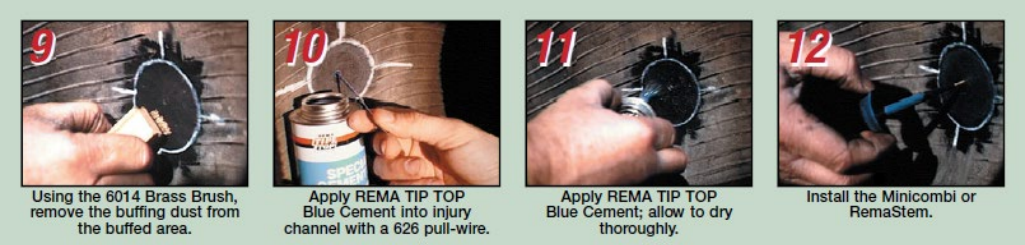






(REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)

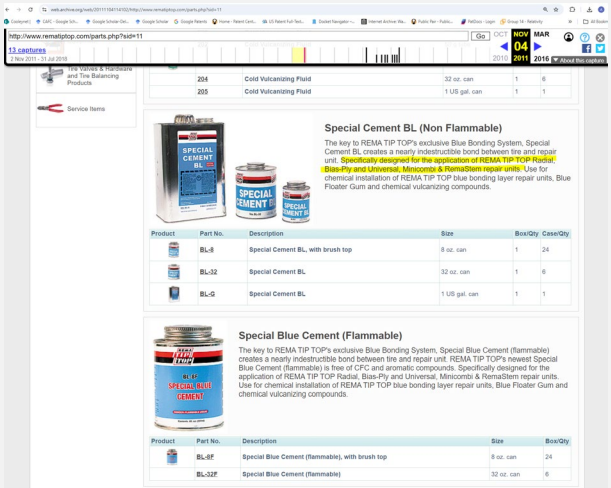
’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)



(REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 23.)



(REMA Tip Top Patches, https://web.archive.org/web/20140611110558/http://www.rematiptop.com/downloads/trm/catalogs/RTTNA-NHP-05.pdf at 7.)



'027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	(REMA Tip Top Patches, https://web.archive.org/web/20111104114102/http://www.rematiptop.com/parts.php?sid=11.)
22. The assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface.	*REMA Tip Top Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface. For example:*  **REMA TIP TOP Bias-Ply tire repair units** REMA TIP TOP offers a wide selection of bias-ply (cross ply) repair units for applications on passenger, truck, OTR, agricultural and industrial bias-ply tires. Due to our fully-integrated blue bonding layer, REMA TIP TOP bias-ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102204738/http://www.rematiptop.com/parts.php?sid=7.)  **REMA TIP TOP Radial tire repair units** REMA TIP TOP offers a variety of radial-ply repair units to meet the diverse demands of today's passenger, truck, and OTR tire applications. Due to our fully-integrated blue bonding layer and center over injury design, REMA TIP TOP Radial-Ply repair units are suitable for use with all current vulcanizing systems. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair. (REMA Tip Top Patches, https://web.archive.org/web/20111102205534/http://www.rematiptop.com/parts.php?sid=6.)  **REMA TIP TOP Universal tire repair units** REMA TIP TOP's rubber-reinforced, Universal repair units are specially formulated to provide maximum flexibility and strength. These non-directional, center over injury repair units perform flawlessly in both radial or bias-ply tire designs. For best results, always select the corresponding REMA TIP TOP Stem insert unit, carbide cutter and Special Cement BL (non flammable) or Special Blue Cement (flammable) product for a permanent, reliable repair.

’027 Claim Element	Disclosures from Prior Art (REMA Tip Top Patches)
	(REMA Tip Top Patches, https://web.archive.org/web/20111104113401/http:/www.rematiptop.com/parts.php?sid=8.)  (REMA Tip Top Patches, https://www.youtube.com/watch?v=c-GF4FbtEAY.)

Invalidity Claim Chart Against U.S. Patent No. 11,124,027 ("'027 Patent")
Based on Patches from Tech Tire Repair the Technical Rubber Company and ("Tech/TRC Patches")

Patches from Tech Tire Repair and the Technical Rubber Company ("Tech/TRC Patches") include all patches sold by the Patch Rubber Company prior to the earliest priority date of the '027 patent, April 26, 2016, including all patches found at:

- https://web.archive.org/web/20100331030538/http://www.TRC-gmbh.de/portal/resources/139.pdf
- https://www.youtube.com/watch?v=QZl3B9jDg-E
- https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf
- https://web.archive.org/web/20101123004733/http://www.techtirerepairs.com/_assets/documents/Tech_International_Catalog_20050810.pdf
- https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf

Tech/TRC Patches qualify as prior art under at least 35 U.S.C. § 102(a)(1). Tech/TRC Patches anticipate and/or render obvious the Asserted Claims of the '027 Patent (at least as Revvo understands Plaintiff's application of the Asserted Claims in an effort to show infringement).

To the extent Plaintiff argues that any element below is not disclosed by Tech/TRC Patches, a person of ordinary skill in the art would have found it obvious to combine the teachings of Tech/TRC Patches with the background knowledge of a person of ordinary skill in the art and/or the additional references and exemplary teachings set forth in the chart below, to arrive at the claim limitation with a reasonable expectation of success. The chart below provides representative examples of where each element of each claim is found within the Tech/TRC Patches. Citations are meant to be exemplary, not exhaustive, and Revvo reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by Plaintiff. Citations to figures, drawings, tables, and the link include reference to any accompanying or related text. All internal cross-references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Revvo's position that Plaintiff's October 30, 2024 Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Revvo's statements below should not be treated as an admission, implication, or suggestion that Revvo agrees with Plaintiff regarding either the scope, construction, or interpretation of any of the Asserted Claims or the infringement theories advanced by Plaintiff in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Revvo has specified non-limiting examples of where its application of the prior art is based on Plaintiff's apparent application of the claim element. These statements are not intended to suggest that Revvo agrees with Plaintiff's application of any claim element, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or propose claim constructions until a later date.

Plaintiff has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by the Tech/TRC Patches. Revvo therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if Plaintiff makes any such contention.

Where Revvo states that the Tech/TRC Patches "disclose" a limitation, that disclosure may be express, implicit, and/or inherent.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
1[pre]. An assembly for attachment with a vulcanized rubber article comprising:	*To the extent that the preamble is limiting, Tech/TRC Patches disclose, teach, and/or suggest a display assembly for attachment with a vulcanized rubber article comprising. For example:*

TECH
2-Way® Tube Repairs*,
All-Purpose Repairs

Tech 2-Way tube repairs are the finest made today. Every repair is permanent and safe. And the repair is twice as strong as the tube itself. Tech makes round and oval repairs for any tube injury…on or off the road. Tech is the pioneer of self-vulcanizing repairs, so you can depend on high quality Tech repairs throughout the line.

Tech All-Purpose repairs are designed for use in radial and bias tires. New compounding and thicker rubber helps to resist dimpling. They can also be used for tube repairing.

*Patent No. 2,582,770





TECH
BP®
Bias Ply Tire Repairs



All Tech low temperature and cloth-back BP's have Tech's bead label which allows the repair technician to record month, year and other identification for warranty purposes.

Tech BP Bias Ply tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

Uncured BP's are special order products. Please see your Tech distributor or contact Tech International.

See charts to determine proper size repair unit.

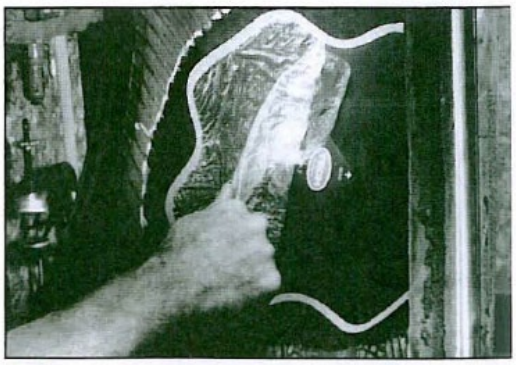
Note: All BP and BPT Bias Ply repair units must be used in conjunction with proper injury filler material. Do not install BP or BPT Bias Ply repair units over open injuries.

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	   (Tech/TRC Patches, https://web.archive.org/web/20101123004733/http://www.techtirerepairs.com/_assets/documents/Tech_International_Catalog_20050810.pdf)  (Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 **16.** With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.  **17.** Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair. (Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)  (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E) *See also following limitations.*
[1a] an outer layer of elastomeric material having a visual feature; and	*Tech/TRC Patches disclose, teach, and/or suggest an outer layer of elastomeric material having a visual feature. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	     (Tech/TRC Patches, https://web.archive.org/web/20101123004733/http://www.techtirerepairs.com/_assets/documents/Tech_International_Catalog_20050810.pdf)

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



49 Remove the protective clear poly from the top of the repair unit.

(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



16. With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.

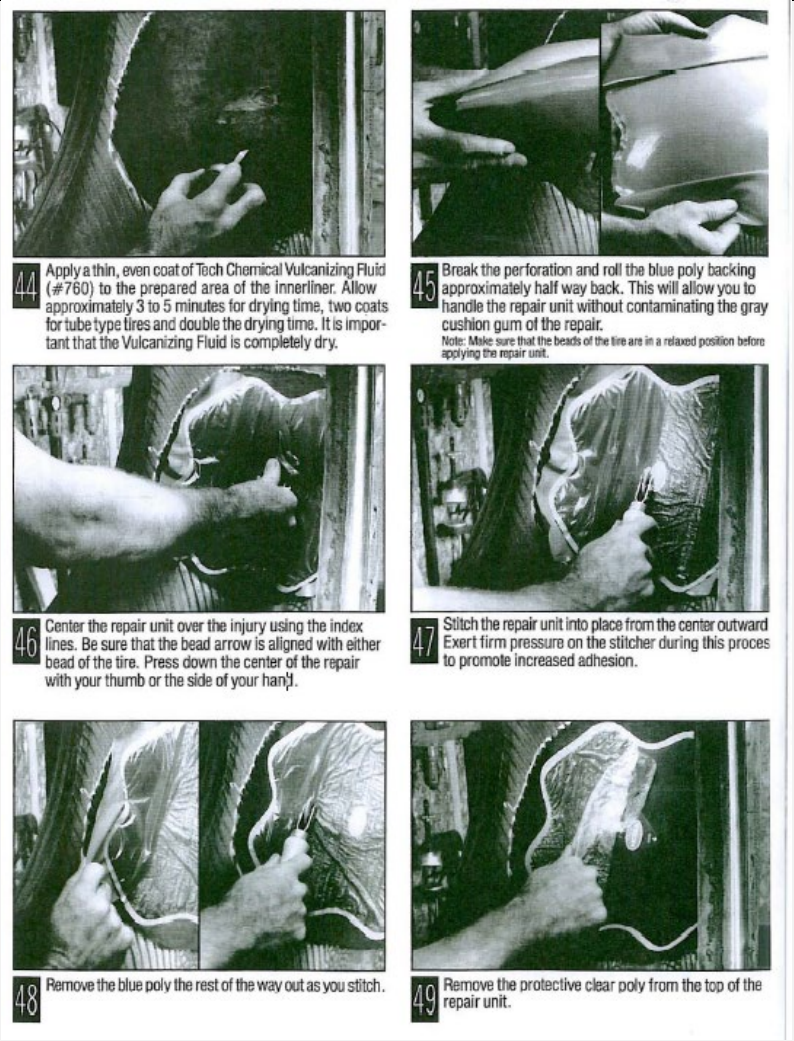


17. Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair.

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[1b] an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and	*Tech/TRC Patches disclose, teach, and/or suggest an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition. For example:*

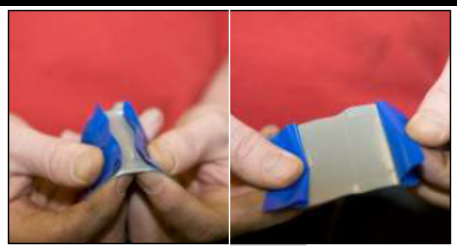
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



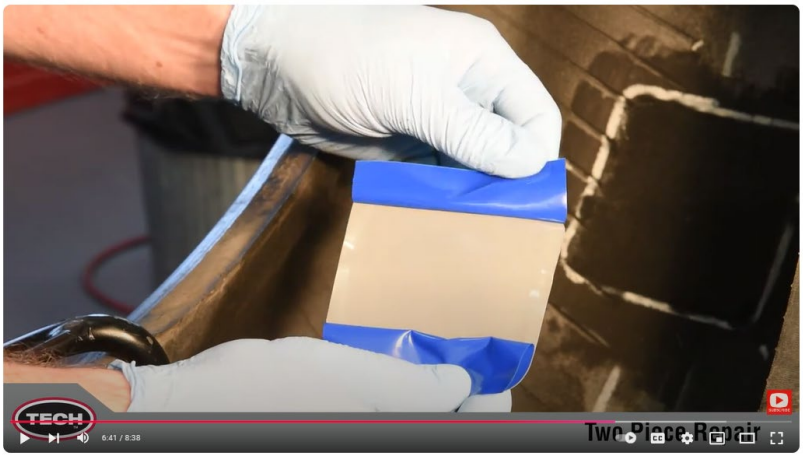
14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

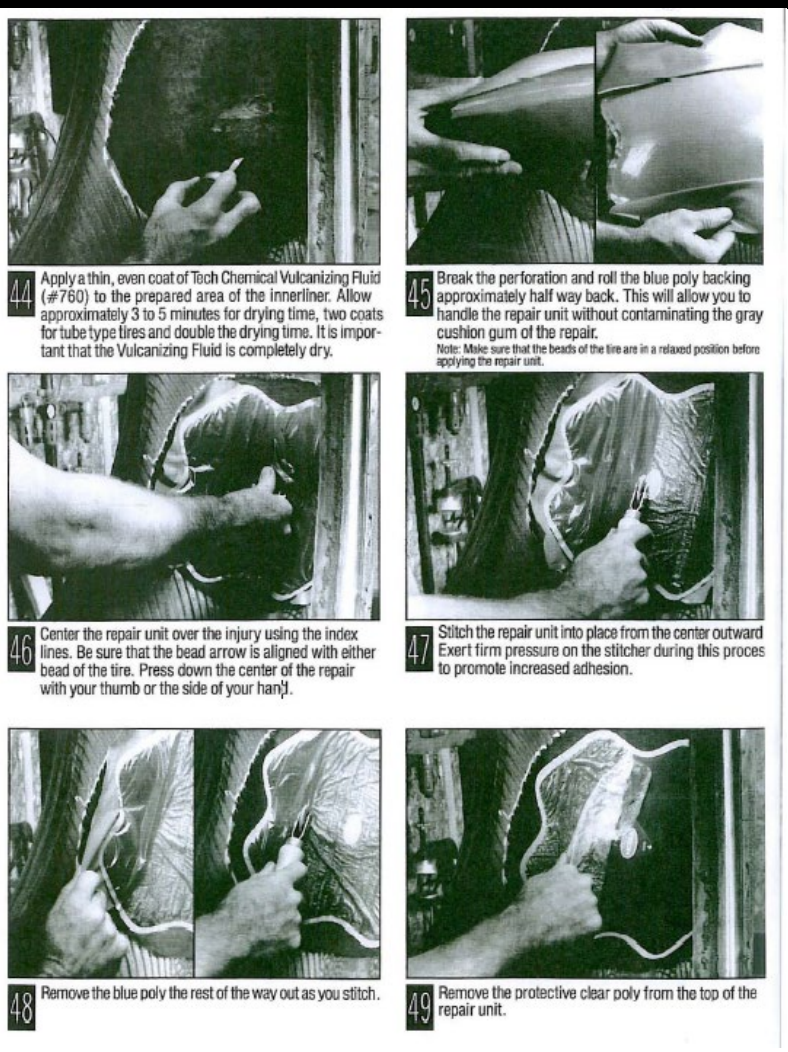
(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



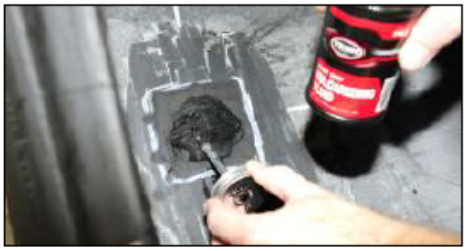
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 Tire Repair: Two-Piece Installation TECH Tire Repairs 3.54K subscribers Subscribe 81 Share Download Clip Save 12,471 views Aug 12, 2016 TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair.  Tire Repair: Two-Piece Installation TECH Tire Repairs 3.54K subscribers Subscribe 81 Share Download Clip Save 12,471 views Aug 12, 2016 TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[1c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.	*Tech/TRC Patches disclose, teach, and/or suggest wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

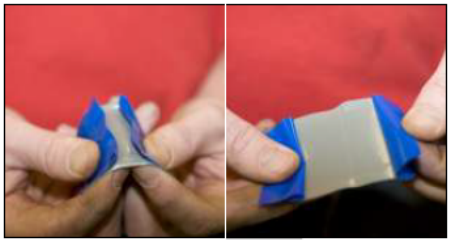


(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



13. Apply a thin even coat of 760 Chemical Vulcanizing Fluid to the buffed surface. Allow 3 to 5 minutes drying time. Additional drying time may be required in adverse weather conditions.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



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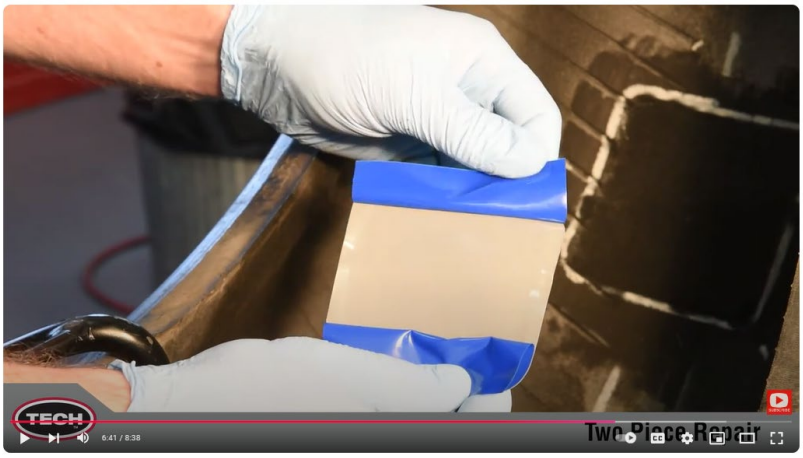
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



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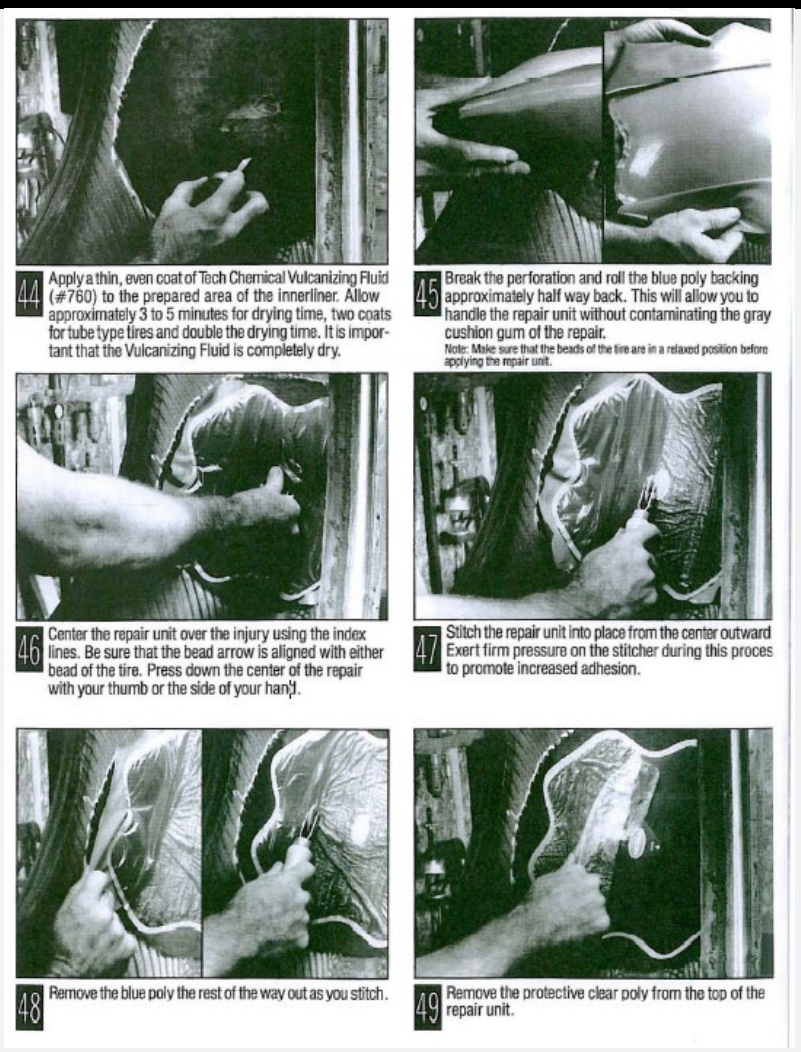
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'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
5. The assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article.	*Tech/TRC Patches disclose, teach, and/or suggest the assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article. For example:* **TECH BP®** **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

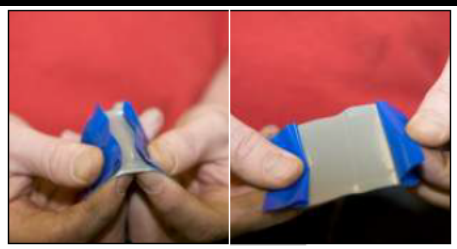
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

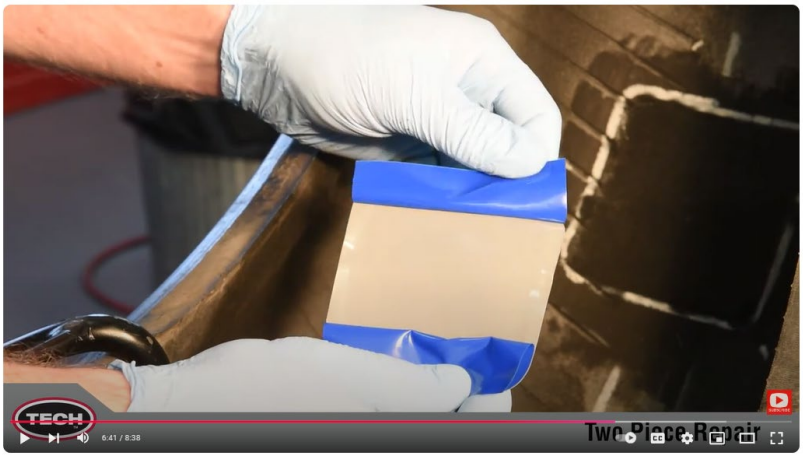


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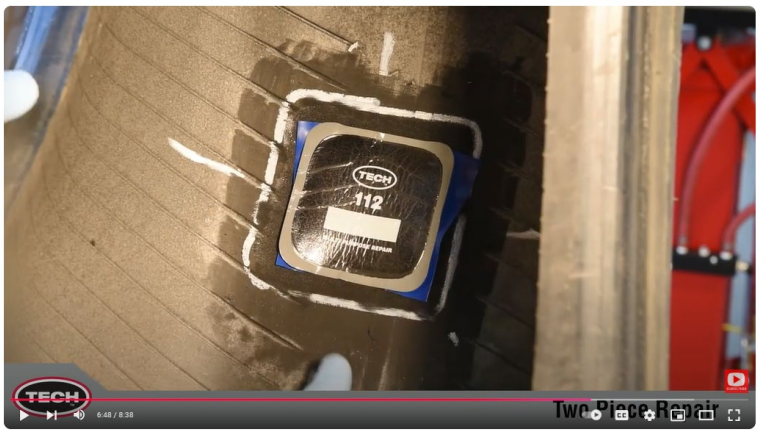


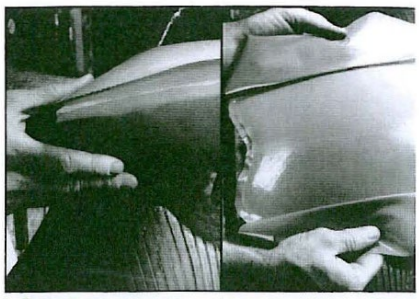
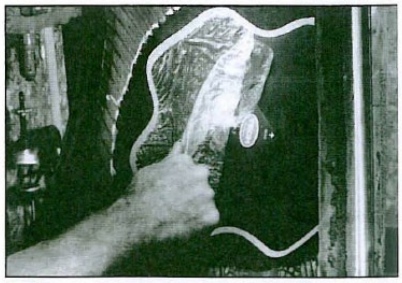
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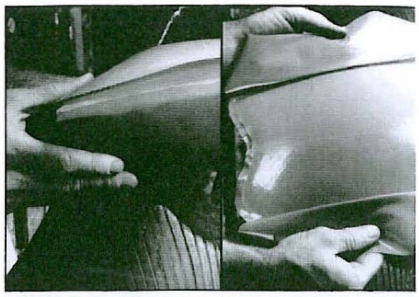
12,471 views Aug 12, 2016
TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair.

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
7. The assembly as recited in claim 1 further comprising a cavity disposed therein.	*Tech/TRC Patches disclose, teach, and/or suggest the assembly as recited in claim 1 further comprising a cavity disposed therein. For example:*  **TECH BP®** **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

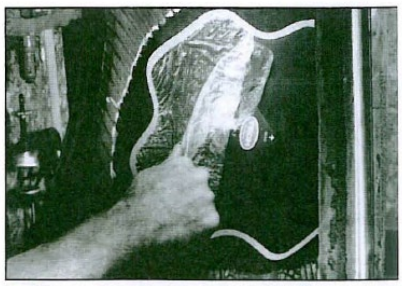
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair. Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.  49 Remove the protective clear poly from the top of the repair unit. (Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)
8. The assembly as recited in claim 7 further comprising an element disposed within the cavity.	*Tech/TRC Patches disclose, teach, and/or suggest the assembly as recited in claim 7 further comprising an element disposed within the cavity. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

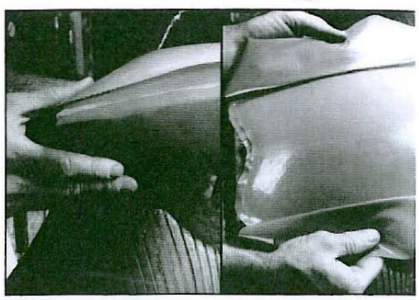
TECH BP®
Bias Ply tire repairs
Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

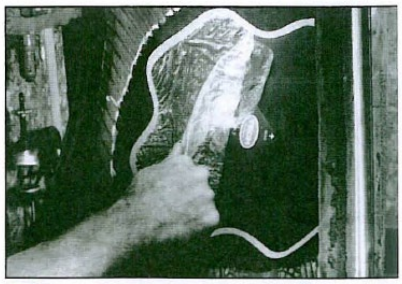
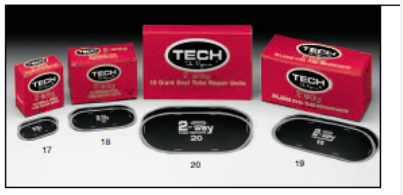


45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair.
Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.

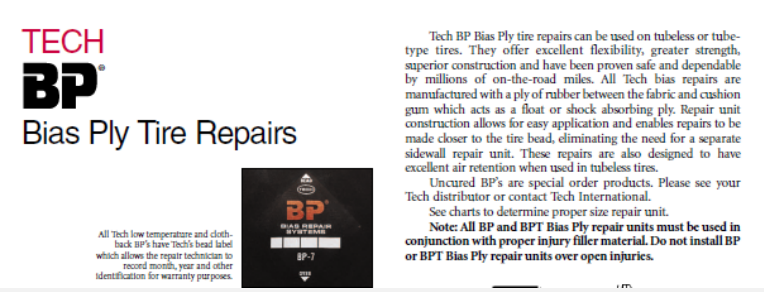


49 Remove the protective clear poly from the top of the repair unit.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)
9. The assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer.	*Tech/TRC Patches disclose, teach, and/or suggest the assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer. For example:* **TECH BP®** **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.  45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair. Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 49 Remove the protective clear poly from the top of the repair unit. (Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)
11[pre]. A method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of:	*To the extent that the preamble is limiting, Tech/TRC Patches disclose, teach, and/or suggest a method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of. For example:* TECH 2-Way® Tube Repairs*, All-Purpose Repairs Tech 2-Way tube repairs are the finest made today. Every repair is permanent and safe. And the repair is twice as strong as the tube itself. Tech makes round and oval repairs for any tube injury…on or off the road. Tech is the pioneer of self-vulcanizing repairs, so you can depend on high quality Tech repairs throughout the line. Tech All-Purpose repairs are designed for use in radial and bias tires. New compounding and thicker rubber helps to resist dimpling. They can also be used for tube repairing. *Patent No. 2,582,770  

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)


TECH
BP
Bias Ply Tire Repairs

All Tech low temperature and cloth-back BP's have Tech's bead label which allows the repair technician to record month, year and other identification for warranty purposes.

Tech BP Bias Ply tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

Uncured BP's are special order products. Please see your Tech distributor or contact Tech International.

See charts to determine proper size repair unit.

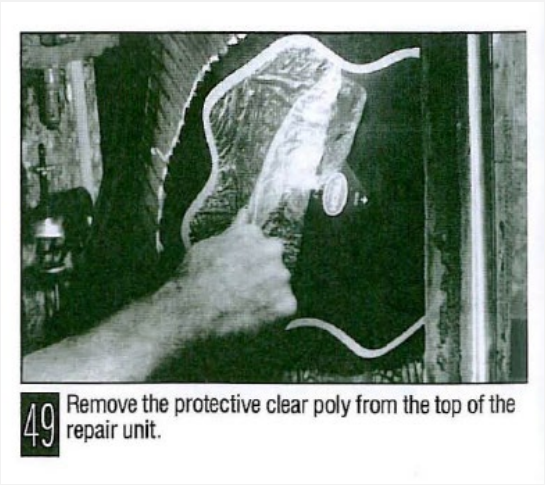
Note: All BP and BPT Bias Ply repair units must be used in conjunction with proper injury filler material. Do not install BP or BPT Bias Ply repair units over open injuries.







(Tech/TRC Patches, https://web.archive.org/web/20101123004733/http://www.techtirerepairs.com/_assets/documents/Tech_International_Catalog_20050810.pdf)



'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)   **16.** With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.  **17.** Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair. (Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 Tire Repair: Two-Piece Installation TECH Tire Repairs 3.54K subscribers Subscribe 81 Share Download Clip Save 12,471 views Aug 12, 2016 TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair.  Tire Repair: Two-Piece Installation TECH Tire Repairs 3.54K subscribers Subscribe 81 Share Download Clip Save 12,471 views Aug 12, 2016 TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair. (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E) *See also following limitations.*
[11a] identifying a surface of a vulcanized rubber article;	*Tech/TRC Patches disclose, teach, and/or suggest identifying a surface of a vulcanized rubber article. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



1. Locate and mark all damage on the inside and outside of the tire while checking for separation.

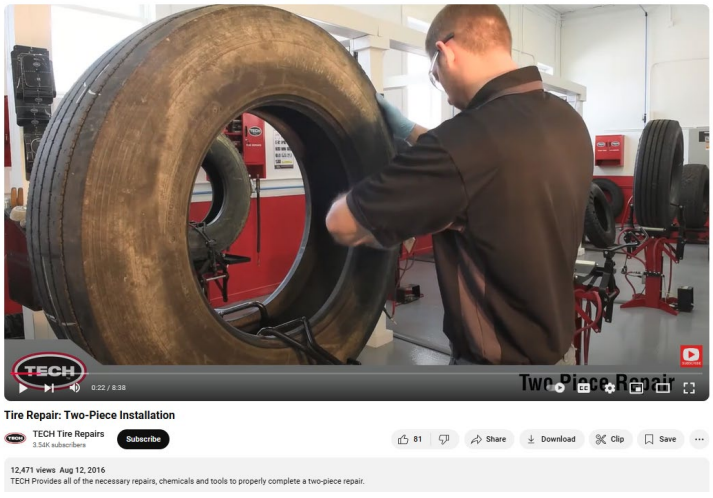


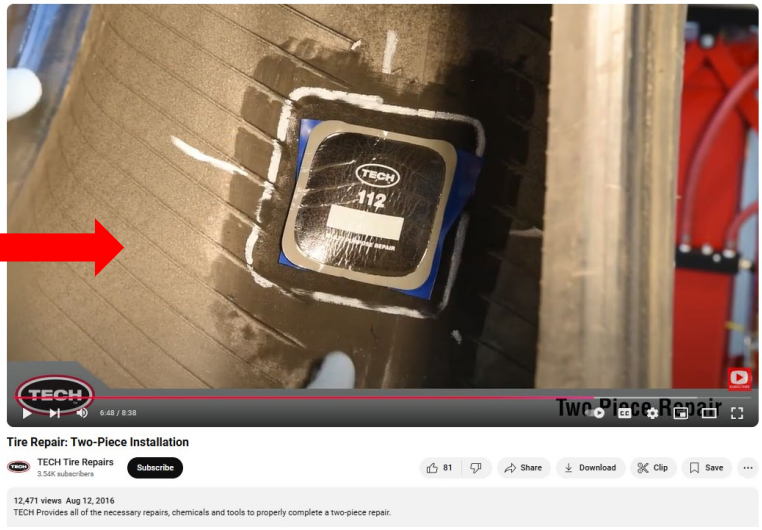
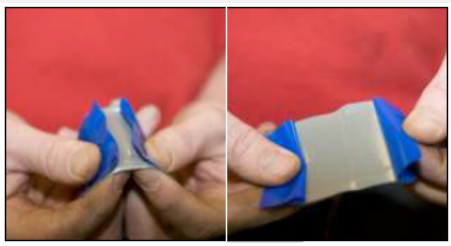
16. With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.



17. Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair.

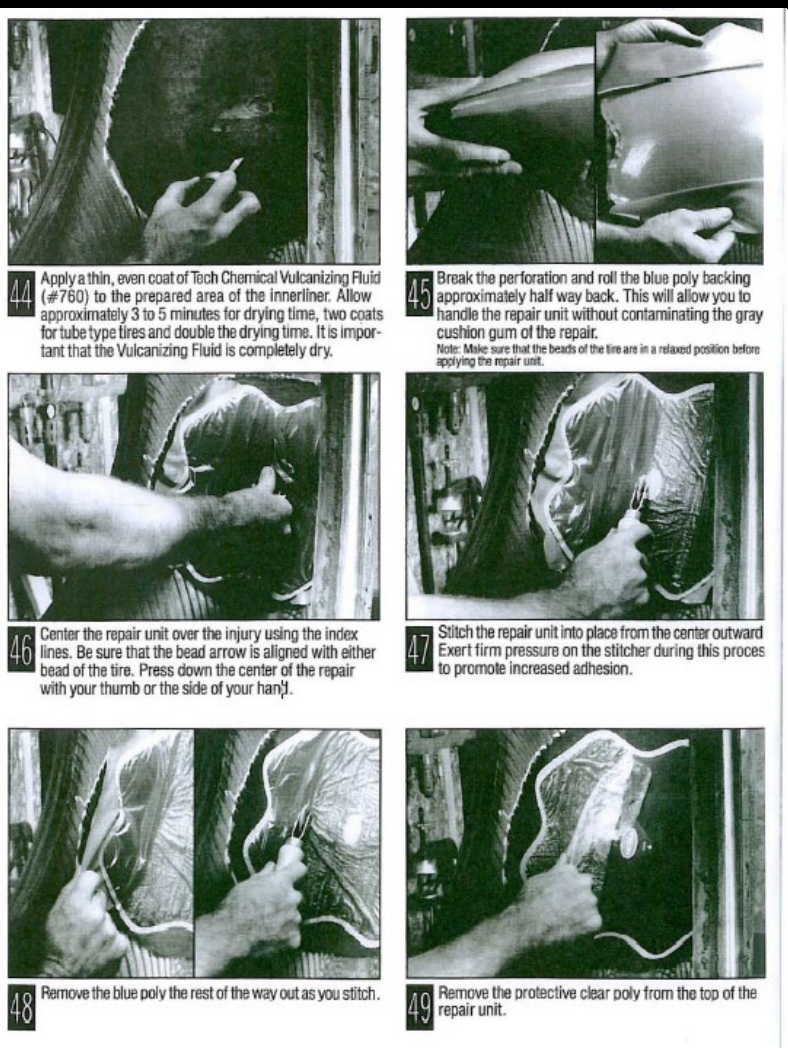
(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



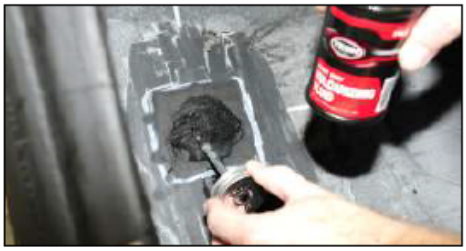
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[11b] placing an assembly into contact with the identified surface, wherein the assembly comprises:	*Tech/TRC Patches disclose, teach, and/or suggest placing an assembly into contact with the identified surface, wherein the assembly comprises. For example:*  **14.** Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.  **15.** Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)  **16.** With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.  **17.** Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair. (Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)  (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[11c] an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article, and	*Tech/TRC Patches disclose, teach, and/or suggest an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

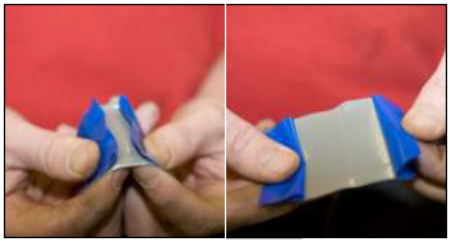


(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



13. Apply a thin even coat of 760 Chemical Vulcanizing Fluid to the buffed surface. Allow 3 to 5 minutes drying time. Additional drying time may be required in adverse weather conditions.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



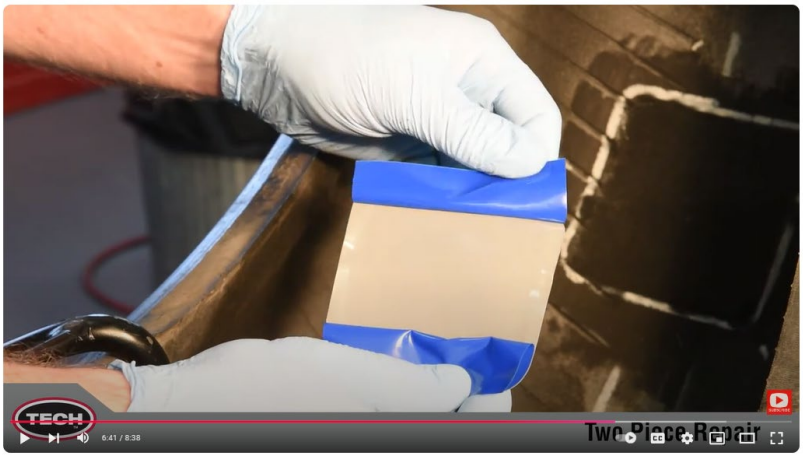
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



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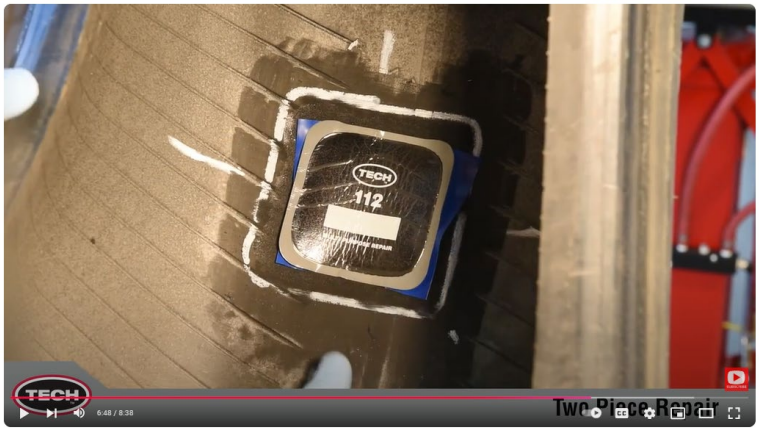
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TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair.



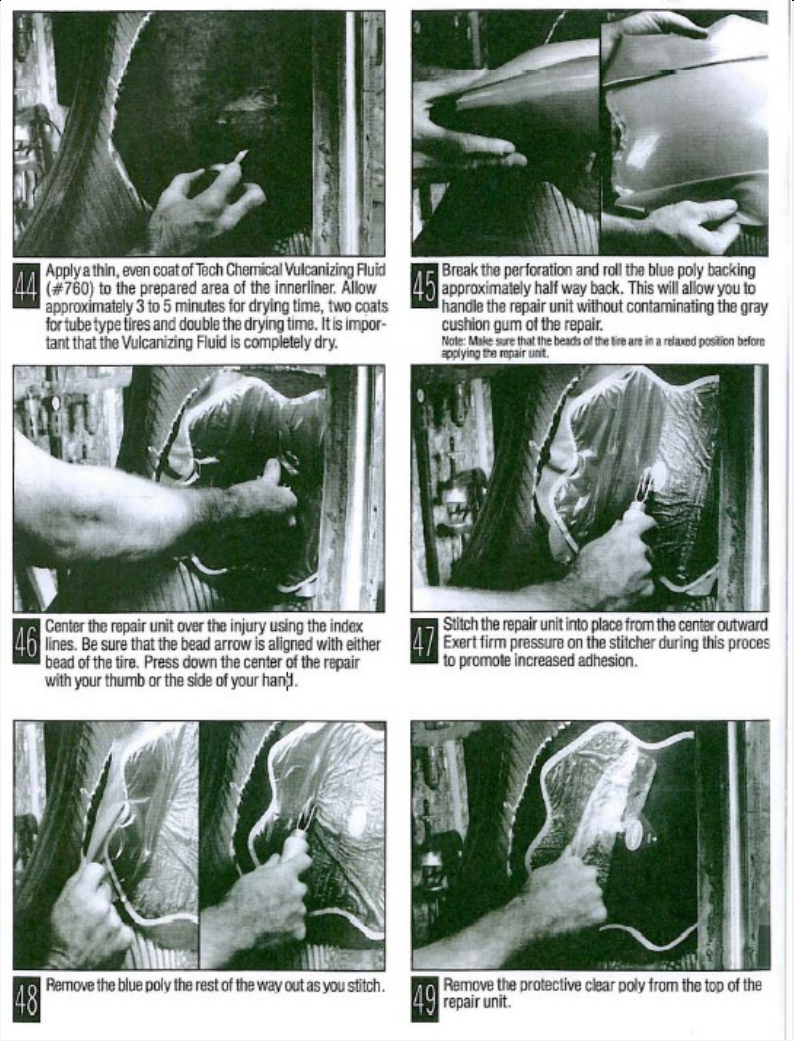
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TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair.

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[11d] wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article.	*Tech/TRC Patches disclose, teach, and/or suggest wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article. For example:*  **TECH BP®** **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

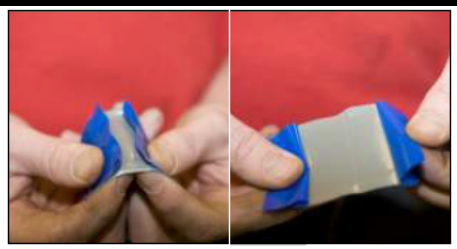
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



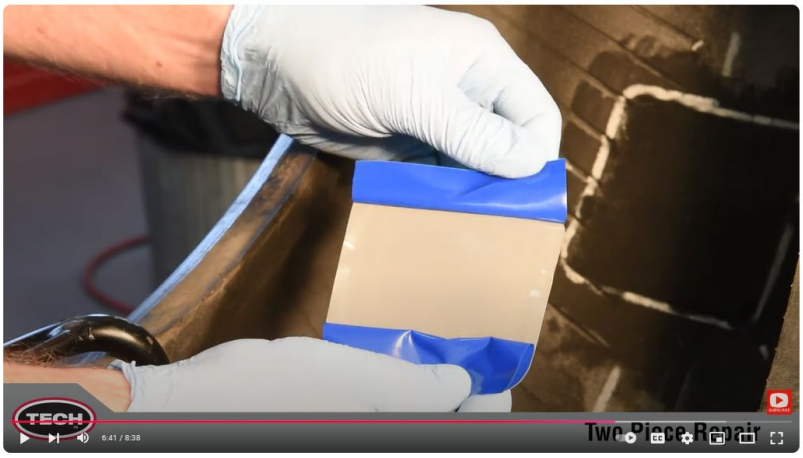
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



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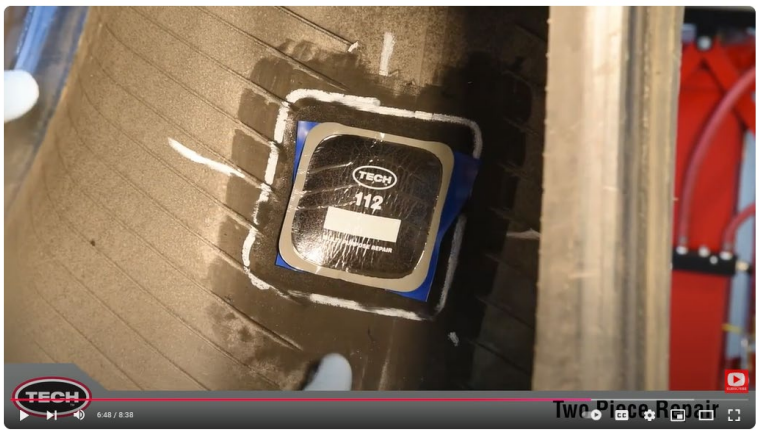
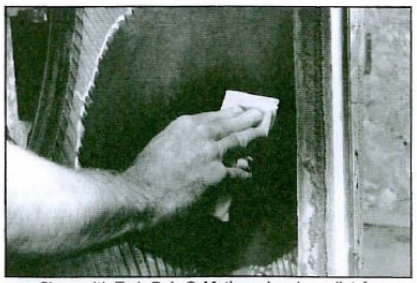
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'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
12. The method as recited in claim 11 further comprising preparing the identified surface before the step of placing.	*Tech/TRC Patches disclose, teach, and/or suggest the method as recited in claim 11 further comprising preparing the identified surface before the step of placing. For example:*  42 Vacuum the entire buffed area and surrounding area to remove debris from the tire.  43 Clean with Tech Rub-O-Matic and a clean, lint-free cloth. Always clean from the center, out. Make sure the surface is cleaned thoroughly. Allow 3 to 4 minutes for the solvents to evaporate. (Double the time for tube type tires if there is exposed fabric.) (Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



3. Pre-clean the inner liner with Rub-O-Matic rubber cleaner and a scraper 2 to 3 times to remove contaminants.

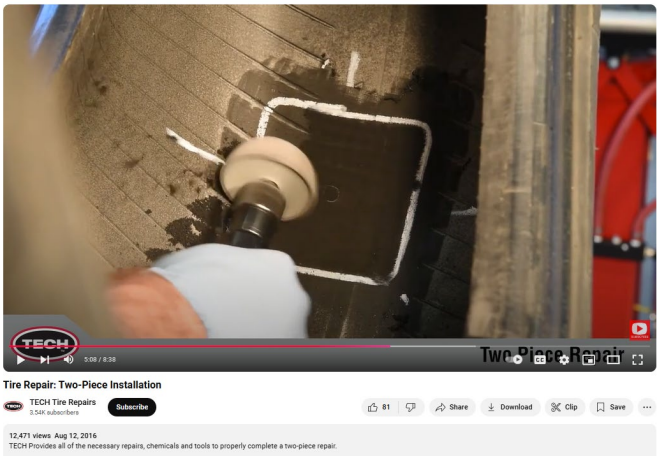
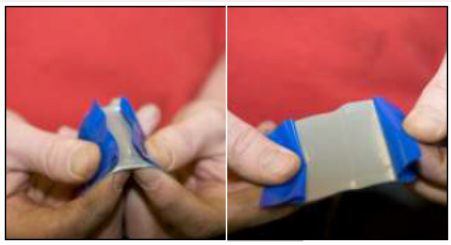


11. Using a low speed buffer (maximum 5,000 rpm) and an appropriate inner liner wheel, buff the stem flush to the inner liner. Buff the entire outlined area on the inner liner to an RMA #1 or #2 texture.

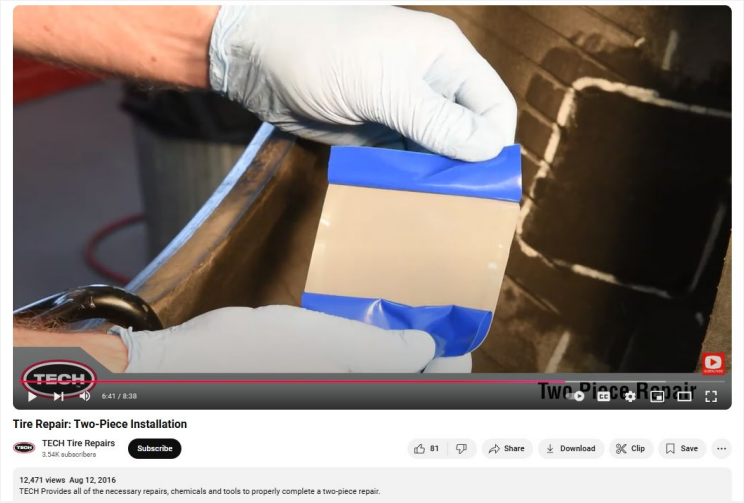


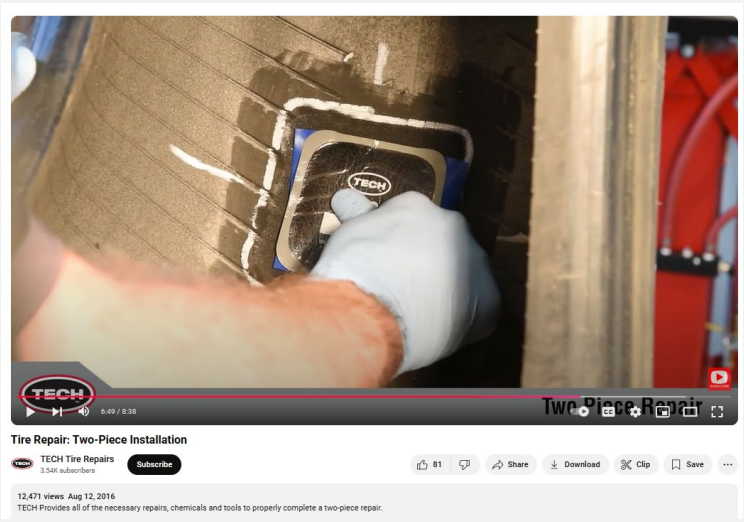
12. Use a soft wire brush on a low speed buffer to remove buffing dust and debris from the buffed area. Remove the debris from the tire using a vacuum.

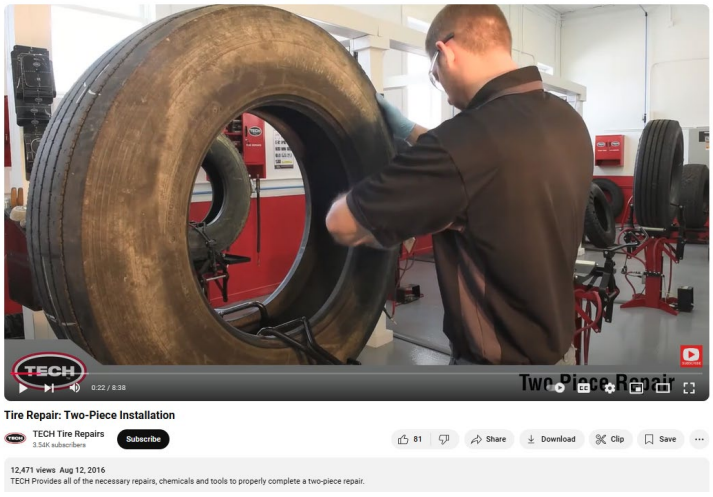
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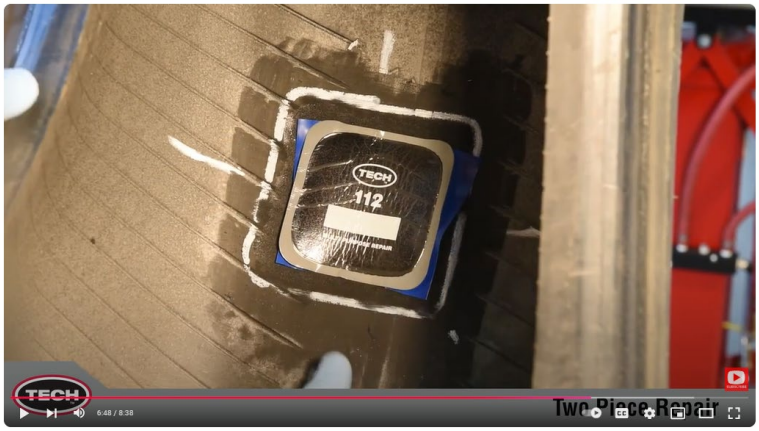
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
13. The method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing.	*Tech/TRC Patches disclose, teach, and/or suggest the method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing. For example:*  **14.** Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.  **15.** Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)  **16.** With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.  **17.** Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair. (Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)

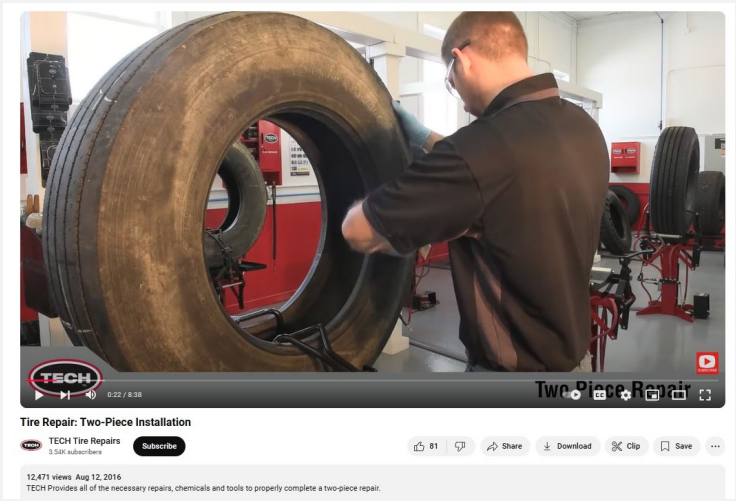
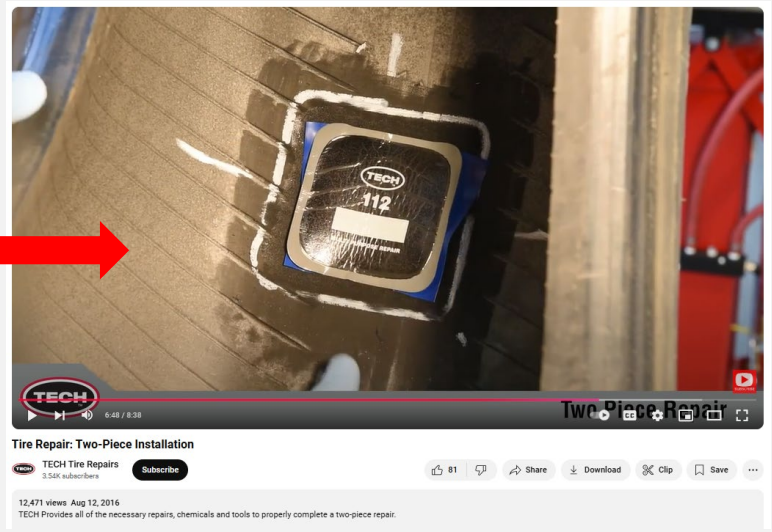
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



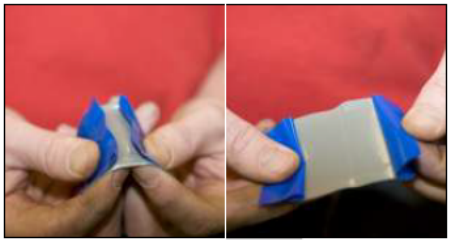


'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
15[pre] A vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, Tech/TRC Patches disclose, teach, and/or suggest a vulcanized rubber tire comprising. For example:* 

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E) *See also following limitations.*
[15a] a target surface disposed along a portion of the rubber tire;	*Tech/TRC Patches disclose, teach, and/or suggest a target surface disposed along a portion of the rubber tire. For example:*  **1.** Locate and mark all damage on the inside and outside of the tire while checking for separation.  **16.** With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.  **17.** Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)   (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[15b] an assembly disposed onto the target surface and comprising:	*Tech/TRC Patches disclose, teach, and/or suggest an assembly disposed onto the target surface and comprising. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

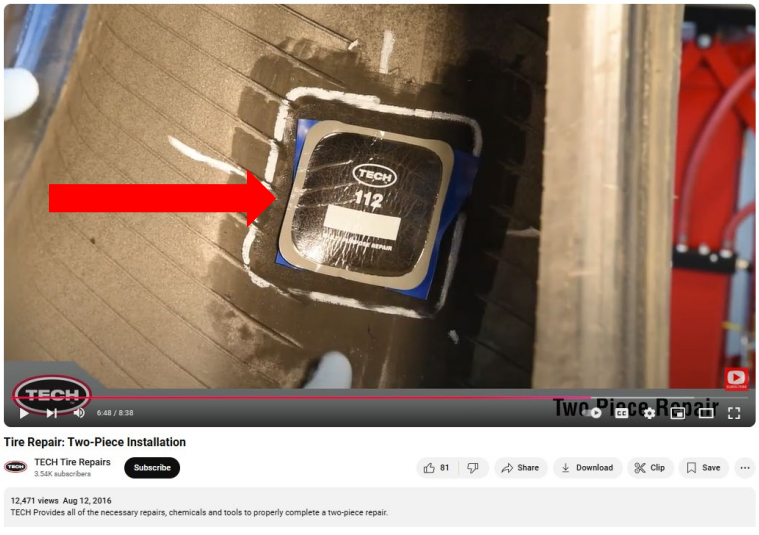


16. With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.



17. Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair.

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



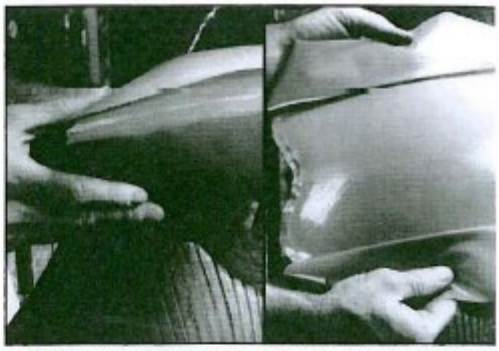
(Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
[15c] an outer layer of elastomeric material; and	*Tech/TRC Patches disclose, teach, and/or suggest an outer layer of elastomeric material. For example:*  **TECH BP®** **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



44 Apply a thin, even coat of Tech Chemical Vulcanizing Fluid (#760) to the prepared area of the innerliner. Allow approximately 3 to 5 minutes for drying time, two coats for tube type tires and double the drying time. It is important that the Vulcanizing Fluid is completely dry.



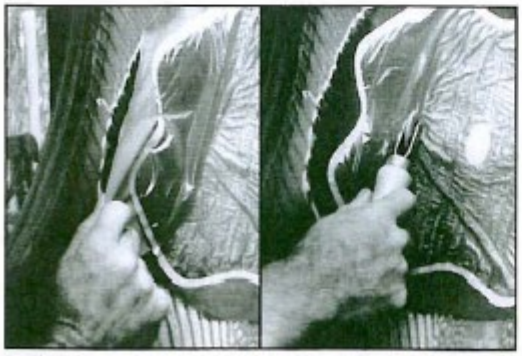
45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair.
Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.



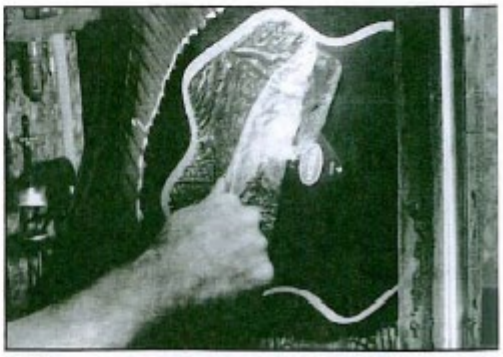
46 Center the repair unit over the injury using the index lines. Be sure that the bead arrow is aligned with either bead of the tire. Press down the center of the repair with your thumb or the side of your hand.



47 Stitch the repair unit into place from the center outward Exert firm pressure on the stitcher during this proces to promote increased adhesion.

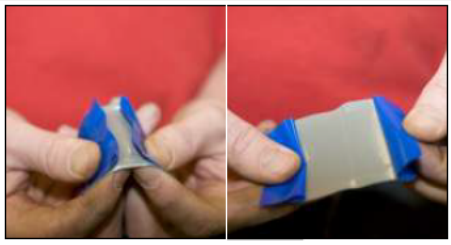


48 Remove the blue poly the rest of the way out as you stitch.

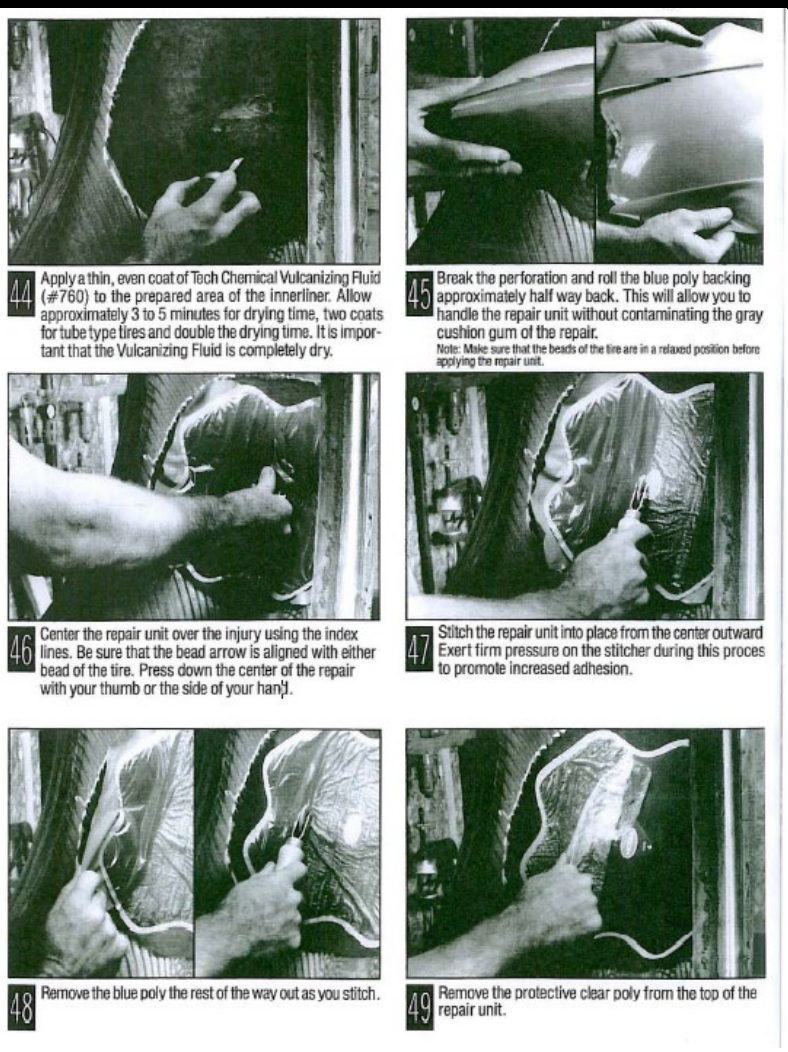


49 Remove the protective clear poly from the top of the repair unit.

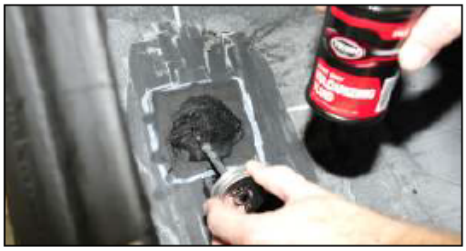
(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	  **14.** Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair. **15.** Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.) (Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)
[15d] an adhesive layer connected with the outer layer;	*Tech/TRC Patches disclose, teach, and/or suggest an adhesive layer connected with the outer layer. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

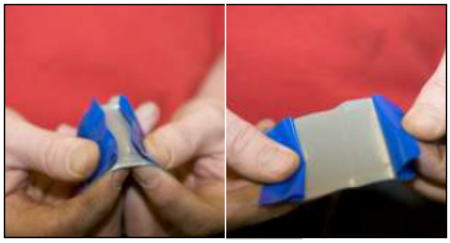


(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



13. Apply a thin even coat of 760 Chemical Vulcanizing Fluid to the buffed surface. Allow 3 to 5 minutes drying time. Additional drying time may be required in adverse weather conditions.

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

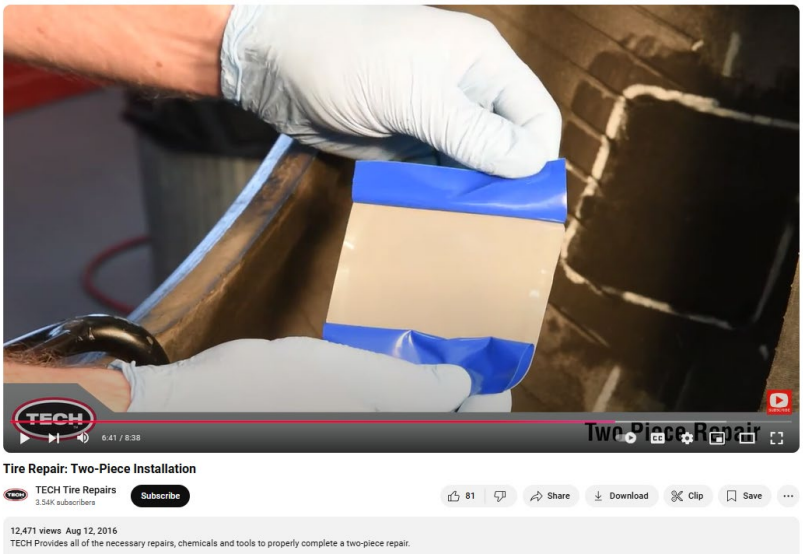


14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



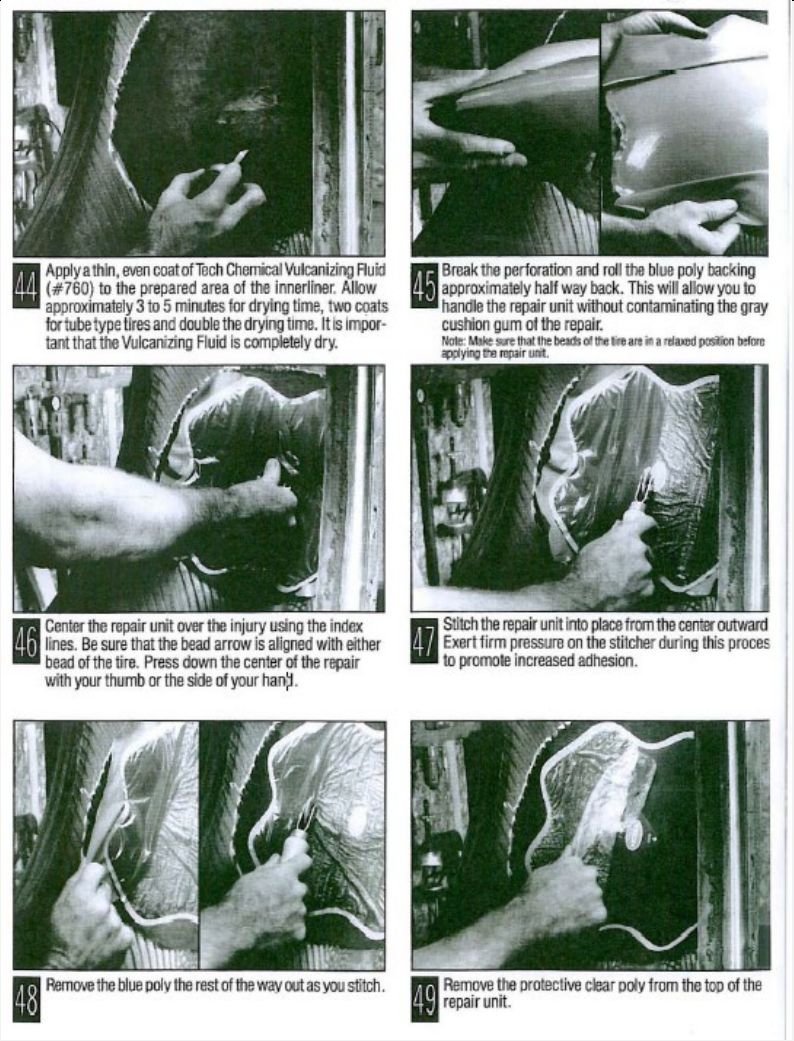
15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[15e] wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire.	*Tech/TRC Patches disclose, teach, and/or suggest wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire. For example:*  **TECH BP®** **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

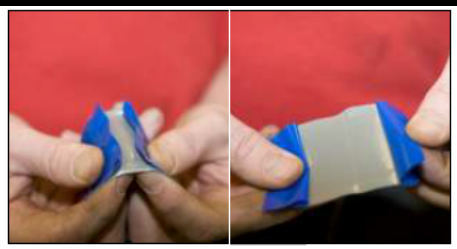


(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



13. Apply a thin even coat of 760 Chemical Vulcanizing Fluid to the buffed surface. Allow 3 to 5 minutes drying time. Additional drying time may be required in adverse weather conditions.

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



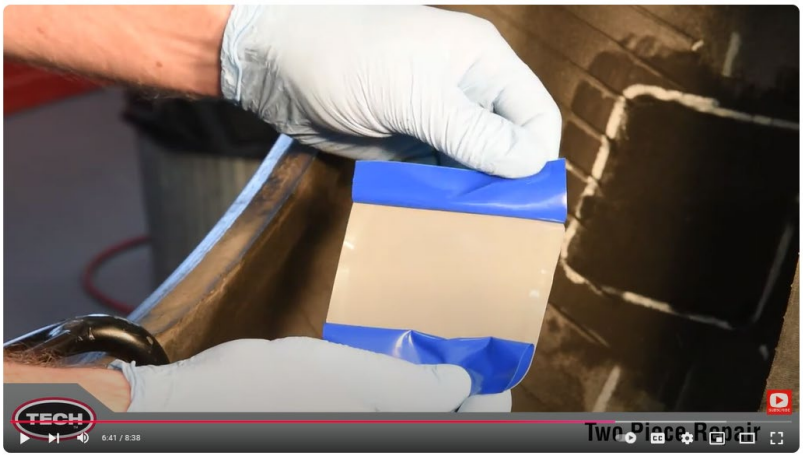
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



Tire Repair: Two-Piece Installation

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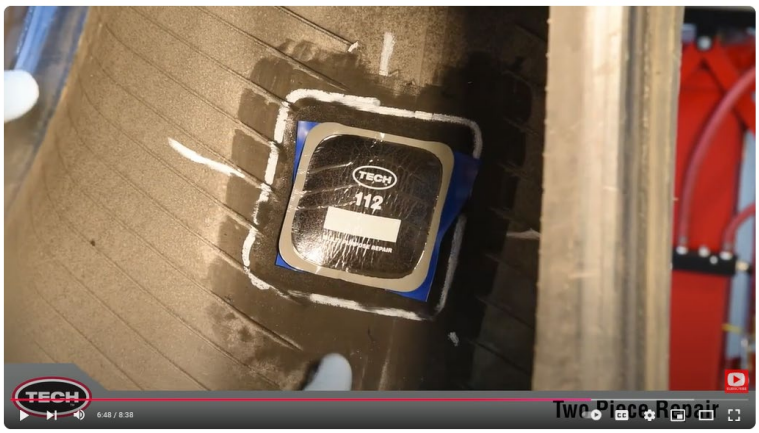
12,471 views Aug 12, 2016
TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair.

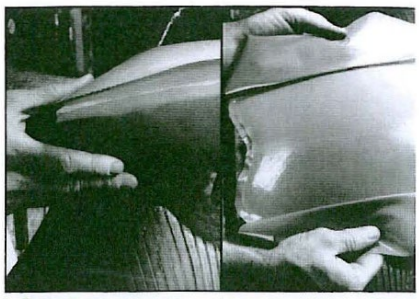
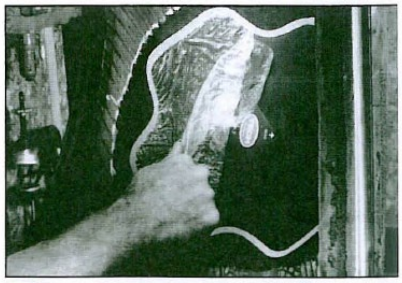


Tire Repair: Two-Piece Installation

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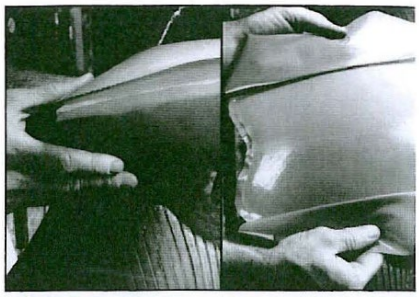
12,471 views Aug 12, 2016
TECH Provides all of the necessary repairs, chemicals and tools to properly complete a two-piece repair.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
16. The rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein.	*Tech/TRC Patches disclose, teach, and/or suggest the rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein. For example:* TECH BP® **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

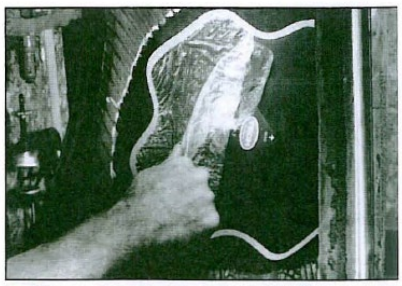
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair. Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.  49 Remove the protective clear poly from the top of the repair unit. (Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)
17. The rubber tire as recited in claim 16 wherein an element is disposed within the cavity.	*Tech/TRC Patches disclose, teach, and/or suggest the rubber tire as recited in claim 16 wherein an element is disposed within the cavity. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

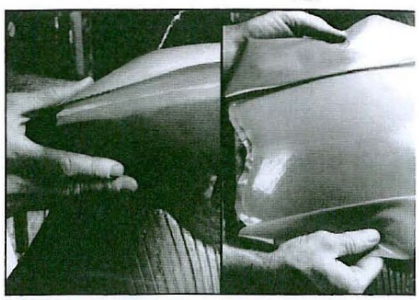
TECH BP®
Bias Ply tire repairs
Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

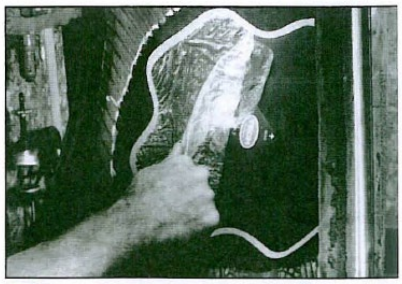
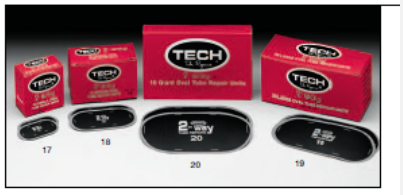


45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair.
Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.

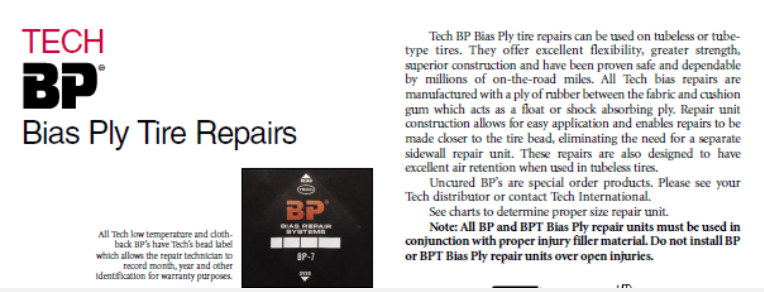


49 Remove the protective clear poly from the top of the repair unit.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)
18. The rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer.	*Tech/TRC Patches disclose, teach, and/or suggest the rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer. For example:* TECH BP® **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.  45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair. Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 49 Remove the protective clear poly from the top of the repair unit. (Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)
19[pre] An assembly for attachment to a vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, Tech/TRC Patches disclose, teach, and/or suggest an assembly for attachment to a vulcanized rubber tire comprising. For example:* TECH 2-Way® Tube Repairs*, All-Purpose Repairs Tech 2-Way tube repairs are the finest made today. Every repair is permanent and safe. And the repair is twice as strong as the tube itself. Tech makes round and oval repairs for any tube injury…on or off the road. Tech is the pioneer of self-vulcanizing repairs, so you can depend on high quality Tech repairs throughout the line. Tech All-Purpose repairs are designed for use in radial and bias tires. New compounding and thicker rubber helps to resist dimpling. They can also be used for tube repairing. *Patent No. 2,582,770  

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



TECH
BP
Bias Ply Tire Repairs

All Tech low temperature and cloth-back BP's have Tech's bead label which allows the repair technician to record month, year and other identification for warranty purposes.

Tech BP Bias Ply tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

Uncured BP's are special order products. Please see your Tech distributor or contact Tech International.

See charts to determine proper size repair unit.

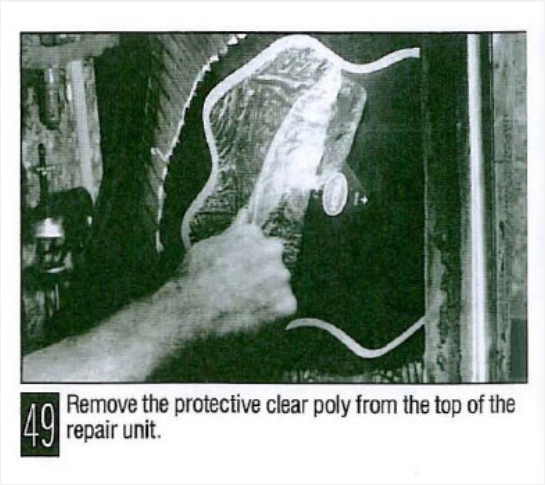
Note: All BP and BPT Bias Ply repair units must be used in conjunction with proper injury filler material. Do not install BP or BPT Bias Ply repair units over open injuries.



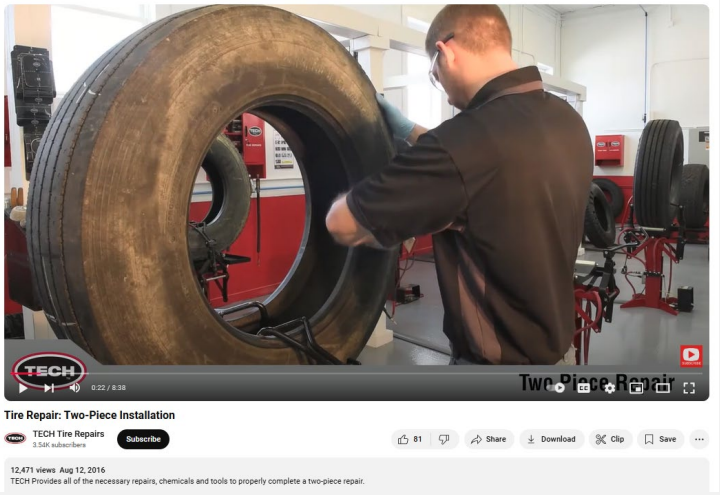




(Tech/TRC Patches, https://web.archive.org/web/20101123004733/http://www.techtirerepairs.com/_assets/documents/Tech_International_Catalog_20050810.pdf)



49 Remove the protective clear poly from the top of the repair unit.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)  **16.** With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.  **17.** Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair. (Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf) 

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E) *See also following limitations.*
[19a] an outer layer formed from an elastomeric material;	*Tech/TRC Patches disclose, teach, and/or suggest an outer layer formed from an elastomeric material. For example:*  

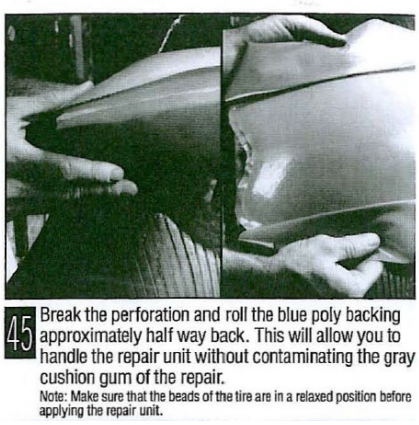
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)





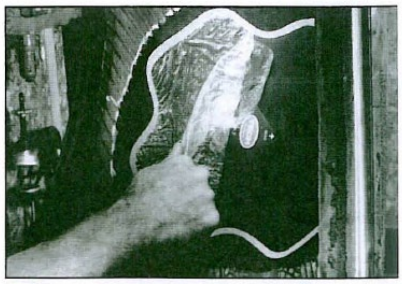


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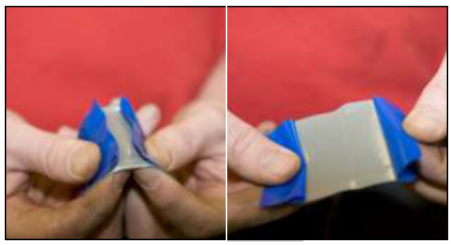
45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair.
Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



49 Remove the protective clear poly from the top of the repair unit.

(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)



16. With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.



17. Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair.

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



Tire Repair: Two-Piece Installation

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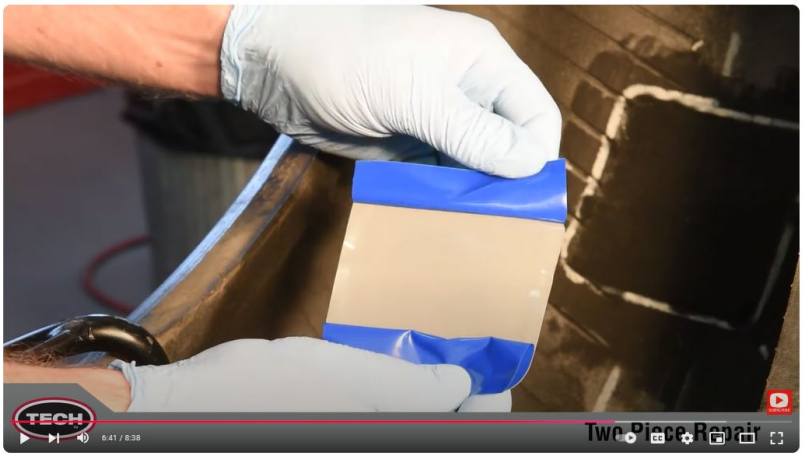
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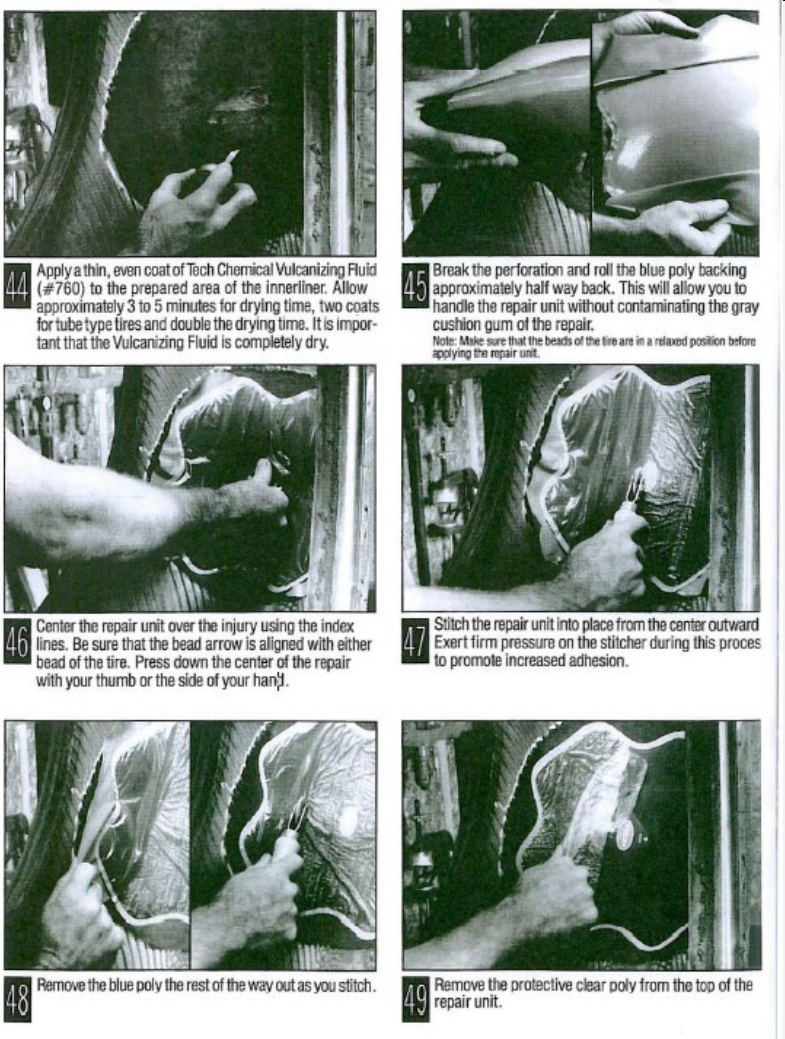
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’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	  (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[19b] an adhesive layer bonding the assembly to portion of a vulcanized rubber tire; and	*Tech/TRC Patches disclose, teach, and/or suggest an adhesive layer bonding the assembly to portion of a vulcanized rubber tire. For example:*

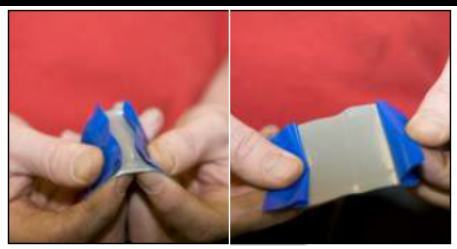
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

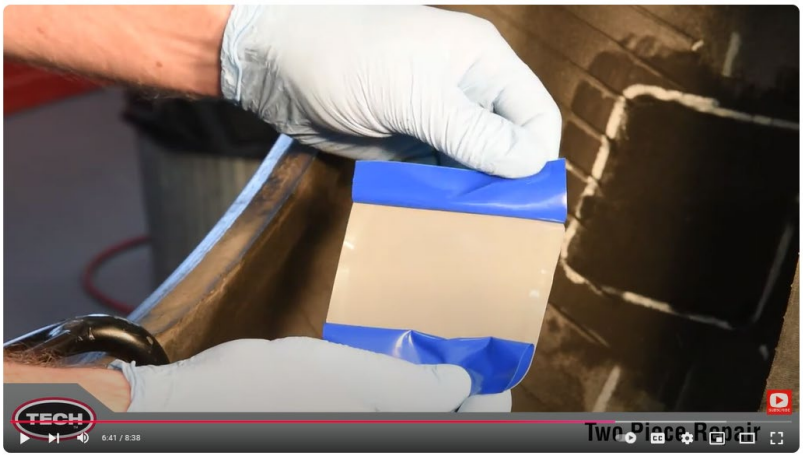


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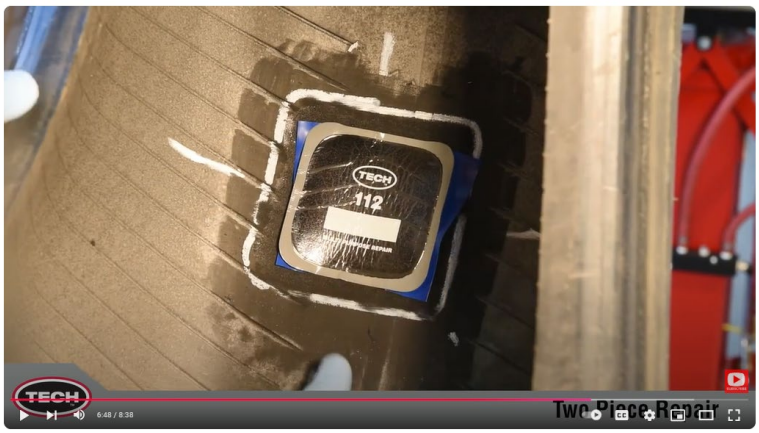


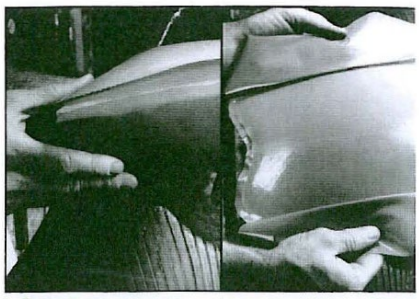
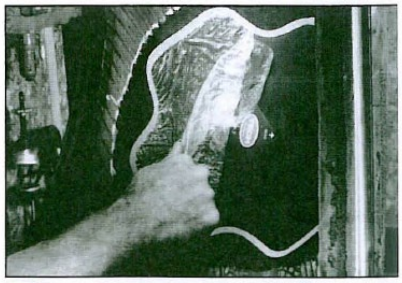
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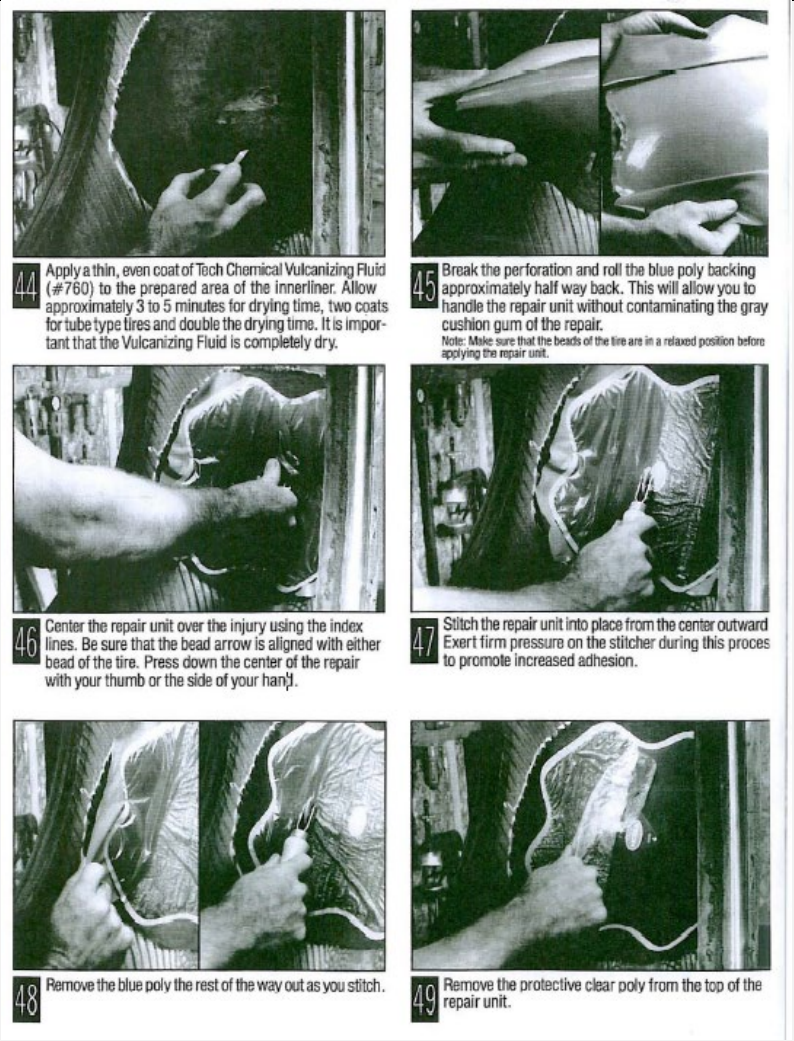
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
[19c] a cavity disposed within the assembly for accommodating an element therein;	*Tech/TRC Patches disclose, teach, and/or suggest a cavity disposed within the assembly for accommodating an element therein. For example:* TECH BP® **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair. Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.  49 Remove the protective clear poly from the top of the repair unit. (Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)
[19d] wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire.	*Tech/TRC Patches disclose, teach, and/or suggest wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)	
		

TECH BP®
Bias Ply tire repairs
Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

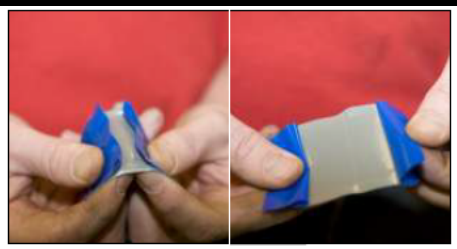
'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

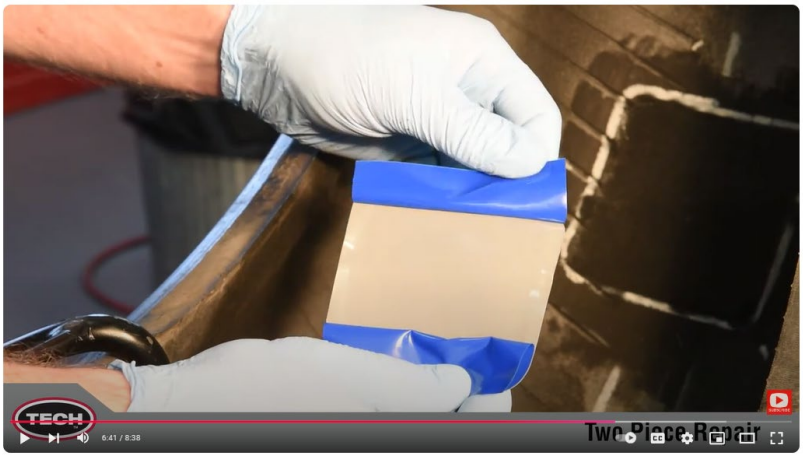


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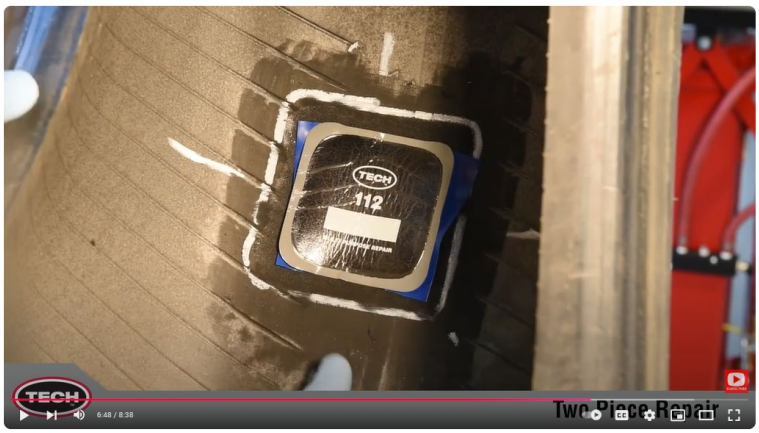


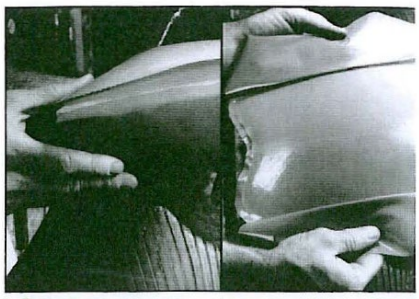
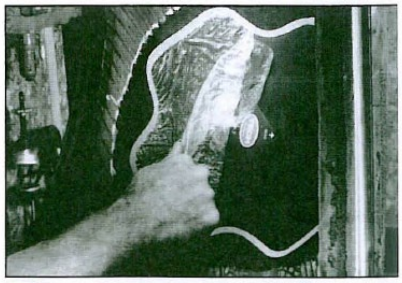
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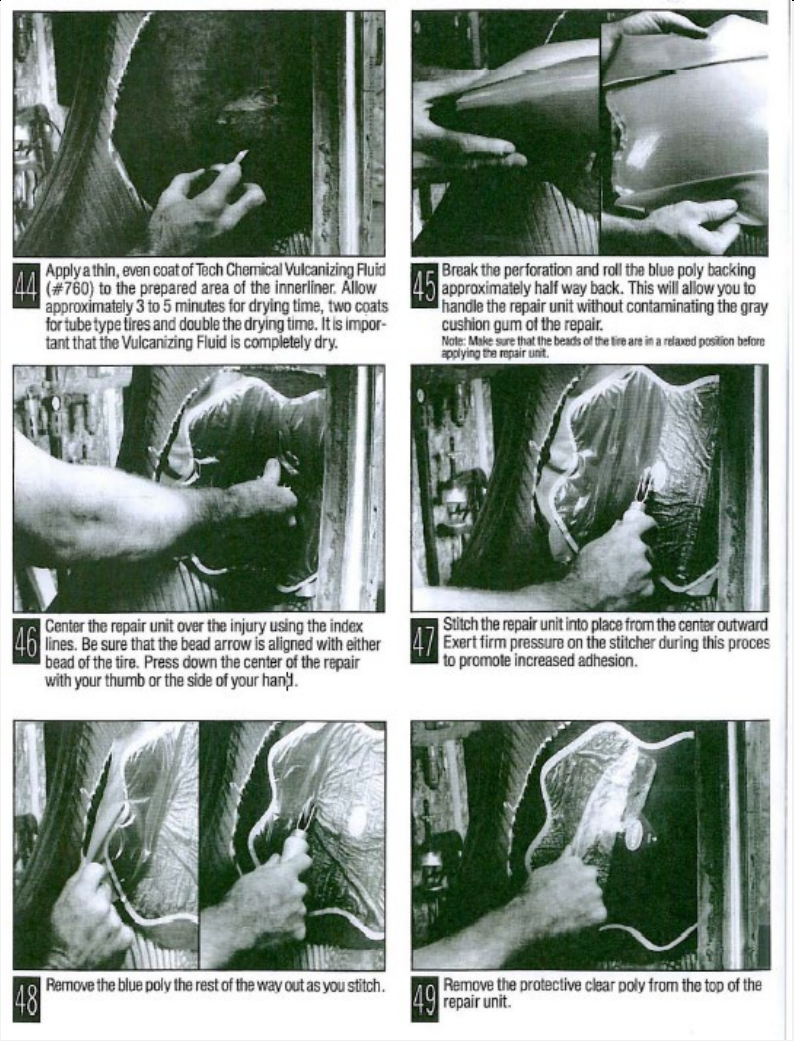
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'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
20. The assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer.	*Tech/TRC Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer. For example:*  **TECH BP®** **Bias Ply tire repairs** Tech BP tire repairs can be used on tubeless or tube-type tires. They offer excellent flexibility, greater strength, superior construction and have been proven safe and dependable by millions of on-the-road miles. All Tech bias repairs are manufactured with a ply of rubber between the fabric and cushion gum which acts as a float or shock absorbing ply. Repair unit construction allows for easy application and enables repairs to be made closer to the tire bead, eliminating the need for a separate sidewall repair unit. These repairs are also designed to have excellent air retention when used in tubeless tires.

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 45 Break the perforation and roll the blue poly backing approximately half way back. This will allow you to handle the repair unit without contaminating the gray cushion gum of the repair. Note: Make sure that the beads of the tire are in a relaxed position before applying the repair unit.  49 Remove the protective clear poly from the top of the repair unit. (Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)
21. The assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer.	*Tech/TRC Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer. For example:*

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)

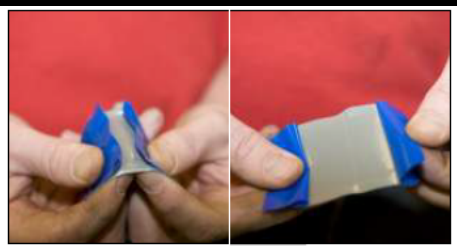


(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)



13. Apply a thin even coat of 760 Chemical Vulcanizing Fluid to the buffed surface. Allow 3 to 5 minutes drying time. Additional drying time may be required in adverse weather conditions.

’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



14. Bend the repair back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing the middle portion of the repair.



15. Center the repair unit over the filled injury. Press down the center of the repair unit with your thumb. (If the repair is a Centech or BP repair unit, be sure to align the bead arrows with the beads of the tire.)

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



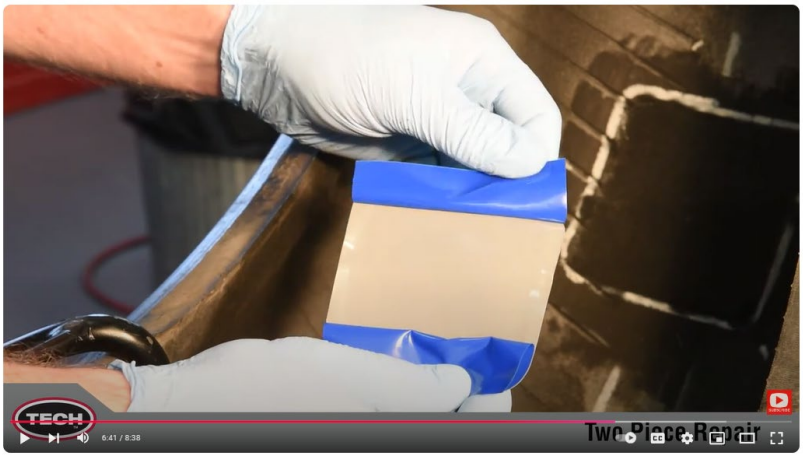
’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



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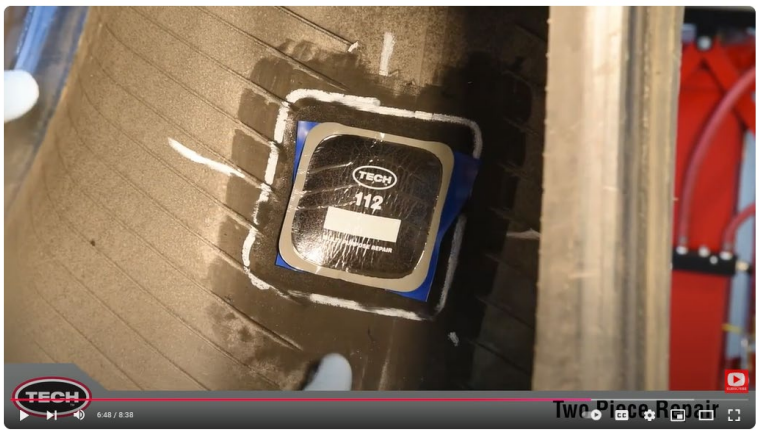
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’027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)
	 (Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)
22. The assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface.	*Tech/TRC Patches disclose, teach, and/or suggest the assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface. For example:*  

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)







(Tech/TRC Patches, https://web.archive.org/web/20101123004733/http://www.techtirerepairs.com/_assets/documents/Tech_International_Catalog_20050810.pdf)



(Tech/TRC Patches, https://web.archive.org/web/20160818000530/http://www.techtirerepairs.com/content/documents/RM-7---Bias-Ply-truck-Section-Repair.pdf)

'027 Claim Element	Disclosures from Prior Art (Tech/TRC Patches)



16. With the blue poly still positioned under the repair unit, stitch the repair unit from the center out, using firm pressure.



17. Remove the poly from under the repair unit, press down the edges of the repair and continue stitching toward the edges of the repair.

(Tech/TRC Patches, https://web.archive.org/web/20100601194218/http://www.techtirerepairs.com/_assets/documents/RepairManuals/RM-5_Two-Piece_Nail_Hole_Repair_Method.pdf)



(Tech/TRC Patches, https://www.youtube.com/watch?v=QZl3B9jDg-E)

Invalidity Claim Chart Against U.S. Patent No. 11,124,027 ("'027 Patent")
Based on U.S. Patent No. 6,726,012 ("Bielicki")

U.S. Patent No. 6,726,012 ("Bielicki") was filed on April 25, 2002 and issued on April 27, 2004. Bielicki qualifies as prior art under at least 35 U.S.C. § 102(a)(1). Bielicki anticipates and/or renders obvious the Asserted Claims of the '027 Patent (at least as Revvo understands Plaintiff's application of the Asserted Claims in an effort to show infringement).

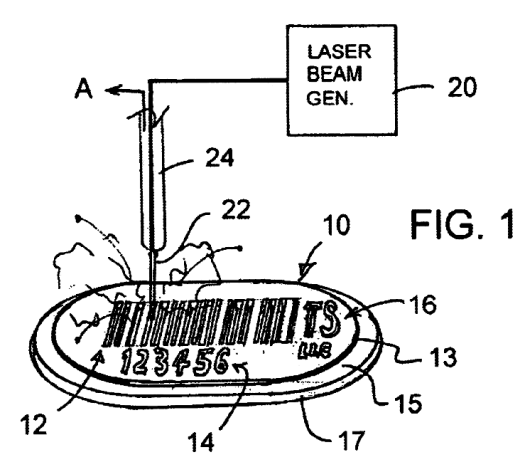
To the extent Plaintiff argues that any element below is not disclosed by Bielicki, a person of ordinary skill in the art would have found it obvious to combine the teachings of Bielicki with the background knowledge of a person of ordinary skill in the art and/or the additional references and exemplary teachings set forth in the chart below, to arrive at the claim limitation with a reasonable expectation of success. The chart below provides representative examples of where each element of each claim is found within Bielicki. Citations are meant to be exemplary, not exhaustive, and Revvo reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by Plaintiff. Citations to figures, drawings, tables, and the link include reference to any accompanying or related text. All internal cross-references are meant to incorporate the cross-referenced material as if fully set forth therein.

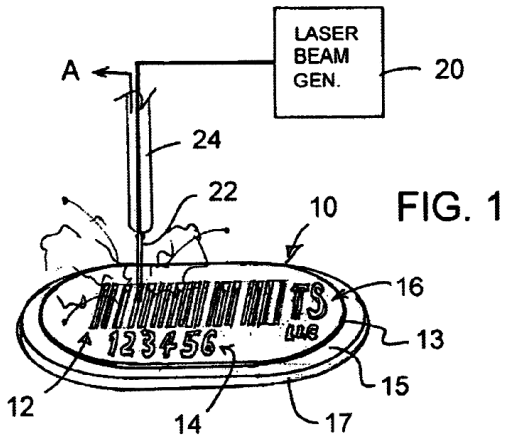
It is Revvo's position that Plaintiff's October 30, 2024 Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Revvo's statements below should not be treated as an admission, implication, or suggestion that Revvo agrees with Plaintiff regarding either the scope, construction, or interpretation of any of the Asserted Claims or the infringement theories advanced by Plaintiff in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Revvo has specified non-limiting examples of where its application of the prior art is based on Plaintiff's apparent application of the claim element. These statements are not intended to suggest that Revvo agrees with Plaintiff's application of any claim element, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or propose claim constructions until a later date.

Plaintiff has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Bielicki. Revvo therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if Plaintiff makes any such contention.

Where Revvo states that Bielicki "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

Patent Owner's Exhibit 2002
Revvo v Tire Stickers
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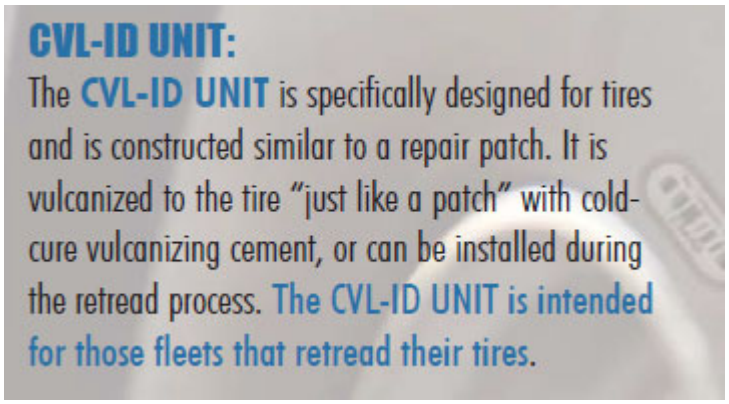
'027 Claim Element	Disclosures from Prior Art (Bielicki)
1[pre]. An assembly for attachment with a vulcanized rubber article comprising:	*To the extent that the preamble is limiting, Bielicki discloses, teaches, and/or suggests a display assembly for attachment with a vulcanized rubber article comprising. For example:* "A weather and wear resistant rubber ID unit for a tire with a selected pattern on the ID unit is made by scanning a outer layer of the rubber unit with a laser beam from a high powered CO_2 laser operated at a less than full power output, to ablate the outer layer in the form of the selected pattern to expose an inner layer of the unit which has a contrasting color. Loose and residue particles are removing using a vacuum and a cleaning fluid contain alcohol and a surface active agent such as soap. The fluid is rinsed away and the unit is dried for use." (Bielicki, Abstract.)  (Bielicki, Figure 1.) "The method starts by providing the multi-layered rubber ID unit **10** which has an outer layer **13** of one color, e.g. white, and at least one inner layer **15** of a contrasting color, e.g. black. There is also [] another bottom layer **17** beneath inner layer **15**, which acts as a bonding layer between the ID unit and a tire." (Bielicki, 3:30-35; *see also* the '027 patent, 4:25-28 ("the vulcanized article may be a rubber tire, where the display assembly is configured to be adhered to a portion of the rubber tire").) "The unit or patch **10** is supplied by Patch Rubber Company/Myers Industries, Inc. of Roanoke Rapids, N.C…." (Bielicki, 4:44-45.) *See also following limitations.*

'027 Claim Element	Disclosures from Prior Art (Bielicki)
[1a] an outer layer of elastomeric material having a visual feature; and	*Bielicki discloses, teaches, and/or suggests an outer layer of elastomeric material having a visual feature. For example:* "A weather and wear resistant rubber ID unit for a tire with a selected pattern on the ID unit is made by scanning a outer layer of the rubber unit with a laser beam from a high powered CO_2 laser operated at a less than full power output, to ablate the outer layer in the form of the selected pattern to expose an inner layer of the unit which has a contrasting color. Loose and residue particles are removing using a vacuum and a cleaning fluid contain alcohol and a surface active agent such as soap. The fluid is rinsed away and the unit is dried for use." (Bielicki, Abstract.)  FIG. 1 (Bielicki, Figure 1.) "The present invention relates generally to the field of marking rubber articles, and in particular to a new and useful laser-assisted method of cutting a selected pattern into a multi-layered workpiece, unit or patch, and to the resulting product itself." (Bielicki, 1:8-12.) "The unit can be used as part of a tire tracking, inventory and use system. To this end the unit must be economical to make and extremely resistant to wear and weathering, while being marked with individual, unique and serialized patterns, such as a bar code. This is particularly true where the system is used for truck tires." (Bielicki, 2:32-37; *compare with* the '027 patent, 5:27-37 ("the use of a patterned display layer… may be in the form of a barcode").) "The method starts by providing the multi-layered rubber ID unit **10** which has an outer layer **13** of one color, e.g. white, and at least one inner layer **15** of a contrasting color, e.g. black. There is

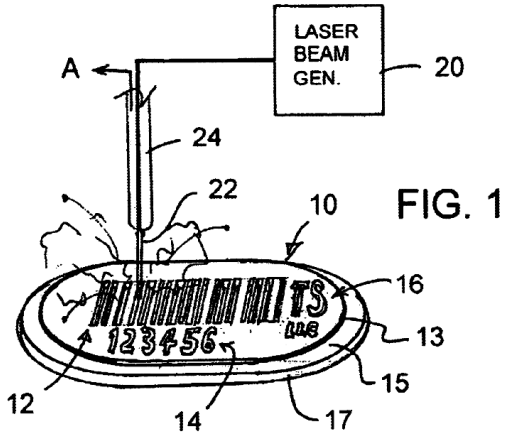
'027 Claim Element	Disclosures from Prior Art (Bielicki)
	also [] another bottom layer **17** beneath inner layer **15**, which acts as a bonding layer between the ID unit and a tire." (Bielicki, 3:30-35.) "The unit or patch **10** is supplied by Patch Rubber Company/Myers Industries, Inc. of Roanoke Rapids, N.C. As shown in FIG. 1, the unit or patch comprises an outer layer **13** of high durometer rubber material that is preferably 0.5 mm thick, but may be between 0.4 and 0.7 mm thick at a maximum. The term durometer is used in the art to signify a measurement of the hardness of a rubber material. A higher durometer will be more durable than a lower durometer product. In addition, a higher durometer rubber has a lower ablation rate than a lower durometer rubber. The outer layer **13** is preferably white to contrast other layers within the unit or patch. The ID unit **10** also comprises the inner layer **15**, which is preferably 1 mm thick, but may be between 0.8 and 1.5 mm thick. The inner layer **15** is also a rubber material with a lower durometer than the outer layer **13**. Therefore, in the preferred embodiment, the ablation rate of the outer layer is lower than the ablation rate of the ablation rate of the inner layer **15**. This has been confirmed by experiments that used the same laser **20** in a first and second pass to cut a first and second trough or groove into the ID unit. If the outer layer **13** had a greater ablation rate than the inner layer **15**, the depth of the first pass would have been slightly less than that of the second pass. However, if the outer **13** layer had a lower ablation rate than the inner layer **15**, the depth of the second pass would be more than twice that of the first pass." (Bielicki, 4:44-5:2.) "The inner layer **15** is preferably a black contrast to the white outer layer **13**. In addition, the inner layer **15** may also serve to block ultraviolet light that may cause staining of the outer white layer. For this reason the ID unit **10** also comprises a bottom layer **17**, which is a semi-cured gum rubber used as a bonding layer between the ID unit **10** and a tire. The bottom layer **17** is preferably 0.1 mm thick but may be as thick as 0.4 mm." (Bielicki, 5:22-29.)
[1b] an adhesive layer adhered to an interface surface of the outer layer, wherein at	*Bielicki discloses, teaches, and/or suggests an adhesive layer adhered to an interface surface of the outer layer, wherein at least a*

'027 Claim Element	Disclosures from Prior Art (Bielicki)
least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and	*portion of the outer layer adjacent the interface surface comprises a barrier material composition. For example:* "The unit or patch **10** is supplied by Patch Rubber Company/Myers Industries, Inc. of Roanoke Rapids, N.C. As shown in FIG. 1, the unit or patch comprises an outer layer **13** of high durometer rubber material that is preferably 0.5 mm thick, but may be between 0.4 and 0.7 mm thick at a maximum. The term durometer is used in the art to signify a measurement of the hardness of a rubber material. A higher durometer will be more durable than a lower durometer product. In addition, a higher durometer rubber has a lower ablation rate than a lower durometer rubber. The outer layer **13** is preferably white to contrast other layers within the unit or patch. The ID unit **10** also comprises the inner layer **15**, which is preferably 1 mm thick, but may be between 0.8 and 1.5 mm thick. The inner layer **15** is also a rubber material with a lower durometer than the outer layer **13**. Therefore, in the preferred embodiment, the ablation rate of the outer layer is lower than the ablation rate of the ablation rate of the inner layer **15**. This has been confirmed by experiments that used the same laser **20** in a first and second pass to cut a first and second trough or groove into the ID unit. If the outer layer **13** had a greater ablation rate than the inner layer **15**, the depth of the first pass would have been slightly less than that of the second pass. However, if the outer **13** layer had a lower ablation rate than the inner layer **15**, the depth of the second pass would be more than twice that of the first pass." (Bielicki, 4:44-5:2.) "The inner layer **15** is preferably a black contrast to the white outer layer **13**. In addition, the inner layer **15** may also serve to block ultraviolet light that may cause staining of the outer white layer. For this reason the ID unit **10** also comprises a bottom layer **17**, which is a semi-cured gum rubber used as a bonding layer between the ID unit **10** and a tire. The bottom layer **17** is preferably 0.1 mm thick but may be as thick as 0.4 mm. Alternatively, the ID unit **10** may also have other layers between the inner layer **15** and the bottom layer **17** which assist in blocking active oxidants in tires from blackening or browning the white outer layer **13**. These additional layers are preferably black and 1 mm thick. However, they may be as thick as 1.5 mm." (Bielicki, 5:22-35.)

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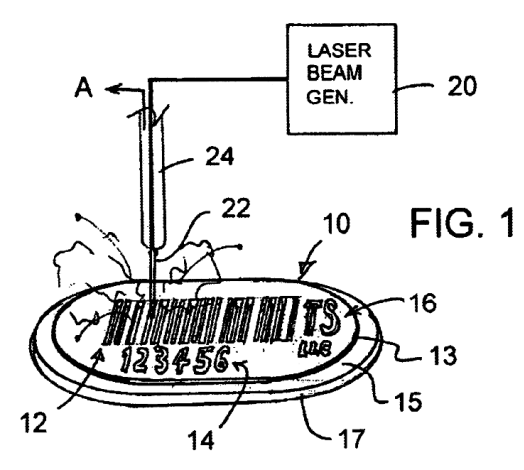
'027 Claim Element	Disclosures from Prior Art (Bielicki)
[1c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.	*Bielicki discloses, teaches, and/or suggests wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article. For example:* "The method starts by providing the multi-layered rubber ID unit **10** which has an outer layer **13** of one color, e.g. white, and at least one inner layer **15** of a contrasting color, e.g. black. There is also [] another bottom layer **17** beneath inner layer **15**, which acts as a bonding layer between the ID unit and a tire." (Bielicki, 3:30-35.) "The inner layer **15** is preferably a black contrast to the white outer layer **13**. In addition, the inner layer **15** may also serve to block ultraviolet light that may cause staining of the outer white layer. For this reason the ID unit **10** also comprises a bottom layer **17**, which is a semi-cured gum rubber used as a bonding layer between the ID unit **10** and a tire. The bottom layer **17** is preferably 0.1 mm thick but may be as thick as 0.4 mm." (Bielicki, 5:22-29.)  (Tire-Track Brochure (2011), p.3)  (Tire-Track Brochure (2009), p.4)

'027 Claim Element	Disclosures from Prior Art (Bielicki)
	"The unit or patch **10** is supplied by Patch Rubber Company/Myers Industries, Inc. of Roanoke Rapids, N.C…." (Bielicki, 4:44-45.)
5. The assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article.	*Bielicki discloses, teaches, and/or suggests the assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article. For example:* "The unit or patch **10** is supplied by Patch Rubber Company/Myers Industries, Inc. of Roanoke Rapids, N.C. As shown in FIG. 1, the unit or patch comprises an outer layer **13** of high durometer rubber material that is preferably 0.5 mm thick, but may be between 0.4 and 0.7 mm thick at a maximum. The term durometer is used in the art to signify a measurement of the hardness of a rubber material. A higher durometer will be more durable than a lower durometer product. In addition, a higher durometer rubber has a lower ablation rate than a lower durometer rubber. The outer layer **13** is preferably white to contrast other layers within the unit or patch. The ID unit **10** also comprises the inner layer **15**, which is preferably 1 mm thick, but may be between 0.8 and 1.5 mm thick. The inner layer **15** is also a rubber material with a lower durometer than the outer layer **13**. Therefore, in the preferred embodiment, the ablation rate of the outer layer is lower than the ablation rate of the ablation rate of the inner layer **15**. This has been confirmed by experiments that used the same laser **20** in a first and second pass to cut a first and second trough or groove into the ID unit. If the outer layer **13** had a greater ablation rate than the inner layer **15**, the depth of the first pass would have been slightly less than that of the second pass. However, if the outer **13** layer had a lower ablation rate than the inner layer **15**, the depth of the second pass would be more than twice that of the first pass." (Bielicki, 4:44-5:2.) "The inner layer **15** is preferably a black contrast to the white outer layer **13**. In addition, the inner layer **15** may also serve to block ultraviolet light that may cause staining of the outer white layer. For this reason the ID unit **10** also comprises a bottom layer **17**, which is a semi-cured gum rubber used as a bonding layer between the ID unit **10** and a tire. The bottom layer **17** is preferably 0.1 mm thick but may be as thick as 0.4 mm.

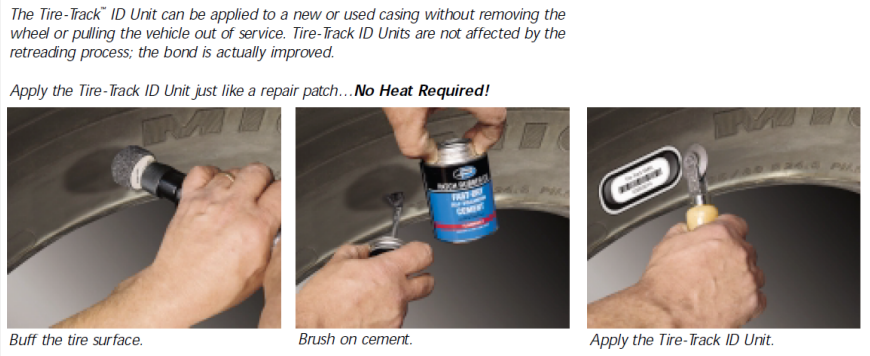
'027 Claim Element	Disclosures from Prior Art (Bielicki)
	Alternatively, the ID unit **10** may also have other layers between the inner layer **15** and the bottom layer **17** which assist in blocking active oxidants in tires from blackening or browning the white outer layer **13**. These additional layers are preferably black and 1 mm thick. However, they may be as thick as 1.5 mm." (Bielicki, 5:22-35.)
7. The assembly as recited in claim 1 further comprising a cavity disposed therein.	*Bielicki discloses, teaches, and/or suggests the assembly as recited in claim 1 further comprising a cavity disposed therein. For example:* "A weather and wear resistant rubber ID unit for a tire with a selected pattern on the ID unit is made by scanning a outer layer of the rubber unit with a laser beam from a high powered CO_2 laser operated at a less than full power output, to ablate the outer layer in the form of the selected pattern to expose an inner layer of the unit which has a contrasting color. Loose and residue particles are removing using a vacuum and a cleaning fluid contain alcohol and a surface active agent such as soap. The fluid is rinsed away and the unit is dried for use." (Bielicki, Abstract.)  FIG. 1 (Bielicki, Figure 1.) "The present invention relates generally to the field of marking rubber articles, and in particular to a new and useful laser-assisted method of cutting a selected pattern into a multi-layered workpiece, unit or patch, and to the resulting product itself." (Bielicki, 1:8-12.)

'027 Claim Element	Disclosures from Prior Art (Bielicki)
	 (Tire-Track Brochure (2011), p. 3.)
8. The assembly as recited in claim 7 further comprising an element disposed within the cavity.	*Bielicki discloses, teaches, and/or suggests the assembly as recited in claim 7 further comprising an element disposed within the cavity. For example:*  (Tire-Track Brochure (2011), p. 3.)
9. The assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer.	*Bielicki discloses, teaches, and/or suggests the assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer. For example:*  (Tire-Track Brochure (2011), p. 3.)

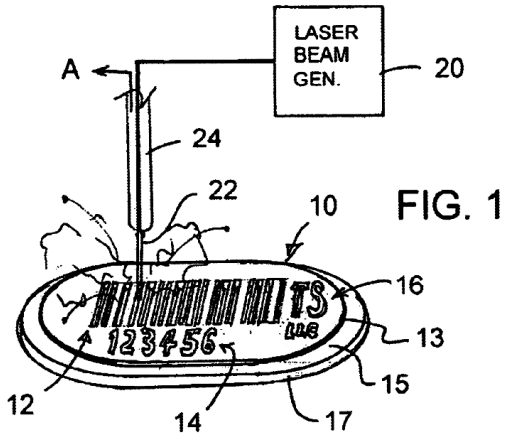
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'027 Claim Element	Disclosures from Prior Art (Bielicki)
11[pre]. A method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of:	*To the extent that the preamble is limiting, Bielicki discloses, teaches, and/or suggests a method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of. For example:* "A weather and wear resistant rubber ID unit for a tire with a selected pattern on the ID unit is made by scanning a outer layer of the rubber unit with a laser beam from a high powered CO_2 laser operated at a less than full power output, to ablate the outer layer in the form of the selected pattern to expose an inner layer of the unit which has a contrasting color. Loose and residue particles are removing using a vacuum and a cleaning fluid contain alcohol and a surface active agent such as soap. The fluid is rinsed away and the unit is dried for use." (Bielicki, Abstract.)  (Bielicki, Figure 1.) "The method starts by providing the multi-layered rubber ID unit **10** which has an outer layer **13** of one color, e.g. white, and at least one inner layer **15** of a contrasting color, e.g. black. There is also [] another bottom layer **17** beneath inner layer **15**, which acts as a bonding layer between the ID unit and a tire." (Bielicki, 3:30-35; *see also* the '027 patent, 4:25-28 ("the vulcanized article may be a rubber tire, where the display assembly is configured to be adhered to a portion of the rubber tire").) "The unit or patch **10** is supplied by Patch Rubber Company/Myers Industries, Inc. of Roanoke Rapids, N.C…." (Bielicki, 4:44-45.) "The inner layer **15** is preferably a black contrast to the white outer layer **13**. In addition, the inner layer **15** may also serve to block ultraviolet light that may cause staining of the outer white

'027 Claim Element	Disclosures from Prior Art (Bielicki)
	layer. For this reason the ID unit **10** also comprises a bottom layer **17**, which is a semi-cured gum rubber used as a bonding layer between the ID unit **10** and a tire. The bottom layer **17** is preferably 0.1 mm thick but may be as thick as 0.4 mm." (Bielicki, 5:22-29.) *See also following limitations.*
[11a] identifying a surface of a vulcanized rubber article;	*Bielicki discloses, teaches, and/or suggests identifying a surface of a vulcanized rubber article. For example:* *The Tire-Track™ ID Unit can be applied to a new or used casing without removing the wheel or pulling the vehicle out of service. Tire-Track ID Units are not affected by the retreading process; the bond is actually improved.* *Apply the Tire-Track ID Unit just like a repair patch…**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (Tire-Track Brochure (2009), p. 4.)
[11b] placing an assembly into contact with the identified surface, wherein the assembly comprises:	*Bielicki discloses, teaches, and/or suggests placing an assembly into contact with the identified surface, wherein the assembly comprises. For example:* "The method starts by providing the multi-layered rubber ID unit **10** which has an outer layer **13** of one color, e.g. white, and at least one inner layer **15** of a contrasting color, e.g. black. There is also [] another bottom layer **17** beneath inner layer **15**, which acts as a bonding layer between the ID unit and a tire." (Bielicki, 3:30-35; *see also* the '027 patent, 4:25-28 ("the vulcanized article may be a rubber tire, where the display assembly is configured to be adhered to a portion of the rubber tire").) "The unit or patch **10** is supplied by Patch Rubber Company/Myers Industries, Inc. of Roanoke Rapids, N.C…." (Bielicki, 4:44-45.) "The inner layer **15** is preferably a black contrast to the white outer layer **13**. In addition, the inner layer **15** may also serve

'027 Claim Element	Disclosures from Prior Art (Bielicki)
	to block ultraviolet light that may cause staining of the outer white layer. For this reason the ID unit **10** also comprises a bottom layer **17**, which is a semi-cured gum rubber used as a bonding layer between the ID unit **10** and a tire. The bottom layer **17** is preferably 0.1 mm thick but may be as thick as 0.4 mm." (Bielicki, 5:22-29.)  *The Tire-Track™ ID Unit can be applied to a new or used casing without removing the wheel or pulling the vehicle out of service. Tire-Track ID Units are not affected by the retreading process; the bond is actually improved.* *Apply the Tire-Track ID Unit just like a repair patch…**No Heat Required!*** *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (Tire-Track Brochure (2009), p. 4.)
[11c] an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article, and	*Bielicki discloses, teaches, and/or suggests an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article. For example:* *See* claims 1[a] and 1[b].
[11d] wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article.	*Bielicki discloses, teaches, and/or suggests the display assembly comprising: one or more display layers of elastomeric material constructed to provide a display indicia. For example:* *See* claims 1[b] and 5.
12. The method as recited in claim 11 further comprising preparing the identified surface before the step of placing.	*Bielicki discloses, teaches, and/or suggests the method as recited in claim 11 further comprising preparing the identified surface before the step of placing. For example:*

'027 Claim Element	Disclosures from Prior Art (Bielicki)
	The Tire-Track™ ID Unit can be applied to a new or used casing without removing the wheel or pulling the vehicle out of service. Tire-Track ID Units are not affected by the retreading process; the bond is actually improved. *Apply the Tire-Track ID Unit just like a repair patch…**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (Tire-Track Brochure (2009), p. 4.)
13. The method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing.	*Bielicki discloses, teaches, and/or suggests the method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing. For example:* *The Tire-Track™ ID Unit can be applied to a new or used casing without removing the wheel or pulling the vehicle out of service. Tire-Track ID Units are not affected by the retreading process; the bond is actually improved.* *Apply the Tire-Track ID Unit just like a repair patch…**No Heat Required!***  *Buff the tire surface.* *Brush on cement.* *Apply the Tire-Track ID Unit.* (Tire-Track Brochure (2009), p. 4.)
15[pre] A vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, Bielicki discloses, teaches, and/or suggests a vulcanized rubber tire comprising. For example:* "A weather and wear resistant rubber ID unit for a tire with a selected pattern on the ID unit is made by scanning a outer layer of the rubber unit with a laser beam from a high powered CO_2 laser operated at a less than full power output, to ablate the outer layer in the form of the selected pattern to expose an inner layer of the unit which has a contrasting color. Loose and residue particles are removing using a vacuum and a cleaning fluid contain alcohol and a surface active agent such as soap. The fluid is rinsed away and the unit is dried for use." (Bielicki, Abstract.)

’027 Claim Element	Disclosures from Prior Art (Bielicki)
	 FIG. 1 (Bielicki, Figure 1.) “The method starts by providing the multi-layered rubber ID unit **10** which has an outer layer **13** of one color, e.g. white, and at least one inner layer **15** of a contrasting color, e.g. black. There is also [] another bottom layer **17** beneath inner layer **15**, which acts as a bonding layer between the ID unit and a tire.” (Bielicki, 3:30-35; *see also* the ’027 patent, 4:25-28 (“the vulcanized article may be a rubber tire, where the display assembly is configured to be adhered to a portion of the rubber tire”).) “The unit or patch **10** is supplied by Patch Rubber Company/Myers Industries, Inc. of Roanoke Rapids, N.C….” (Bielicki, 4:44-45.) “The inner layer **15** is preferably a black contrast to the white outer layer **13**. In addition, the inner layer **15** may also serve to block ultraviolet light that may cause staining of the outer white layer. For this reason the ID unit **10** also comprises a bottom layer **17**, which is a semi-cured gum rubber used as a bonding layer between the ID unit **10** and a tire. The bottom layer **17** is preferably 0.1 mm thick but may be as thick as 0.4 mm.” (Bielicki, 5:22-29.) *See also following limitations.*
[15a] a target surface disposed along a portion of the rubber tire;	*Bielicki discloses, teaches, and/or suggests a target surface disposed along a portion of the rubber tire. For example:* *See* claim 11[a].

'027 Claim Element	Disclosures from Prior Art (Bielicki)
[15b] an assembly disposed onto the target surface and comprising:	*Bielicki discloses, teaches, and/or suggests an assembly disposed onto the target surface and comprising. For example:* *See* claim 11[b].
[15c] an outer layer of elastomeric material; and	*Bielicki discloses, teaches, and/or suggests an outer layer of elastomeric material. For example:* *See* claims 1[a] and 11[c].
[15d] an adhesive layer connected with the outer layer;	*Bielicki discloses, teaches, and/or suggests an adhesive layer connected with the outer layer. For example:* *See* claims 1[b] and 11[c].
[15e] wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire.	*Bielicki discloses, teaches, and/or suggests wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire. For example:* *See* claims 1[b], 5 and 11[c].
16. The rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein.	*Bielicki discloses, teaches, and/or suggests the rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein. For example:* *See* claim 7.
17. The rubber tire as recited in claim 16 wherein an element is disposed within the cavity.	*Bielicki discloses, teaches, and/or suggests the rubber tire as recited in claim 16 wherein an element is disposed within the cavity. For example:* *See* claim 8.
18. The rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer.	*Bielicki discloses, teaches, and/or suggests the rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer. For example:* *See* claim 9.
19[pre] An assembly for attachment to a vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, Bielicki discloses, teaches, and/or suggests an assembly for attachment to a vulcanized rubber tire comprising. For example:* *See* claim 1[pre].

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'027 Claim Element	Disclosures from Prior Art (Bielicki)
	See also following limitations.
[19a] an outer layer formed from an elastomeric material;	*Bielicki discloses, teaches, and/or suggests an outer layer formed from an elastomeric material. For example:* *See* claim 1[a].
[19b] an adhesive layer bonding the assembly to portion of a vulcanized rubber tire; and	*Bielicki discloses, teaches, and/or suggests an adhesive layer bonding the assembly to portion of a vulcanized rubber tire. For example:* *See* claim 1[b].
[19c] a cavity disposed within the assembly for accommodating an element therein;	*Bielicki discloses, teaches, and/or suggests a cavity disposed within the assembly for accommodating an element therein. For example:* *See* claims 7 and 8.
[19d] wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire.	*Bielicki discloses, teaches, and/or suggests wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire. For example:* *See* claims 1[b], 5 and 11[c].
20. The assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer.	*Bielicki discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer. For example:* *See* claim 9.
21. The assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer.	*Bielicki discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer. For example:* *See* claim 1[b].
22. The assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface.	*Bielicki discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface. For example:* *See* claim 1[a].

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Invalidity Claim Chart Against U.S. Patent No. 11,124,027 ("'027 Patent")
Based on U.S. Patent No. 7,009,506 ("Wilson")

U.S. Patent No. 7,009,506 ("Wilson") was filed on July 9, 2002 and issued on March 7, 2006. Wilson qualifies as prior art under at least 35 U.S.C. § 102(a)(1). Wilson anticipates and/or renders obvious the Asserted Claims of the '027 Patent (at least as Revvo understands Plaintiff's application of the Asserted Claims in an effort to show infringement).

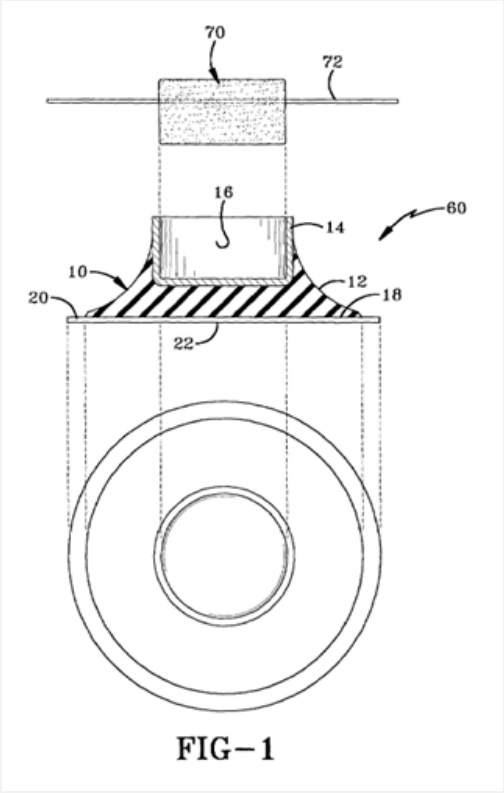
To the extent Plaintiff argues that any element below is not disclosed by Wilson, a person of ordinary skill in the art would have found it obvious to combine the teachings of Wilson with the background knowledge of a person of ordinary skill in the art and/or the additional references and exemplary teachings set forth in the chart below, to arrive at the claim limitation with a reasonable expectation of success. The chart below provides representative examples of where each element of each claim is found within Wilson. Citations are meant to be exemplary, not exhaustive, and Revvo reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by Plaintiff. Citations to figures, drawings, tables, and the link include reference to any accompanying or related text. All internal cross-references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Revvo's position that Plaintiff's October 30, 2024 Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Revvo's statements below should not be treated as an admission, implication, or suggestion that Revvo agrees with Plaintiff regarding either the scope, construction, or interpretation of any of the Asserted Claims or the infringement theories advanced by Plaintiff in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Revvo has specified non-limiting examples of where its application of the prior art is based on Plaintiff's apparent application of the claim element. These statements are not intended to suggest that Revvo agrees with Plaintiff's application of any claim element, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or propose claim constructions until a later date.

Plaintiff has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Wilson. Revvo therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if Plaintiff makes any such contention.

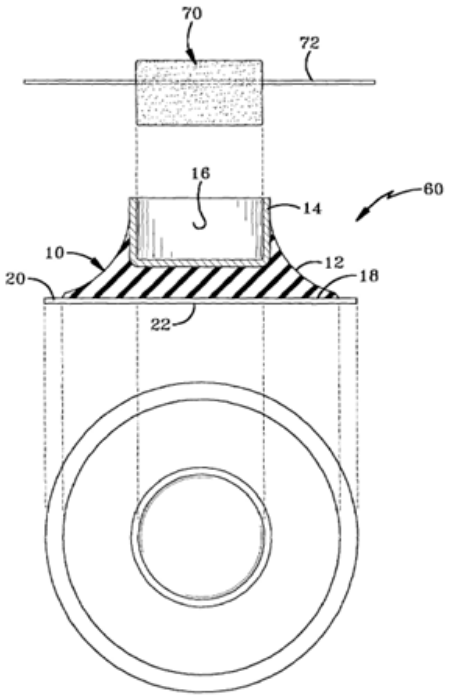
Where Revvo states that Wilson "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

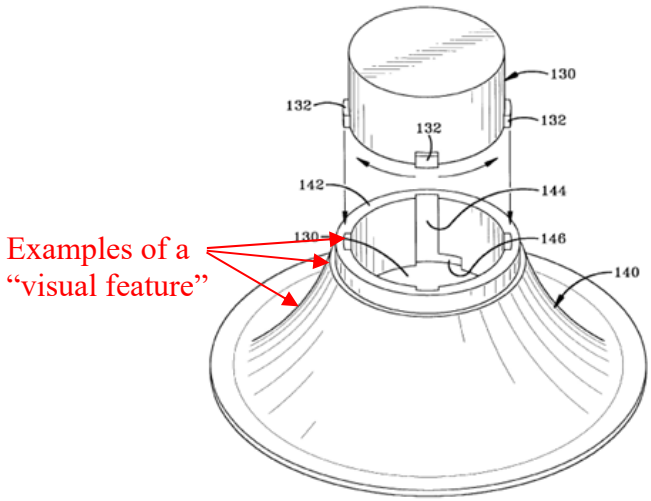
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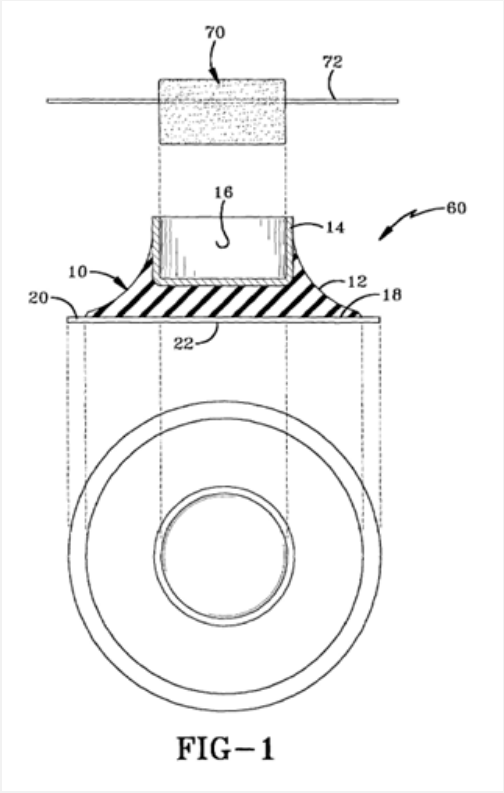
'027 Claim Element	Disclosures from Prior Art (Wilson)
1[pre]. An assembly for attachment with a vulcanized rubber article comprising:	*To the extent that the preamble is limiting, Wilson discloses, teaches, and/or suggests a display assembly for attachment with a vulcanized rubber article comprising. For example:* "A monitoring device and patch assembly includes a patch that removably and re-attachably holds the monitoring device. The patch is adapted to connect the monitoring device to a pneumatic tire when the monitoring device is held by the patch. The patch is configured to hold a monitoring device having a rounded outer surface. The patch holds the rounded monitoring device by having a resilient tube with an outlet having a diameter smaller than the diameter of the monitoring device. The monitoring device of the invention includes a feature that allows it to be removed from the patch." (Wilson, Abstract.)  FIG−1 "FIG. 1 shows a rubber patch **10** of the present invention. The patch **10** has a first side **12** which includes a housing **14** with a cavity **16** of a preselected configuration. As shown in FIG. 1, the housing **14** has a cavity **16** which is cylindrical, although the cavity **16** may be of any convenient configuration, as will become apparent from the description which follows. The patch has a second opposite side **18** approximating the contour of an innerliner of a tire (not shown). In a preferred embodiment, the

'027 Claim Element	Disclosures from Prior Art (Wilson)
	rubber patch is vulcanized and then assembled to the vulcanized tire. Although any method for assembling the vulcanized rubber patch to the vulcanized tire, one acceptable and preferred method is set forth in U.S. Pat. No. 5,971,046; the disclosures of which are incorporated herein by reference. In accordance with the referenced application, the patch may be a rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. The second side **18** of the patch **10** approximates the contour of an innerliner of a tire. The contour of the second side **18** preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. Affixed to the second side **18** of the vulcanized tire patch is a dual cure bonding layer **20**, which has a first side (not shown) and a second side **22**. This dual cure bonding layer may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer is permanently assembled to the patch to form patch assembly **60**. A non-curing cement (not shown) is applied to side **18** of the patch in order to hold the dual cure bonding layer **20** onto the patch. Exemplary non-curing cement and an exemplary dual cure bonding layer are products of Patch Rubber Company. The important feature of the dual cure bonding layer is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer may be any material which can be activated and cured to the vulcanized rubber of the tire innerliner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy-two (72)

'027 Claim Element	Disclosures from Prior Art (Wilson)
	hours. However, if more rapid curing is desired, this may be accomplished by heating to 45° C. for at least twenty-four hours. Referring now to FIG. 2, patch assembly **60** is then assembled to the innerliner **75** of tire **71**. Activating cement is first applied to second side **22** of dual cure bonding layer **20**. The patch assembly is then stitched to the innerliner of the vulcanized tire and the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire innerliner **75**, until the curing cycle is completed." (Wilson, 3:35-4:37.) *See also following limitations.*
[1a] an outer layer of elastomeric material having a visual feature; and	*Wilson discloses, teaches, and/or suggests an outer layer of elastomeric material having a visual feature. For example:* "FIG. 1 shows a rubber patch **10** of the present invention. The patch **10** has a first side **12** which includes a housing **14** with a cavity **16** of a preselected configuration. As shown in FIG. 1, the housing **14** has a cavity **16** which is cylindrical, although the cavity **16** may be of any convenient configuration, as will become apparent from the description which follows. The patch has a second opposite side **18** approximating the contour of an innerliner of a tire (not shown). In a preferred embodiment, the rubber patch is vulcanized and then assembled to the vulcanized tire. Although any method for assembling the vulcanized rubber patch to the vulcanized tire, one acceptable and preferred method is set forth in U.S. Pat. No. 5,971,046; the disclosures of which are incorporated herein by reference. **In accordance with the referenced application, the patch may be a rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber.** Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. The second side **18** of the patch **10** approximates the

’027 Claim Element	Disclosures from Prior Art (Wilson)
	contour of an innerliner of a tire. The contour of the second side **18** preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour.” (Wilson, 3:35-67 (emphasis added).)  FIG−1 *Compare with* the ’027 patent, 4:62-66 (“the display layer may be constructed to have a desired color… or shape… useful to provide a desired display image or indicia or function”).

’027 Claim Element	Disclosures from Prior Art (Wilson)
	 FIG–9 *Compare with* the ’027 patent, 4:62-66 (“the display layer may be constructed to have a desired color… or shape… useful to provide a desired display image or indicia or function”).
[1b] an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and	*Wilson discloses, teaches, and/or suggests an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition. For example:* “FIG. 1 shows a rubber patch **10** of the present invention. The patch **10** has a first side **12** which includes a housing **14** with a cavity **16** of a preselected configuration. As shown in FIG. 1, the housing **14** has a cavity **16** which is cylindrical, although the cavity **16** may be of any convenient configuration, as will become apparent from the description which follows. The patch has a second opposite side **18** approximating the contour of an innerliner of a tire (not shown). In a preferred embodiment, the rubber patch is vulcanized and then assembled to the vulcanized tire. Although any method for assembling the vulcanized rubber patch to the vulcanized tire, one acceptable and preferred method is set forth in U.S. Pat. No. 5,971,046; the disclosures of which are incorporated herein by reference. **In accordance with the referenced application, the patch may be a rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber.** Typically, patches made of

’027 Claim Element	Disclosures from Prior Art (Wilson)
	these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. The second side **18** of the patch **10** approximates the contour of an innerliner of a tire. The contour of the second side **18** preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour.” (Wilson, 3:35-67 (emphasis added).)  FIG−1 “Affixed to the second side **18** of the vulcanized tire patch is a dual cure bonding layer **20**, which has a first side (not shown) and a second side **22**. This dual cure bonding layer may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer is permanently assembled to the patch to form patch assembly **60**. A non-curing cement (not shown) is applied to side **18** of the patch in order to hold the dual cure bonding layer **20** onto the patch. Exemplary non-curing cement and an exemplary dual cure bonding layer are products of Patch

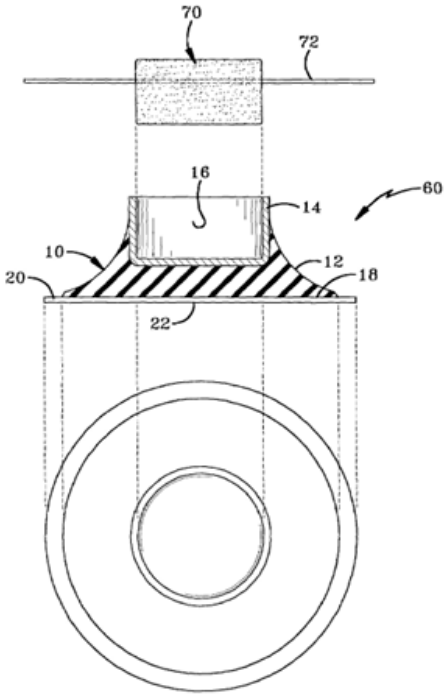
'027 Claim Element	Disclosures from Prior Art (Wilson)
	Rubber Company. The important feature of the dual cure bonding layer is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer may be any material which can be activated and cured to the vulcanized rubber of the tire innerliner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy-two (72) hours. However, if more rapid curing is desired, this may be accomplished by heating to 45° C. for at least twenty-four hours." (Wilson, 4:1-25.)
[1c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.	*Wilson discloses, teaches, and/or suggests wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article. For example:* "Affixed to the second side **18** of the vulcanized tire patch is a dual cure bonding layer **20**, which has a first side (not shown) and a second side **22**. This dual cure bonding layer may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer is permanently assembled to the patch to form patch assembly **60**. A non-curing cement (not shown) is applied to side **18** of the patch in order to hold the dual cure bonding layer **20** onto the patch. **Exemplary non-curing cement and an exemplary dual cure bonding layer are products of Patch Rubber Company. The important feature of the dual cure bonding layer is that it can be chemically activated and cured, without the need for heating to an elevated temperature.** The process is diffusion controlled, however, and some minimal heating will speed the curing process. **The dual cure bonding layer may be any material which can be activated and cured to the vulcanized rubber of the tire innerliner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber.** The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy-two (72) hours. However, if more rapid curing is desired, this may be accomplished by heating to 45° C. for at least twenty-four hours.

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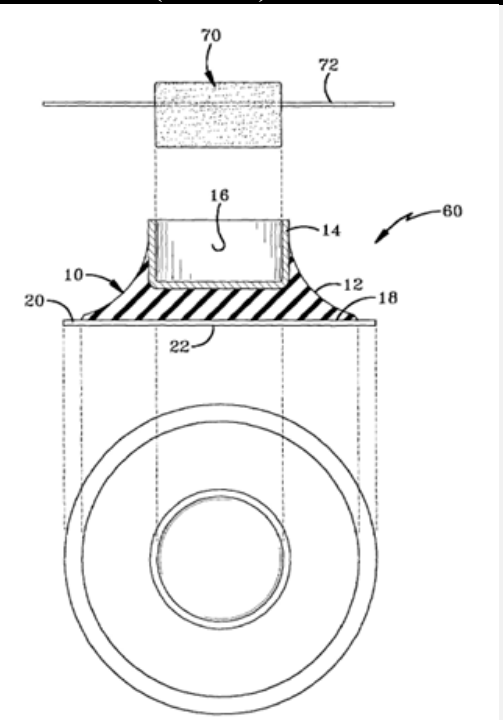
'027 Claim Element	Disclosures from Prior Art (Wilson)
	Referring now to FIG. 2, patch assembly 60 is then assembled to the innerliner 75 of tire 71. Activating cement is first applied to second side 22 of dual cure bonding layer 20. The patch assembly is then stitched to the innerliner of the vulcanized tire and the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire innerliner 75, until the curing cycle is completed." (Wilson, 4:1-37 (emphasis added).)
5. The assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article.	*Wilson discloses, teaches, and/or suggests the assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article. For example:* "FIG. 1 shows a rubber patch **10** of the present invention. The patch **10** has a first side **12** which includes a housing **14** with a cavity **16** of a preselected configuration. As shown in FIG. 1, the housing **14** has a cavity **16** which is cylindrical, although the cavity **16** may be of any convenient configuration, as will become apparent from the description which follows. The patch has a second opposite side **18** approximating the contour of an innerliner of a tire (not shown). In a preferred embodiment, the rubber patch is vulcanized and then assembled to the vulcanized tire. Although any method for assembling the vulcanized rubber patch to the vulcanized tire, one acceptable and preferred method is set forth in U.S. Pat. No. 5,971,046; the disclosures of which are incorporated herein by reference. **In accordance with the referenced application, the patch may be a rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber.** Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. The second side **18** of the patch **10** approximates the contour of an innerliner of a tire. The contour of the second side **18** preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires.

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'027 Claim Element	Disclosures from Prior Art (Wilson)
	For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour." (Wilson, 3:35-67 (emphasis added).)
7. The assembly as recited in claim 1 further comprising a cavity disposed therein.	*Wilson discloses, teaches, and/or suggests the assembly as recited in claim 1 further comprising a cavity disposed therein. For example:* "FIG. 1 shows a rubber patch **10** of the present invention. **The patch 10 has a first side 12 which includes a housing 14 with a cavity 16 of a preselected configuration.** As shown in FIG. 1, the housing **14** has a cavity **16** which is cylindrical, although the cavity **16** may be of any convenient configuration, as will become apparent from the description which follows. The patch has a second opposite side **18** approximating the contour of an innerliner of a tire (not shown). In a preferred embodiment, the rubber patch is vulcanized and then assembled to the vulcanized tire. Although any method for assembling the vulcanized rubber patch to the vulcanized tire, one acceptable and preferred method is set forth in U.S. Pat. No. 5,971,046; the disclosures of which are incorporated herein by reference. In accordance with the referenced application, the patch may be a rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. The second side **18** of the patch **10** approximates the contour of an innerliner of a tire. The contour of the second side **18** preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour." (Wilson, 3:35-67 (emphasis added).)

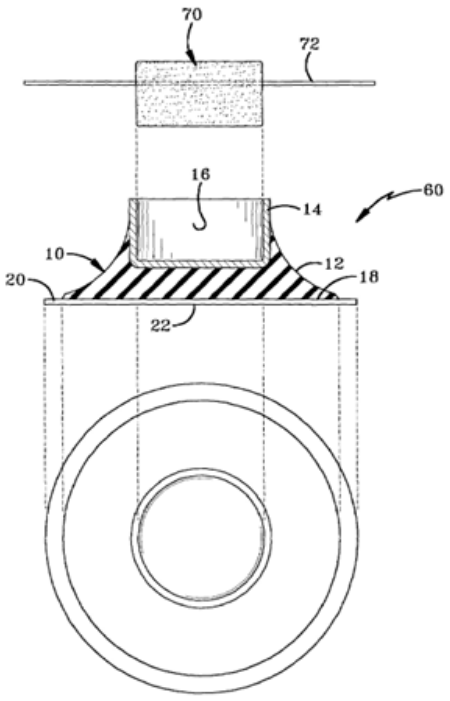
'027 Claim Element	Disclosures from Prior Art (Wilson)
	 FIG−1 (*See also* Wilson, Figures 6-15, 17-19 and related descriptions.)
8. The assembly as recited in claim 7 further comprising an element disposed within the cavity.	*Wilson discloses, teaches, and/or suggests the assembly as recited in claim 7 further comprising an element disposed within the cavity. For example:* "A monitoring device and patch assembly includes a patch that removably and re-attachably holds the monitoring device. The patch is adapted to connect the monitoring device to a pneumatic tire when the monitoring device is held by the patch. The patch is configured to hold a monitoring device having a rounded outer surface. The patch holds the rounded monitoring device by having a resilient tube with an outlet having a diameter smaller than the diameter of the monitoring device. The monitoring device of the invention includes a feature that allows it to be removed from the patch." (Wilson, Abstract.)

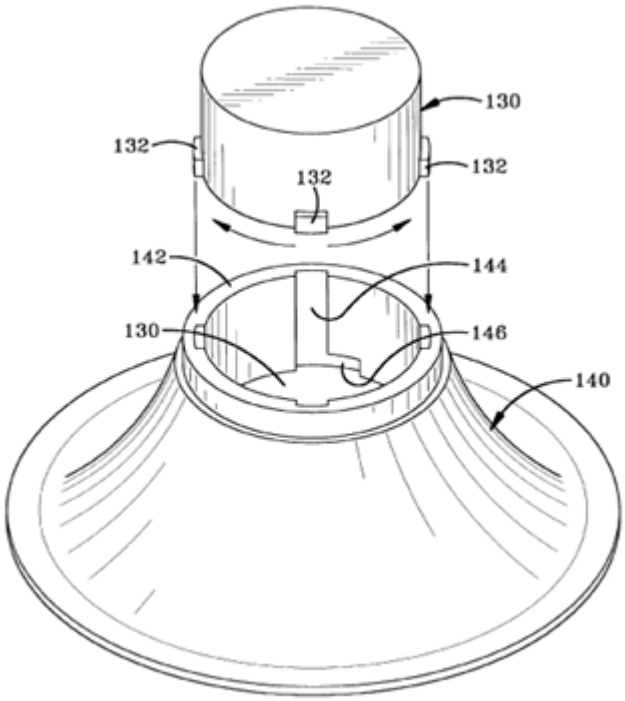
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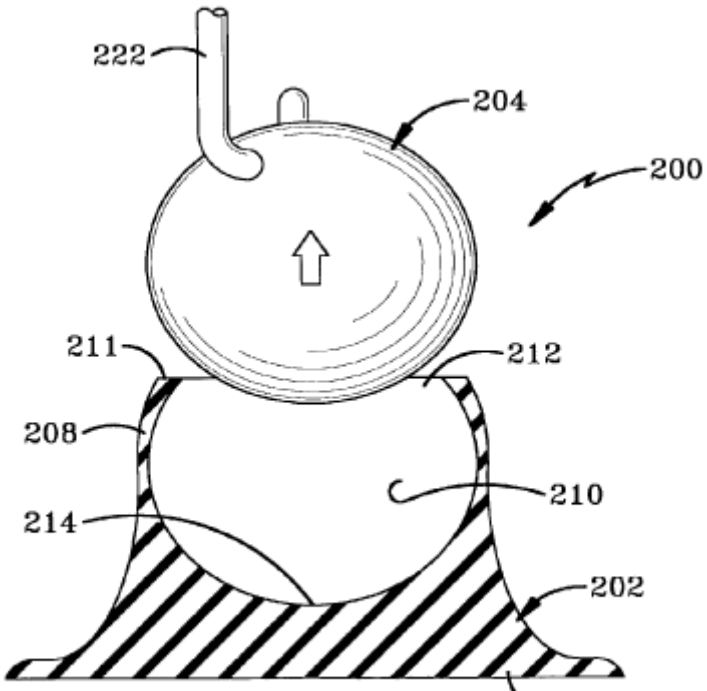
’027 Claim Element	Disclosures from Prior Art (Wilson)
	 FIG−1 “The tag assembly **70** may be of any configuration which allows it to fit within the contour of the cavity **16**, both of which are cylindrical in the embodiment shown in FIG. 1. In the preferred embodiment, tag assembly **70** is assembled into the cavity **16** as shown in FIG. 6. Since the rubber patch assembly can be attached to the tire using an air cure or low temperature cure, it is understood that the sequence of assembling the tag assembly into the rubber patch housing may be accomplished either before or after the rubber patch is attached to the tire innerliner. Tag assembly includes an optional antenna **72**. Housing **14** includes slots **74** to receive the antenna. After the tag assembly **70** is in place within the cavity, at least one lock pin **76** is inserted through a first aperture **78** in housing **80**. As shown in FIG. 6, lock pin **76** is positioned across at least a portion of the top of tag assembly **70**, preferably through a second aperture **82** on the opposite side of the housing. Alternatively, lock pin **76** could extend into the potting of tag assembly **70**.” (Wilson, 5:7-24.) “In yet another embodiment, depicted in FIG. 9, tag assembly **130** is formed with at least one tab **132**, while housing **142** of rubber patch **140** is formed with slots **144** corresponding to tabs on tag assembly **130**. At the

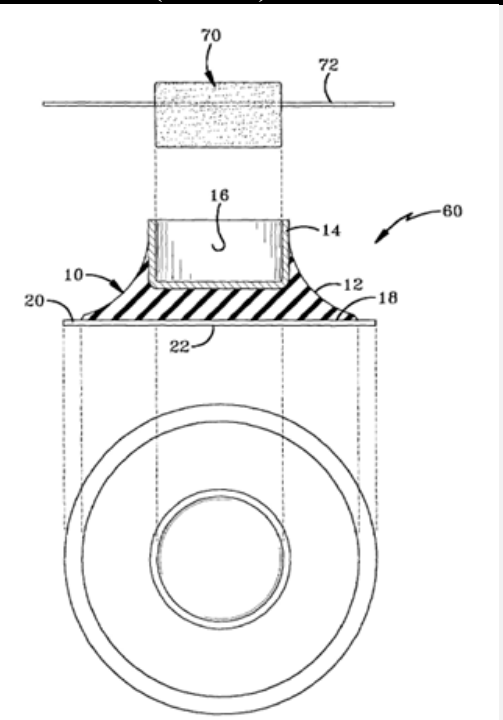
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'027 Claim Element	Disclosures from Prior Art (Wilson)
	bottom of the slots is a ring **146** having an internal diameter corresponding to the slot depth on the housing and extending from each slot at least partially around the housing bottom. Once tabs **132** of tag assembly **130** are mated with slots **144** of rubber patch and tag assembly **130** is inserted into housing **142**, tag assembly **130** is rotated sufficiently so that tabs **132** are rotated into ring **146** and no longer are aligned with slots **144**, locking the tag assembly to rubber patch **140**. An optional locking mechanism, such as discussed previously, may be added to lock tag assembly **130** to rubber patch **140** if there is a concern about rotation of tag assembly **130** with respect to rubber patch assembly. Another method of locking tag assembly **130** to rubber patch **140** is to insert a piece of material (not shown) into at least one slot **144**, for example by an interference fit between the slot and the material, so that in the event of rotation of the parts with respect to one another, even if the tabs **132** and slots become aligned, tabs **132** are prevented from moving axially in the slot. It is obvious that an equivalent structure can be achieved by reversing the arrangement of slots **144**, ring **146** and tabs **132** between tab assembly **130** and housing **142**. In this arrangement, at least one tab is formed in the housing and at least one slot corresponding to tabs is formed in tab assembly." (Wilson, 6:17-44.) (*See also* Wilson, 4:38-5:6, etc.)
9. The assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer.	*Wilson discloses, teaches, and/or suggests the assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer. For example:* "FIG. 1 shows a rubber patch **10** of the present invention. The patch 10 has a first side 12 which includes a housing 14 with a cavity 16 of a preselected configuration. As shown in FIG. 1, the housing **14** has a cavity **16** which is cylindrical, although the cavity **16** may be of any convenient configuration, as will become apparent from the description which follows. The patch has a second opposite side **18** approximating the contour of an innerliner of a tire (not shown). In a preferred embodiment, the rubber patch is vulcanized and then assembled to the vulcanized tire. Although any method for assembling the vulcanized rubber patch to the vulcanized tire, one acceptable and preferred method is set forth in U.S. Pat. No. 5,971,046; the disclosures of which are incorporated herein by reference. In accordance with the

'027 Claim Element	Disclosures from Prior Art (Wilson)
	referenced application, the patch may be a rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. The second side **18** of the patch **10** approximates the contour of an innerliner of a tire. The contour of the second side **18** preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour." (Wilson, 3:35-67.)  FIG−1

’027 Claim Element	Disclosures from Prior Art (Wilson)
	 FIG−9

’027 Claim Element	Disclosures from Prior Art (Wilson)
	 FIG–13
11[pre]. A method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of:	*To the extent that the preamble is limiting, Wilson discloses, teaches, and/or suggests a method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of. For example:* “A monitoring device and patch assembly includes a patch that removably and re-attachably holds the monitoring device. The patch is adapted to connect the monitoring device to a pneumatic tire when the monitoring device is held by the patch. The patch is configured to hold a monitoring device having a rounded outer surface. The patch holds the rounded monitoring device by having a resilient tube with an outlet having a diameter smaller than the diameter of the monitoring device. The monitoring device of the invention includes a feature that allows it to be removed from the patch.” (Wilson, Abstract.)

’027 Claim Element	Disclosures from Prior Art (Wilson)
	 FIG−1 “FIG. 1 shows a rubber patch **10** of the present invention. The patch **10** has a first side **12** which includes a housing **14** with a cavity **16** of a preselected configuration. As shown in FIG. 1, the housing **14** has a cavity **16** which is cylindrical, although the cavity **16** may be of any convenient configuration, as will become apparent from the description which follows. The patch has a second opposite side **18** approximating the contour of an innerliner of a tire (not shown). In a preferred embodiment, the rubber patch is vulcanized and then assembled to the vulcanized tire. Although any method for assembling the vulcanized rubber patch to the vulcanized tire, one acceptable and preferred method is set forth in U.S. Pat. No. 5,971,046; the disclosures of which are incorporated herein by reference. In accordance with the referenced application, the patch may be a rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve

'027 Claim Element	Disclosures from Prior Art (Wilson)
	sufficient curing of the patch for further assembly. The second side **18** of the patch **10** approximates the contour of an innerliner of a tire. The contour of the second side **18** preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. Affixed to the second side **18** of the vulcanized tire patch is a dual cure bonding layer **20**, which has a first side (not shown) and a second side **22**. This dual cure bonding layer may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer is permanently assembled to the patch to form patch assembly **60**. A non-curing cement (not shown) is applied to side **18** of the patch in order to hold the dual cure bonding layer **20** onto the patch. Exemplary non-curing cement and an exemplary dual cure bonding layer are products of Patch Rubber Company. The important feature of the dual cure bonding layer is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer may be any material which can be activated and cured to the vulcanized rubber of the tire innerliner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy-two (72) hours. However, if more rapid curing is desired, this may be accomplished by heating to 45° C. for at least twenty-four hours. Referring now to FIG. 2, patch assembly **60** is then assembled to the innerliner **75** of tire **71**. Activating cement is first applied to second side **22** of dual cure bonding layer **20**. The patch assembly is then stitched to the innerliner of the vulcanized tire and the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire innerliner **75**, until the curing cycle is completed." (Wilson, 3:35-4:37.)

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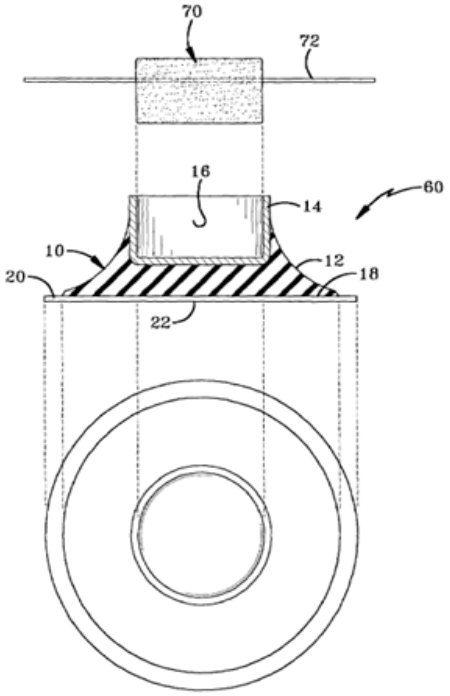
'027 Claim Element	Disclosures from Prior Art (Wilson)
	See also following limitations.
[11a] identifying a surface of a vulcanized rubber article;	*Wilson discloses, teaches, and/or suggests identifying a surface of a vulcanized rubber article. For example:* "Referring now to FIG. 2, patch assembly **60** is then assembled to the innerliner **75** of tire **71**. Activating cement is first applied to second side **22** of dual cure bonding layer **20**. The patch assembly is then stitched to the innerliner of the vulcanized tire and the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire innerliner **75**, until the curing cycle is completed." (Wilson, 4:26-37.)
[11b] placing an assembly into contact with the identified surface, wherein the assembly comprises:	*Wilson discloses, teaches, and/or suggests placing an assembly into contact with the identified surface, wherein the assembly comprises. For example:* "Referring now to FIG. 2, patch assembly **60** is then assembled to the innerliner **75** of tire **71**. Activating cement is first applied to second side **22** of dual cure bonding layer **20**. The patch assembly is then stitched to the innerliner of the vulcanized tire and the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire innerliner **75**, until the curing cycle is completed." (Wilson, 4:26-37.)
[11c] an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article, and	*Wilson discloses, teaches, and/or suggests an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article. For example:* *See* claims 1[a] and 1[b].
[11d] wherein the outer layer comprises a barrier material composition to mitigate	*Wilson discloses, teaches, and/or suggests the display assembly comprising: one or more display layers of elastomeric material constructed to provide a display indicia. For example:*

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'027 Claim Element	Disclosures from Prior Art (Wilson)
migration of material from the vulcanized rubber article.	*See* claims 1[b] and 5.
12. The method as recited in claim 11 further comprising preparing the identified surface before the step of placing.	*Wilson discloses, teaches, and/or suggests the method as recited in claim 11 further comprising preparing the identified surface before the step of placing. For example:* "Referring now to FIG. 2, patch assembly **60** is then assembled to the innerliner **75** of tire **71**. Activating cement is first applied to second side **22** of dual cure bonding layer **20**. The patch assembly is then stitched to the innerliner of the vulcanized tire and the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire innerliner **75**, until the curing cycle is completed." (Wilson, 4:26-37.)
13. The method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing.	*Wilson discloses, teaches, and/or suggests the method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing. For example:* "Referring now to FIG. 2, patch assembly **60** is then assembled to the innerliner **75** of tire **71**. Activating cement is first applied to second side **22** of dual cure bonding layer **20**. The patch assembly is then stitched to the innerliner of the vulcanized tire and the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire innerliner **75**, until the curing cycle is completed." (Wilson, 4:26-37.)
15[pre] A vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, Wilson discloses, teaches, and/or suggests a vulcanized rubber tire comprising. For example:* "A monitoring device and patch assembly includes a patch that removably and re-attachably holds the monitoring device. The patch is adapted to connect the monitoring device to a pneumatic tire when the monitoring device is held by the patch. The patch is configured to hold a monitoring device having a rounded outer surface. The patch holds the rounded monitoring device by having a resilient tube with an outlet having a diameter smaller than the

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'027 Claim Element	Disclosures from Prior Art (Wilson)
	diameter of the monitoring device. The monitoring device of the invention includes a feature that allows it to be removed from the patch." (Wilson, Abstract.)



FIG−1

"FIG. 1 shows a rubber patch **10** of the present invention. The patch **10** has a first side **12** which includes a housing **14** with a cavity **16** of a preselected configuration. As shown in FIG. 1, the housing **14** has a cavity **16** which is cylindrical, although the cavity **16** may be of any convenient configuration, as will become apparent from the description which follows. The patch has a second opposite side **18** approximating the contour of an innerliner of a tire (not shown). In a preferred embodiment, the rubber patch is vulcanized and then assembled to the vulcanized tire. Although any method for assembling the vulcanized rubber patch to the vulcanized tire, one acceptable and preferred method is set forth in U.S. Pat. No. 5,971,046; the disclosures of which are incorporated herein by reference. In accordance with the referenced application, the patch may be a rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and

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'027 Claim Element	Disclosures from Prior Art (Wilson)
	natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. The second side **18** of the patch **10** approximates the contour of an innerliner of a tire. The contour of the second side **18** preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. Affixed to the second side **18** of the vulcanized tire patch is a dual cure bonding layer **20**, which has a first side (not shown) and a second side **22**. This dual cure bonding layer may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer is permanently assembled to the patch to form patch assembly **60**. A non-curing cement (not shown) is applied to side **18** of the patch in order to hold the dual cure bonding layer **20** onto the patch. Exemplary non-curing cement and an exemplary dual cure bonding layer are products of Patch Rubber Company. The important feature of the dual cure bonding layer is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer may be any material which can be activated and cured to the vulcanized rubber of the tire innerliner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy-two (72) hours. However, if more rapid curing is desired, this may be accomplished by heating to 45° C. for at least twenty-four hours. Referring now to FIG. 2, patch assembly **60** is then assembled to the innerliner **75** of tire **71**. Activating cement is first applied to second side **22** of dual cure bonding layer **20**. The patch assembly is then stitched to the innerliner of the vulcanized tire and the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch

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'027 Claim Element	Disclosures from Prior Art (Wilson)
	assembly optionally may be clamped to the tire innerliner **75**, until the curing cycle is completed." (Wilson, 3:35-4:37.) *See also following limitations.*
[15a] a target surface disposed along a portion of the rubber tire;	*Wilson discloses, teaches, and/or suggests a target surface disposed along a portion of the rubber tire. For example:* *See* claim 11[a].
[15b] an assembly disposed onto the target surface and comprising:	*Wilson discloses, teaches, and/or suggests an assembly disposed onto the target surface and comprising. For example:* *See* claim 11[b].
[15c] an outer layer of elastomeric material; and	*Wilson discloses, teaches, and/or suggests an outer layer of elastomeric material. For example:* *See* claims 1[a] and 11[c].
[15d] an adhesive layer connected with the outer layer;	*Wilson discloses, teaches, and/or suggests an adhesive layer connected with the outer layer. For example:* *See* claims 1[b] and 11[c].
[15e] wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire.	*Wilson discloses, teaches, and/or suggests wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire. For example:* *See* claims 1[b], 5 and 11[c].
16. The rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein.	*Wilson discloses, teaches, and/or suggests the rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein. For example:* *See* claim 7.
17. The rubber tire as recited in claim 16 wherein an element is disposed within the cavity.	*Wilson discloses, teaches, and/or suggests the rubber tire as recited in claim 16 wherein an element is disposed within the cavity. For example:* *See* claim 8.

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'027 Claim Element	Disclosures from Prior Art (Wilson)
18. The rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer.	*Wilson discloses, teaches, and/or suggests the rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer. For example:* *See* claim 9.
19[pre] An assembly for attachment to a vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, Wilson discloses, teaches, and/or suggests an assembly for attachment to a vulcanized rubber tire comprising. For example:* *See* claim 1[pre]. *See also following limitations.*
[19a] an outer layer formed from an elastomeric material;	*Wilson discloses, teaches, and/or suggests an outer layer formed from an elastomeric material. For example:* *See* claim 1[a].
[19b] an adhesive layer bonding the assembly to portion of a vulcanized rubber tire; and	*Wilson discloses, teaches, and/or suggests an adhesive layer bonding the assembly to portion of a vulcanized rubber tire. For example:* *See* claim 1[b].
[19c] a cavity disposed within the assembly for accommodating an element therein;	*Wilson discloses, teaches, and/or suggests a cavity disposed within the assembly for accommodating an element therein. For example:* *See* claims 7 and 8.
[19d] wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire.	*Wilson discloses, teaches, and/or suggests wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire. For example:* *See* claims 1[b], 5 and 11[c].
20. The assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer.	*Wilson discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer. For example:* *See* claim 9.
21. The assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer.	*Wilson discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer. For example:*

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’027 Claim Element	Disclosures from Prior Art (Wilson)
	See claim 1[b].
22. The assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface.	*Wilson discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface. For example:* *See* claim 1[a].

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Invalidity Claim Chart Against U.S. Patent No. 11,124,027 ("'027 Patent")
Based on U.S. Patent No. 4,285,382 ("DiRocco")

U.S. Patent No. 4,285,382 ("DiRocco") was filed on July 10, 1980 and issued on August 25, 1981. DiRocco qualifies as prior art under at least 35 U.S.C. § 102(a)(1). DiRocco anticipates and/or renders obvious the Asserted Claims of the '027 Patent (at least as Revvo understands Plaintiff's application of the Asserted Claims in an effort to show infringement).

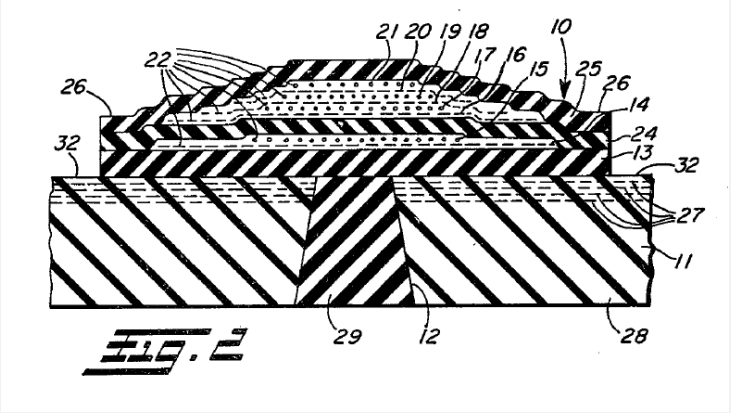
To the extent Plaintiff argues that any element below is not disclosed by DiRocco, a person of ordinary skill in the art would have found it obvious to combine the teachings of DiRocco with the background knowledge of a person of ordinary skill in the art and/or the additional references and exemplary teachings set forth in the chart below, to arrive at the claim limitation with a reasonable expectation of success. The chart below provides representative examples of where each element of each claim is found within DiRocco. Citations are meant to be exemplary, not exhaustive, and Revvo reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by Plaintiff. Citations to figures, drawings, tables, and the link include reference to any accompanying or related text. All internal cross-references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Revvo's position that Plaintiff's October 30, 2024 Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Revvo's statements below should not be treated as an admission, implication, or suggestion that Revvo agrees with Plaintiff regarding either the scope, construction, or interpretation of any of the Asserted Claims or the infringement theories advanced by Plaintiff in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Revvo has specified non-limiting examples of where its application of the prior art is based on Plaintiff's apparent application of the claim element. These statements are not intended to suggest that Revvo agrees with Plaintiff's application of any claim element, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or propose claim constructions until a later date.

Plaintiff has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by DiRocco. Revvo therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if Plaintiff makes any such contention.

Where Revvo states that DiRocco "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
1[pre]. An assembly for attachment with a vulcanized rubber article comprising:	*To the extent that the preamble is limiting, DiRocco discloses, teaches, and/or suggests a display assembly for attachment with a vulcanized rubber article comprising. For example:* "A tire repair patch having overlapping plies of reinforcing cords, a base cushion gum layer and an intermediate cushion gum layer positioned between at least two of the plies. The intermediate cushion gum layer has a thickness greater than the thickness of the plies and suspends some of the plies for distributing the forces transmitted through the patch at the injured portion of the tire." (DiRocco, Abstract.) "The present invention is directed to a tire patch construction which has the flexibility and resilience to flex with the tire in operation and at the same time can be built without the formation of air spaces. This is accomplished by providing a relatively thick intermediate cushion gum layer of rubber at a position spaced from the tire-engaging surface of the patch and interposed between at least two of the plies. The patch also has a relatively thick base cushion gum layer of rubber at the surface engageable with the inner surface of the tire. With this construction the patch is given a flexibility and resilience which resists edge cracking and breaking loose of the edges from the tire during operation." (DiRocco, 1:34-46.) "Referring to FIGS. 1 and 2, a tire repair patch 10 is shown bonded to a tire 11 having an injury 12 which may be a break or puncture in the wall of the tire. With reference to FIGS. 2 and 3, the patch 10 is of a laminated construction including a base cushion gum layer 13, plies 14, 15, 16, 17, 18, 19, 20 and 21 of reinforcing cords 22, an intermediate cushion gum layer 24 and a top cushion gum layer 25." (DiRocco, 2:29-36.)  FIG. 2

’027 Claim Element	Disclosures from Prior Art (DiRocco)
	“The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat.” (DiRocco, 4:3-27.) “Referring to FIGS. 4 and 5, a modified form of the invention is shown in which a patch 33 has a base cushion gum layer 34, overlapping plies 35 through 41 of reinforcing cords 42, a first intermediate cushion gum layer 44, a second intermediate cushion gum layer 45 and a top cushion gum layer 46. The reinforcing cords 42 of the plies 35 through 41 may be of the same end count and materials as those described hereinabove for plies 14 through 21 of the patch 10 shown in FIGS. 1 through 3. Also the thickness and materials of the base, first intermediate, second intermediate and top cushion gum layers 34, 44, 45 and 46 may be the same as the thickness and materials of the base, intermediate and top cushion gum layers 13, 24 and 25 of the patch 10 shown in FIGS. 1 through 3.” (DiRocco, 4:36-50.)

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'027 Claim Element	Disclosures from Prior Art (DiRocco)

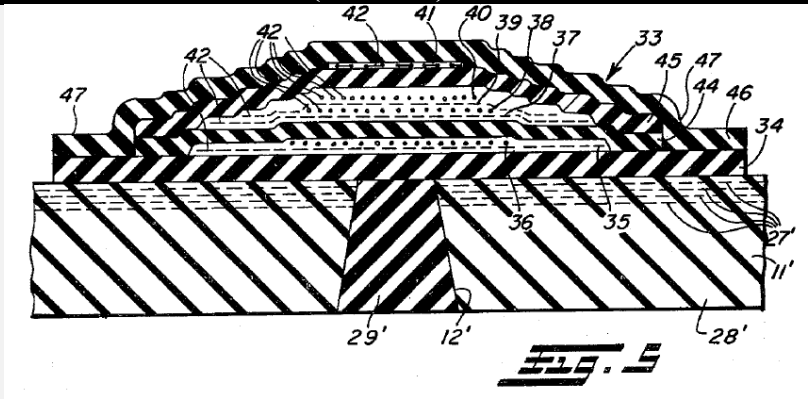


FIG. 5

"Referring to FIGS. 6, 7 and 8, another modification is shown in which a tire repair patch 48 is adapted for repairing an injury 49 in the sidewall 50 of a radial tire 51. Reinforcing plies 52 of the tire 51, as shown in FIG. 8, extend generally in a radial direction between the bead portion 53 and tread 54 of the tire. As shown in FIGS. 7 and 8, the tire repair patch 48 is built up of a base cushion gum layer 55 which has a length L of twenty-seven inches substantially equal to the distance between the bead portion 53 and tread 54 of the tire 51 and a width W of nine and one-half inches required to cover the injury 49. Overlying the base cushion gum layer 55 is a working ply 56 having reinforcing cords 57 extending lengthwise and a length of twenty-six inches and width of eight and one-half inches. Overlying the working ply 56 is an intermediate cushion gum layer 58 having substantially the same size as the base cushion gum layer 55." (DiRocco, 5:36-53.)

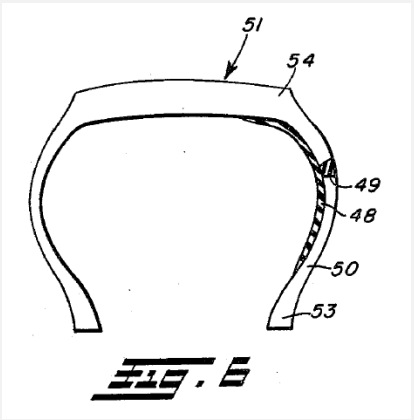


FIG. 6

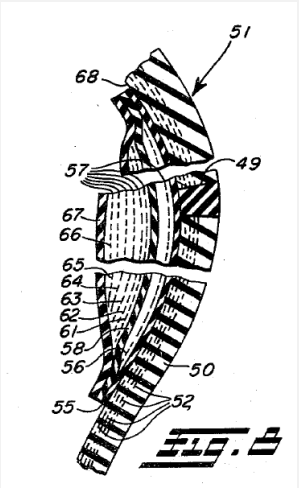
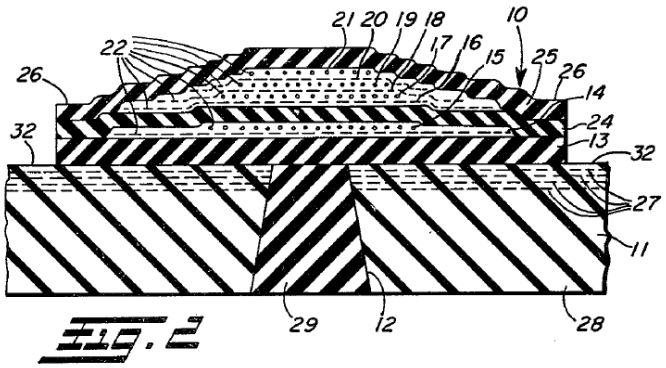
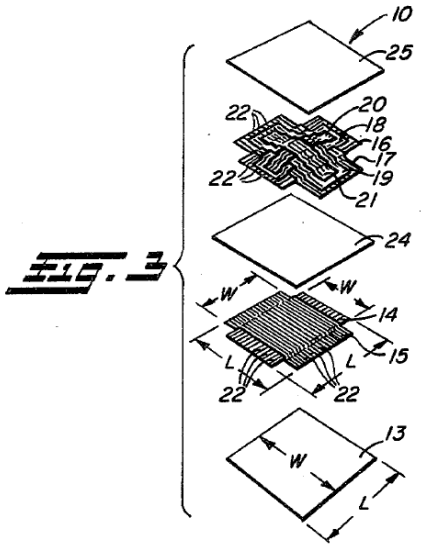


FIG. 8

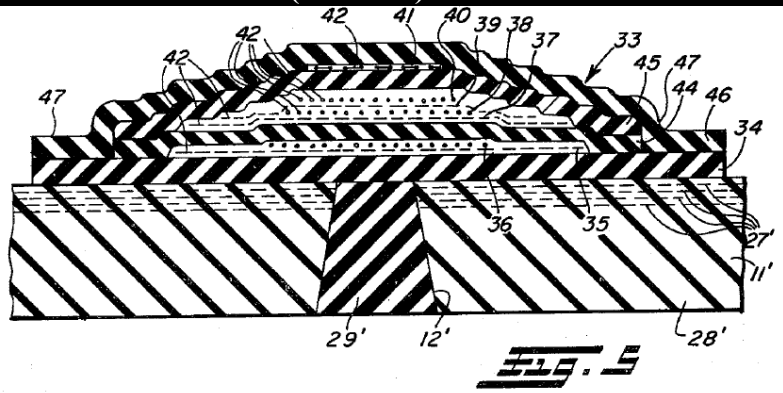
See also following limitations.

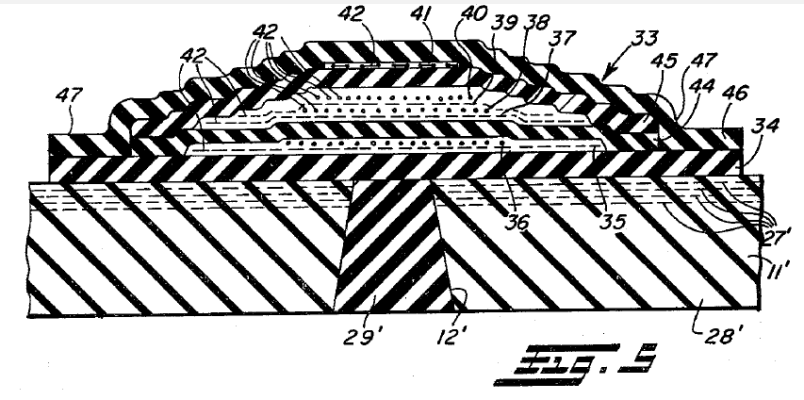
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’027 Claim Element	Disclosures from Prior Art (DiRocco)
[1a] an outer layer of elastomeric material having a visual feature; and	*DiRocco discloses, teaches, and/or suggests an outer layer of elastomeric material having a visual feature. For example:* “Referring to FIGS. 1 and 2, a tire repair patch 10 is shown bonded to a tire 11 having an injury 12 which may be a break or puncture in the wall of the tire. With reference to FIGS. 2 and 3, the patch 10 is of a laminated construction including a base cushion gum layer 13, plies 14, 15, 16, 17, 18, 19, 20 and 21 of reinforcing cords 22, an intermediate cushion gum layer 24 and a top cushion gum layer 25.” (DiRocco, 2:29-36.)  FIG. 2  FIG. 3 “Overlying the body plies 16 through 21 is the top cushion gum layer 25 which has the same size as the base and intermediate cushion gum layers 13 and 24. Although it is desirable to have this layer 25 for this patch 10, it is understood that in some cases this layer may not be necessary such as when the patch is cured with a mandrel-type mold.” (DiRocco, 2:13-19.)

'027 Claim Element	Disclosures from Prior Art (DiRocco)
	"**The base, intermediate and top cushion gum layers 13, 24 and 25 are preferably of a resilient rubberlike material such as natural rubber and alternatively of SBR rubber, a blend of natural and SBR rubbers, or a blend or polybutadienes having a thickness greater than the thickness of any of the plies 14 through 21.** In the embodiment shown the base cushion gum layer 13 has a thickness of 0.090 inches. The intermediate cushion gum layer 24 has a thickness of 0.060 inches and the top cushion gum layer 25 has a thickness of 0.060 inches. The edges of the base, intermediate and top cushion gum layers 13, 24 and 25 overlap at an edge portion 26 to provide a cushioning edge of the patch 10. The base, intermediate and top cushion gum layers 13, 24 and 25 are referred to as separate layers from the plies 14 through 21; however, in the fabrication of the patch 10 it is understood that these layers may be applied by calendering or laminating them to one or more of the reinforcing plies without departing from the spirit or scope of the invention." (DiRocco, 3:20-40 (emphasis added).) "With this construction it has been found that there is substantially no edge cracking and it is believed that this is due to the interaction of the intermediate cushion gum layer 24 with the working plies 14 and 15 to transfer the forces from the reinforcing plies 27 of the tire 11 to the body plies 16 through 21 and at the same time distribute the stresses and absorb the shocks during operation of the tire with the patch 10 adhered thereto." (DiRocco, 4:28-35.) "Referring to FIGS. 4 and 5, a modified form of the invention is shown in which a patch 33 has a base cushion gum layer 34, overlapping plies 35 through 41 of reinforcing cords 42, a first intermediate cushion gum layer 44, a second intermediate cushion gum layer 45 and a top cushion gum layer 46. The reinforcing cords 42 of the plies 35 through 41 may be of the same end count and materials as those described hereinabove for plies 14 through 21 of the patch 10 shown in FIGS. 1 through 3. **Also the thickness and materials of the base, first intermediate, second intermediate and top cushion gum layers 34, 44, 45 and 46 may be the same as the thickness and materials of the base, intermediate and top cushion gum layers 13, 24 and 25 of the patch 10 shown in FIGS. 1 through 3.**" (DiRocco, 4:36-50 (emphasis added).)

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’027 Claim Element	Disclosures from Prior Art (DiRocco)
	 FIG. 5 “The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33.” (DiRocco, 5:17-35.) *See also* DiRocco, 1:34-46, 2:48-3:12, FIG. 4.
[1b] an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and	*DiRocco discloses, teaches, and/or suggests an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition. For example:* “**The base, intermediate and top cushion gum layers 13, 24 and 25 are preferably of a resilient rubberlike material such as natural rubber and alternatively of SBR rubber, a blend of natural and SBR rubbers, or a blend or polybutadienes having a thickness greater than the thickness of any of the plies 14 through 21.** In the embodiment shown the base cushion gum layer 13 has a thickness of 0.090 inches. The intermediate cushion gum layer 24 has a thickness of 0.060 inches and the top cushion gum layer 25 has a thickness of 0.060 inches. The edges of the

'027 Claim Element	Disclosures from Prior Art (DiRocco)
	base, intermediate and top cushion gum layers 13, 24 and 25 overlap at an edge portion 26 to provide a cushioning edge of the patch 10. The base, intermediate and top cushion gum layers 13, 24 and 25 are referred to as separate layers from the plies 14 through 21; however, in the fabrication of the patch 10 it is understood that these layers may be applied by calendering or laminating them to one or more of the reinforcing plies without departing from the spirit or scope of the invention." (DiRocco, 3:20-40 (emphasis added).) "It is understood that other tire repair patch constructions in accordance with this invention may be provided in which the number of plies may be increased or decreased depending upon the strength required of the patch. Also the intermediate cushion gum layer may be disposed at other positions and have a greater or lesser thickness to suspend the working plies and cushion the patch." (DiRocco, 6:20-27.) "Referring to FIGS. 4 and 5, a modified form of the invention is shown in which a patch 33 has a base cushion gum layer 34, overlapping plies 35 through 41 of reinforcing cords 42, a first intermediate cushion gum layer 44, a second intermediate cushion gum layer 45 and a top cushion gum layer 46. The reinforcing cords 42 of the plies 35 through 41 may be of the same end count and materials as those described hereinabove for plies 14 through 21 of the patch 10 shown in FIGS. 1 through 3. **Also the thickness and materials of the base, first intermediate, second intermediate and top cushion gum layers 34, 44, 45 and 46 may be the same as the thickness and materials of the base, intermediate and top cushion gum layers 13, 24 and 25 of the patch 10 shown in FIGS. 1 through 3.**" (DiRocco, 4:36-50 (emphasis added).)  FIG. 5 "In this modification, as shown more clearly in FIG. 4, the base cushion gum layer 34 has a width W of twelve inches and a

'027 Claim Element	Disclosures from Prior Art (DiRocco)
	length L of twelve inches. Overlying the base cushion gum layer 34 is a pair of working plies 35 and 36 in criss-cross relationship, each of which has a length of eleven inches and a width of nine inches. Overlying the working plies 35 and 36 is the first intermediate cushion gum layer 44 having a width of eleven and one-half inches and a length of eleven and one-half inches. Overlying the first intermediate cushion gum layer 44 is a pair of body plies 37 and 38 in criss-cross relationship, each of which has a width of eight inches and a length of ten inches. Overlying this pair of body plies 37 and 38 is another pair of body plies 39 and 40 in criss-cross relationship, each of which has a width of seven inches and a length of nine inches. Overlying these body plies 39 and 40 is the second intermediate cushion gum layer 45 having a width of eleven and one-half inches and a length of eleven and one-half inches. Then overlying the second intermediate cushion gum layer 45 is a single reinforcing ply 41 having a width of six inches and a length of eight inches. Finally, overlying the reinforcing ply 41 is the top cushion gum layer 46 having a width of twelve inches and a length of twelve inches. The top layer 46 is preferred; however, it may not be necessary for other patches such as those cured with a mandrel-type mold. From FIG. 5 it can be seen that the first and second intermediate cushion gum layers 44 and 45 overlap in an edge portion 47 of the patch 33 at a position beyond the ends of the plies 35 through 41. **Also the top cushion gum layer 46 and base cushion gum layer 34 overlap in the edge portion at positions beyond the ends of the first and second intermediate cushion gum layers 44 and 45.**" (DiRocco, 4:51-5:16 (emphasis added).)
[1c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.	*DiRocco discloses, teaches, and/or suggests wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article. For example:* "**The base, intermediate and top cushion gum layers 13, 24 and 25 are preferably of a resilient rubberlike material such as natural rubber and alternatively of SBR rubber, a blend of natural and SBR rubbers, or a blend or polybutadienes having a thickness greater than the thickness of any of the plies 14 through 21.** In the embodiment shown the base cushion gum layer 13 has a thickness of 0.090 inches. The intermediate cushion gum layer 24 has a thickness of 0.060 inches and the top cushion gum layer 25 has a thickness of 0.060 inches. The edges of the base, intermediate and top cushion gum layers 13, 24 and 25 overlap at an edge portion 26 to provide a cushioning edge of

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	the patch 10. The base, intermediate and top cushion gum layers 13, 24 and 25 are referred to as separate layers from the plies 14 through 21; however, in the fabrication of the patch 10 it is understood that these layers may be applied by calendering or laminating them to one or more of the reinforcing plies without departing from the spirit or scope of the invention." (DiRocco, 3:20-40 (emphasis added).) "The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat." (DiRocco, 4:3-27.) "Referring to FIGS. 4 and 5, a modified form of the invention is shown in which a patch 33 has a base cushion gum layer 34, overlapping plies 35 through 41 of reinforcing cords 42, a first intermediate cushion gum layer 44, a second intermediate cushion gum layer 45 and a top cushion gum layer 46. The reinforcing cords 42 of the plies 35 through 41 may be of the same end count and materials as those described hereinabove for plies 14 through 21 of the patch 10 shown in FIGS. 1 through 3. **Also the thickness and materials of the base, first intermediate, second intermediate and top cushion gum layers 34, 44, 45 and 46 may be the same as the thickness and materials of the base, intermediate and top cushion gum layers**

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	13, 24 and 25 of the patch 10 shown in FIGS. 1 through 3." (DiRocco, 4:36-50 (emphasis added).) "The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33." (DiRocco, 5:17-35.)
5. The assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article.	*DiRocco discloses, teaches, and/or suggests the assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article. For example:* "**The base, intermediate and top cushion gum layers 13, 24 and 25 are preferably of a resilient rubberlike material such as natural rubber and alternatively of SBR rubber, a blend of natural and SBR rubbers, or a blend or polybutadienes having a thickness greater than the thickness of any of the plies 14 through 21.** In the embodiment shown the base cushion gum layer 13 has a thickness of 0.090 inches. The intermediate cushion gum layer 24 has a thickness of 0.060 inches and the top cushion gum layer 25 has a thickness of 0.060 inches. The edges of the base, intermediate and top cushion gum layers 13, 24 and 25 overlap at an edge portion 26 to provide a cushioning edge of the patch 10. The base, intermediate and top cushion gum layers 13, 24 and 25 are referred to as separate layers from the plies 14 through 21; however, in the fabrication of the patch 10 it is understood that these layers may be applied by calendering or laminating them to one or more of the reinforcing

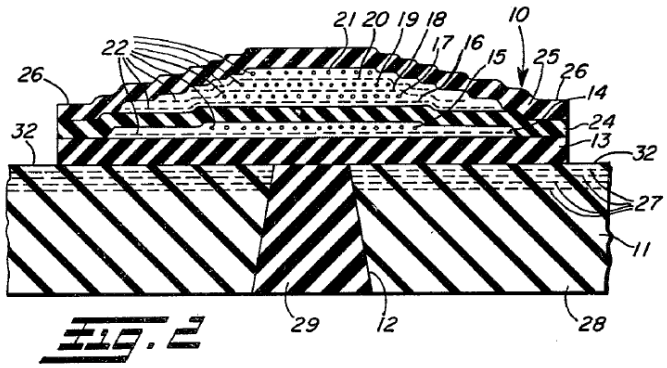
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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	plies without departing from the spirit or scope of the invention." (DiRocco, 3:20-40 (emphasis added).) "The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat." (DiRocco, 4:3-27.) "Referring to FIGS. 4 and 5, a modified form of the invention is shown in which a patch 33 has a base cushion gum layer 34, overlapping plies 35 through 41 of reinforcing cords 42, a first intermediate cushion gum layer 44, a second intermediate cushion gum layer 45 and a top cushion gum layer 46. The reinforcing cords 42 of the plies 35 through 41 may be of the same end count and materials as those described hereinabove for plies 14 through 21 of the patch 10 shown in FIGS. 1 through 3. **Also the thickness and materials of the base, first intermediate, second intermediate and top cushion gum layers 34, 44, 45 and 46 may be the same as the thickness and materials of the base, intermediate and top cushion gum layers 13, 24 and 25 of the patch 10 shown in FIGS. 1 through 3.**" (DiRocco, 4:36-50 (emphasis added).) "The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an

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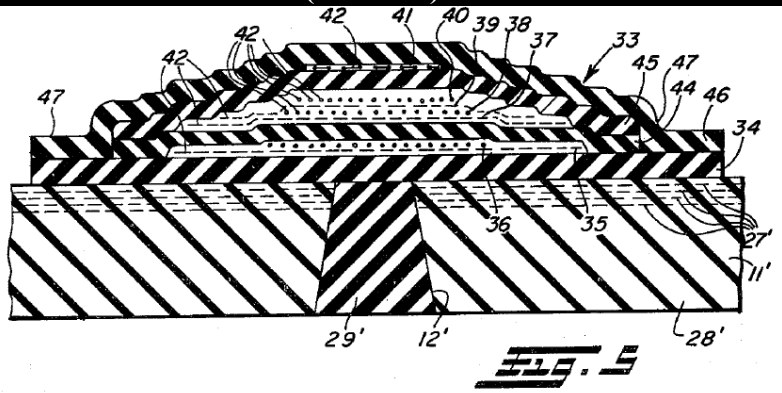
’027 Claim Element	Disclosures from Prior Art (DiRocco)
	injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33.” (DiRocco, 5:17-35.)
7. The assembly as recited in claim 1 further comprising a cavity disposed therein.	*DiRocco discloses, teaches, and/or suggests the assembly as recited in claim 1 further comprising a cavity disposed therein. For example:* “The plies 14 through 21 are preferably elongated strips of reinforcing cords 22 which extend substantially longitudinally of the strips. The plies 14 through 21 are in criss-cross relationship with the cords 22 of adjacent plies positioned at substantially right angles. Also the larger plies are closer to the base cushion gum layer 13 and the smaller plies are closer to the top cushion gum layer 25. As shown in FIG. 3, the base cushion gum layer 13 has a width W of twelve inches and a length L of twelve inches. Overlying the base cushion gum layer 13 is a pair of plies 14 and 15 in criss-cross relationship, each of which has a width W of nine inches and a length L of eleven inches. These plies 14 and 15 are designated as being working plies because they are separated from the other plies 16 through 21 by the intermediate cushion gum layer 24 which has the same width and length as the base cushion gum layer 13. As shown in FIG. 2, the intermediate cushion gum layer 24 extends continuously between the end portions of the working plies 14 and 15. Overlying the intermediate cushion gum layer 24 is a pair of plies 16 and 17 in criss-cross relationship, each of which has a width of eight inches and a length of ten inches. These plies are overlapped by another pair of plies 17 and 18 in criss-cross relationship, each of which has a width of seven inches and a length of nine inches.” (DiRocco, 2:48-3:5.)

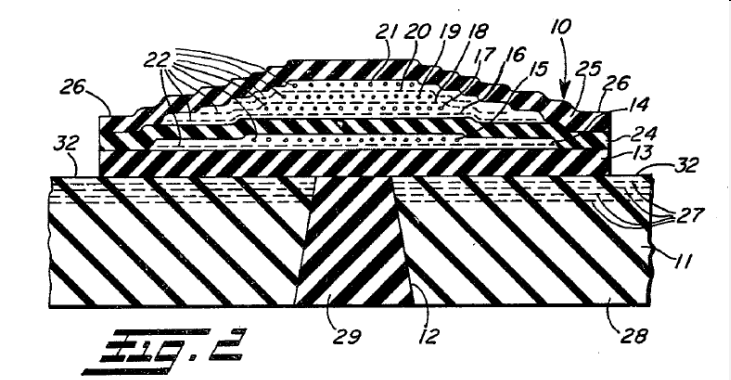
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’027 Claim Element	Disclosures from Prior Art (DiRocco)
	 FIG. 2 “The intermediate cushion gum layer 24 suspends the working plies 14 and 15 between the wall of the tire 11 and the body plies 16 through 21 and may have a thickness of 0.010 up to 0.0250 inches depending upon the service requirements of the patch. As shown in FIG. 2, the tire 11 has reinforcing plies 27 and a tread portion 28. A plug 29 of resilient rubberlike material such as natural or SBR rubber is inserted at the injury 12 of the tire 11 which has been skived with a V-shaped taper as shown in FIG. 2. The intermediate cushion gum layer 24 is preferably of a resilient rubberlike material having a tensile strength of about 2800 pounds per square inch but may be from 2600 to 3000 pounds per square inch. This material has a modulus of elasticity of about 1000 to 1200 and may be as high as 1400. The hardness of the material is preferably about 50 durometer but may be from 48 to 60 durometer. The base cushion gum layer 13 and top cushion gum layer 25 may be of this same material although this is not essential for effective operation of the patch. The tire repair patch 10 may be built in the uncured condition and compressed by suitable means such as rolling so that substantially no air remains in the patch. The base, intermediate and top cushion gum layers 13, 24 and 25 and the plies 14 through 21 will be held together by the natural tack of the rubber in the patch 10. The patch 10 is then covered by polyethylene or some other material which can be removed when the patch is to be used.” (DiRocco, 3:41-4:4.) “In this modification, as shown more clearly in FIG. 4, the base cushion gum layer 34 has a width W of twelve inches and a length L of twelve inches. Overlying the base cushion gum layer 34 is a pair of working plies 35 and 36 in criss-cross relationship, each of which has a length of eleven inches and a

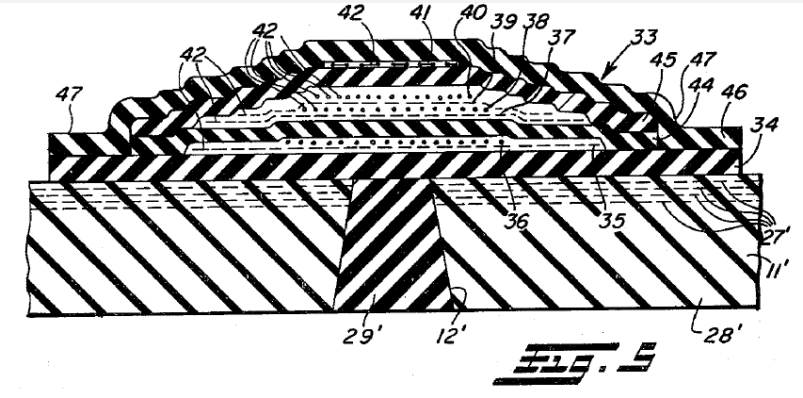
'027 Claim Element	Disclosures from Prior Art (DiRocco)
	width of nine inches. Overlying the working plies 35 and 36 is the first intermediate cushion gum layer 44 having a width of eleven and one-half inches and a length of eleven and one-half inches. Overlying the first intermediate cushion gum layer 44 is a pair of body plies 37 and 38 in criss-cross relationship, each of which has a width of eight inches and a length of ten inches. Overlying this pair of body plies 37 and 38 is another pair of body plies 39 and 40 in criss-cross relationship, each of which has a width of seven inches and a length of nine inches. Overlying these body plies 39 and 40 is the second intermediate cushion gum layer 45 having a width of eleven and one-half inches and a length of eleven and one-half inches. Then overlying the second intermediate cushion gum layer 45 is a single reinforcing ply 41 having a width of six inches and a length of eight inches. Finally, overlying the reinforcing ply 41 is the top cushion gum layer 46 having a width of twelve inches and a length of twelve inches. The top layer 46 is preferred; however, it may not be necessary for other patches such as those cured with a mandrel-type mold. From FIG. 5 it can be seen that the first and second intermediate cushion gum layers 44 and 45 overlap in an edge portion 47 of the patch 33 at a position beyond the ends of the plies 35 through 41. Also the top cushion gum layer 46 and base cushion gum layer 34 overlap in the edge portion at positions beyond the ends of the first and second intermediate cushion gum layers 44 and 45. The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33." (DiRocco, 4:51-5:35.)

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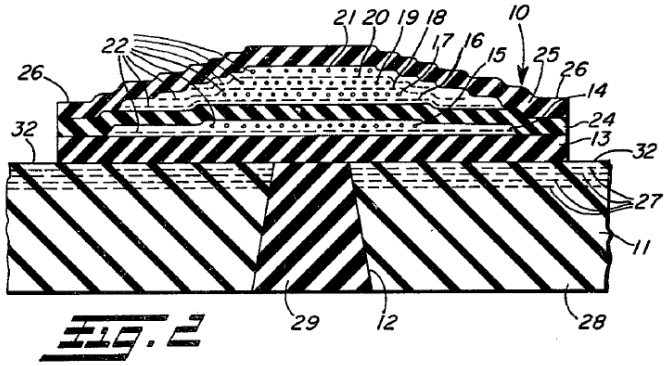
'027 Claim Element	Disclosures from Prior Art (DiRocco)
	 FIG. 5
8. The assembly as recited in claim 7 further comprising an element disposed within the cavity.	*DiRocco discloses, teaches, and/or suggests the assembly as recited in claim 7 further comprising an element disposed within the cavity. For example:* "The plies 14 through 21 are preferably elongated strips of reinforcing cords 22 which extend substantially longitudinally of the strips. The plies 14 through 21 are in criss-cross relationship with the cords 22 of adjacent plies positioned at substantially right angles. Also the larger plies are closer to the base cushion gum layer 13 and the smaller plies are closer to the top cushion gum layer 25. As shown in FIG. 3, the base cushion gum layer 13 has a width W of twelve inches and a length L of twelve inches. Overlying the base cushion gum layer 13 is a pair of plies 14 and 15 in criss-cross relationship, each of which has a width W of nine inches and a length L of eleven inches. These plies 14 and 15 are designated as being working plies because they are separated from the other plies 16 through 21 by the intermediate cushion gum layer 24 which has the same width and length as the base cushion gum layer 13. As shown in FIG. 2, the intermediate cushion gum layer 24 extends continuously between the end portions of the working plies 14 and 15. Overlying the intermediate cushion gum layer 24 is a pair of plies 16 and 17 in criss-cross relationship, each of which has a width of eight inches and a length of ten inches. These plies are overlapped by another pair of plies 17 and 18 in criss-cross relationship, each of which has a width of seven inches and a length of nine inches." (DiRocco, 2:48-3:5.)

’027 Claim Element	Disclosures from Prior Art (DiRocco)
	 FIG. 2 “The intermediate cushion gum layer 24 suspends the working plies 14 and 15 between the wall of the tire 11 and the body plies 16 through 21 and may have a thickness of 0.010 up to 0.0250 inches depending upon the service requirements of the patch. As shown in FIG. 2, the tire 11 has reinforcing plies 27 and a tread portion 28. A plug 29 of resilient rubberlike material such as natural or SBR rubber is inserted at the injury 12 of the tire 11 which has been skived with a V-shaped taper as shown in FIG. 2.” (DiRocco, 3:41-50.) “In this modification, as shown more clearly in FIG. 4, the base cushion gum layer 34 has a width W of twelve inches and a length L of twelve inches. Overlying the base cushion gum layer 34 is a pair of working plies 35 and 36 in criss-cross relationship, each of which has a length of eleven inches and a width of nine inches. Overlying the working plies 35 and 36 is the first intermediate cushion gum layer 44 having a width of eleven and one-half inches and a length of eleven and one-half inches. Overlying the first intermediate cushion gum layer 44 is a pair of body plies 37 and 38 in criss-cross relationship, each of which has a width of eight inches and a length of ten inches. Overlying this pair of body plies 37 and 38 is another pair of body plies 39 and 40 in criss-cross relationship, each of which has a width of seven inches and a length of nine inches. Overlying these body plies 39 and 40 is the second intermediate cushion gum layer 45 having a width of eleven and one-half inches and a length of eleven and one-half inches. Then overlying the second intermediate cushion gum layer 45 is a single reinforcing ply 41 having a width of six inches and a length of eight inches. Finally, overlying the reinforcing ply 41 is the top cushion gum layer 46 having a width of twelve inches and a length of twelve inches. The top layer 46 is preferred; however, it may not be necessary for other patches such as those cured with a mandrel-type mold. From FIG. 5 it can be seen that the first and second intermediate cushion gum layers 44

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	and 45 overlap in an edge portion 47 of the patch 33 at a position beyond the ends of the plies 35 through 41. Also the top cushion gum layer 46 and base cushion gum layer 34 overlap in the edge portion at positions beyond the ends of the first and second intermediate cushion gum layers 44 and 45. The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33." (DiRocco, 4:51-5:35.)  Fig. 5
9. The assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer.	*DiRocco discloses, teaches, and/or suggests the assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer. For example:* "The plies 14 through 21 are preferably elongated strips of reinforcing cords 22 which extend substantially longitudinally of the strips. The plies 14 through 21 are in criss-cross relationship

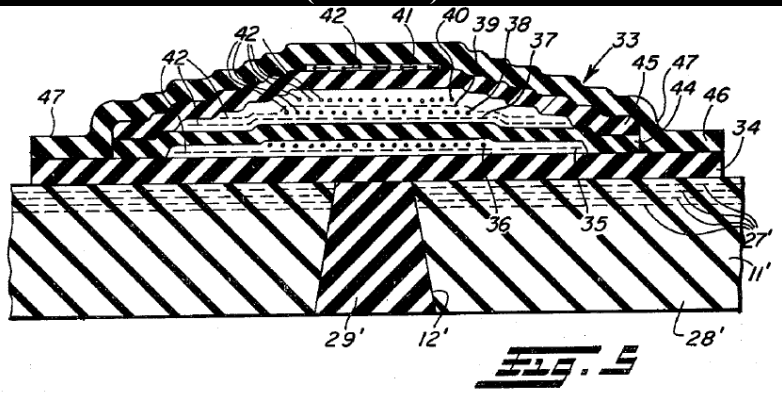
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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	with the cords 22 of adjacent plies positioned at substantially right angles. Also the larger plies are closer to the base cushion gum layer 13 and the smaller plies are closer to the top cushion gum layer 25. As shown in FIG. 3, the base cushion gum layer 13 has a width W of twelve inches and a length L of twelve inches. Overlying the base cushion gum layer 13 is a pair of plies 14 and 15 in criss-cross relationship, each of which has a width W of nine inches and a length L of eleven inches. These plies 14 and 15 are designated as being working plies because they are separated from the other plies 16 through 21 by the intermediate cushion gum layer 24 which has the same width and length as the base cushion gum layer 13. As shown in FIG. 2, the intermediate cushion gum layer 24 extends continuously between the end portions of the working plies 14 and 15. Overlying the intermediate cushion gum layer 24 is a pair of plies 16 and 17 in criss-cross relationship, each of which has a width of eight inches and a length of ten inches. These plies are overlapped by another pair of plies 17 and 18 in criss-cross relationship, each of which has a width of seven inches and a length of nine inches." (DiRocco, 2:48-3:5.)  FIG. 2 "The intermediate cushion gum layer 24 suspends the working plies 14 and 15 between the wall of the tire 11 and the body plies 16 through 21 and may have a thickness of 0.010 up to 0.0250 inches depending upon the service requirements of the patch. As shown in FIG. 2, the tire 11 has reinforcing plies 27 and a tread portion 28. A plug 29 of resilient rubberlike material such as natural or SBR rubber is inserted at the injury 12 of the tire 11 which has been skived with a V-shaped taper as shown in FIG. 2." (DiRocco, 3:41-50.) "In this modification, as shown more clearly in FIG. 4, the base cushion gum layer 34 has a width W of twelve inches and a length L of twelve inches. Overlying the base cushion gum layer 34 is a pair of working plies 35 and 36 in criss-cross

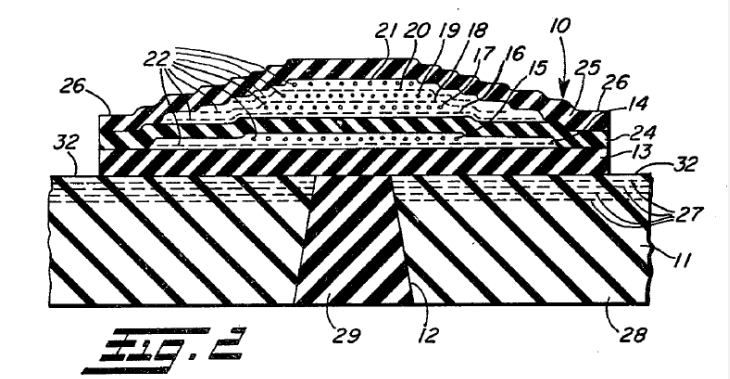
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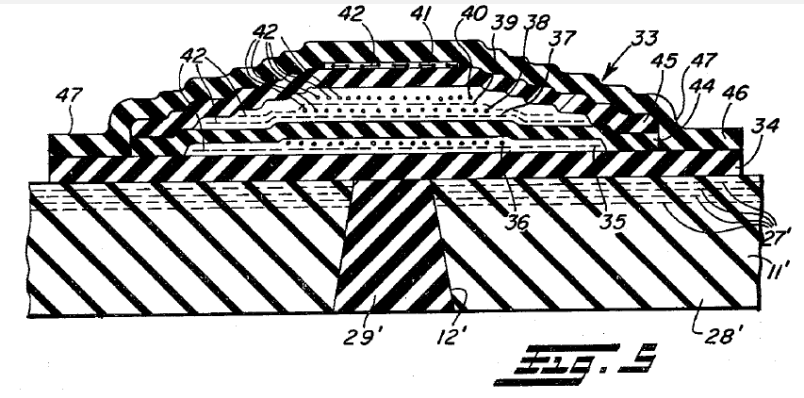
’027 Claim Element	Disclosures from Prior Art (DiRocco)
	relationship, each of which has a length of eleven inches and a width of nine inches. Overlying the working plies 35 and 36 is the first intermediate cushion gum layer 44 having a width of eleven and one-half inches and a length of eleven and one-half inches. Overlying the first intermediate cushion gum layer 44 is a pair of body plies 37 and 38 in criss-cross relationship, each of which has a width of eight inches and a length of ten inches. Overlying this pair of body plies 37 and 38 is another pair of body plies 39 and 40 in criss-cross relationship, each of which has a width of seven inches and a length of nine inches. Overlying these body plies 39 and 40 is the second intermediate cushion gum layer 45 having a width of eleven and one-half inches and a length of eleven and one-half inches. Then overlying the second intermediate cushion gum layer 45 is a single reinforcing ply 41 having a width of six inches and a length of eight inches. Finally, overlying the reinforcing ply 41 is the top cushion gum layer 46 having a width of twelve inches and a length of twelve inches. The top layer 46 is preferred; however, it may not be necessary for other patches such as those cured with a mandrel-type mold. From FIG. 5 it can be seen that the first and second intermediate cushion gum layers 44 and 45 overlap in an edge portion 47 of the patch 33 at a position beyond the ends of the plies 35 through 41. Also the top cushion gum layer 46 and base cushion gum layer 34 overlap in the edge portion at positions beyond the ends of the first and second intermediate cushion gum layers 44 and 45. The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33.” (DiRocco, 4:51-5:35.)

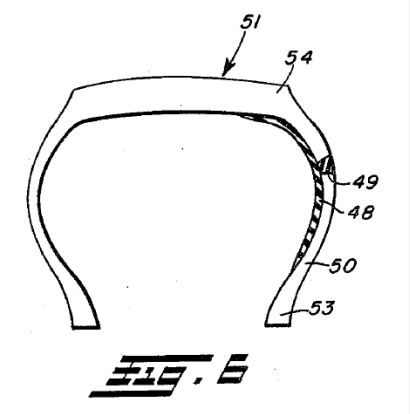
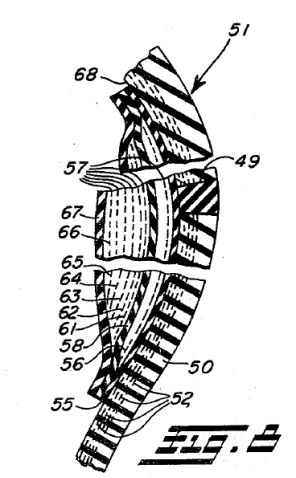
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’027 Claim Element	Disclosures from Prior Art (DiRocco)
	 FIG. 5
11[pre]. A method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of:	*To the extent that the preamble is limiting, DiRocco discloses, teaches, and/or suggests a method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of. For example:* “A tire repair patch having overlapping plies of reinforcing cords, a base cushion gum layer and an intermediate cushion gum layer positioned between at least two of the plies. The intermediate cushion gum layer has a thickness greater than the thickness of the plies and suspends some of the plies for distributing the forces transmitted through the patch at the injured portion of the tire.” (DiRocco, Abstract.) “The present invention is directed to a tire patch construction which has the flexibility and resilience to flex with the tire in operation and at the same time can be built without the formation of air spaces. This is accomplished by providing a relatively thick intermediate cushion gum layer of rubber at a position spaced from the tire-engaging surface of the patch and interposed between at least two of the plies. The patch also has a relatively thick base cushion gum layer of rubber at the surface engageable with the inner surface of the tire. With this construction the patch is given a flexibility and resilience which resists edge cracking and breaking loose of the edges from the tire during operation.” (DiRocco, 1:34-46.) “Referring to FIGS. 1 and 2, a tire repair patch 10 is shown bonded to a tire 11 having an injury 12 which may be a break or puncture in the wall of the tire. With reference to FIGS. 2 and 3, the patch 10 is of a laminated construction including a base cushion gum layer 13, plies 14, 15, 16, 17, 18, 19, 20 and 21 of reinforcing cords 22, an intermediate cushion gum layer 24 and a top cushion gum layer 25.” (DiRocco, 2:29-36.)

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	 FIG. 2 "The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat." (DiRocco, 4:3-27.) "Referring to FIGS. 4 and 5, a modified form of the invention is shown in which a patch 33 has a base cushion gum layer 34, overlapping plies 35 through 41 of reinforcing cords 42, a first intermediate cushion gum layer 44, a second intermediate cushion gum layer 45 and a top cushion gum layer 46. The reinforcing cords 42 of the plies 35 through 41 may be of the same end count and materials as those described hereinabove for plies 14 through 21 of the patch 10 shown in FIGS. 1 through

’027 Claim Element	Disclosures from Prior Art (DiRocco)
	3. Also the thickness and materials of the base, first intermediate, second intermediate and top cushion gum layers 34, 44, 45 and 46 may be the same as the thickness and materials of the base, intermediate and top cushion gum layers 13, 24 and 25 of the patch 10 shown in FIGS. 1 through 3.” (DiRocco, 4:36-50.)  Fig. 5 “Referring to FIGS. 6, 7 and 8, another modification is shown in which a tire repair patch 48 is adapted for repairing an injury 49 in the sidewall 50 of a radial tire 51. Reinforcing plies 52 of the tire 51, as shown in FIG. 8, extend generally in a radial direction between the bead portion 53 and tread 54 of the tire. As shown in FIGS. 7 and 8, the tire repair patch 48 is built up of a base cushion gum layer 55 which has a length L of twenty-seven inches substantially equal to the distance between the bead portion 53 and tread 54 of the tire 51 and a width W of nine and one-half inches required to cover the injury 49. Overlying the base cushion gum layer 55 is a working ply 56 having reinforcing cords 57 extending lengthwise and a length of twenty-six inches and width of eight and one-half inches. Overlying the working ply 56 is an intermediate cushion gum layer 58 having substantially the same size as the base cushion gum layer 55.” (DiRocco, 5:36-53.)

'027 Claim Element	Disclosures from Prior Art (DiRocco)
	 Fig. 6  Fig. 8 *See also following limitations.*
[11a] identifying a surface of a vulcanized rubber article;	*DiRocco discloses, teaches, and/or suggests identifying a surface of a vulcanized rubber article. For example:* "The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat." (DiRocco, 4:3-27.) "The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33." (DiRocco, 5:17-35.)
[11b] placing an assembly into contact with the identified surface, wherein the assembly comprises:	*DiRocco discloses, teaches, and/or suggests placing an assembly into contact with the identified surface, wherein the assembly comprises. For example:* "The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat." (DiRocco, 4:3-27.)

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	"The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33." (DiRocco, 5:17-35.)
[11c] an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article, and	*DiRocco discloses, teaches, and/or suggests an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article. For example:* *See* claims 1[a] and 1[b].
[11d] wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article.	*DiRocco discloses, teaches, and/or suggests the display assembly comprising: one or more display layers of elastomeric material constructed to provide a display indicia. For example:* *See* claims 1[b] and 5.
12. The method as recited in claim 11 further comprising preparing the identified surface before the step of placing.	*DiRocco discloses, teaches, and/or suggests the method as recited in claim 11 further comprising preparing the identified surface before the step of placing. For example:* "The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the

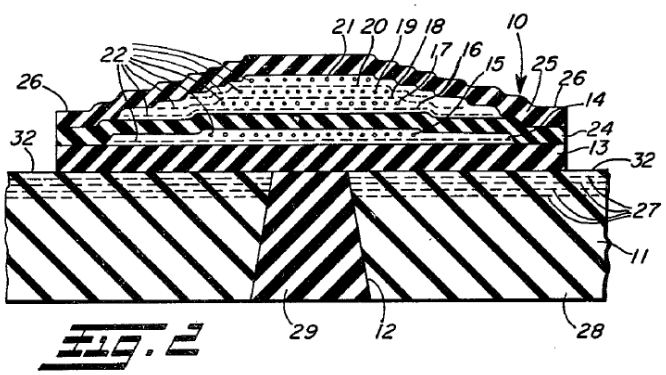
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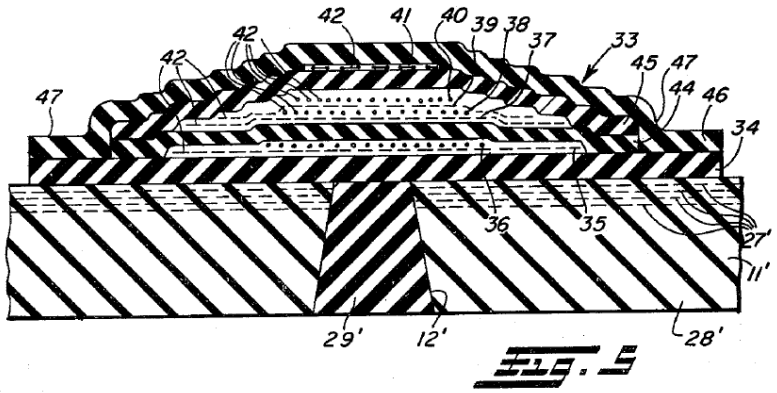
'027 Claim Element	Disclosures from Prior Art (DiRocco)
	center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat." (DiRocco, 4:3-27.) "The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33." (DiRocco, 5:17-35.)
13. The method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing.	*DiRocco discloses, teaches, and/or suggests the method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing. For example:* "The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing

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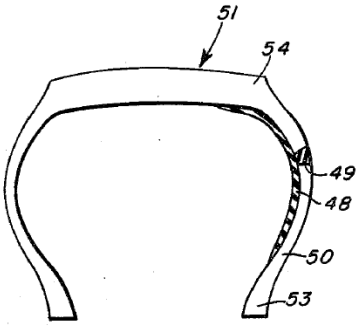
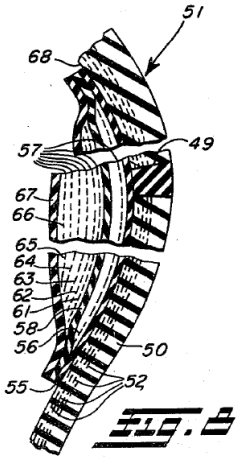
'027 Claim Element	Disclosures from Prior Art (DiRocco)
	method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat." (DiRocco, 4:3-27.) "The patch 33 of this modification is made in substantially the same way described for the patch 10 of FIGS. 1 through 3 and may be applied to a tire 11' with reinforcing plies 27' over an injury 12' in which a plug 29' has been inserted in a skived opening of the tire. With this construction, the working plies 35 and 36 are suspended between the reinforcing plies 27' of the tire 11' and the body plies 36 through 40 of the patch 10. Also the top ply 41 is suspended between the top cushion gum layer 46 and the body plies 37 through 40 to further distribute the load and reduce the stresses at the edge portions 47 of the patch 33. Furthermore, the positioning of the edges of the first and second intermediate cushion gum layers 44 and 45 and the base and top cushion gum layers 34 and 46 provides a resilient edge of the patch 33 which cushions the patch. In this way the forces in the tire 11' carried by the reinforcing plies 27' are transmitted to the body plies 37 through 40 of the patch 33." (DiRocco, 5:17-35.)
15[pre] A vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, DiRocco discloses, teaches, and/or suggests a vulcanized rubber tire comprising. For example:* "A tire repair patch having overlapping plies of reinforcing cords, a base cushion gum layer and an intermediate cushion gum layer positioned between at least two of the plies. The intermediate cushion gum layer has a thickness greater than the thickness of the plies and suspends some of the plies for distributing the forces

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	transmitted through the patch at the injured portion of the tire." (DiRocco, Abstract.) "The present invention is directed to a tire patch construction which has the flexibility and resilience to flex with the tire in operation and at the same time can be built without the formation of air spaces. This is accomplished by providing a relatively thick intermediate cushion gum layer of rubber at a position spaced from the tire-engaging surface of the patch and interposed between at least two of the plies. The patch also has a relatively thick base cushion gum layer of rubber at the surface engageable with the inner surface of the tire. With this construction the patch is given a flexibility and resilience which resists edge cracking and breaking loose of the edges from the tire during operation." (DiRocco, 1:34-46.) "Referring to FIGS. 1 and 2, a tire repair patch 10 is shown bonded to a tire 11 having an injury 12 which may be a break or puncture in the wall of the tire. With reference to FIGS. 2 and 3, the patch 10 is of a laminated construction including a base cushion gum layer 13, plies 14, 15, 16, 17, 18, 19, 20 and 21 of reinforcing cords 22, an intermediate cushion gum layer 24 and a top cushion gum layer 25." (DiRocco, 2:29-36.)  FIG. 2 "The application of the patch 10 to the tire 11 follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed. A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method. In the heat vulcanizing method, the protective film is removed from the patch 10 and the patch installed with no distortion and stitched thoroughly from the

'027 Claim Element	Disclosures from Prior Art (DiRocco)
	center to the edges. The tire 11 is then placed in a section mold or kettle and the patch 10 cured in a conventional approved manner. In the semicured method, the patch 10 is cured before application to the tire 11. Then a layer of rubber which may be part of the base cushion gum layer 13 is cured in a kettle or mold or is cured with a chemical cement. In the chemical cure method, a patch 10 is cured and has a layer of chemical cure base gum which may be molded or laminated to the patch 10. When it is desired to apply the patch 10 to the inner surface 32 of the tire 11, a chemical cement-like vulcanizing material is added to the base cushion gum layer 13 and the patch applied to the inner surface of the tire. The curing of the chemical cure base gum will take place at room temperature and may be accelerated by the addition of heat." (DiRocco, 4:3-27.) "Referring to FIGS. 4 and 5, a modified form of the invention is shown in which a patch 33 has a base cushion gum layer 34, overlapping plies 35 through 41 of reinforcing cords 42, a first intermediate cushion gum layer 44, a second intermediate cushion gum layer 45 and a top cushion gum layer 46. The reinforcing cords 42 of the plies 35 through 41 may be of the same end count and materials as those described hereinabove for plies 14 through 21 of the patch 10 shown in FIGS. 1 through 3. Also the thickness and materials of the base, first intermediate, second intermediate and top cushion gum layers 34, 44, 45 and 46 may be the same as the thickness and materials of the base, intermediate and top cushion gum layers 13, 24 and 25 of the patch 10 shown in FIGS. 1 through 3." (DiRocco, 4:36-50.)  FIG. 5 "Referring to FIGS. 6, 7 and 8, another modification is shown in which a tire repair patch 48 is adapted for repairing an injury 49 in the sidewall 50 of a radial tire 51. Reinforcing plies 52 of the tire 51, as shown in FIG. 8, extend generally in a radial

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
	direction between the bead portion 53 and tread 54 of the tire. As shown in FIGS. 7 and 8, the tire repair patch 48 is built up of a base cushion gum layer 55 which has a length L of twenty-seven inches substantially equal to the distance between the bead portion 53 and tread 54 of the tire 51 and a width W of nine and one-half inches required to cover the injury 49. Overlying the base cushion gum layer 55 is a working ply 56 having reinforcing cords 57 extending lengthwise and a length of twenty-six inches and width of eight and one-half inches. Overlying the working ply 56 is an intermediate cushion gum layer 58 having substantially the same size as the base cushion gum layer 55." (DiRocco, 5:36-53.)  Fig. 6  Fig. 8 *See also following limitations.*
[15a] a target surface disposed along a portion of the rubber tire;	*DiRocco discloses, teaches, and/or suggests a target surface disposed along a portion of the rubber tire. For example:* *See* claim 11[a].
[15b] an assembly disposed onto the target surface and comprising:	*DiRocco discloses, teaches, and/or suggests an assembly disposed onto the target surface and comprising. For example:* *See* claim 11[b].
[15c] an outer layer of elastomeric material; and	*DiRocco discloses, teaches, and/or suggests an outer layer of elastomeric material. For example:* *See* claims 1[a] and 11[c].

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
[15d] an adhesive layer connected with the outer layer;	*DiRocco discloses, teaches, and/or suggests an adhesive layer connected with the outer layer. For example:* *See* claims 1[b] and 11[c].
[15e] wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire.	*DiRocco discloses, teaches, and/or suggests wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire. For example:* *See* claims 1[b], 5 and 11[c].
16. The rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein.	*DiRocco discloses, teaches, and/or suggests the rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein. For example:* *See* claim 7.
17. The rubber tire as recited in claim 16 wherein an element is disposed within the cavity.	*DiRocco discloses, teaches, and/or suggests the rubber tire as recited in claim 16 wherein an element is disposed within the cavity. For example:* *See* claim 8.
18. The rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer.	*DiRocco discloses, teaches, and/or suggests the rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer. For example:* *See* claim 9.
19[pre] An assembly for attachment to a vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, DiRocco discloses, teaches, and/or suggests an assembly for attachment to a vulcanized rubber tire comprising. For example:* *See* claim 1[pre]. *See also following limitations.*
[19a] an outer layer formed from an elastomeric material;	*DiRocco discloses, teaches, and/or suggests an outer layer formed from an elastomeric material. For example:* *See* claim 1[a].
[19b] an adhesive layer bonding the assembly to	*DiRocco discloses, teaches, and/or suggests an adhesive layer bonding the assembly to portion of a vulcanized rubber tire. For example:*

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'027 Claim Element	Disclosures from Prior Art (DiRocco)
portion of a vulcanized rubber tire; and	*See* claim 1[b].
[19c] a cavity disposed within the assembly for accommodating an element therein;	*DiRocco discloses, teaches, and/or suggests a cavity disposed within the assembly for accommodating an element therein. For example:* *See* claims 7 and 8.
[19d] wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire.	*DiRocco discloses, teaches, and/or suggests wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire. For example:* *See* claims 1[b], 5 and 11[c].
20. The assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer.	*DiRocco discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer. For example:* *See* claim 9.
21. The assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer.	*DiRocco discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer. For example:* *See* claim 1[b].
22. The assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface.	*DiRocco discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface. For example:* *See* claim 1[a].

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Invalidity Claim Chart Against U.S. Patent No. 11,124,027 ("'027 Patent")
Based on U.S. Patent No. 5,971,046 ("Koch-046")

U.S. Patent No. 5,971,046 ("Koch-046") was filed on September 17, 1997 and issued on October 26, 1999. Koch-046 qualifies as prior art under at least 35 U.S.C. § 102. Koch-046 anticipates and/or renders obvious the Asserted Claims of the'027 Patent (at least as Revvo understands Plaintiff's application of the Asserted Claims in an effort to show infringement).

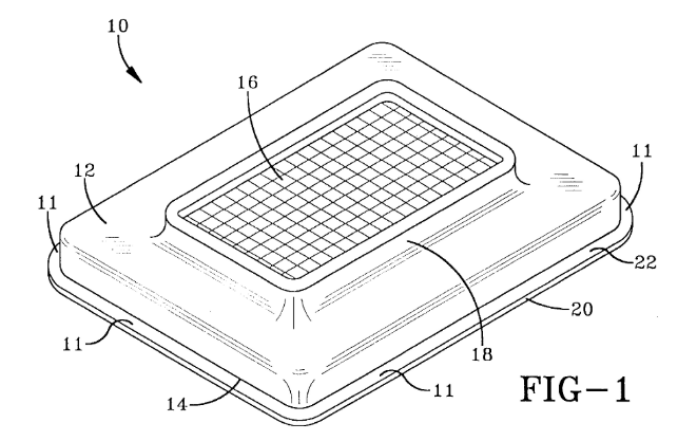
To the extent Plaintiff argues that any element below is not disclosed by Koch-046, a person of ordinary skill in the art would have found it obvious to combine the teachings of Koch-046 with the background knowledge of a person of ordinary skill in the art and/or the additional references and exemplary teachings set forth in the chart below, to arrive at the claim limitation with a reasonable expectation of success. The chart below provides representative examples of where each element of each claim is found within Koch-046. Citations are meant to be exemplary, not exhaustive, and Revvo reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by Plaintiff. Citations to figures, drawings, tables, and the link include reference to any accompanying or related text. All internal cross-references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Revvo's position that Plaintiff's October 30, 2024 Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Revvo's statements below should not be treated as an admission, implication, or suggestion that Revvo agrees with Plaintiff regarding either the scope, construction, or interpretation of any of the Asserted Claims or the infringement theories advanced by Plaintiff in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Revvo has specified non-limiting examples of where its application of the prior art is based on Plaintiff's apparent application of the claim element. These statements are not intended to suggest that Revvo agrees with Plaintiff's application of any claim element, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or propose claim constructions until a later date.

Plaintiff has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Koch-046. Revvo therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if Plaintiff makes any such contention.

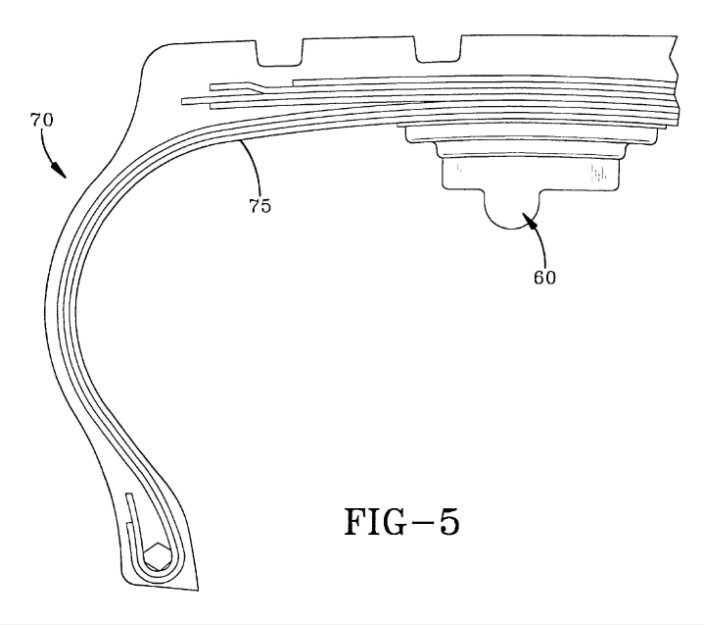
Where Revvo states that Koch-046 "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

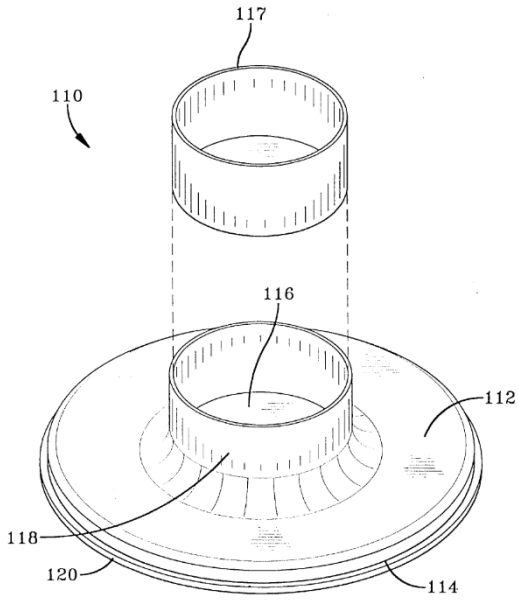
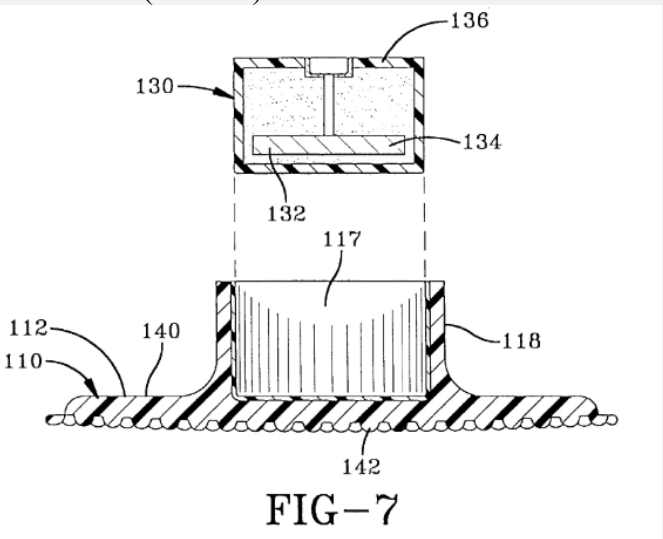
'027 Claim Element	Disclosures from Prior Art (Koch-046)
1[pre]. An assembly for attachment with a vulcanized rubber article comprising:	*To the extent that the preamble is limiting, Koch-046 discloses, teaches, and/or suggests a display assembly for attachment with a vulcanized rubber article comprising. For example:* **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. FIELD OF THE INVENTION This invention pertains to an apparatus and a method of bonding an active tag to a patch and to a tire. More particularly, this invention sets forth a method and apparatus for encapsulating an electronic device in a rigid material, mounting the device on a vulcanized rubber patch and bonding the rubber patch to a vulcanized tire. (1:5-10) A rubber tire patch having a preselected configuration is formed. The rubber patch includes a first side for interfacing with the face of the encapsulated rigid tag assembly. This first side has increased surface area, which allows for a better bond with the encapsulated tag. The first side also includes a recessed cavity surrounded by a ridge of material of sufficient height to capture the encapsulated rigid tag assembly. This ridge helps to improve the bond between the rubber patch and the encapsulated rigid tag. The patch includes a second opposite side, the second side approximating the contour of the inner liner of the tire. The patch is tapered from the first side toward the second side, with the second side flaring out into a relatively thin configuration, but having a radius approaching the radius of the tire inner liner. The rubber patch is vulcanized at a preselected temperature and for a time sufficient its vulcanization. After vulcanization, a thin layer of dual cure bonding rubber is applied to the second side of the vulcanized rubber patch. This thin layer of dual cure bonding rubber will permit the assembly of the patch assembly to the inner liner of the tire. A fluid epoxy adhesive is applied to an interface between the encapsulated tag assembly and the rubber patch. The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the

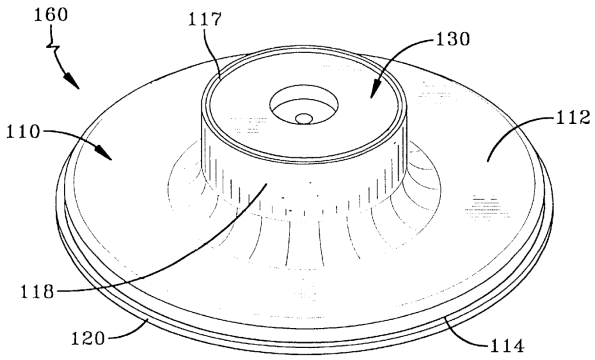
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)  FIG−1 FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) Affixed to the second side 14 of the vulcanized tire patch is a dual cure bonding layer 20, which has a second side (not shown) and a first side 22. This dual cure bonding layer 20 may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer 20 is permanently assembled to the patch. A non-curing cement (not shown) is applied to side 14 of the patch in order to hold the dual cure bonding layer 20 onto the patch. The non-curing cement and the dual cure bonding layer 20 are products of Patch Rubber Company. The important feature of the dual cure bonding layer 20 is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer 20 may be any material which can be activated and cured to the vulcanized rubber

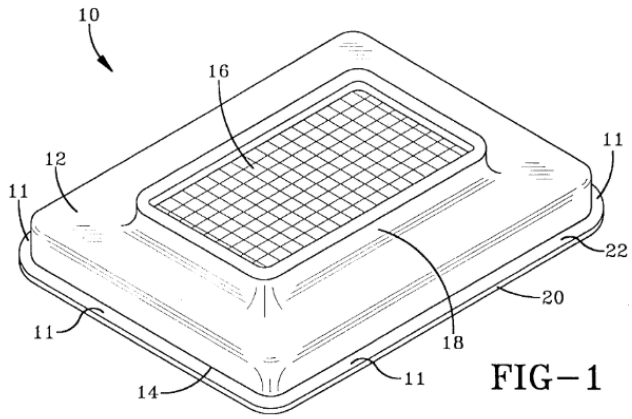
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	of the tire inner liner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy two (72) hours. However, if more rapid curing is desired this may be accomplished by heating to 45° C. for at least twenty four hours. (4:20-43) Rigid tag assembly 30 is assembled into the recessed cavity 16 on the first side 12 of tire patch 10 either after vulcanization of the patch or after assembly of the dual bond curing layer 20 to the patch. In order to permanently adhere tag assembly 30 to patch 10, a fluid adhesive is applied to the interface between tag assembly 30 and recess 16. This adhesive, preferably an epoxy adhesive, may be applied conveniently to surface 42 of tag assembly or to the base of recess 16. As tag assembly 30 is pressed into recessed cavity 16, the epoxy adhesive flows evenly along the interface between surface 42 and the base of recess 16. The increased surface area between the base of recessed cavity 16 and surface 52 provides for additional bonding area and a stronger bond. Because the ridges around the recess are closely dimensioned to correspond to the dimensions of tag assembly 30, excess epoxy will flow between tag assembly 30 and ridge 18, and some epoxy may even flow out from this region. Of course, the flow of epoxy in this region will add to the strength of the assembly as the epoxy cures. While the epoxy can be allowed to cure at room temperature, the curing process can be accelerated by heating the assembly at an elevated temperature, for example a temperature of from about 75-90° C. for at least about 30 minutes. If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)

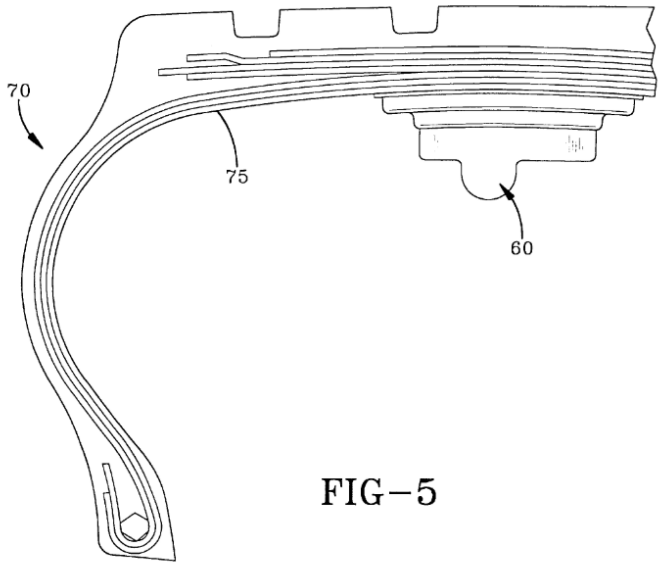
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−6 FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device. FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)  FIG−7

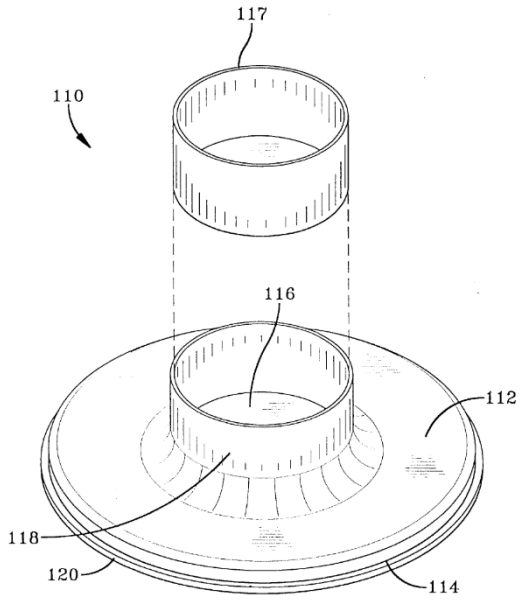
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−8 FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28) Patch assembly 160 formed by assembling rigid tag assembly 130 into tire patch 110 is bonded to a tire using the same materials and methods described above for Patch assembly 60. As such, a dual cure bonding layer 120 is connected to second side 114 as described above with respect to the first embodiment of the present invention. (6:58-63) *See also following limitations.*
[1a] an outer layer of elastomeric material having a visual feature; and	*Koch-046 discloses, teaches, and/or suggests an outer layer of elastomeric material having a visual feature. For example:* **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. FIELD OF THE INVENTION This invention pertains to an apparatus and a method of bonding an active tag to a patch and to a tire. More particularly, this invention sets forth a method and apparatus for encapsulating an electronic device in a rigid material, mounting the device on a vulcanized rubber patch and bonding the rubber patch to a vulcanized tire. (1:5-10) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−1 FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)

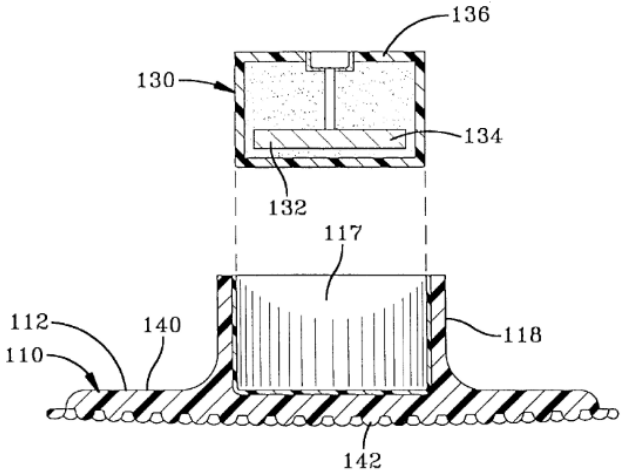
’027 Claim Element	Disclosures from Prior Art (Koch-046)



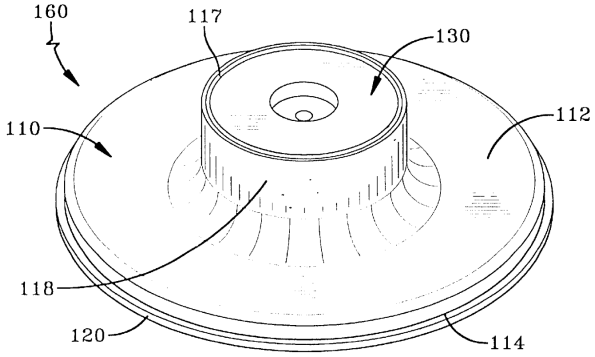
FIG−6

FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device.

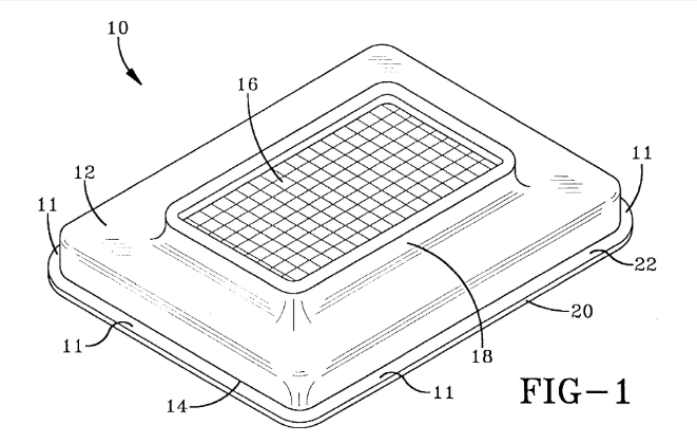
FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)



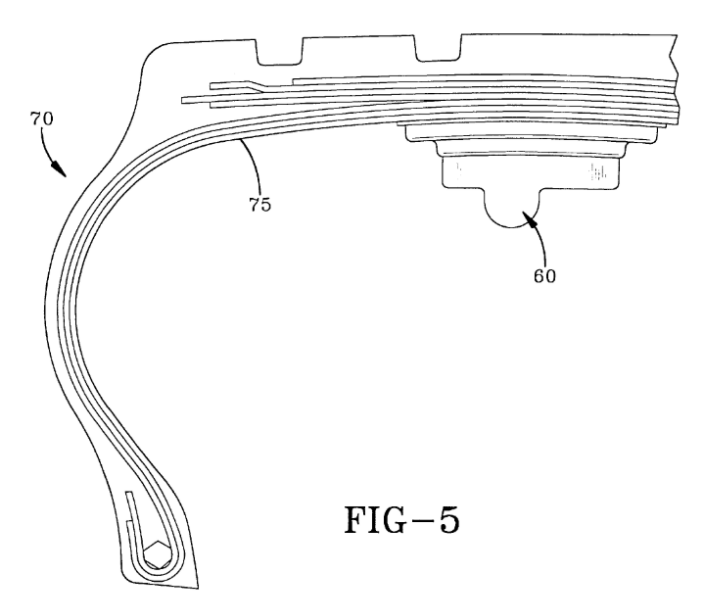
FIG−7

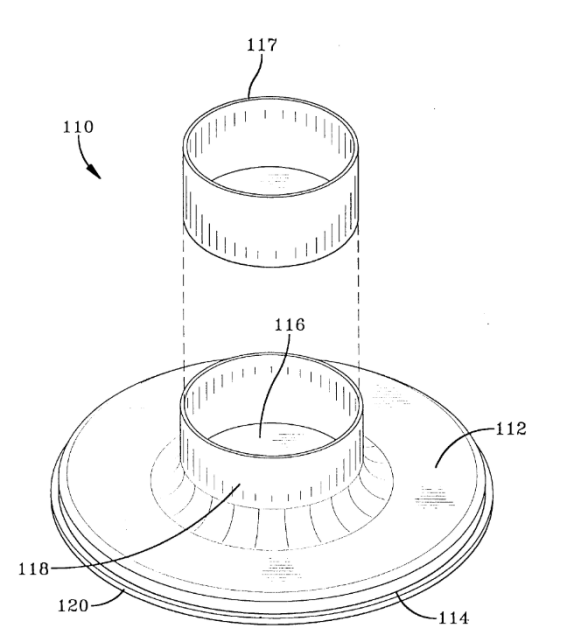
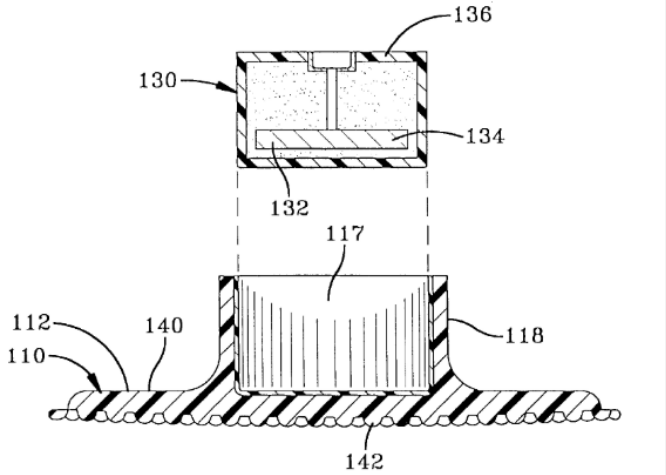
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−8 FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is

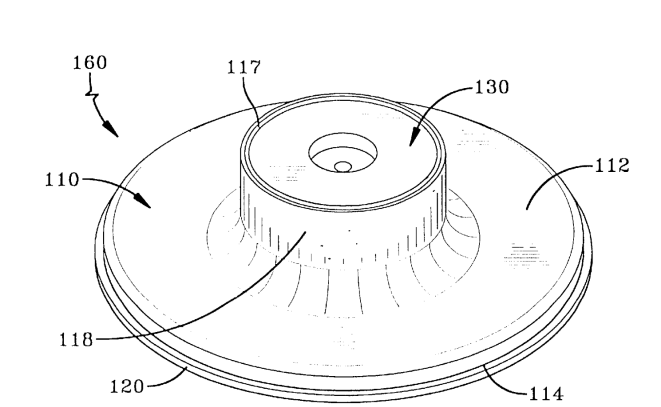
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28)
[1b] an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and	*Koch-046 discloses, teaches, and/or suggests an adhesive layer adhered to an interface surface of the outer layer, wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition. For example:* **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. FIELD OF THE INVENTION This invention pertains to an apparatus and a method of bonding an active tag to a patch and to a tire. More particularly, this invention sets forth a method and apparatus for encapsulating an electronic device in a rigid material, mounting the device on a vulcanized rubber patch and bonding the rubber patch to a vulcanized tire. (1:5-10) A rubber tire patch having a preselected configuration is formed. The rubber patch includes a first side for interfacing with the face of the encapsulated rigid tag assembly. This first side has increased surface area, which allows for a better bond with the encapsulated tag. The first side also includes a recessed cavity surrounded by a ridge of material of sufficient height to capture the encapsulated rigid tag assembly. This ridge helps to improve the bond between the rubber patch and the encapsulated rigid tag. The patch includes a second opposite side, the second side approximating the contour of the inner liner of the tire. The patch is tapered from the first side toward the second side, with the second side flaring out into a relatively thin configuration, but having a radius approaching the radius of the tire inner liner. The rubber patch is vulcanized at a preselected temperature and for a time sufficient its vulcanization. After vulcanization, a thin layer of dual cure bonding rubber is applied to the second side of the vulcanized rubber patch. This thin layer of dual cure bonding rubber will permit the assembly of the patch assembly to the inner liner of the tire. A fluid epoxy adhesive is applied to an interface

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	between the encapsulated tag assembly and the rubber patch. The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)  FIG−1 FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing

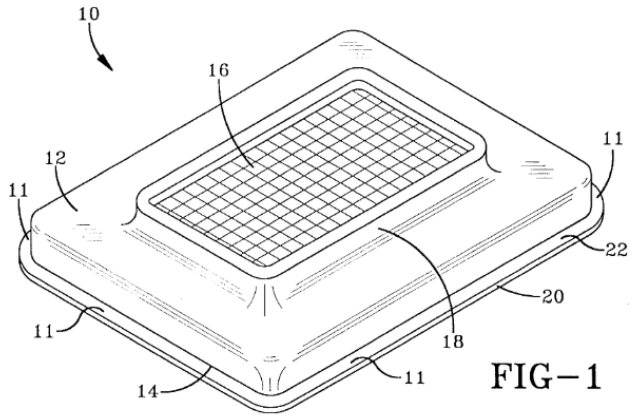
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) Affixed to the second side 14 of the vulcanized tire patch is a dual cure bonding layer 20, which has a second side (not shown) and a first side 22. This dual cure bonding layer 20 may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer 20 is permanently assembled to the patch. A non-curing cement (not shown) is applied to side 14 of the patch in order to hold the dual cure bonding layer 20 onto the patch. The non-curing cement and the dual cure bonding layer 20 are products of Patch Rubber Company. The important feature of the dual cure bonding layer 20 is that it can be chemically activated and cured, without the need

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer 20 may be any material which can be activated and cured to the vulcanized rubber of the tire inner liner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy two (72) hours. However, if more rapid curing is desired this may be accomplished by heating to 45° C. for at least twenty four hours. (4:20-43) If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a

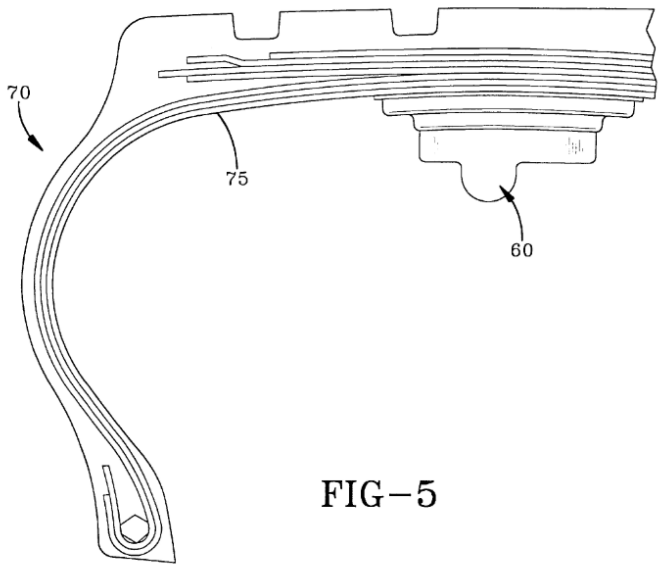
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)  FIG−6 FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device. FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)  FIG−7

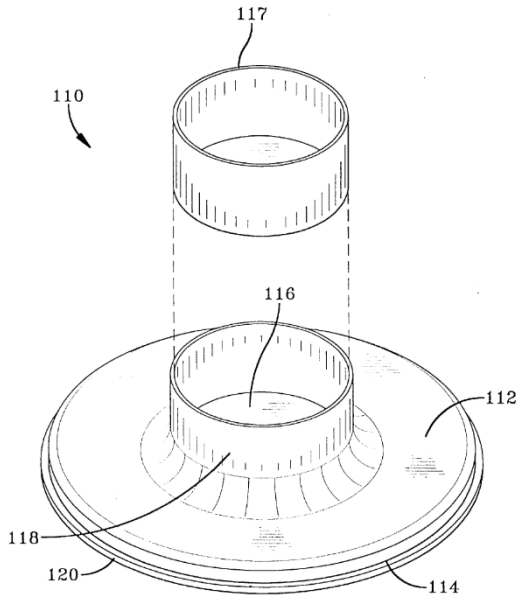
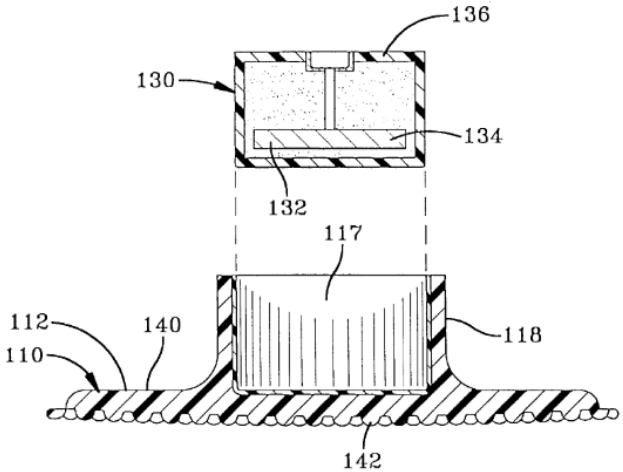
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	 FIG−8 FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is

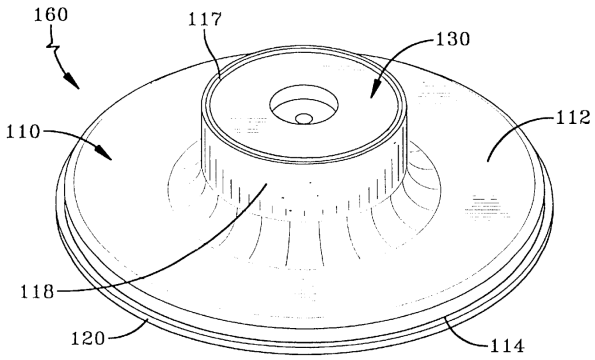
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28) Patch assembly 160 formed by assembling rigid tag assembly 130 into tire patch 110 is bonded to a tire using the same materials and methods described above for Patch assembly 60. As such, a dual cure bonding layer 120 is connected to second side 114 as described above with respect to the first embodiment of the present invention. (6:58-63)
[1c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.	*Koch-046 discloses, teaches, and/or suggests wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article. For example:* **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. A rubber tire patch having a preselected configuration is formed. The rubber patch includes a first side for interfacing with the face of the encapsulated rigid tag assembly. This first side has increased surface area, which allows for a better bond with the encapsulated tag. The first side also includes a recessed cavity surrounded by a ridge of material of sufficient height to capture the encapsulated rigid tag assembly. This ridge helps to improve the bond between the rubber patch and the encapsulated rigid tag. The patch includes a second opposite side, the second side approximating the contour of the inner liner of the tire. The patch is tapered from the first side toward the second side, with the second side flaring out into a relatively thin configuration, but having a radius approaching the radius of the tire inner liner. The rubber patch is vulcanized at a preselected temperature and for a time sufficient its vulcanization. After vulcanization, a thin layer of dual cure bonding rubber is applied to the second side of the vulcanized rubber patch. This thin layer of dual cure bonding rubber will permit the assembly of the patch assembly to the inner liner of the tire. A fluid epoxy adhesive is applied to an interface between the encapsulated tag assembly and the rubber patch. The encapsulated tag assembly is assembled into the recessed cavity

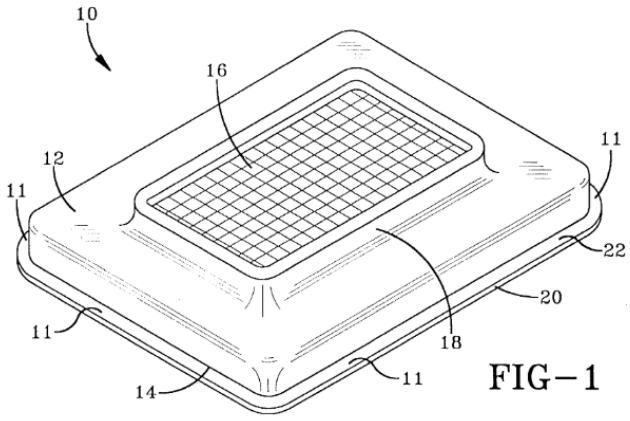
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)  FIG−1 FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) Affixed to the second side 14 of the vulcanized tire patch is a dual cure bonding layer 20, which has a second side (not shown) and a first side 22. This dual cure bonding layer 20 may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer 20 is permanently assembled to the patch. A non-curing cement (not shown) is applied to side 14 of the patch in order to hold the dual cure bonding layer 20 onto the patch. The non-curing cement and the dual cure bonding layer 20 are products of Patch Rubber Company. The important feature of the dual cure bonding layer 20 is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer 20 may be any material which can be activated and cured to the vulcanized rubber of the tire inner liner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy two (72) hours. However, if more rapid curing is desired this may be accomplished by heating to 45° C. for at least twenty four hours. (4:20-43)

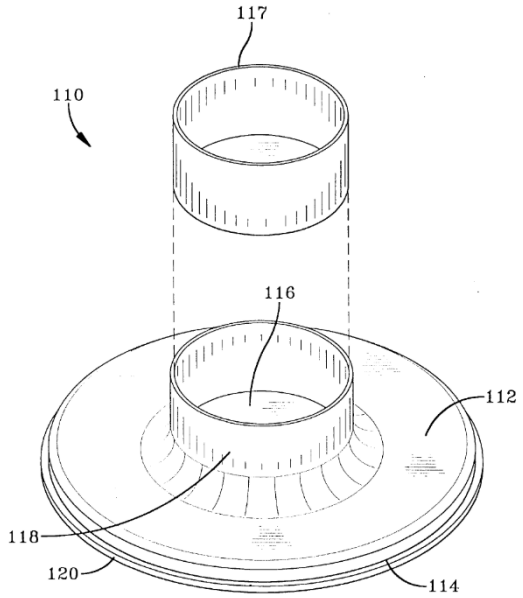
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−6 FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device. FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)  FIG−7

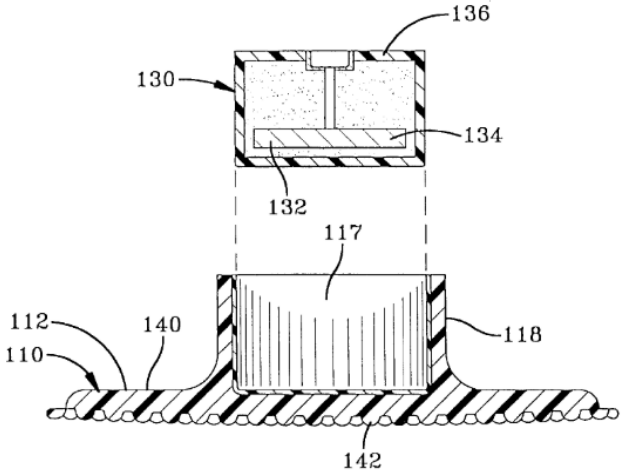
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−8 Patch assembly 160 formed by assembling rigid tag assembly 130 into tire patch 110 is bonded to a tire using the same materials and methods described above for Patch assembly 60. As such, a dual cure bonding layer 120 is connected to second side 114 as described above with respect to the first embodiment of the present invention. (6:58-63)
5. The assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article.	*Koch-046 discloses, teaches, and/or suggests the assembly as recited in claim 1 wherein the barrier material composition impairs migration of a material constituent within the assembly when the assembly is attached to a vulcanized rubber article. For example:* *See, e.g.*, **[1a]**, above. The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8)
7. The assembly as recited in claim 1 further comprising a cavity disposed therein.	*Koch-046 discloses, teaches, and/or suggests the assembly as recited in claim 1 further comprising a cavity disposed therein. For example:*

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)  FIG−1 FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2.

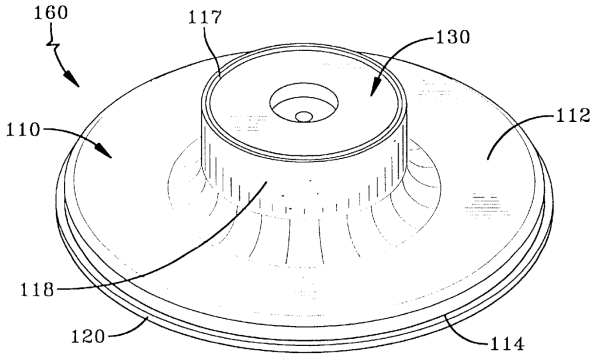
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) Rigid tag assembly 30 is assembled into the recessed cavity 16 on the first side 12 of tire patch 10 either after vulcanization of the patch or after assembly of the dual bond curing layer 20 to the patch. In order to permanently adhere tag assembly 30 to patch 10, a fluid adhesive is applied to the interface between tag assembly 30 and recess 16. This adhesive, preferably an epoxy adhesive, may be applied conveniently to surface 42 of tag assembly or to the base of recess 16. As tag assembly 30 is pressed into recessed cavity 16, the epoxy adhesive flows evenly along the interface between surface 42 and the base of recess 16. The increased surface area between the base of recessed cavity 16 and surface 52 provides for additional bonding area and a stronger bond. Because the ridges around the recess are closely

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	dimensioned to correspond to the dimensions of tag assembly 30, excess epoxy will flow between tag assembly 30 and ridge 18, and some epoxy may even flow out from this region. Of course, the flow of epoxy in this region will add to the strength of the assembly as the epoxy cures. While the epoxy can be allowed to cure at room temperature, the curing process can be accelerated by heating the assembly at an elevated temperature, for example a temperature of from about 75-90° C. for at least about 30 minutes. If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)  FIG−6 FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device. FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)

’027 Claim Element	Disclosures from Prior Art (Koch-046)



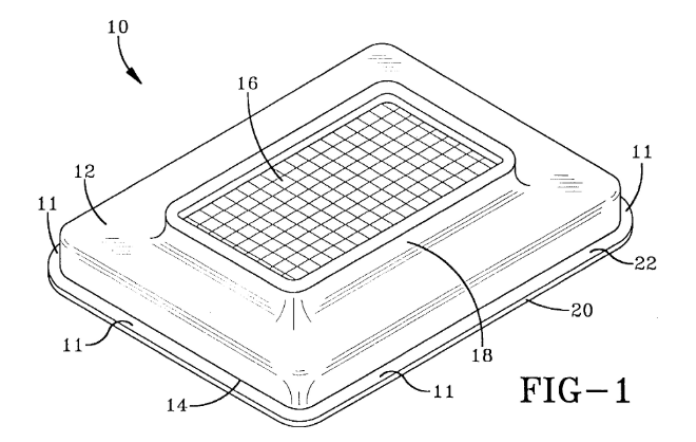
FIG−7



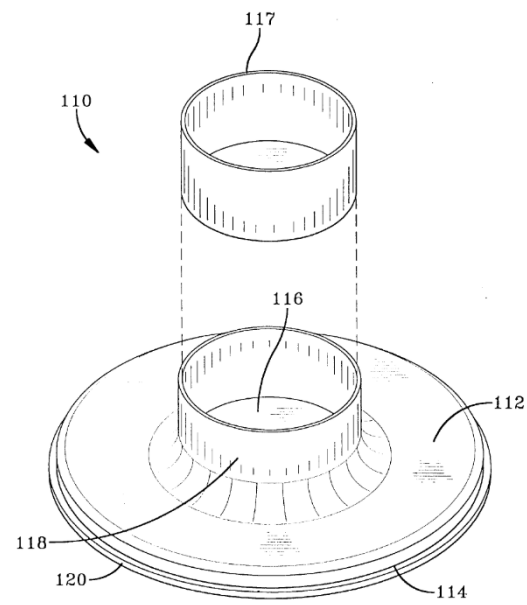
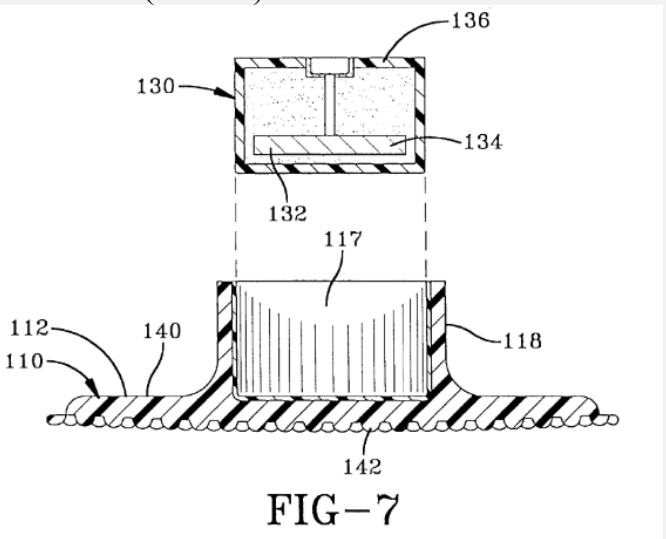
FIG−8

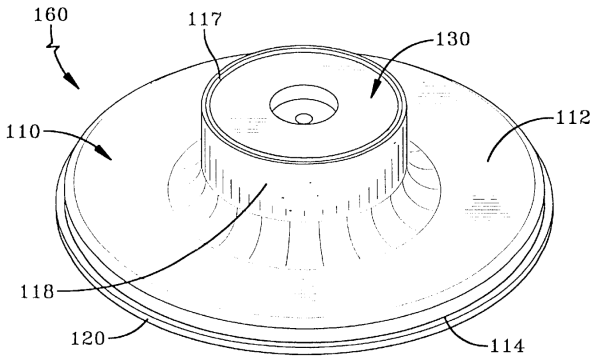
FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in

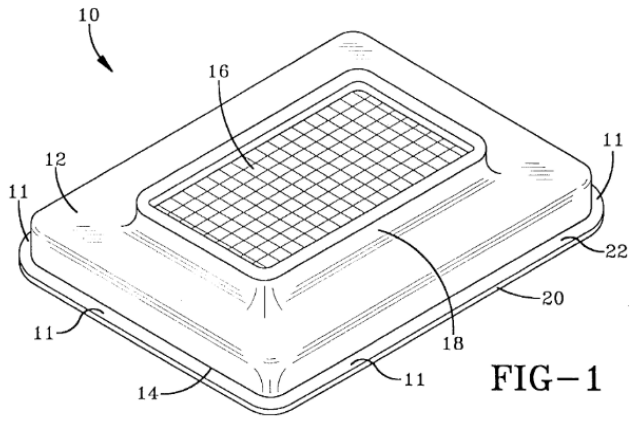
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28)
8. The assembly as recited in claim 7 further comprising an element disposed within the cavity.	*Koch-046 discloses, teaches, and/or suggests the assembly as recited in claim 7 further comprising an element disposed within the cavity. For example:* The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21)

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)  FIG−1 FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The

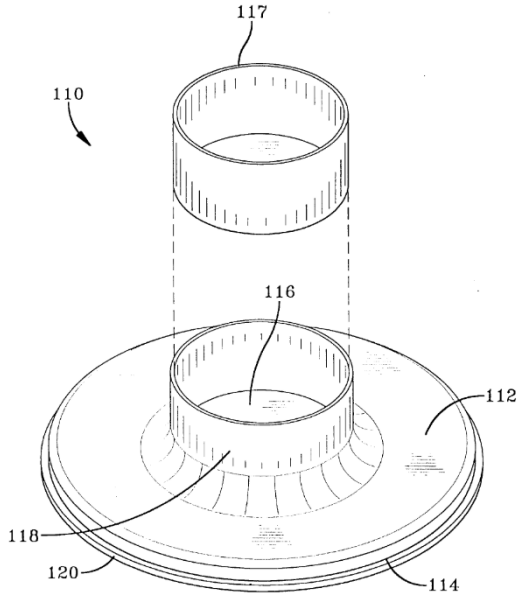
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) Rigid tag assembly 30 is assembled into the recessed cavity 16 on the first side 12 of tire patch 10 either after vulcanization of the patch or after assembly of the dual bond curing layer 20 to the patch. In order to permanently adhere tag assembly 30 to patch 10, a fluid adhesive is applied to the interface between tag assembly 30 and recess 16. This adhesive, preferably an epoxy adhesive, may be applied conveniently to surface 42 of tag assembly or to the base of recess 16. As tag assembly 30 is pressed into recessed cavity 16, the epoxy adhesive flows evenly along the interface between surface 42 and the base of recess 16. The increased surface area between the base of recessed cavity 16 and surface 52 provides for additional bonding area and a stronger bond. Because the ridges around the recess are closely dimensioned to correspond to the dimensions of tag assembly 30, excess epoxy will flow between tag assembly 30 and ridge 18, and some epoxy may even flow out from this region. Of course, the flow of epoxy in this region will add to the strength of the assembly as the epoxy cures. While the epoxy can be allowed to cure at room temperature, the curing process can be accelerated by heating the assembly at an elevated temperature, for example a temperature of from about 75-90° C. for at least about 30 minutes. If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)

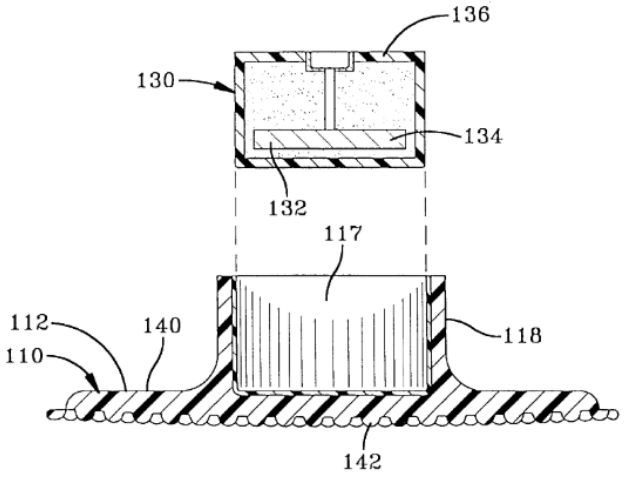
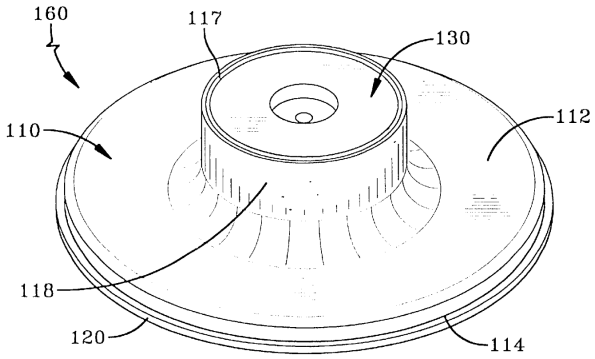
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−6 FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device. FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)  FIG−7

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−8 FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28)
9. The assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer.	*Koch-046 discloses, teaches, and/or suggests the assembly as recited in claim 7 wherein the cavity is disposed beneath the outer layer.* *For example:* The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)  FIG−1

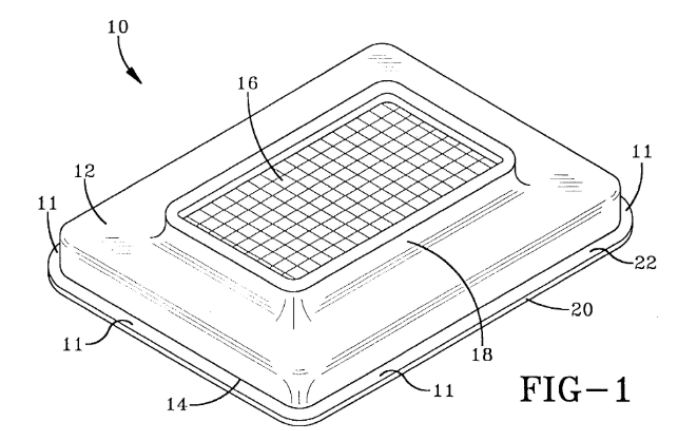
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) Rigid tag assembly 30 is assembled into the recessed cavity 16 on the first side 12 of tire patch 10 either after vulcanization of the patch or after assembly of the dual bond curing layer 20 to the patch. In order to permanently adhere tag assembly 30 to patch 10, a fluid adhesive is applied to the interface between tag assembly 30 and recess 16. This adhesive, preferably an epoxy

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	adhesive, may be applied conveniently to surface 42 of tag assembly or to the base of recess 16. As tag assembly 30 is pressed into recessed cavity 16, the epoxy adhesive flows evenly along the interface between surface 42 and the base of recess 16. The increased surface area between the base of recessed cavity 16 and surface 52 provides for additional bonding area and a stronger bond. Because the ridges around the recess are closely dimensioned to correspond to the dimensions of tag assembly 30, excess epoxy will flow between tag assembly 30 and ridge 18, and some epoxy may even flow out from this region. Of course, the flow of epoxy in this region will add to the strength of the assembly as the epoxy cures. While the epoxy can be allowed to cure at room temperature, the curing process can be accelerated by heating the assembly at an elevated temperature, for example a temperature of from about 75-90° C. for at least about 30 minutes. If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)  FIG−6 FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device.

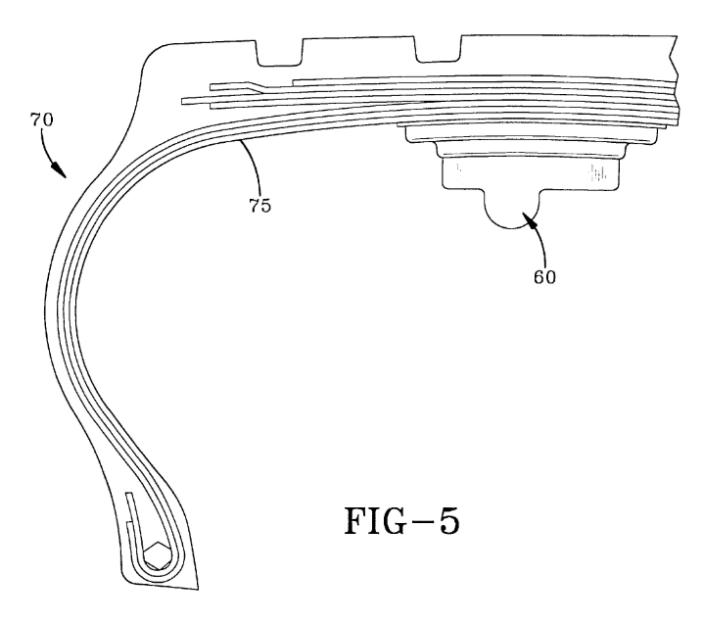
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)  FIG−7  FIG−8 FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28)
11[pre]. A method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of:	*To the extent that the preamble is limiting, Koch-046 discloses, teaches, and/or suggests a method for attaching an assembly to a surface of a vulcanized rubber article comprising the steps of. For example:* **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. FIELD OF THE INVENTION This invention pertains to an apparatus and a method of bonding an active tag to a patch and to a tire. More particularly, this invention sets forth a method and apparatus for encapsulating an electronic device in a rigid material, mounting the device on a vulcanized rubber patch and bonding the rubber patch to a vulcanized tire. (1:5-10) A rubber tire patch having a preselected configuration is formed. The rubber patch includes a first side for interfacing with the face of the encapsulated rigid tag assembly. This first side has

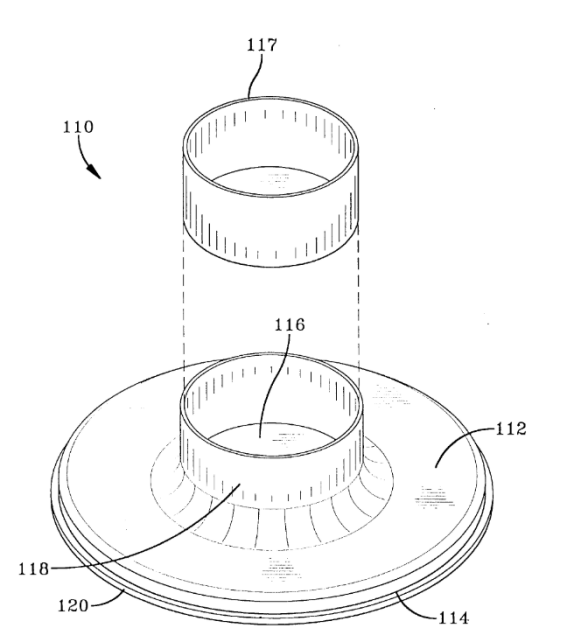
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	increased surface area, which allows for a better bond with the encapsulated tag. The first side also includes a recessed cavity surrounded by a ridge of material of sufficient height to capture the encapsulated rigid tag assembly. This ridge helps to improve the bond between the rubber patch and the encapsulated rigid tag. The patch includes a second opposite side, the second side approximating the contour of the inner liner of the tire. The patch is tapered from the first side toward the second side, with the second side flaring out into a relatively thin configuration, but having a radius approaching the radius of the tire inner liner. The rubber patch is vulcanized at a preselected temperature and for a time sufficient its vulcanization. After vulcanization, a thin layer of dual cure bonding rubber is applied to the second side of the vulcanized rubber patch. This thin layer of dual cure bonding rubber will permit the assembly of the patch assembly to the inner liner of the tire. A fluid epoxy adhesive is applied to an interface between the encapsulated tag assembly and the rubber patch. The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−1 FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) Affixed to the second side 14 of the vulcanized tire patch is a dual cure bonding layer 20, which has a second side (not shown) and a first side 22. This dual cure bonding layer 20 may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer 20 is permanently assembled to the patch. A non-curing cement (not shown) is applied to side 14 of the patch in order to hold the dual cure bonding layer 20 onto the patch. The non-curing cement and the dual cure bonding layer 20 are products of Patch Rubber Company. The important feature of the dual cure bonding layer 20 is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer 20 may be any material which can be activated and cured to the vulcanized rubber of the tire inner liner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy two (72) hours. However, if more rapid curing is desired this may be accomplished by heating to 45° C. for at least twenty four hours. (4:20-43) Rigid tag assembly 30 is assembled into the recessed cavity 16 on the first side 12 of tire patch 10 either after vulcanization of the patch or after assembly of the dual bond curing layer 20 to the patch. In order to permanently adhere tag assembly 30 to patch 10, a fluid adhesive is applied to the interface between tag assembly 30 and recess 16. This adhesive, preferably an epoxy adhesive, may be applied conveniently to surface 42 of tag assembly or to the base of recess 16. As tag assembly 30 is pressed into recessed cavity 16, the epoxy adhesive flows evenly along the interface between surface 42 and the base of recess 16. The increased surface area between the base of recessed cavity 16 and surface 52 provides for additional bonding area and a stronger bond. Because the ridges around the recess are closely dimensioned to correspond to the dimensions of tag assembly 30, excess epoxy will flow between tag assembly 30 and ridge 18,

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	and some epoxy may even flow out from this region. Of course, the flow of epoxy in this region will add to the strength of the assembly as the epoxy cures. While the epoxy can be allowed to cure at room temperature, the curing process can be accelerated by heating the assembly at an elevated temperature, for example a temperature of from about 75-90° C. for at least about 30 minutes. If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)

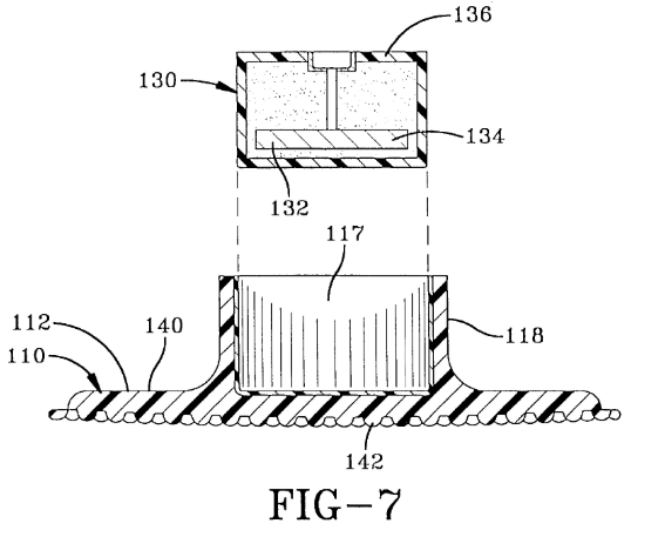
’027 Claim Element	Disclosures from Prior Art (Koch-046)



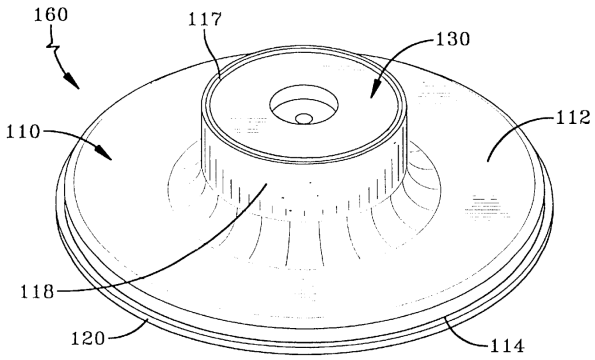
FIG−6

FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device.

FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)

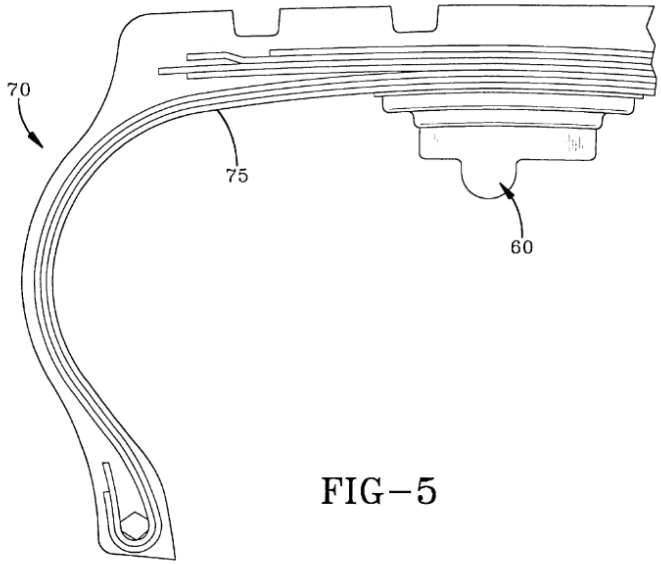


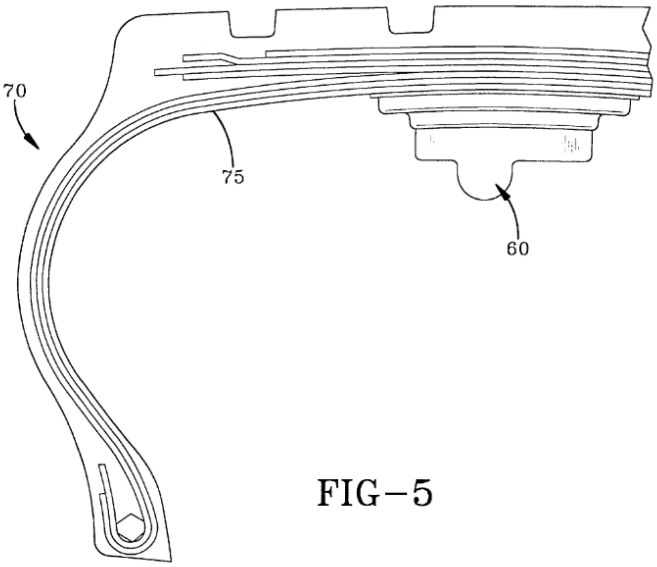
FIG−7

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−8 FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is

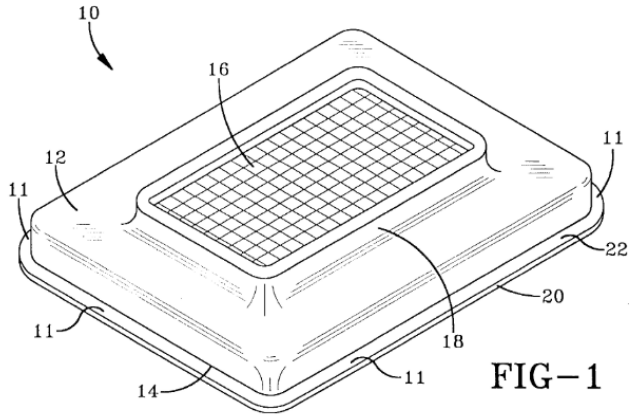
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28) Patch assembly 160 formed by assembling rigid tag assembly 130 into tire patch 110 is bonded to a tire using the same materials and methods described above for Patch assembly 60. As such, a dual cure bonding layer 120 is connected to second side 114 as described above with respect to the first embodiment of the present invention. (6:58-63) *See also following limitations.*
[11a] identifying a surface of a vulcanized rubber article;	*Koch-046 discloses, teaches, and/or suggests identifying a surface of a vulcanized rubber article. For example:* **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. A rubber tire patch having a preselected configuration is formed. The rubber patch includes a first side for interfacing with the face of the encapsulated rigid tag assembly. This first side has increased surface area, which allows for a better bond with the encapsulated tag. The first side also includes a recessed cavity surrounded by a ridge of material of sufficient height to capture the encapsulated rigid tag assembly. This ridge helps to improve the bond between the rubber patch and the encapsulated rigid tag. The patch includes a second opposite side, the second side approximating the contour of the inner liner of the tire. The patch is tapered from the first side toward the second side, with the second side flaring out into a relatively thin configuration, but having a radius approaching the radius of the tire inner liner. The rubber patch is vulcanized at a preselected temperature and for a time sufficient its vulcanization. After vulcanization, a thin layer of dual cure bonding rubber is applied to the second side of the vulcanized rubber patch. This thin layer of dual cure bonding rubber will permit the assembly of the patch assembly to the inner liner of the tire. A fluid epoxy adhesive is applied to an interface between the encapsulated tag assembly and the rubber patch. The

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) Affixed to the second side 14 of the vulcanized tire patch is a dual cure bonding layer 20, which has a second side (not shown) and a first side 22. This dual cure bonding layer 20 may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer 20 is permanently assembled to the patch. A non-curing cement (not shown) is applied to side 14 of the patch in order to hold the dual cure bonding layer 20 onto the patch. The non-curing cement and the dual cure bonding layer 20 are products of Patch Rubber Company. The important feature of the dual cure bonding layer 20 is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer 20 may be any material which can be activated and cured to the vulcanized rubber of the tire inner liner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy two (72) hours. However, if more rapid curing is desired this may be

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	accomplished by heating to 45° C. for at least twenty four hours. (4:20-43) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60)
[11b] placing an assembly into contact with the identified surface, wherein the assembly comprises:	*Koch-046 discloses, teaches, and/or suggests placing an assembly into contact with the identified surface, wherein the assembly comprises. For example:* FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)

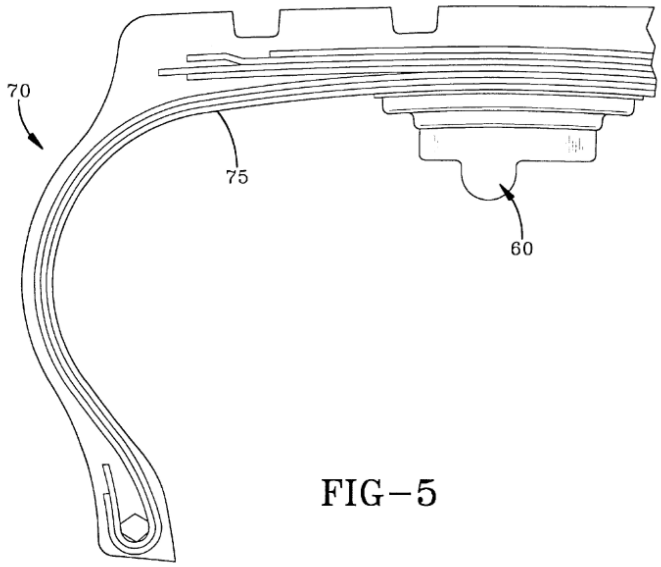
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG–5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60) Patch assembly 160 formed by assembling rigid tag assembly 130 into tire patch 110 is bonded to a tire using the same materials and methods described above for Patch assembly 60. As such, a dual cure bonding layer 120 is connected to second side 114 as described above with respect to the first embodiment of the present invention. (6:58-63)
[11c] an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the	*Koch-046 discloses, teaches, and/or suggests an outer layer of elastomeric material, wherein the outer layer is in contact with an adhesive layer interposed between the identified surface and the assembly that bonds the assembly to the vulcanized rubber article. For example:* **Abstract**

'027 Claim Element	Disclosures from Prior Art (Koch-046)
assembly to the vulcanized rubber article, and	A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. FIELD OF THE INVENTION This invention pertains to an apparatus and a method of bonding an active tag to a patch and to a tire. More particularly, this invention sets forth a method and apparatus for encapsulating an electronic device in a rigid material, mounting the device on a vulcanized rubber patch and bonding the rubber patch to a vulcanized tire. (1:5-10) A rubber tire patch having a preselected configuration is formed. The rubber patch includes a first side for interfacing with the face of the encapsulated rigid tag assembly. This first side has increased surface area, which allows for a better bond with the encapsulated tag. The first side also includes a recessed cavity surrounded by a ridge of material of sufficient height to capture the encapsulated rigid tag assembly. This ridge helps to improve the bond between the rubber patch and the encapsulated rigid tag. The patch includes a second opposite side, the second side approximating the contour of the inner liner of the tire. The patch is tapered from the first side toward the second side, with the second side flaring out into a relatively thin configuration, but having a radius approaching the radius of the tire inner liner. The rubber patch is vulcanized at a preselected temperature and for a time sufficient its vulcanization. After vulcanization, a thin layer of dual cure bonding rubber is applied to the second side of the vulcanized rubber patch. This thin layer of dual cure bonding rubber will permit the assembly of the patch assembly to the inner liner of the tire. A fluid epoxy adhesive is applied to an interface between the encapsulated tag assembly and the rubber patch. The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The

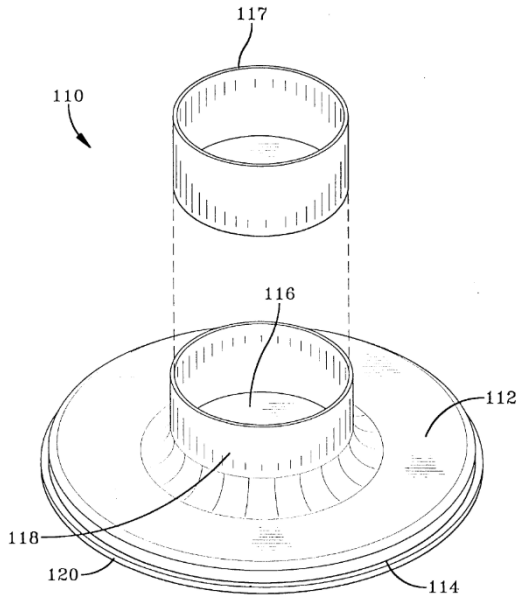
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)  FIG−1 FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62)

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) Affixed to the second side 14 of the vulcanized tire patch is a dual cure bonding layer 20, which has a second side (not shown) and a first side 22. This dual cure bonding layer 20 may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer 20 is permanently assembled to the patch. A non-curing cement (not shown) is applied to side 14 of the patch in order to hold the dual cure bonding layer 20 onto the patch. The non-curing cement and the dual cure bonding layer 20 are products of Patch Rubber Company. The important feature of the dual cure bonding layer 20 is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer 20 may be any material which can be activated and cured to the vulcanized rubber of the tire inner liner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy two (72) hours. However, if more rapid curing is desired this may be

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	accomplished by heating to 45° C. for at least twenty four hours. (4:20-43) Rigid tag assembly 30 is assembled into the recessed cavity 16 on the first side 12 of tire patch 10 either after vulcanization of the patch or after assembly of the dual bond curing layer 20 to the patch. In order to permanently adhere tag assembly 30 to patch 10, a fluid adhesive is applied to the interface between tag assembly 30 and recess 16. This adhesive, preferably an epoxy adhesive, may be applied conveniently to surface 42 of tag assembly or to the base of recess 16. As tag assembly 30 is pressed into recessed cavity 16, the epoxy adhesive flows evenly along the interface between surface 42 and the base of recess 16. The increased surface area between the base of recessed cavity 16 and surface 52 provides for additional bonding area and a stronger bond. Because the ridges around the recess are closely dimensioned to correspond to the dimensions of tag assembly 30, excess epoxy will flow between tag assembly 30 and ridge 18, and some epoxy may even flow out from this region. Of course, the flow of epoxy in this region will add to the strength of the assembly as the epoxy cures. While the epoxy can be allowed to cure at room temperature, the curing process can be accelerated by heating the assembly at an elevated temperature, for example a temperature of from about 75-90° C. for at least about 30 minutes. If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)

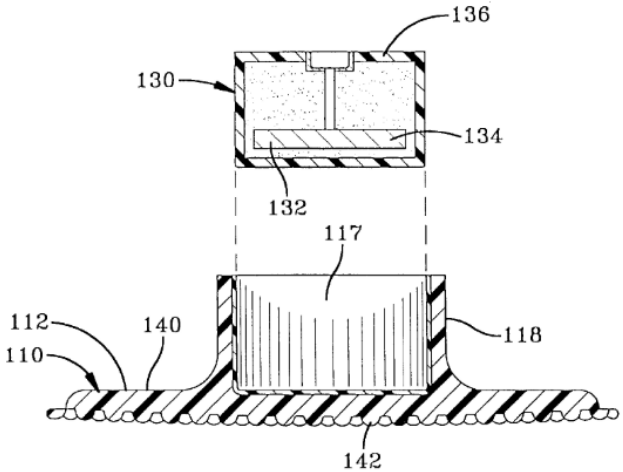
’027 Claim Element	Disclosures from Prior Art (Koch-046)



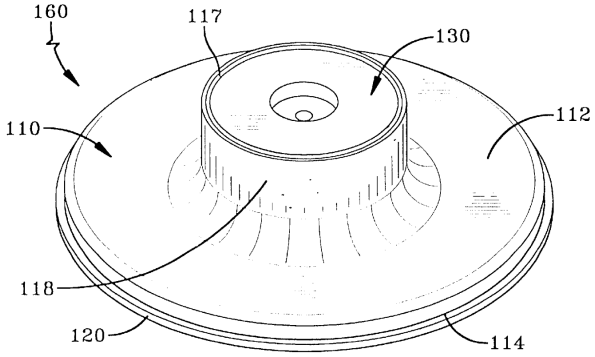
FIG−6

FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device.

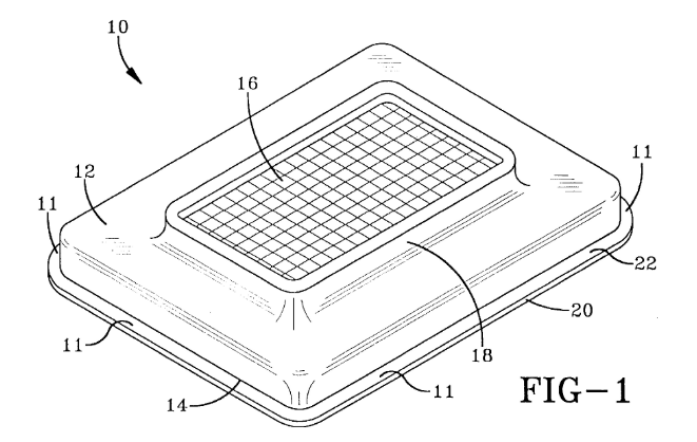
FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)



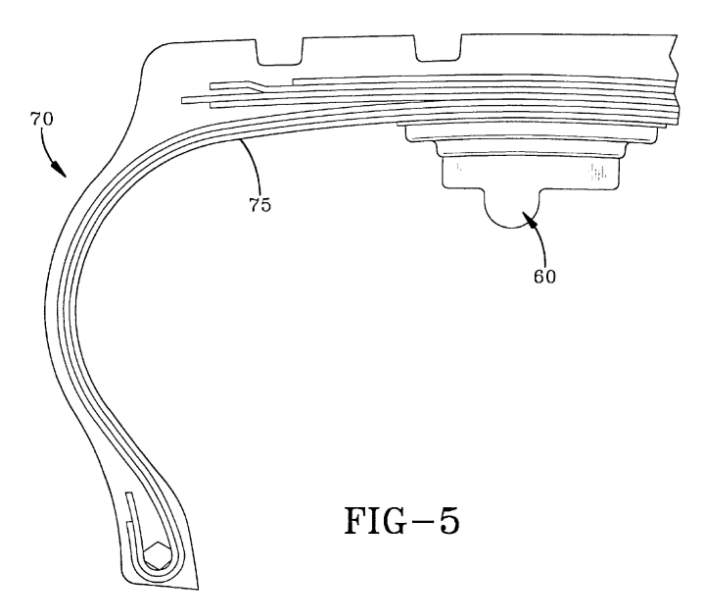
FIG−7

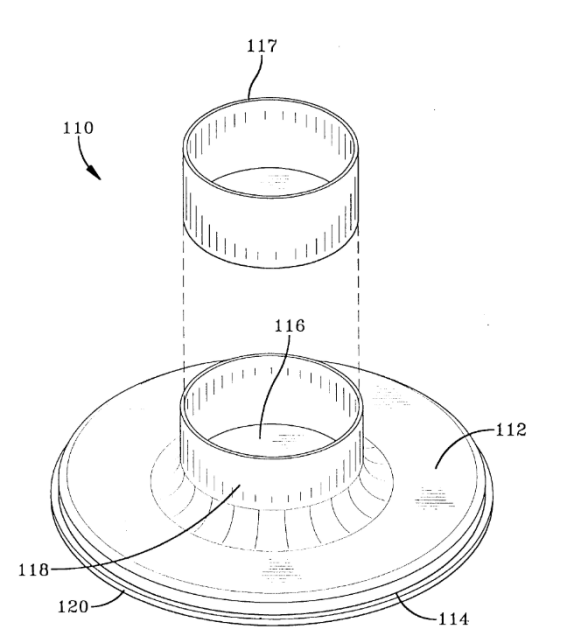
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	 FIG−8 FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28) Patch assembly 160 formed by assembling rigid tag assembly 130 into tire patch 110 is bonded to a tire using the same materials and methods described above for Patch assembly 60. As such, a dual cure bonding layer 120 is connected to second side 114 as described above with respect to the first embodiment of the present invention. (6:58-63)
[11d] wherein the outer layer comprises a barrier material composition to mitigate migration of material from the vulcanized rubber article.	*Koch-046 discloses, teaches, and/or suggests the display assembly comprising: one or more display layers of elastomeric material constructed to provide a display indicia. For example:* **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. FIELD OF THE INVENTION This invention pertains to an apparatus and a method of bonding an active tag to a patch and to a tire. More particularly, this invention sets forth a method and apparatus for encapsulating an electronic device in a rigid material, mounting the device on a vulcanized rubber patch and bonding the rubber patch to a vulcanized tire. (1:5-10) A rubber tire patch having a preselected configuration is formed. The rubber patch includes a first side for interfacing with the face of the encapsulated rigid tag assembly. This first side has increased surface area, which allows for a better bond with the encapsulated tag. The first side also includes a recessed cavity surrounded by a ridge of material of sufficient height to capture the encapsulated rigid tag assembly. This ridge helps to improve the bond between the rubber patch and the encapsulated rigid tag. The patch includes a second opposite side, the second side approximating the contour of the inner liner of the tire. The patch is tapered from the first side toward the second side, with the second side flaring out into a relatively thin configuration, but having a radius approaching the radius of the tire inner liner. The

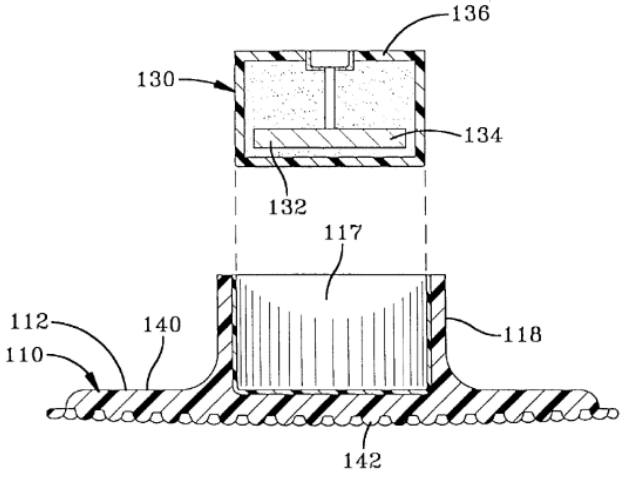
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	rubber patch is vulcanized at a preselected temperature and for a time sufficient its vulcanization. After vulcanization, a thin layer of dual cure bonding rubber is applied to the second side of the vulcanized rubber patch. This thin layer of dual cure bonding rubber will permit the assembly of the patch assembly to the inner liner of the tire. A fluid epoxy adhesive is applied to an interface between the encapsulated tag assembly and the rubber patch. The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) FIG. 1 is a perspective view of the tire patch of the present invention. (3:24-25)  FIG−1

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	FIG. 1 shows a tire patch 10 of the present invention. The tire patch is of a preselected configuration, which as shown, is rectangular in shape. The patch may be of any other convenient configuration, but is shown as rectangular, and therefore has four edges 11. The tire patch 10 has a first side 12 for interfacing with a face of an encapsulated tag assembly 30, shown in FIG. 2. The patch has a second opposite side 14 approximating the contour of an inner liner of a tire. The contour of the second side 14 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side is flat, having no contour. (3:49-62) The rubber patch is vulcanized at a preselected temperature and for a time sufficient to vulcanize the patch. The patch may be rubber selected from the group consisting of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof. One preferred embodiment is a mixture of chlorobutyl rubber and natural rubber. Another preferred embodiment is a mixture of Styrene-Butadiene rubber (SBR) and natural rubber. Typically, patches made of these rubber compositions may be cured by heating to a temperature of about 150° C. and holding at this temperature for about 30 minutes. The time and temperature may be modified as necessary to achieve sufficient curing of the patch for further assembly. (3:63-4:8) The first side 12 includes a recessed cavity 16 which is surrounded by a raised ridge 18 of rubbery polymer material. The recessed cavity optionally may have a roughened bottom surface to increase its surface area. The ridge 18 preferably is of the same material as the remainder of the patch. The ridge of material should be of sufficient height to capture the encapsulated rigid tag 30. In a preferred embodiment, the ridge is about one eighth (1/8") inch. The patch is gradually tapered from the ridge 18 of material of the first side of the patch 12, outwardly toward the edges of the patch. (4:9-19) Affixed to the second side 14 of the vulcanized tire patch is a dual cure bonding layer 20, which has a second side (not shown) and a first side 22. This dual cure bonding layer 20 may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer 20 is permanently

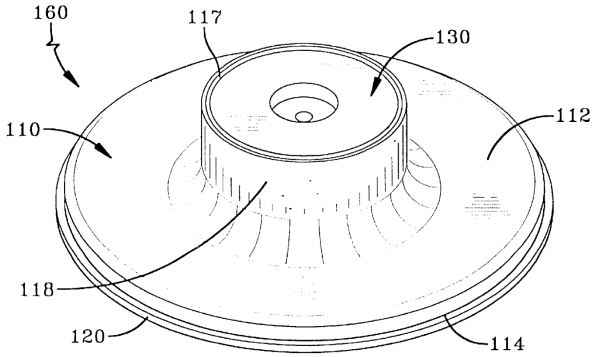
’027 Claim Element	Disclosures from Prior Art (Koch-046)
	assembled to the patch. A non-curing cement (not shown) is applied to side 14 of the patch in order to hold the dual cure bonding layer 20 onto the patch. The non-curing cement and the dual cure bonding layer 20 are products of Patch Rubber Company. The important feature of the dual cure bonding layer 20 is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer 20 may be any material which can be activated and cured to the vulcanized rubber of the tire inner liner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy two (72) hours. However, if more rapid curing is desired this may be accomplished by heating to 45° C. for at least twenty four hours. (4:20-43) If the dual cure bonding layer 20 has not already been assembled to the second side 14 of tire patch 10, it may be added at this time to form patch assembly 60. (5:23-48) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60) FIG. 6 is a perspective view of an alternative configuration of the tire patch of the present invention. (3:36-37)  FIG−6 FIG. 7 is a cross-sectional view of the rigid tag assembly of FIG. 6, showing the encapsulated electronic monitoring device. FIG. 8 is a perspective view of the patch assembly of the present invention. (3:38-42)

’027 Claim Element	Disclosures from Prior Art (Koch-046)



FIG−7

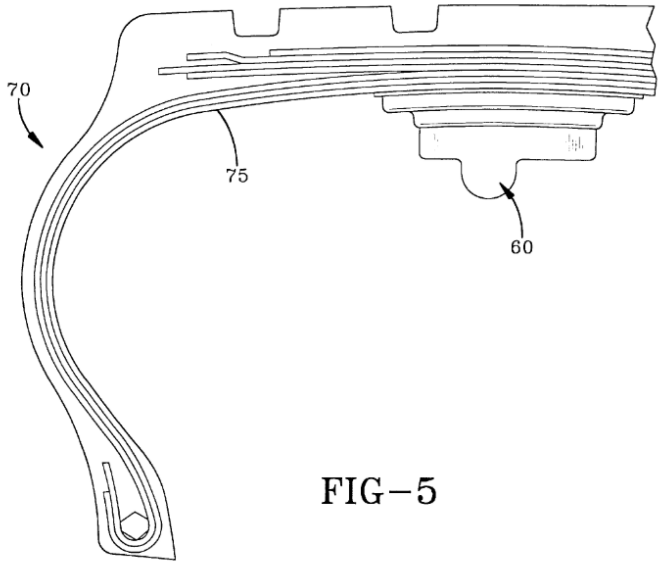


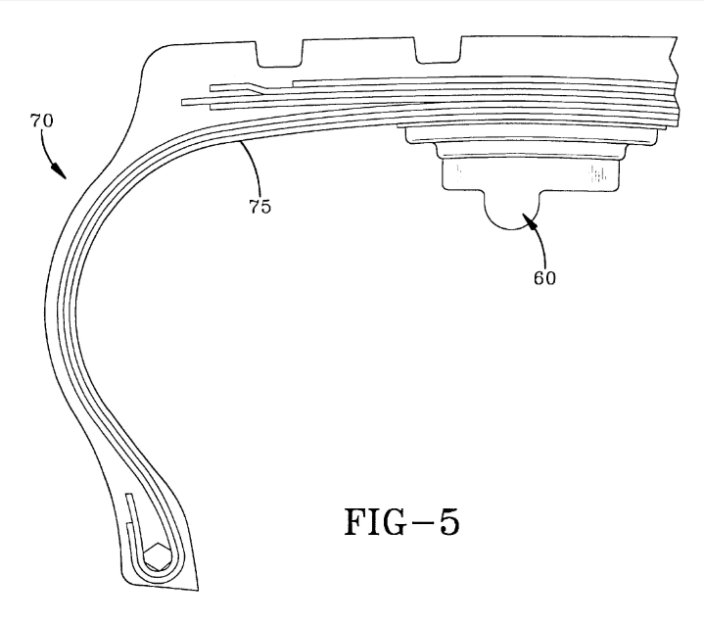
FIG−8

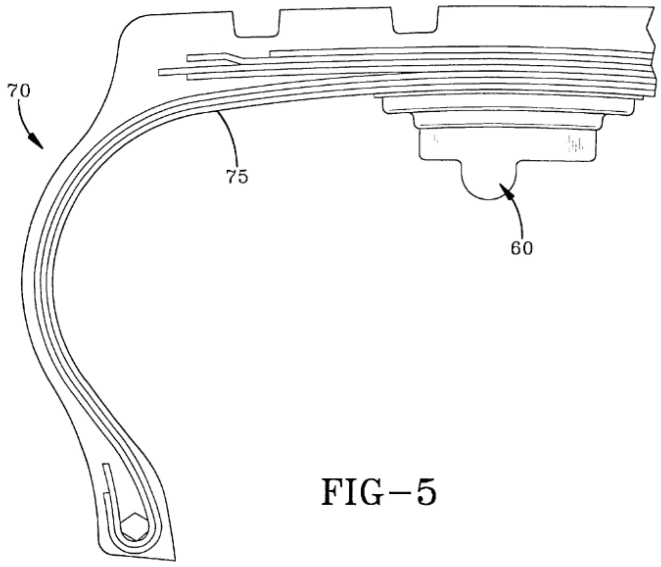
FIG. 6 shows an alternative configuration of a tire patch 110 of the present invention. The tire patch 110 is of a preselected configuration, which as shown, is round in shape. The tire patch 110 has a first side 112 for interfacing with a face of an encapsulated tag assembly 130, shown in cross-section in FIG. 7. First side 112 includes a recessed cavity 116, which in this alternative configuration is formed by a cylindrical rigid insert 117 molded into the rubber patch. Preferably cylindrical insert 117 is a rigid plastic material, such as nylon, epoxy or a rigid composite material such as glass-filled polyimide or glass-filled epoxy, but also may be a metal, as long as the metal does not interfere with the electronic functions and operation of tag assembly 130. Cylindrical rigid insert 117 is surrounded by a ridge 118 of rubbery material. The ridge preferably is of the same material as the remainder of the patch and should be of sufficient height to permanently hold cylindrical insert 117 in place following curing. In a preferred embodiment shown in

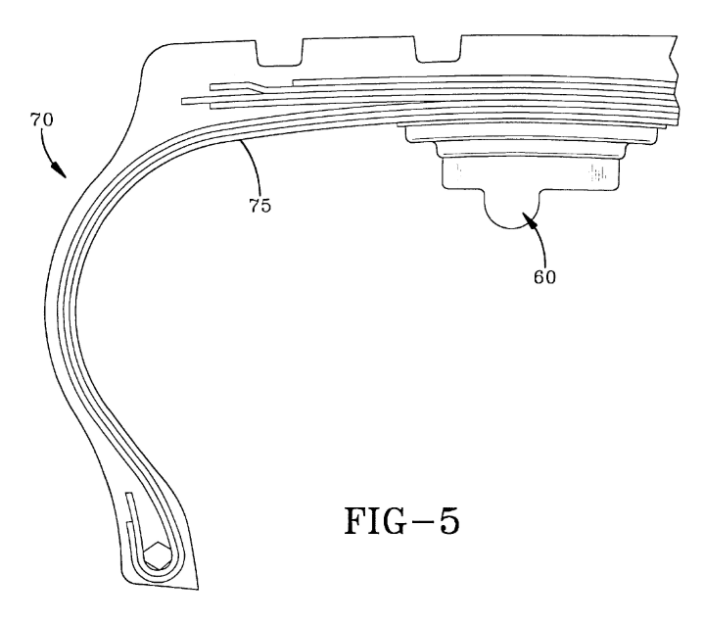
'027 Claim Element	Disclosures from Prior Art (Koch-046)
	FIGS. 6 and 7, the ridge 118 is the same height as cylindrical insert 117. The patch is gradually tapered from the ridge 118 of material of the first side of the patch outwardly toward the edges of the patch. Recessed cavity 116 may have a roughened bottom surface to increase its surface area, as previously described, or alternatively may be smooth and made from the same material as the cylindrical insert. The patch has a second opposite side 114 which may approximate the contour of an inner liner of a tire. The contour of the second side 114 preferably is radiused to have about the same radius as the tire to which it is assembled, the radius being larger for larger tires. For very large tires, such as for off-the-road tires, the radius may be eliminated altogether, so that there is no contour and the opposite side 114 is flat, having no contour. Tire patch 110 including cylindrical rigid insert 117 is cured prior to insertion of rigid tag assembly 130 to form a round patch assembly. (5:61-6:28) Patch assembly 160 formed by assembling rigid tag assembly 130 into tire patch 110 is bonded to a tire using the same materials and methods described above for Patch assembly 60. As such, a dual cure bonding layer 120 is connected to second side 114 as described above with respect to the first embodiment of the present invention. (6:58-63)
12. The method as recited in claim 11 further comprising preparing the identified surface before the step of placing.	*Koch-046 discloses, teaches, and/or suggests the method as recited in claim 11 further comprising preparing the identified surface before the step of placing. For example:* **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. A rubber tire patch having a preselected configuration is formed. The rubber patch includes a first side for interfacing with the face of the encapsulated rigid tag assembly. This first side has increased surface area, which allows for a better bond with the encapsulated tag. The first side also includes a recessed cavity surrounded by a ridge of material of sufficient height to capture the encapsulated rigid tag assembly. This ridge helps to improve

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	the bond between the rubber patch and the encapsulated rigid tag. The patch includes a second opposite side, the second side approximating the contour of the inner liner of the tire. The patch is tapered from the first side toward the second side, with the second side flaring out into a relatively thin configuration, but having a radius approaching the radius of the tire inner liner. The rubber patch is vulcanized at a preselected temperature and for a time sufficient its vulcanization. After vulcanization, a thin layer of dual cure bonding rubber is applied to the second side of the vulcanized rubber patch. This thin layer of dual cure bonding rubber will permit the assembly of the patch assembly to the inner liner of the tire. A fluid epoxy adhesive is applied to an interface between the encapsulated tag assembly and the rubber patch. The encapsulated tag assembly is assembled into the recessed cavity on the first side of the rubber patch so that the fluid epoxy adhesive is evenly distributed across the interface and flows from the interface between the encapsulated tag assembly and the rubber patch. Of course, the increased surface area of the tag assembly allows for better bonding between the rubber patch and the encapsulated tag. The assembly or the encapsulated tag and the rubber patch is allowed to cure to form a patch assembly. The patch assembly is then assembled to the inner liner of a vulcanized tire by applying an activating cement between the dual cure bonding layer and the inner liner of the tire. This curing process permanently bonds the patch assembly to the inner liner and is diffusion-controlled. Because it is diffusion controlled, the curing must be done for a sufficient amount of time and at a sufficient temperature to allow a strong permanent bond to form. To assure that solid contact is maintained at the interface between the inner liner of the tire and the dual cure bonding layer of the patch assembly, a clamping mechanism is applied to secure the patch assembly to the inner liner during the curing process. The clamping mechanism is applied with sufficient pressure across the interface of the patch assembly and the inner liner to assure intimate contact during curing. (2:20-3:21) Affixed to the second side 14 of the vulcanized tire patch is a dual cure bonding layer 20, which has a second side (not shown) and a first side 22. This dual cure bonding layer 20 may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner. The dual cure bonding layer 20 is permanently assembled to the patch. A non-curing cement (not shown) is applied to side 14 of the patch in order to hold the dual cure bonding layer 20 onto the patch. The non-curing cement and the

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	dual cure bonding layer 20 are products of Patch Rubber Company. The important feature of the dual cure bonding layer 20 is that it can be chemically activated and cured, without the need for heating to an elevated temperature. The process is diffusion controlled, however, and some minimal heating will speed the curing process. The dual cure bonding layer 20 may be any material which can be activated and cured to the vulcanized rubber of the tire inner liner and the vulcanized patch. Preferably, however, the dual cure bonding rubber is natural rubber. The dual cure bonding rubber, after application of the activating cement, may cure at room temperature over a period of seventy two (72) hours. However, if more rapid curing is desired this may be accomplished by heating to 45° C. for at least twenty four hours. (4:20-43) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60)
13. The method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing.	*Koch-046 discloses, teaches, and/or suggests the method as recited in claim 11 further comprising applying pressure to the assembly after the step of placing. For example:* FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60)
15[pre] A vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, Koch-046 discloses, teaches, and/or suggests a vulcanized rubber tire comprising. For example:* *See, e.g.*, **1[pre]**, above.

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60) *See also following limitations.*
[15a] a target surface disposed along a portion of the rubber tire;	*Koch-046 discloses, teaches, and/or suggests a target surface disposed along a portion of the rubber tire. For example:* *See, e.g.*, **1[pre]**, **11[a]**, above. **Abstract** A method and apparatus for bonding an active tag to a patch and assembling the patch to a tire is set forth. A patch assembly and a

’027 Claim Element	Disclosures from Prior Art (Koch-046)
	method for securing an electronic monitoring device having electronic and mechanical components for monitoring at least one engineering condition within a tire, comprising an rigid tag assembly encapsulating the electronic monitoring device, bonded to a vulcanized rubber patch which is secured to the inner cavity of a tire utilizing a layer of dual cure bonding rubber. FIELD OF THE INVENTION This invention pertains to an apparatus and a method of bonding an active tag to a patch and to a tire. More particularly, this invention sets forth a method and apparatus for encapsulating an electronic device in a rigid material, mounting the device on a vulcanized rubber patch and bonding the rubber patch to a vulcanized tire. (1:5-10) FIG. 5 is a cross-sectional view of the patch assembled to the inner liner of a tire. (3:34-35)  FIG−5 Referring now to FIG. 5, Patch assembly 60 was then assembled to the inner liner 75 of tire 70. Activating cement was first applied to second side (not shown) of dual cure bonding layer 20. The patch assembly was then stitched to the inner liner of the vulcanized tire and the patch assembly/tire assembly was allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly. The times and temperatures utilized for this curing may be basically the same times and temperatures as previously discussed. To ensure

'027 Claim Element	Disclosures from Prior Art (Koch-046)
	a strong bond, the patch assembly optionally may be clamped to the tire inner liner 75, until the curing cycle is completed. (5:48-60)
[15b] an assembly disposed onto the target surface and comprising:	*Koch-046 discloses, teaches, and/or suggests an assembly disposed onto the target surface and comprising. For example:* *See, e.g.*, **1[pre]**, **[1a]-[1c]**, above.
[15c] an outer layer of elastomeric material; and	*Koch-046 discloses, teaches, and/or suggests an outer layer of elastomeric material. For example:* *See, e.g.*, **1[pre]**, [**1a]**, above.
[15d] an adhesive layer connected with the outer layer;	*Koch-046 discloses, teaches, and/or suggests an adhesive layer connected with the outer layer. For example:* *See, e.g.*, **1[pre]**, [**1b]**, **[1c]**, above.
[15e] wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire.	*Koch-046 discloses, teaches, and/or suggests wherein at least a portion of the outer layer comprises a barrier material composition to mitigate migration of material from the rubber tire. For example:* *See, e.g.*, **1[pre]**, [**1b]**, **[11d]**, above.
16. The rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein.	*Koch-046 discloses, teaches, and/or suggests the rubber tire as recited in claim 15 wherein the assembly further comprises a cavity disposed therein. For example:* *See, e.g.*, **1[pre]**, **7**, above.
17. The rubber tire as recited in claim 16 wherein an element is disposed within the cavity.	*Koch-046 discloses, teaches, and/or suggests the rubber tire as recited in claim 16 wherein an element is disposed within the cavity. For example:* *See, e.g.*, **1[pre]**, **8**, above.
18. The rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer.	*Koch-046 discloses, teaches, and/or suggests the rubber tire as recited in claim 16 wherein the cavity is disposed beneath the outer layer. For example:* *See, e.g.*, **1[pre]**, **9**, above.

'027 Claim Element	Disclosures from Prior Art (Koch-046)
19[pre] An assembly for attachment to a vulcanized rubber tire comprising:	*To the extent that the preamble is limiting, Koch-046 discloses, teaches, and/or suggests an assembly for attachment to a vulcanized rubber tire comprising. For example:* *See, e.g.*, **1[pre]**, above. *See also following limitations.*
[19a] an outer layer formed from an elastomeric material;	*Koch-046 discloses, teaches, and/or suggests an outer layer formed from an elastomeric material. For example:* *See, e.g.*, **1[pre]**, **[1a]**, above.
[19b] an adhesive layer bonding the assembly to portion of a vulcanized rubber tire; and	*Koch-046 discloses, teaches, and/or suggests an adhesive layer bonding the assembly to portion of a vulcanized rubber tire. For example:* *See, e.g.*, **1[pre]**, [**1b]**, **[1c]**, above.
[19c] a cavity disposed within the assembly for accommodating an element therein;	*Koch-046 discloses, teaches, and/or suggests a cavity disposed within the assembly for accommodating an element therein. For example:* *See, e.g.*, **1[pre]**, **7**, **8**, above.
[19d] wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire.	*Koch-046 discloses, teaches, and/or suggests wherein the outer layer comprises a material composition that acts as a barrier to material migrating from the vulcanized rubber tire. For example:* *See, e.g.*, **1[pre]**, [**1b]**, **[11d]**, above.
20. The assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer.	*Koch-046 discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein at least a portion of the cavity is disposed beneath the outer layer. For example:* *See, e.g.*, **1[pre]**, **9**, above.
21. The assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer.	*Koch-046 discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein the adhesive layer is connected with the outer layer. For example:* *See, e.g.*, **1[pre]**, [**1a]**, **[1b]**, **[1c]**, **[11d]**, above.

'027 Claim Element	**Disclosures from Prior Art (Koch-046)**
22. The assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface.	*Koch-046 discloses, teaches, and/or suggests the assembly as recited in claim 19 wherein the outer layer includes an indicia along an outer surface. For example:* *See, e.g.*, **1[pre]**, **[1a]**, above.