Exhibit D1

MEDTRONIC EXHIBIT 1059

EXHIBIT D1 - U.S. PATENT 10,064,738
Infringement Claim Chart

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
Row	**Claim 1**	
1A	A intervertebral combination internal screw guide and fixation apparatus configured to be inserted into a disc space between a first vertebral body and a second vertebral body and to provide fusion of the first vertebral body to the second vertebral body via biological bone fusion and screw fusion, the apparatus comprising:	To the extent the preamble is limiting, the '738 Accused Instrumentalities include an intervertebral combination internal screw guide and fixation apparatus configured to be inserted into a disc space between a first vertebral body and a second vertebral body and to provide fusion of the first vertebral body to the second vertebral body via biological bone fusion and screw fusion. For example, Medtronic promotional material states "The Sovereign™ spinal system is an intervertebral body fusion device with internal screw fixation. The screws protrude through the interbody portion of the device and stabilize the vertebral body while preventing expulsion of the implant." This material further states that "The Sovereign™ spinal system is indicated for use with autogenous bone and/or allograft bone graft comprised of cancellous and/or corticocancellous bone graft, and/or demineralized allograft bone with bone marrow aspirate in patients with degenerative disc disease (DDD) at one or two contiguous levels from L2 to S1" and "When used as a stand-alone device, the Sovereign™ interbody device is intended to be used with 3 titanium alloy fixed or variable angle screws."

[1] These allegations are exemplary and Moskowitz Family LLC reserves the right to supplement them as the case progresses.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		   Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://pmc.ncbi.nlm.nih.gov/articles/PMC7870318/ https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
1B	an intervertebral cage including: a top wall, a bottom wall, and two sidewalls defining an open space capable of receiving bone filling for the biological bone fusion;	The '738 Accused Instrumentalities include an intervertebral cage that includes a top wall, a bottom wall, and two sidewalls defining an open space capable of receiving bone filling for the biological bone fusion. For example, Medtronic promotional material states "The Sovereign™ spinal system is indicated for use with autogenous bone and/or allograft bone graft comprised of cancellous and/or corticocancellous bone graft, and/or demineralized allograft bone with bone marrow

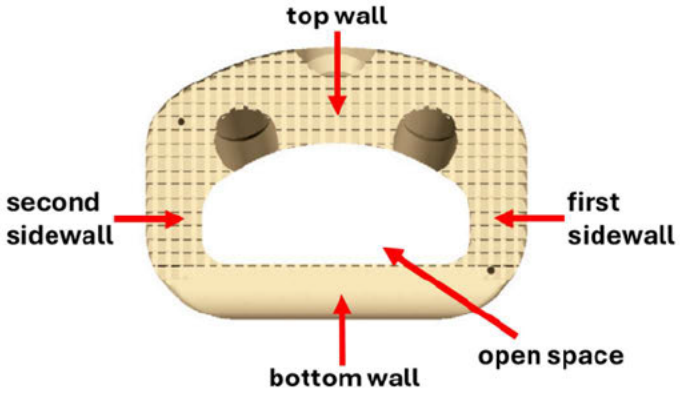
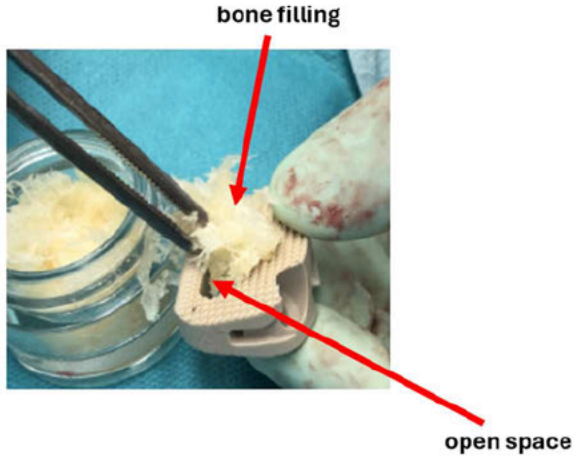
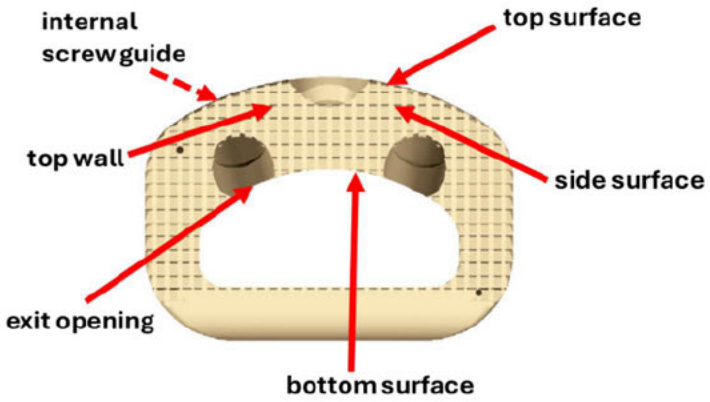
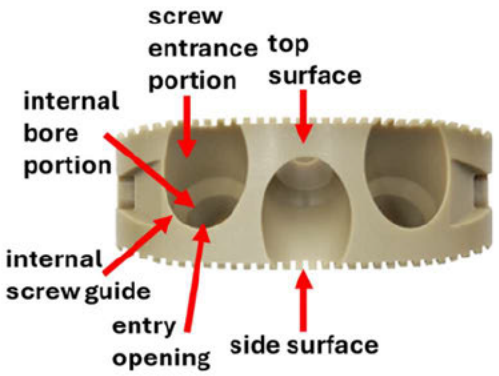
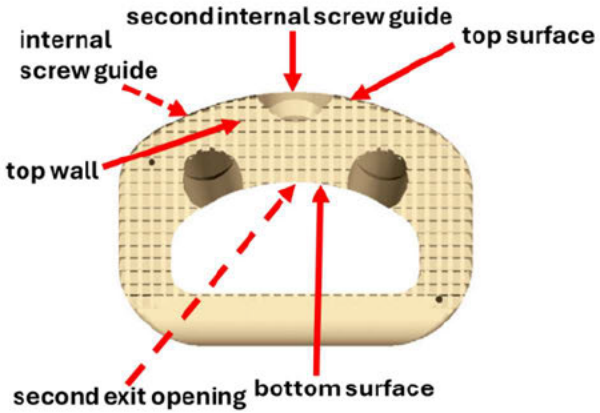
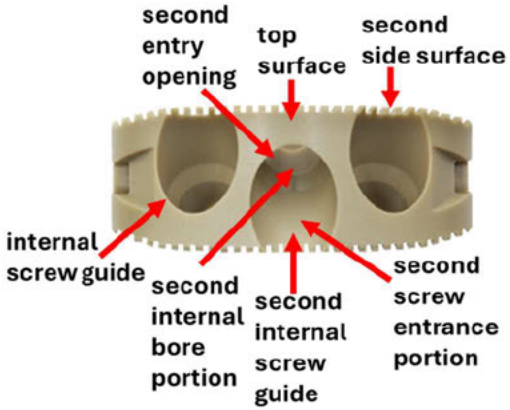
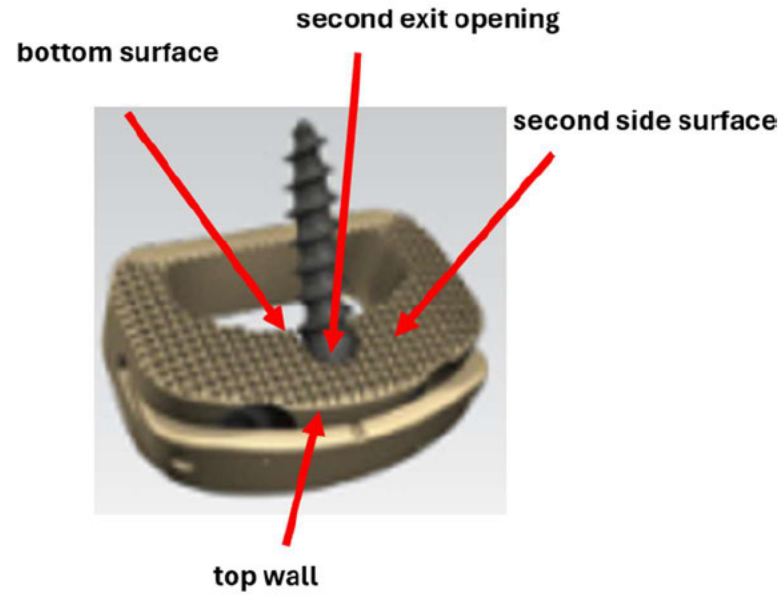
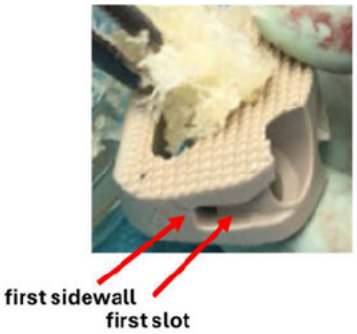
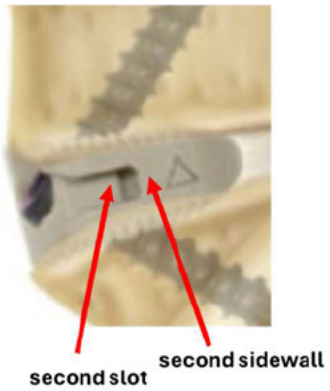
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		aspirate in patients with degenerative disc disease (DDD) at one or two contiguous levels from L2 to S1" and "the interior space of the product is to be used with autogenous bone graft."   Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://pmc.ncbi.nlm.nih.gov/articles/PMC7870318/ https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

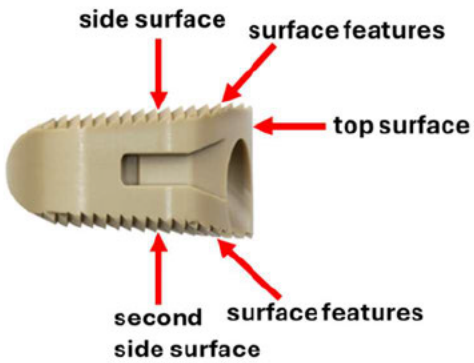
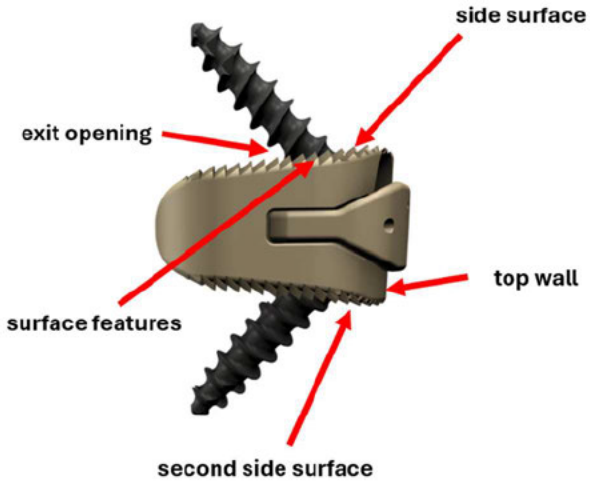
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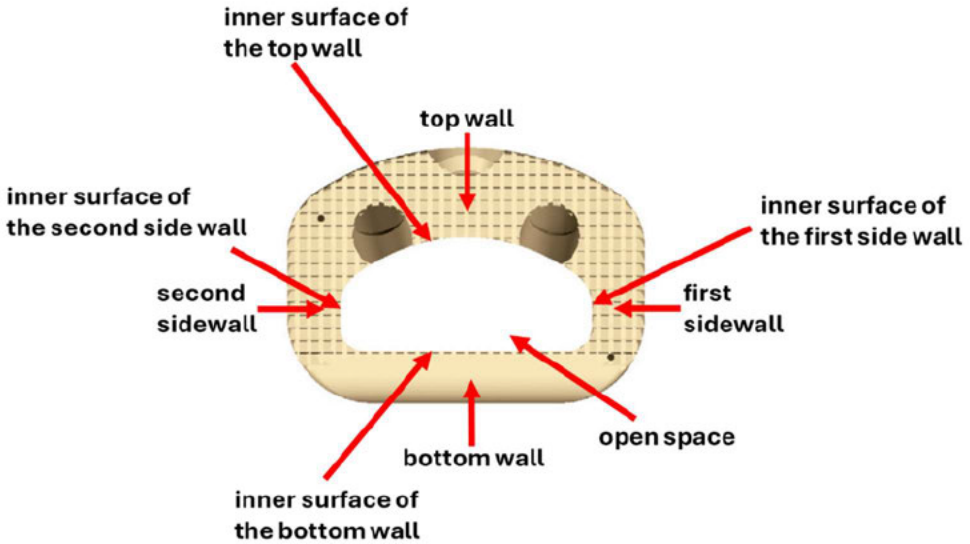
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
1C	an internal screw guide having a screw entrance portion and an internal bore portion, wherein the screw entrance portion is larger than and coaxial with the internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the internal bore portion has an entry opening formed only in a top surface of the top wall as viewed from the top and has an exit opening formed at least partially in a bottom surface of the top wall and at least partially in a side surface of the top wall;	The ’738 Accused Instrumentalities include an internal screw guide having a screw entrance portion and an internal bore portion, wherein the screw entrance portion is larger than and coaxial with the internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the internal bore portion has an entry opening formed only in a top surface of the top wall as viewed from the top and has an exit opening formed at least partially in a bottom surface of the top wall and at least partially in a side surface of the top wall.   Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html

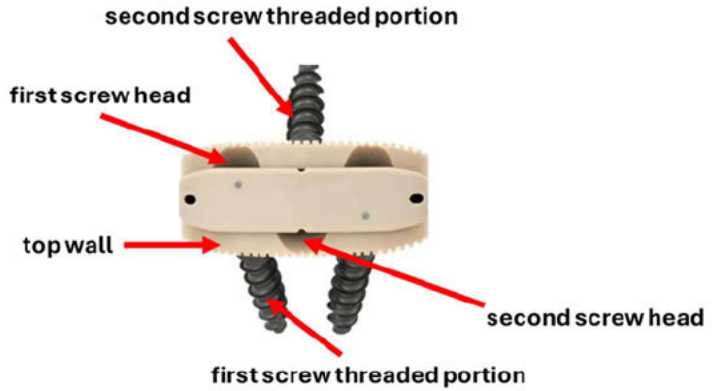
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
1D	a second internal screw guide having a second screw entrance portion and a second internal bore portion, wherein the second screw entrance portion is larger than and coaxial with the second internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the second internal bore portion has a second entry opening formed only in the top surface of the top wall as viewed from the top and has a second exit opening formed at least partially in the bottom surface of the top wall and at least partially in a second side surface of the top wall, and wherein the internal screw guide and the second internal screw guide are angled to orient a first screw member and a second member screw bi-directionally in opposite directions;	The ’738 Accused Instrumentalities include a second internal screw guide having a second screw entrance portion and a second internal bore portion, wherein the second screw entrance portion is larger than and coaxial with the second internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the second internal bore portion has a second entry opening formed only in the top surface of the top wall as viewed from the top and has a second exit opening formed at least partially in the bottom surface of the top wall and at least partially in a second side surface of the top wall, and wherein the internal screw guide and the second internal screw guide are angled to orient a first screw member and a second member screw bi-directionally in opposite directions. For example, the Sovereign™ Spinal System includes screw guides that are angled to orient a first screw and a second screw bi-directionally in opposite directions.  

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		  Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://pmc.ncbi.nlm.nih.gov/articles/PMC7870318/ https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
1E	a first slot on a first outer side of a first sidewall of the two sidewalls; a second slot on a second outer side of a second sidewall of the two sidewalls, wherein the second slot is positioned opposite of the first slot; wherein the first slot is positioned along a first centerline axis that bisects the first side wall and is positioned nearer a top of the intervertebral cage than a bottom of the intervertebral cage, wherein the second slot is positioned along a second centerline axis that bisects the second side wall and is positioned nearer the top of the intervertebral cage than the bottom of the intervertebral cage,	The '738 Accused Instrumentalities include a first slot on a first outer side of a first sidewall of the two sidewalls, a second slot on a second outer side of a second sidewall of the two sidewalls, wherein the second slot is positioned opposite of the first slot, wherein the first slot is positioned along a first centerline axis that bisects the first side wall and is positioned nearer a top of the intervertebral cage than a bottom of the intervertebral cage, wherein the second slot is positioned along a second centerline axis that bisects the second side wall and is positioned nearer the top of the intervertebral cage than the bottom of the intervertebral cage.    Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
1F	wherein the side surface and the second side surface of the top wall are patterned with a plurality of surface features to create rough side surfaces, wherein at least some of the plurality of surface features are positioned on the side surface between the top wall and the exit opening, and	The side surface and the second side surface of the top wall are patterned with a plurality of surface features to create rough side surfaces, wherein at least some of the plurality of surface features are positioned on the side surface between the top wall and the exit opening.   Exemplary Sources https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
1G	wherein the top wall, the bottom wall, and the sidewalls are integrally formed and the open space for receiving bone graft	The top wall, the bottom wall, and the sidewalls are integrally formed and the open space for receiving bone graft material extends continuously from an inner surface of the first sidewall to an inner surface of the second sidewall and extends continuously from an inner surface of the top wall to an inner surface of the bottom wall.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	material extends continuously from an inner surface of the first sidewall to an inner surface of the second sidewall and extends continuously from an inner surface of the top wall to an inner surface of the bottom wall;	 *See also* Row 1B. Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
1H	a first screw having a first screw head and a first screw threaded portion, wherein the first screw is sized to be positioned in the internal screw guide with the first screw head in the screw entrance portion;	The '738 Accused Instrumentalities include a first screw having a first screw head and a first screw threaded portion, wherein the first screw is sized to be positioned in the internal screw guide with the first screw head in the screw entrance portion. For example, Medtronic promotional material for the Sovereign™ spinal system states "The screws used with this device are manufactured from titanium alloy." This material further states "These titanium cancellous screws are provided in both a variable angle and fixed angle option," and "If the physician chooses to use less than 3 or none of the provided screws, additional supplemental fixation in the lumbar spine must be used to augment stability." 

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]

Screws

20mm, 25mm, 30mm and 35mm standard lengths. Available in Variable Angle and Fixed Angle designs.





Variable Angle Screws

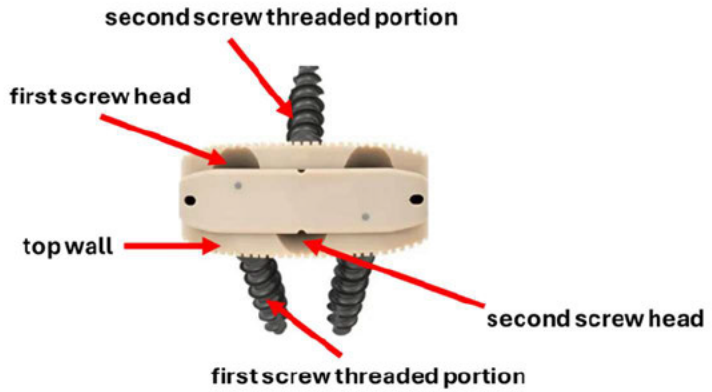
Part Number	(Diameter × Length)
7965520	5.5mm × 20mm
7965525	5.5mm × 25mm
7965530	5.5mm × 30mm
7965535	5.5mm × 35mm
7966020	6.0mm × 20mm
7966025	6.0mm × 25mm
7966030	6.0mm × 30mm
7966035	6.0mm × 35mm

Fixed Angle Screws

Part Number	(Diameter × Length)
7975520	5.5mm × 20mm
7975525	5.5mm × 25mm
7975530	5.5mm × 30mm
7975535	5.5mm × 35mm
7976020	6.0mm × 20mm
7976025	6.0mm × 25mm
7976030	6.0mm × 30mm
7976035	6.0mm × 35mm

See also Row 1C.

Exemplary Sources
https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
1I	a second screw having a second screw head and a second screw threaded portion, wherein the second screw is sized to be positioned in the second internal screw guide with the second screw head in the second screw entrance portion; and	The '738 Accused Instrumentalities include a second screw having a second screw head and a second screw threaded portion, wherein the second screw is sized to be positioned in the second internal screw guide with the second screw head in the second screw entrance portion. For example, Medtronic promotional material for the Sovereign™ spinal system states "The screws used with this device are manufactured from titanium alloy." This material further states "These titanium cancellous screws are provided in both a variable angle and fixed angle option," and "If the physician chooses to use less than 3 or none of the provided screws, additional supplemental fixation in the lumbar spine must be used to augment stability." 

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]

Screws

20mm, 25mm, 30mm and 35mm standard lengths. Available in Variable Angle and Fixed Angle designs.





Variable Angle Screws

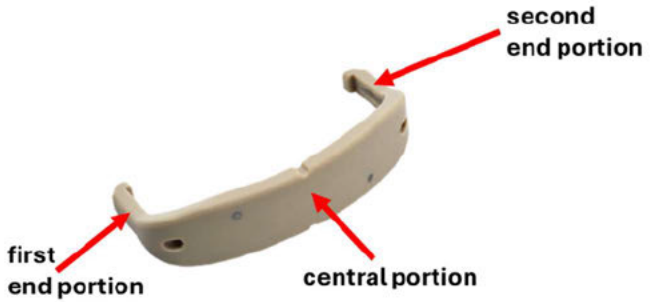
Part Number	(Diameter × Length)
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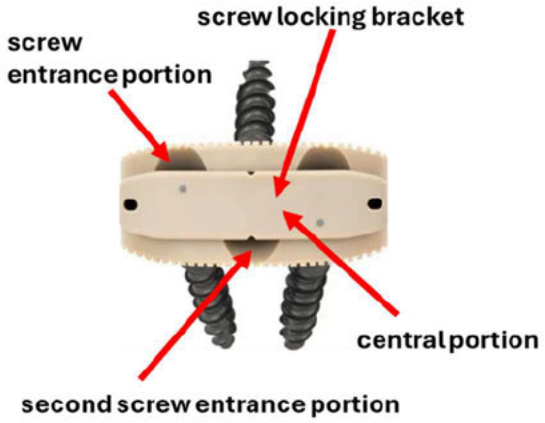
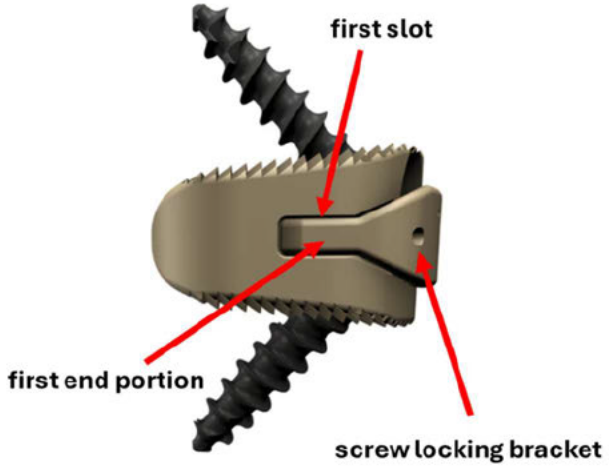
Fixed Angle Screws

Part Number	(Diameter × Length)
7975520	5.5mm × 20mm
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7976020	6.0mm × 20mm
7976025	6.0mm × 25mm
7976030	6.0mm × 30mm
7976035	6.0mm × 35mm

See also Row 1C.

Exemplary Sources
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1J	a screw locking bracket having a first end portion sized and positioned to be inserted in the first slot, a second end portion sized and positioned to be inserted in the second slot and a central portion extending between the first end portion and the second end portion, wherein when the screw locking bracket is connected to the intervertebral cage with the first end portion in the first slot and the second end portion in the second slot, the central portion partially blocks the screw entrance portion and the second screw entrance portion so as to retain the first and second screws in the internal screw guide and the second internal screw guide while leaving at least a portion of the screw entrance portion and the second	The ’738 Accused Instrumentalities include a screw locking bracket having a first end portion sized and positioned to be inserted in the first slot, a second end portion sized and positioned to be inserted in the second slot and a central portion extending between the first end portion and the second end portion, wherein when the screw locking bracket is connected to the intervertebral cage with the first end portion in the first slot and the second end portion in the second slot, the central portion partially blocks the screw entrance portion and the second screw entrance portion so as to retain the first and second screws in the internal screw guide and the second internal screw guide while leaving at least a portion of the screw entrance portion and the second screw entrance portion at least partially exposed.  

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	screw entrance portion at least partially exposed.	  *See also* Claim 1, Row 1E. Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 2**	
2	The apparatus of claim 1, wherein the screw locking bracket contacts both the first and second screw heads when	The '738 Accused Instrumentalities include the limitations of claim 1, as described above. The screw locking bracket contacts both the first and second screw heads when the screw locking bracket is connected to the intervertebral cage.

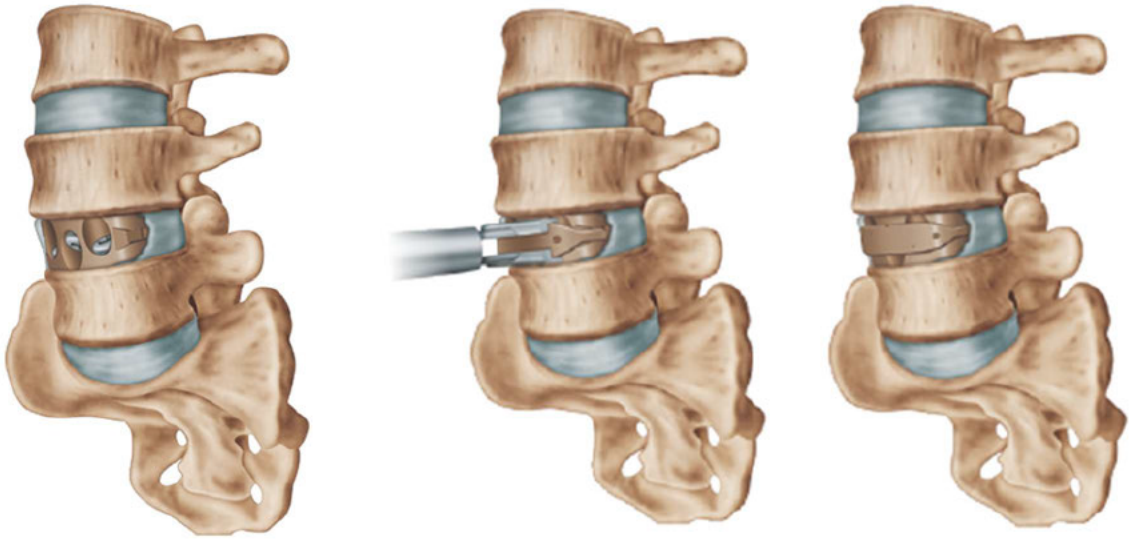
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	the screw locking bracket is connect to the intervertebral cage.	 *See also* Claim 1, Row 1J. Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

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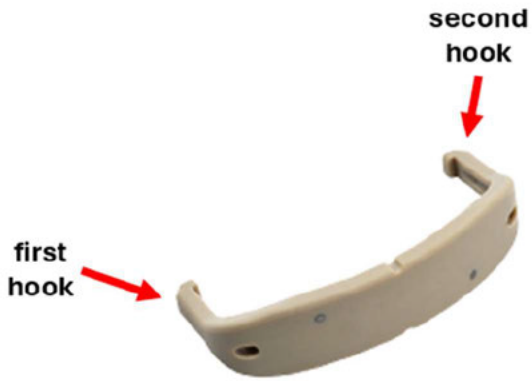
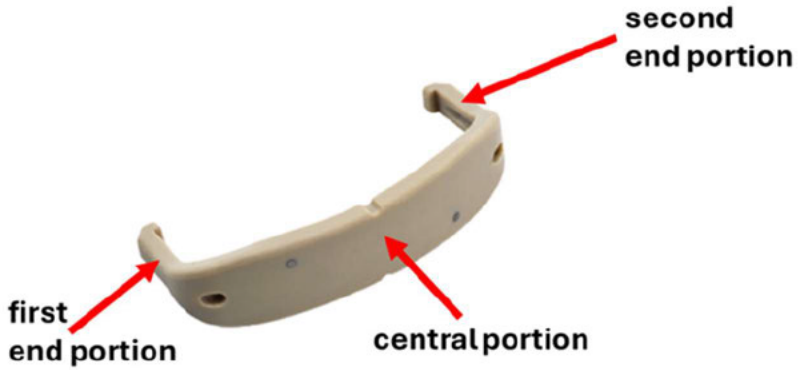
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
Row	**Claim 3**	
3	The apparatus of claim 1, wherein the screw locking bracket comprises a first hook at the first end portion that is sized to fit in the first slot and a second hook at the second end portion that is sized to fit in the second slot.	The '738 Accused Instrumentalities include the limitations of claim 1, as described above. The screw locking bracket comprises a first hook at the first end portion that is sized to fit in the first slot and a second hook at the second end portion that is sized to fit in the second slot.  *See also* Claim 1, Rows 1E and 1J. Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

EXHIBIT D1 - U.S. PATENT 10,064,738
Infringement Claim Chart

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
Row	**Claim 4**	
4	The apparatus of claim 1, wherein the first end portion and the second end portion extend in a direction that is substantially perpendicular to the central portion.	The '738 Accused Instrumentalities include the limitations of claim 1, as described above. The first end portion and the second end portion extend in a direction that is substantially perpendicular to the central portion.  *See also* Claim 1, Row 1J. Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

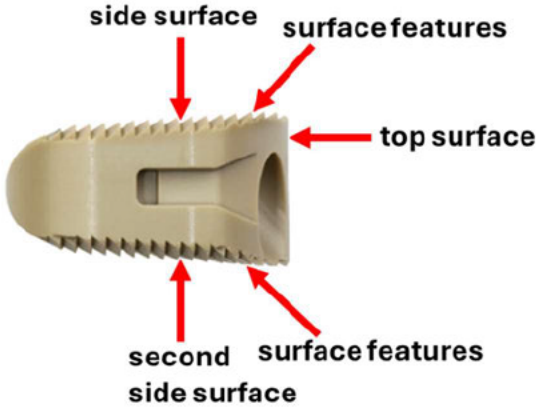
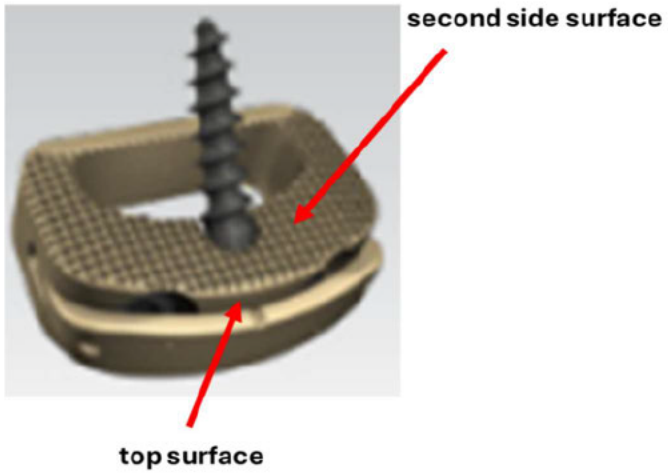
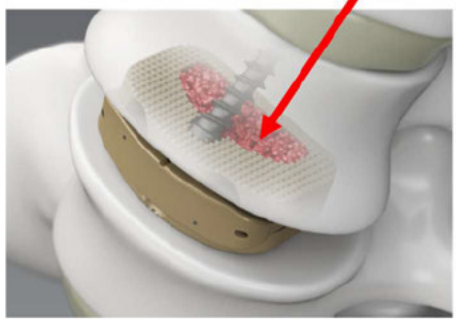
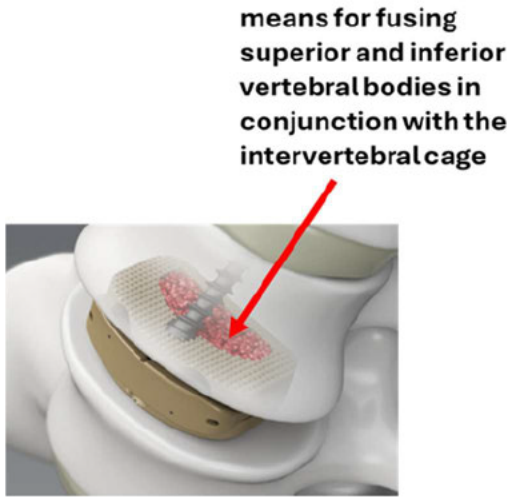
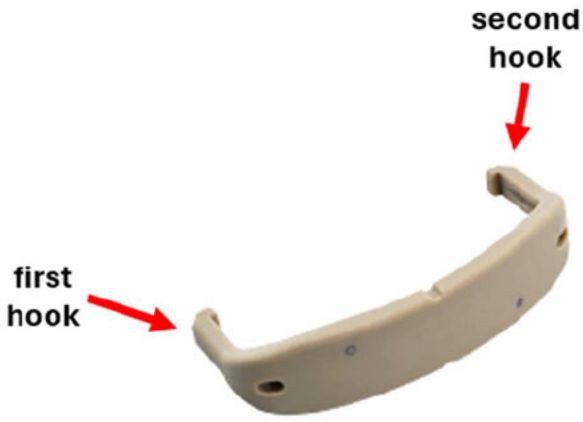
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
Row	**Claim 5**	
5	The apparatus of claim 1, wherein the plurality of surface features on the side surface and the second side surface are patterned all the way next to the top surface of the top wall so as to be adjacent the top surface of the top wall.	The '738 Accused Instrumentalities include the limitations of claim 1, as described above. The plurality of surface features on the side surface and the second side surface are patterned all the way next to the top surface of the top wall so as to be adjacent the top surface of the top wall.   *See also* Claim 1, Rows 1F and 1G. Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf

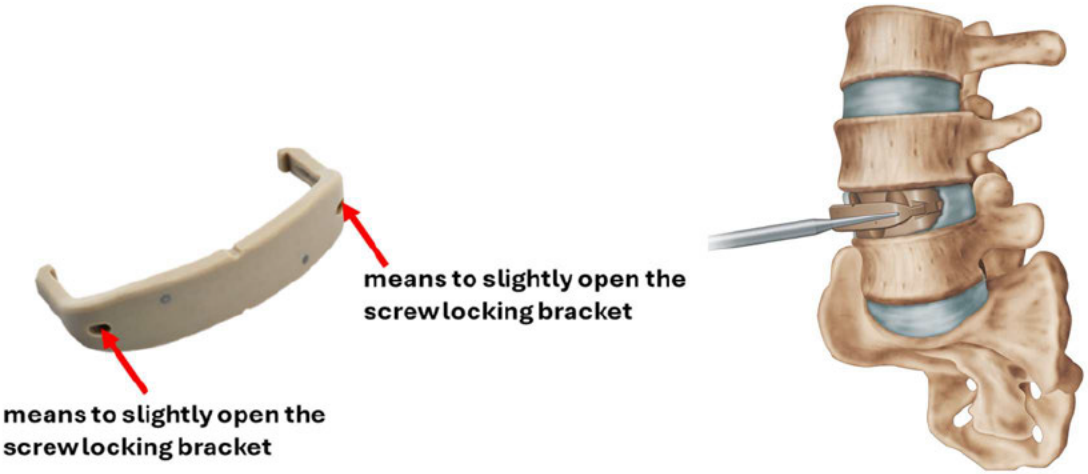
EXHIBIT D1 - U.S. PATENT 10,064,738
Infringement Claim Chart

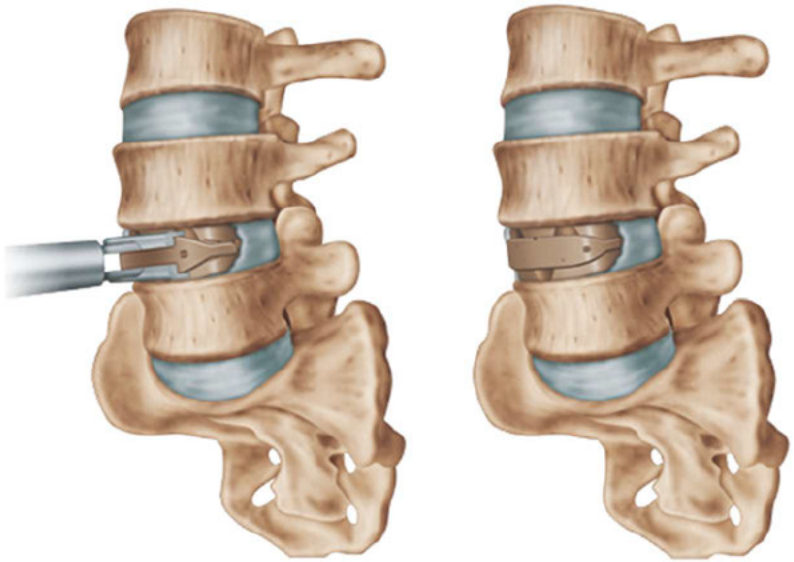
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
Row	**Claim 6**	
6	The apparatus of claim 1, and further comprising means for fusing superior and inferior vertebral bodies in conjunction with the intervertebral cage.	The '738 Accused Instrumentalities include the limitations of claim 1, as described above. The '738 Accused Instrumentalities further include means for fusing superior and inferior vertebral bodies in conjunction with the intervertebral cage. For example, Medtronic promotional material states "The Sovereign™ spinal system is indicated for use with autogenous bone and/or allograft bone graft comprised of cancellous and/or corticocancellous bone graft, and/or demineralized allograft bone with bone marrow aspirate in patients with degenerative disc disease (DDD) at one or two contiguous levels from L2 to S1." **means for fusing superior and inferior vertebral bodies in conjunction with the intervertebral cage** 

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 7**	
7	The apparatus of claim 1, wherein the intervertebral cage is sized and configured for use in a patient's lumbar spine, the apparatus further comprising means for fusing superior and inferior lumbar vertebral bodies in conjunction with the intervertebral cage.	The '738 Accused Instrumentalities include the limitations of claim 1, as described above. The intervertebral cage is sized and configured for use in a patient's lumbar spine. The '738 Accused Instrumentalities further include means for fusing superior and inferior lumbar vertebral bodies in conjunction with the intervertebral cage. For example, Medtronic promotional material states "The Sovereign™ spinal system is indicated for use with autogenous bone and/or allograft bone graft comprised of cancellous and/or corticocancellous bone graft, and/or demineralized allograft bone with bone marrow aspirate in patients with degenerative disc disease (DDD) at one or two contiguous levels from L2 to S1."

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		 Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf
Row	**Claim 9**	
9	The apparatus of claim 1, wherein the screw locking bracket comprises a first hook at the first end portion that curves inward to engage the first slot and a second hook at the second end portion that	The '738 Accused Instrumentalities include the limitations of claim 1 as described above. The screw locking bracket comprises a first hook at the first end portion that curves inward to engage the first slot and a second hook at the second end portion that curves inward to engage the second slot.

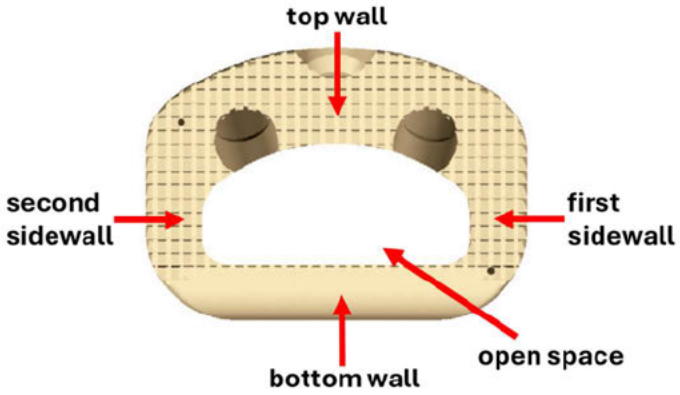
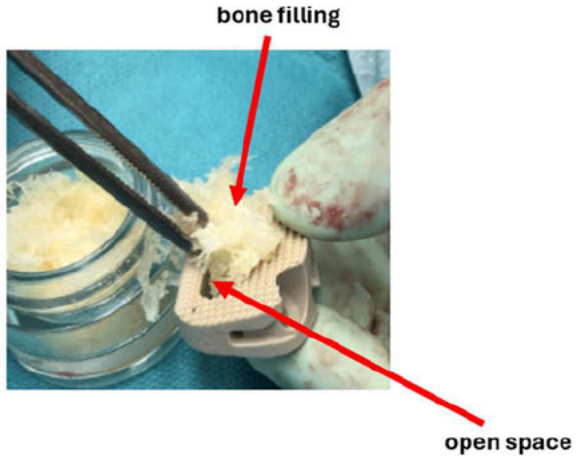
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	curves inward to engage the second slot.	 *See also* Claim 1, Row 1J. Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html
Row	**Claim 10**	
10	The apparatus of claim 1, wherein the screw locking bracket comprises means to	The ’738 Accused Instrumentalities include the limitations of claim 1, as described above. The screw locking bracket comprises means to slightly open the screw locking bracket.

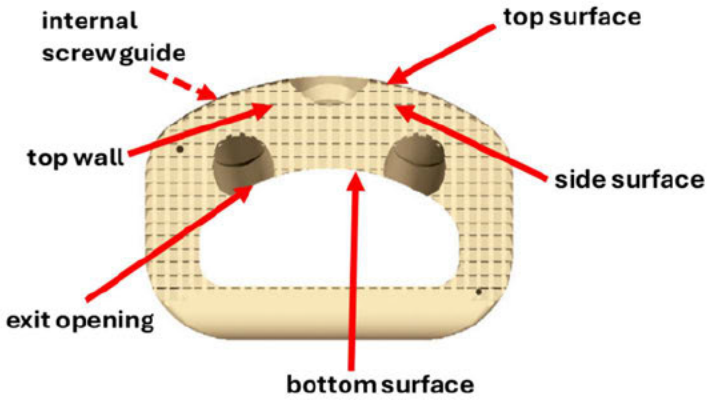
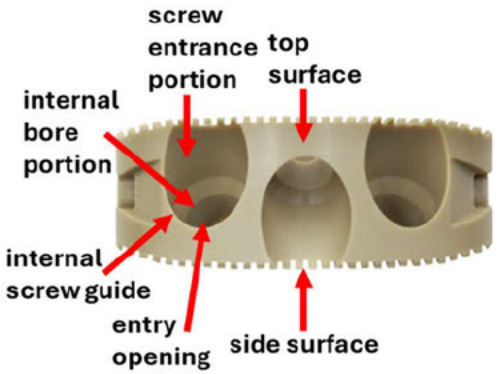
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	slightly open the screw locking bracket.	For example, Medtronic promotional material for the Sovereign™ spinal system states "If it becomes necessary to remove the Interbody Spacer, remove the Coverplate using the Coverplate Remover. This is done by inserting the ball tip end of the instrument into the side hole in the Coverplate. Flex the arm out to loosen it from the Interbody Spacer and then pull back the Coverplate from the Interbody Spacer Construct."  Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 11**	
11	The apparatus of claim 1, wherein the screw locking bracket is configured to be press fit to the intervertebral cage.	The '738 Accused Instrumentalities include the limitations of claim 1, as described above. The screw locking bracket is configured to be press fit to the intervertebral cage. For example, Medtronic promotional material for the Sovereign™ spinal system instructs the user to "Attach the Coverplate by aligning it to the grooves in the side of the Interbody Spacer (Figure 15). Push down on the Coverplate until it snaps into place (Figure 16). Both sides should snap into place." 

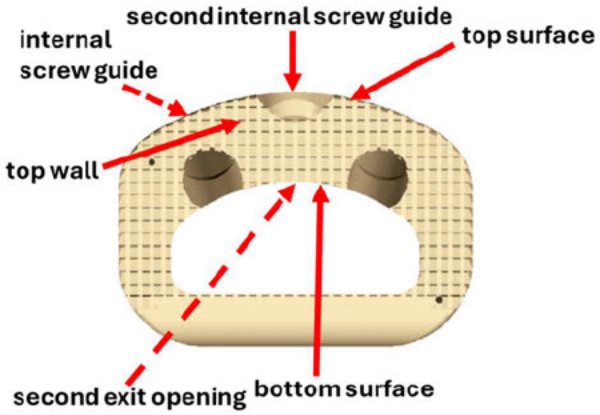
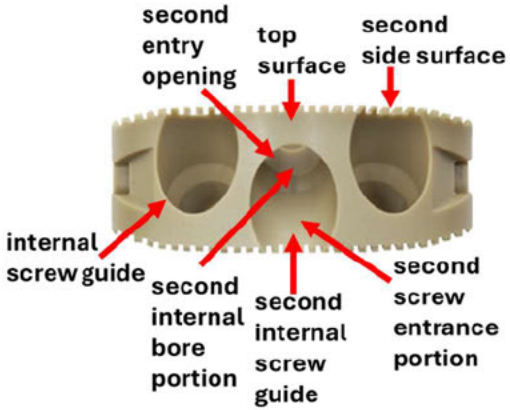
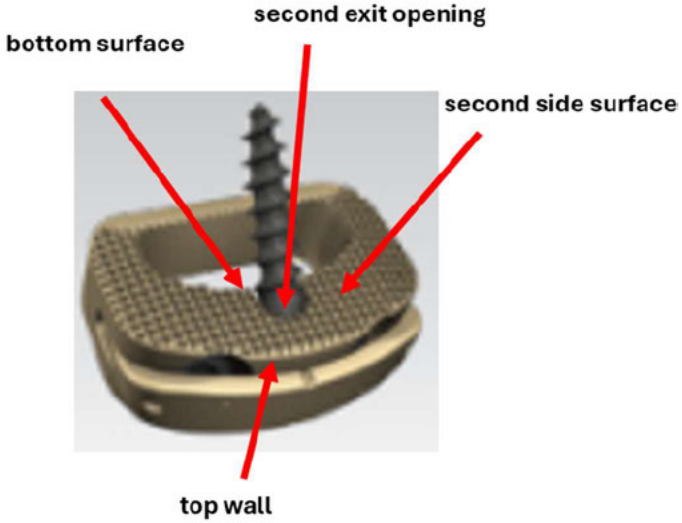
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		See also Claim 1, Rows 1E and 1J. Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 12**	
12A	A intervertebral combination internal screw guide and fixation apparatus configured to be inserted into a disc space between a first vertebral body and a second vertebral body and to provide fusion of the first vertebral body to the second vertebral body via biological bone fusion and screw fusion, the apparatus comprising:	To the extent the preamble is limiting, the '738 Accused Instrumentalities include an intervertebral combination internal screw guide and fixation apparatus configured to be inserted into a disc space between a first vertebral body and a second vertebral body and to provide fusion of the first vertebral body to the second vertebral body via biological bone fusion and screw fusion. For example, Medtronic promotional material states "The Sovereign™ spinal system is an intervertebral body fusion device with internal screw fixation. The screws protrude through the interbody portion of the device and stabilize the vertebral body while preventing expulsion of the implant." This material further states that "The Sovereign™ spinal system is indicated for use with autogenous bone and/or allograft bone graft comprised of cancellous and/or corticocancellous bone graft, and/or demineralized allograft bone with bone marrow aspirate in patients with degenerative disc disease (DDD) at one or two contiguous levels from L2 to S1"

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		and "When used as a stand-alone device, the Sovereign™ interbody device is intended to be used with 3 titanium alloy fixed or variable angle screws."    Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://pmc.ncbi.nlm.nih.gov/articles/PMC7870318/ https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
12B	an intervertebral cage including: a top wall, a bottom wall, and two sidewalls defining an open space capable of receiving bone	The '738 Accused Instrumentalities include an intervertebral cage including a top wall, a bottom wall, and two sidewalls defining an open space capable of receiving bone filling for the biological bone fusion.

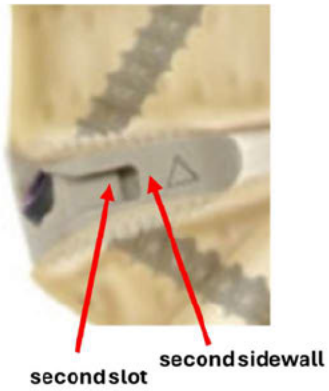
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	filling for the biological bone fusion;	For example, Medtronic promotional material states "The Sovereign™ spinal system is indicated for use with autogenous bone and/or allograft bone graft comprised of cancellous and/or corticocancellous bone graft, and/or demineralized allograft bone with bone marrow aspirate in patients with degenerative disc disease (DDD) at one or two contiguous levels from L2 to S1" and "the interior space of the product is to be used with autogenous bone graft."   Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://pmc.ncbi.nlm.nih.gov/articles/PMC7870318/

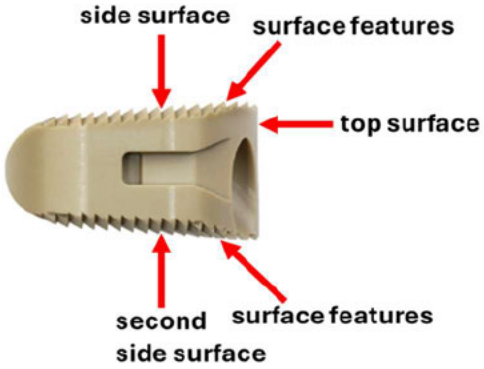
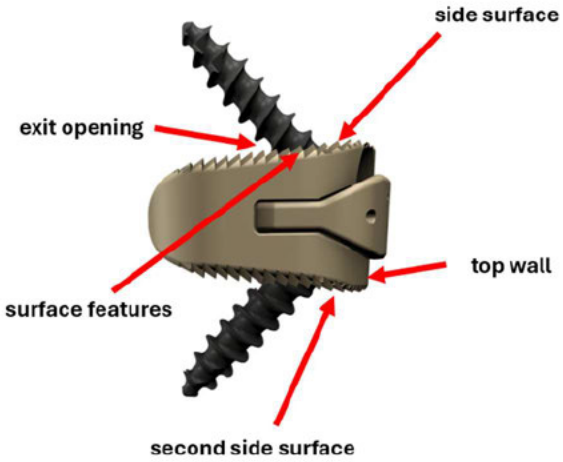
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
12C	an internal screw guide having a screw entrance portion and an internal bore portion, wherein the screw entrance portion is larger than and coaxial with the internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the internal bore portion has an entry opening formed only in a top surface of the top wall as viewed from the top and has an exit opening formed at least partially in a bottom surface of the top wall and at least partially in a side surface of the top wall;	The '738 Accused Instrumentalities include an internal screw guide having a screw entrance portion and an internal bore portion, wherein the screw entrance portion is larger than and coaxial with the internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the internal bore portion has an entry opening formed only in a top surface of the top wall as viewed from the top and has an exit opening formed at least partially in a bottom surface of the top wall and at least partially in a side surface of the top wall.   Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525

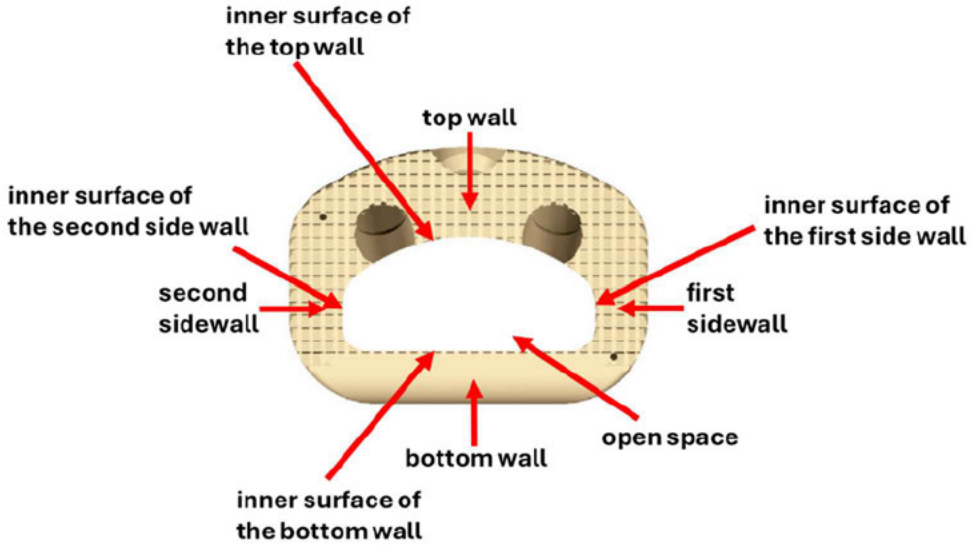
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html
12D	a second internal screw guide having a second screw entrance portion and a second internal bore portion, wherein the second screw entrance portion is larger than and coaxial with the second internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the second internal bore portion has a second entry opening formed only in the top surface of the top wall as viewed from the top and has a second exit opening formed at least partially in the bottom surface of the top wall and at least partially in a second side surface of the top wall, and wherein the internal screw guide and the second internal screw guide are angled to orient a first screw member and a second member screw bi-	The '738 Accused Instrumentalities include a second internal screw guide having a second screw entrance portion and a second internal bore portion, wherein the second screw entrance portion is larger than and coaxial with the second internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the second internal bore portion has a second entry opening formed only in the top surface of the top wall as viewed from the top and has a second exit opening formed at least partially in the bottom surface of the top wall and at least partially in a second side surface of the top wall, and wherein the internal screw guide and the second internal screw guide are angled to orient a first screw member and a second member screw bi-directionally in opposite directions. For example, the Sovereign™ Spinal System includes screw guides that are angled to orient a first screw and a second screw bi-directionally in opposite directions.

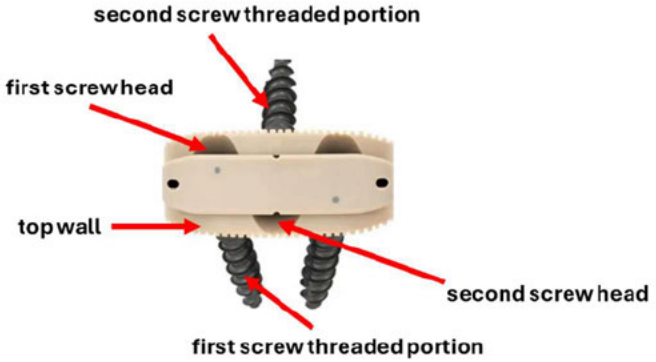
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	directionally in opposite directions;	   

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://pmc.ncbi.nlm.nih.gov/articles/PMC7870318/ https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
12E	a first slot extending at least partially into a first sidewall of the two sidewalls; a second slot extending at least partially into a second sidewall of the two sidewalls, wherein the second slot is positioned opposite of the first slot; wherein the first slot is positioned along a first centerline axis that bisects the first side wall and is positioned nearer a top of the intervertebral cage than a bottom of the intervertebral cage, wherein the second slot is positioned along a second	The '738 Accused Instrumentalities include a first slot extending at least partially into a first sidewall of the two sidewalls; a second slot extending at least partially into a second sidewall of the two sidewalls, wherein the second slot is positioned opposite of the first slot; wherein the first slot is positioned along a first centerline axis that bisects the first side wall and is positioned nearer a top of the intervertebral cage than a bottom of the intervertebral cage, wherein the second slot is positioned along a second centerline axis that bisects the second side wall and is positioned nearer the top of the intervertebral cage than the bottom of the intervertebral cage.

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	centerline axis that bisects the second side wall and is positioned nearer the top of the intervertebral cage than the bottom of the intervertebral cage,	   Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
12F	wherein the side surface and the second side surface of the top wall are patterned with a plurality of surface features to create rough side surfaces, wherein at least some of the plurality of surface features are positioned on the side surface	The side surface and the second side surface of the top wall are patterned with a plurality of surface features to create rough side surfaces, wherein at least some of the plurality of surface features are positioned on the side surface between the top wall and the exit opening.

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	between the top wall and the exit opening, and	  Exemplary Sources https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
12G	wherein the top wall, the bottom wall, and the sidewalls are integrally formed;	The top wall, the bottom wall, and the sidewalls are integrally formed.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		 Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
12H	a first screw having a first screw head and a first screw threaded portion, wherein the first screw	The ’738 Accused Instrumentalities include a first screw having a first screw head and a first screw threaded portion, wherein the first screw is sized to be positioned in the internal screw guide with the first screw head in the screw entrance portion.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	is sized to be positioned in the internal screw guide with the first screw head in the screw entrance portion;	For example, Medtronic promotional material for the Sovereign™ spinal system states "The screws used with this device are manufactured from titanium alloy." This material further states "These titanium cancellous screws are provided in both a variable angle and fixed angle option," and "If the physician chooses to use less than 3 or none of the provided screws, additional supplemental fixation in the lumbar spine must be used to augment stability." 

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]

Screws

20mm, 25mm, 30mm and 35mm standard lengths. Available in Variable Angle and Fixed Angle designs.





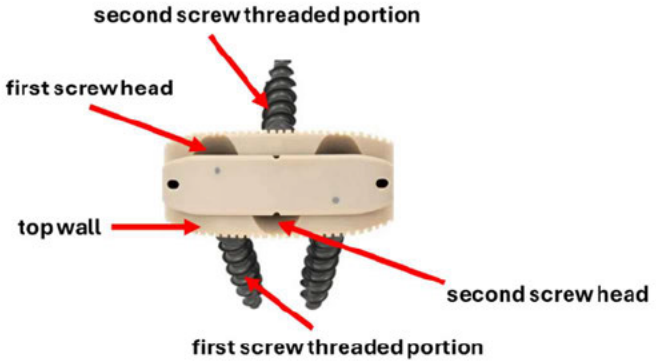
Variable Angle Screws

Part Number	(Diameter × Length)
7965520	5.5mm × 20mm
7965525	5.5mm × 25mm
7965530	5.5mm × 30mm
7965535	5.5mm × 35mm
7966020	6.0mm × 20mm
7966025	6.0mm × 25mm
7966030	6.0mm × 30mm
7966035	6.0mm × 35mm

Fixed Angle Screws

Part Number	(Diameter × Length)
7975520	5.5mm × 20mm
7975525	5.5mm × 25mm
7975530	5.5mm × 30mm
7975535	5.5mm × 35mm
7976020	6.0mm × 20mm
7976025	6.0mm × 25mm
7976030	6.0mm × 30mm
7976035	6.0mm × 35mm

Exemplary Sources
https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525
https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
12I	a second screw having a second screw head and a second screw threaded portion, wherein the second screw is sized to be positioned in the second internal screw guide with the second screw head in the second screw entrance portion; and	The '738 Accused Instrumentalities include a second screw having a second screw head and a second screw threaded portion, wherein the second screw is sized to be positioned in the second internal screw guide with the second screw head in the second screw entrance portion. For example, Medtronic promotional material for the Sovereign™ spinal system states "The screws used with this device are manufactured from titanium alloy." This material further states "These titanium cancellous screws are provided in both a variable angle and fixed angle option," and "If the physician chooses to use less than 3 or none of the provided screws, additional supplemental fixation in the lumbar spine must be used to augment stability." 

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]

Screws

20mm, 25mm, 30mm and 35mm standard lengths. Available in Variable Angle and Fixed Angle designs.





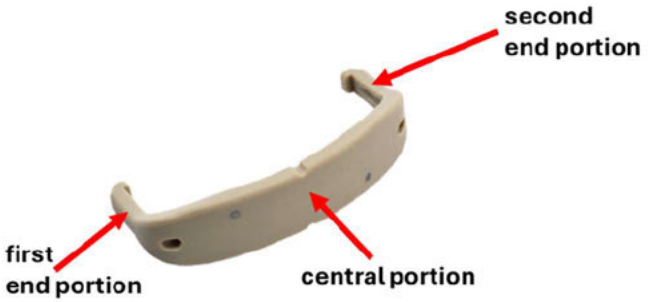
Variable Angle Screws

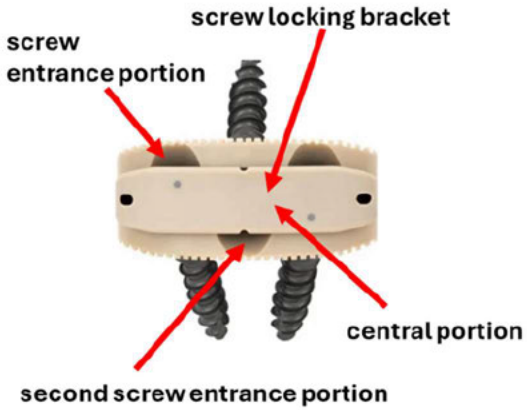
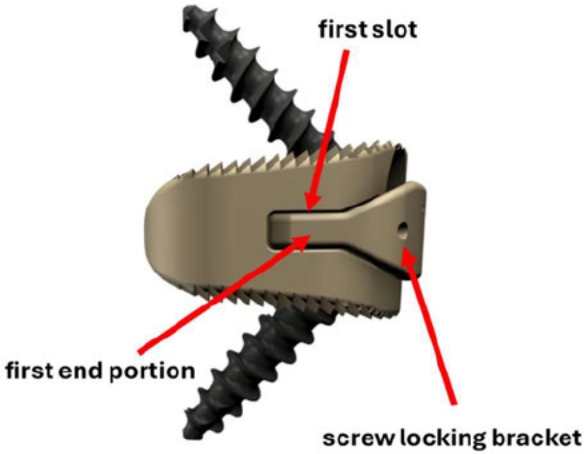
Part Number	(Diameter × Length)
7965520	5.5mm × 20mm
7965525	5.5mm × 25mm
7965530	5.5mm × 30mm
7965535	5.5mm × 35mm
7966020	6.0mm × 20mm
7966025	6.0mm × 25mm
7966030	6.0mm × 30mm
7966035	6.0mm × 35mm

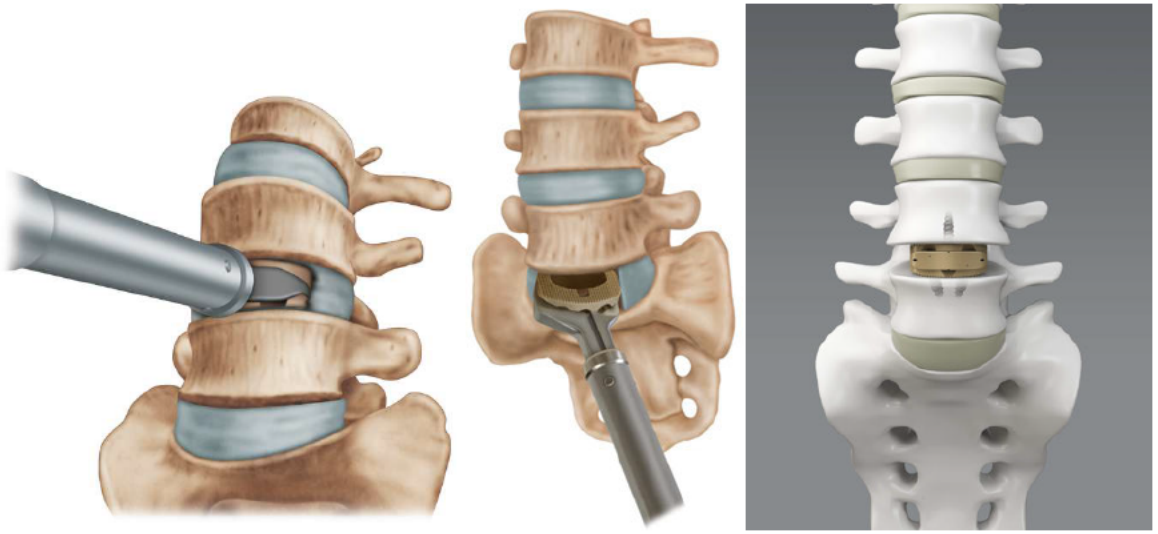
Fixed Angle Screws

Part Number	(Diameter × Length)
7975520	5.5mm × 20mm
7975525	5.5mm × 25mm
7975530	5.5mm × 30mm
7975535	5.5mm × 35mm
7976020	6.0mm × 20mm
7976025	6.0mm × 25mm
7976030	6.0mm × 30mm
7976035	6.0mm × 35mm

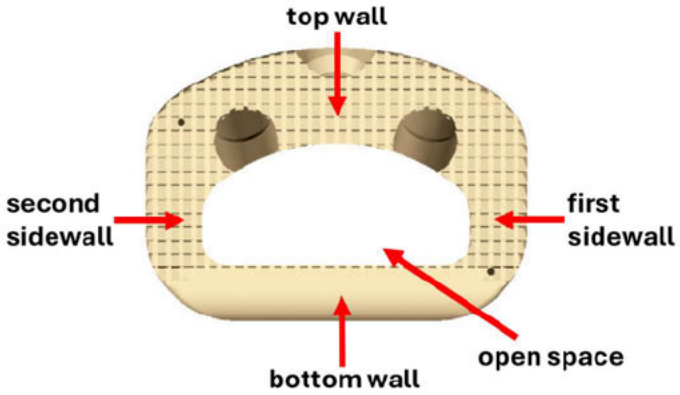
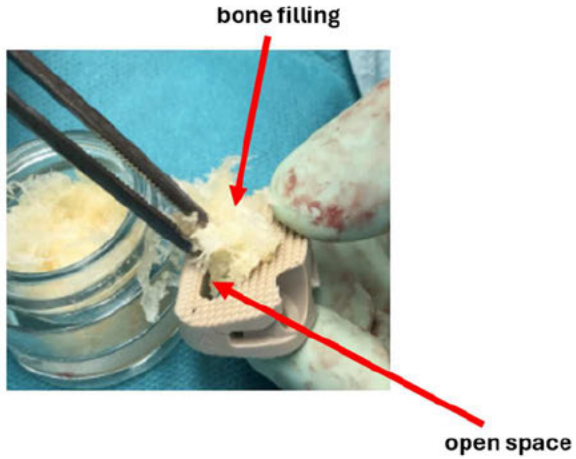
Exemplary Sources
https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525
https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf

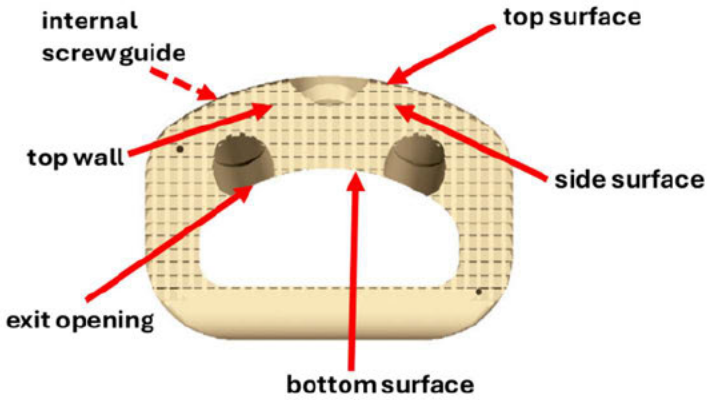
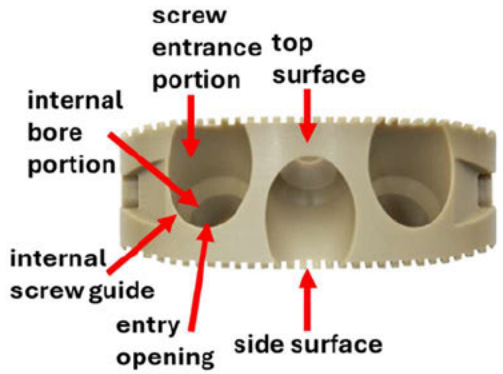
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
12J	a screw locking bracket having a first end portion sized and positioned to be inserted in the first slot, a second end portion sized and positioned to be inserted in the second slot and a central portion extending between the first end portion and the second end portion, wherein when the screw locking bracket is connected to the intervertebral cage with the first end portion in the first slot and the second end portion in the second slot, the central portion partially blocks the screw entrance portion and the second screw entrance portion so as to retain the first and second screws in the internal screw guide and the second internal screw guide while leaving at least a portion of the screw entrance portion and the second screw entrance portion at least partially exposed.	The '738 Accused Instrumentalities include a screw locking bracket having a first end portion sized and positioned to be inserted in the first slot, a second end portion sized and positioned to be inserted in the second slot and a central portion extending between the first end portion and the second end portion, wherein when the screw locking bracket is connected to the intervertebral cage with the first end portion in the first slot and the second end portion in the second slot, the central portion partially blocks the screw entrance portion and the second screw entrance portion so as to retain the first and second screws in the internal screw guide and the second internal screw guide while leaving at least a portion of the screw entrance portion and the second screw entrance portion at least partially exposed.  

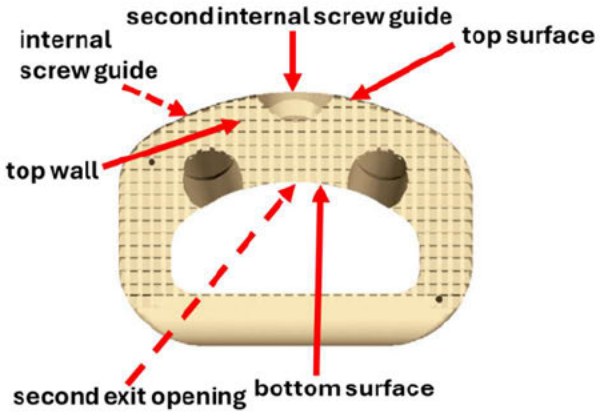
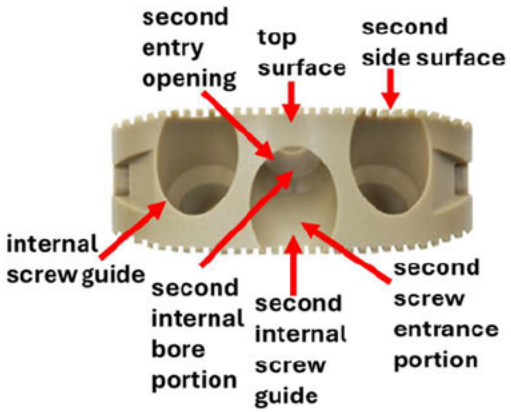
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		  Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 22**	
22	The apparatus of claim 12, wherein the screw locking bracket is configured to be press fit to the intervertebral cage.	The '738 Accused Instrumentalities include the limitations of claim 12, as described above. The screw locking bracket is configured to be press fit to the intervertebral cage. *See* Claim 11.

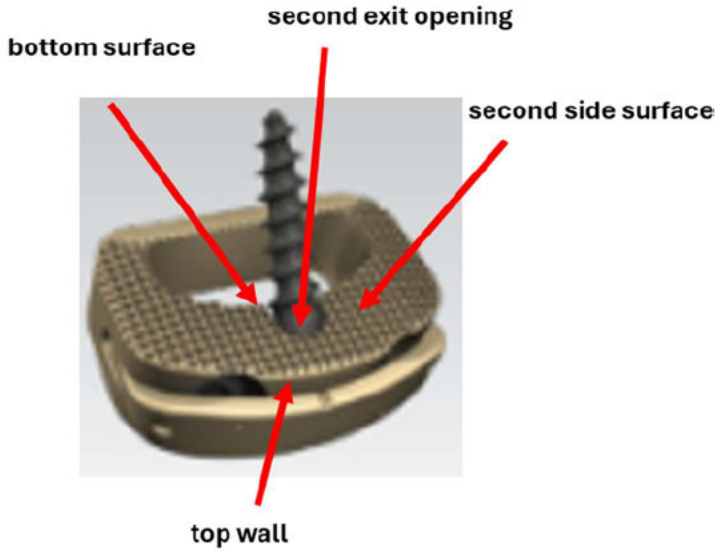
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
Row	**Claim 24**	
24A	A method of inserting a bi-directional fixating transvertebral (BDFT) screw/cage apparatus between a first vertebral body and a second vertebral body, the method including: inserting an intervertebral cage into a midline of a disc space between the first vertebral body and the second vertebral body until the intervertebral cage is one of flush and countersunk relative to the first vertebral body and the second vertebral body,	To the extent the preamble is limiting, the '738 Accused Instrumentalities include a method of inserting a bi-directional fixating transvertebral (BDFT) screw/cage apparatus between a first vertebral body and a second vertebral body. The method includes inserting an intervertebral cage into a midline of a disc space between the first vertebral body and the second vertebral body until the intervertebral cage is one of flush and countersunk relative to the first vertebral body and the second vertebral body. For example, Medtronic promotional material for the Sovereign™ spinal system instructs users as follows: "Once the Interbody Spacer is attached impact the Interbody Spacer into the disc space (Figures 6 and 7)." 

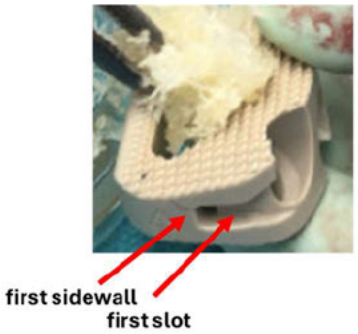
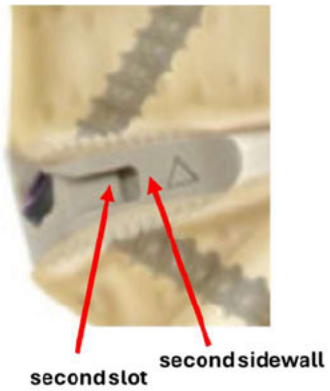
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		 Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
24B	wherein the intervertebral cage includes: a top wall, a bottom wall, and two sidewalls defining an open space capable of receiving bone filling for the biological bone fusion;	The intervertebral cage includes a top wall, a bottom wall, and two sidewalls defining an open space capable of receiving bone filling for the biological bone fusion. For example, Medtronic promotional material states "The Sovereign™ spinal system is indicated for use with autogenous bone and/or allograft bone graft comprised of cancellous and/or corticocancellous bone graft, and/or demineralized allograft bone with bone marrow aspirate in patients with degenerative disc disease (DDD) at one or two contiguous levels from L2 to S1" and "the interior space of the product is to be used with autogenous bone graft."

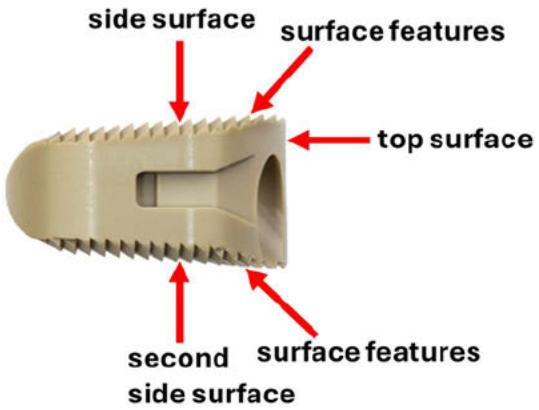
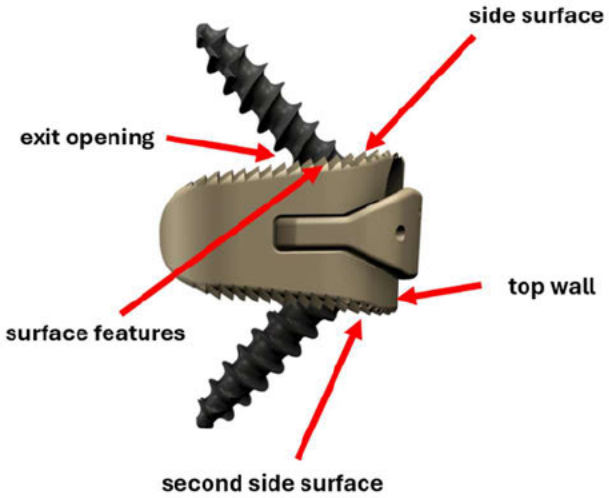
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		  Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://pmc.ncbi.nlm.nih.gov/articles/PMC7870318/ https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
24C	an internal screw guide having a screw entrance portion and an internal bore portion, wherein	The intervertebral cage includes an internal screw guide having a screw entrance portion and an internal bore portion, wherein the screw entrance portion is larger than and coaxial with the internal bore and is formed at least partially in the top surface of the top wall as viewed from

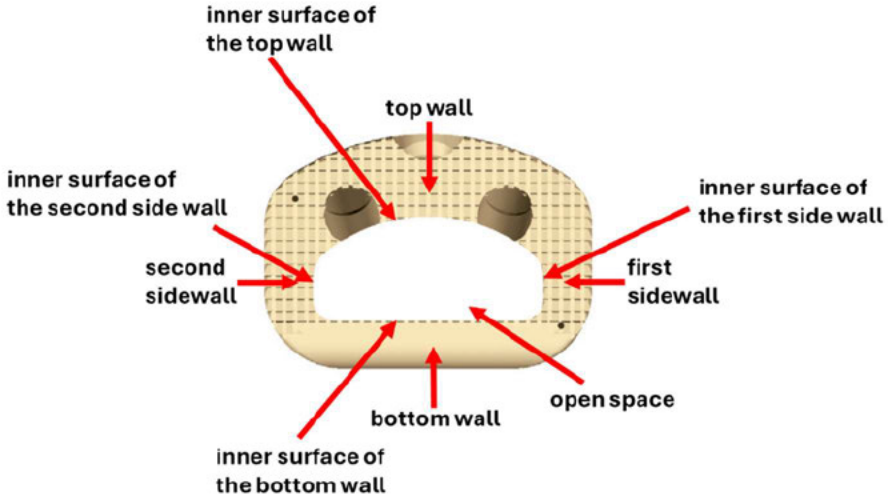
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	the screw entrance portion is larger than and coaxial with the internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the internal bore portion has an entry opening formed only in a top surface of the top wall as viewed from the top and has an exit opening formed at least partially in a bottom surface of the top wall and at least partially in a side surface of the top wall;	the top, wherein the internal bore portion has an entry opening formed only in a top surface of the top wall as viewed from the top and has an exit opening formed at least partially in a bottom surface of the top wall and at least partially in a side surface of the top wall.   Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html
24D	a second internal screw guide having a second screw entrance portion and a second internal bore portion, wherein the	The intervertebral cage includes a second internal screw guide having a second screw entrance portion and a second internal bore portion, wherein the second screw entrance portion is larger than and coaxial with the second internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the second internal bore portion has a second

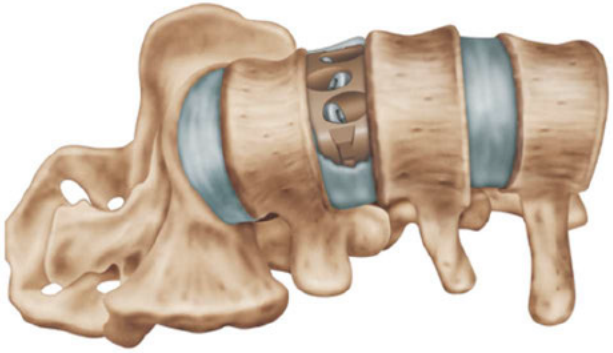
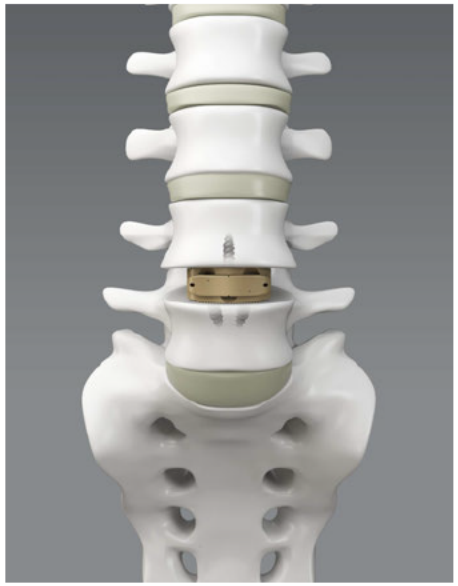
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	second screw entrance portion is larger than and coaxial with the second internal bore and is formed at least partially in the top surface of the top wall as viewed from the top, wherein the second internal bore portion has a second entry opening formed only in the top surface of the top wall as viewed from the top and has a second exit opening formed at least partially in the bottom surface of the top wall and at least partially in a second side surface of the top wall, and wherein the internal screw guide and the second internal screw guide are angled to orient a first screw member and a second member screw bi-directionally in opposite directions;	entry opening formed only in the top surface of the top wall as viewed from the top and has a second exit opening formed at least partially in the bottom surface of the top wall and at least partially in a second side surface of the top wall, and wherein the internal screw guide and the second internal screw guide are angled to orient a first screw member and a second member screw bi-directionally in opposite directions. For example, the Sovereign™ Spinal System includes screw guides that are angled to orient a first screw and a second screw bi-directionally in opposite directions.  

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		  Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://pmc.ncbi.nlm.nih.gov/articles/PMC7870318/ https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
24E	a first slot extending at least partially into a first sidewall of the two sidewalls; a second slot extending at least partially into a second sidewall of the two sidewalls, wherein the second slot is positioned opposite of the first slot; wherein the first slot is positioned along a first centerline axis that bisects the first side wall and is positioned nearer a top of the intervertebral cage than a bottom of the intervertebral cage, wherein the second slot is positioned along a second centerline axis that bisects the second side wall and is positioned nearer the top of the intervertebral cage than the bottom of the intervertebral cage,	The intervertebral cage includes a first slot extending at least partially into a first sidewall of the two sidewalls; a second slot extending at least partially into a second sidewall of the two sidewalls, wherein the second slot is positioned opposite of the first slot; wherein the first slot is positioned along a first centerline axis that bisects the first side wall and is positioned nearer a top of the intervertebral cage than a bottom of the intervertebral cage, wherein the second slot is positioned along a second centerline axis that bisects the second side wall and is positioned nearer the top of the intervertebral cage than the bottom of the intervertebral cage.    Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
24F	wherein the side surface and the second side surface of the top wall are patterned with a plurality of surface features to create rough side surfaces, wherein at least some of the plurality of surface features are positioned on the side surface between the top wall and the exit opening, and	The side surface and the second side surface of the top wall are patterned with a plurality of surface features to create rough side surfaces, wherein at least some of the plurality of surface features are positioned on the side surface between the top wall and the exit opening.   Exemplary Sources https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
24G	wherein the top wall, the bottom wall, and the sidewalls are integrally formed; and	The top wall, the bottom wall, and the sidewalls are integrally formed.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		 Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
24H	inserting a first screw into the internal screw guide of the intervertebral cage;	The method includes inserting a first screw into the internal screw guide of the intervertebral cage. For example, Medtronic promotional material for the Sovereign™ spinal system states "The screws used with this device are manufactured from titanium alloy." This material further

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		states "These titanium cancellous screws are provided in both a variable angle and fixed angle option," and "If the physician chooses to use less than 3 or none of the provided screws, additional supplemental fixation in the lumbar spine must be used to augment stability." This promotional material instructs the user as follows: "Once the pilot hole is made, there is an option to insert a 5.5mm or 6.0mm diameter Variable Angle or Fixed Angle screw," and "Screw insertion can be accomplished with one of the different screw driver options in the set: U-Joint, Flexible Shaft, or Straight. Repeat the above mentioned steps to insert the remaining screws (Figure 14)."  

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]

Screws

20mm, 25mm, 30mm and 35mm standard lengths. Available in Variable Angle and Fixed Angle designs.





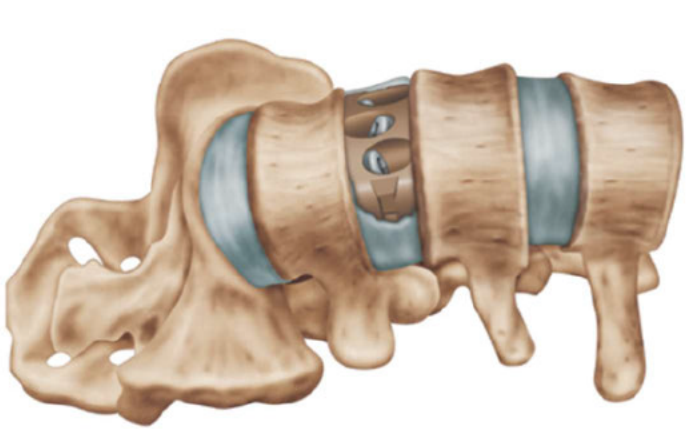
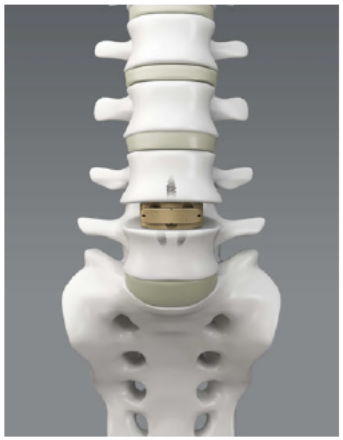
Variable Angle Screws

Part Number	(Diameter × Length)
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7965525	5.5mm × 25mm
7965530	5.5mm × 30mm
7965535	5.5mm × 35mm
7966020	6.0mm × 20mm
7966025	6.0mm × 25mm
7966030	6.0mm × 30mm
7966035	6.0mm × 35mm

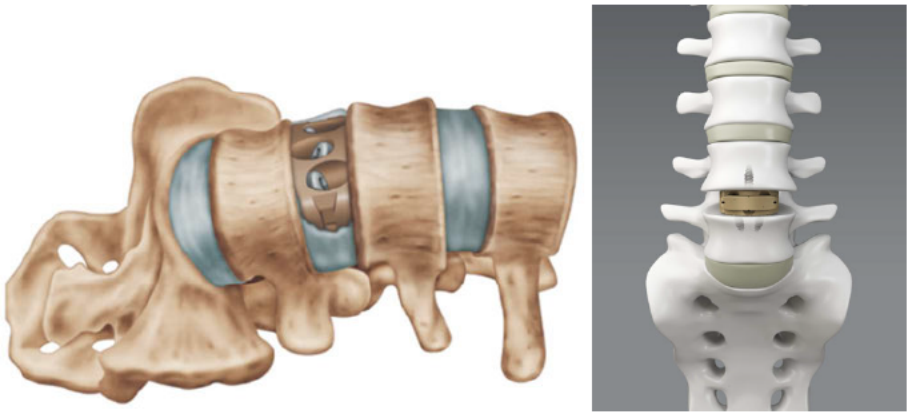
Fixed Angle Screws

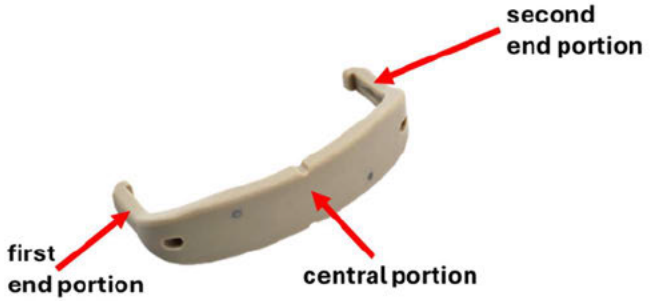
Part Number	(Diameter × Length)
7975520	5.5mm × 20mm
7975525	5.5mm × 25mm
7975530	5.5mm × 30mm
7975535	5.5mm × 35mm
7976020	6.0mm × 20mm
7976025	6.0mm × 25mm
7976030	6.0mm × 30mm
7976035	6.0mm × 35mm

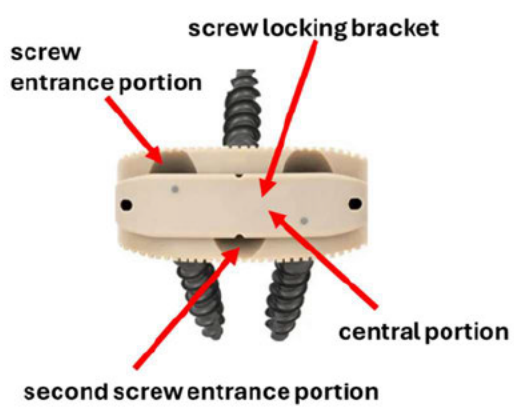
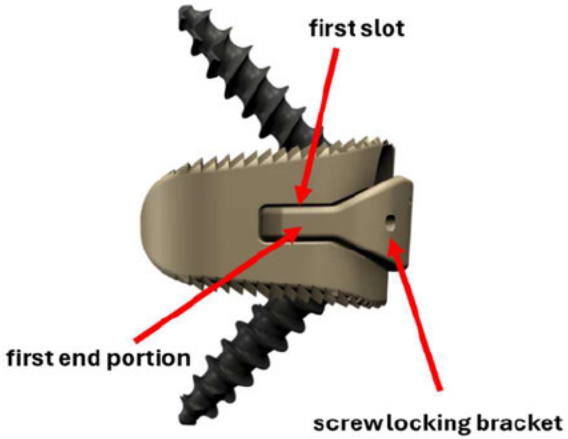
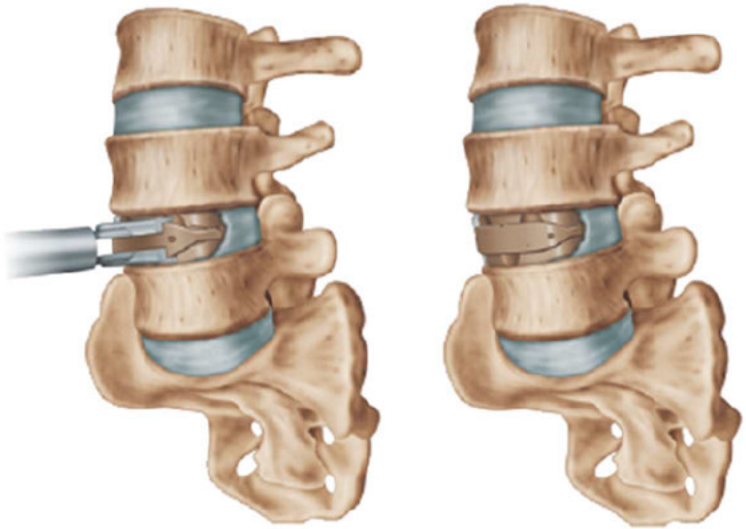
Exemplary Sources
https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
24I	inserting a second screw into the second internal screw guide of the intervertebral cage;	The method includes inserting a second screw into the second internal screw guide of the intervertebral cage. For example, Medtronic promotional material for the Sovereign™ spinal system states "The screws used with this device are manufactured from titanium alloy." This material further states "These titanium cancellous screws are provided in both a variable angle and fixed angle option," and "If the physician chooses to use less than 3 or none of the provided screws, additional supplemental fixation in the lumbar spine must be used to augment stability." This promotional material instructs the user as follows: "Once the pilot hole is made, there is an option to insert a 5.5mm or 6.0mm diameter Variable Angle or Fixed Angle screw," and "Screw insertion can be accomplished with one of the different screw driver options in the set: U-Joint, Flexible Shaft, or Straight. Repeat the above mentioned steps to insert the remaining screws (Figure 14)."  

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		Screws 20mm, 25mm, 30mm and 35mm standard lengths. Available in Variable Angle and Fixed Angle designs.   **Variable Angle Screws** Part Number (Diameter × Length) 7965520 5.5mm × 20mm 7965525 5.5mm × 25mm 7965530 5.5mm × 30mm 7965535 5.5mm × 35mm 7966020 6.0mm × 20mm 7966025 6.0mm × 25mm 7966030 6.0mm × 30mm 7966035 6.0mm × 35mm **Fixed Angle Screws** Part Number (Diameter × Length) 7975520 5.5mm × 20mm 7975525 5.5mm × 25mm 7975530 5.5mm × 30mm 7975535 5.5mm × 35mm 7976020 6.0mm × 20mm 7976025 6.0mm × 25mm 7976030 6.0mm × 30mm 7976035 6.0mm × 35mm Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
24J	screwing the first screw and the second screw into the first	The method includes screwing the first screw and the second screw into the first vertebral body and the second vertebral body respectively.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	vertebral body and the second vertebral body respectively; and	For example, Medtronic promotional material for the Sovereign™ spinal system states "The screws used with this device are manufactured from titanium alloy." This material further states "These titanium cancellous screws are provided in both a variable angle and fixed angle option," and "If the physician chooses to use less than 3 or none of the provided screws, additional supplemental fixation in the lumbar spine must be used to augment stability." This promotional material instructs the user as follows: "Once the pilot hole is made, there is an option to insert a 5.5mm or 6.0mm diameter Variable Angle or Fixed Angle screw," and "Screw insertion can be accomplished with one of the different screw driver options in the set: U-Joint, Flexible Shaft, or Straight. Repeat the above mentioned steps to insert the remaining screws (Figure 14)."  Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
24K	locking the first screw and the second screw in the intervertebral cage using a screw locking bracket coupled to the intervertebral cage by positioning a first end portion of the screw locking bracket in the first slot, a second end portion of the screw locking bracket in the second slot and a central portion of the screw locking bracket extending between the first end portion and the second end portion across at least part of the top surface of the top wall such that the central portion partially blocks the screw entrance portion and the second screw entrance portion so as to retain the first and second screws in the internal screw guide and the second internal screw guide while leaving at least a portion of the screw entrance portion and the second screw entrance portion at least partially exposed.	The method includes locking the first screw and the second screw in the intervertebral cage using a screw locking bracket coupled to the intervertebral cage by positioning a first end portion of the screw locking bracket in the first slot, a second end portion of the screw locking bracket in the second slot and a central portion of the screw locking bracket extending between the first end portion and the second end portion across at least part of the top surface of the top wall such that the central portion partially blocks the screw entrance portion and the second screw entrance portion so as to retain the first and second screws in the internal screw guide and the second internal screw guide while leaving at least a portion of the screw entrance portion and the second screw entrance portion at least partially exposed. For example, Medtronic promotional material for the Sovereign™ spinal system instructs the user to "Attach the Coverplate by aligning it to the grooves in the side of the Interbody Spacer (Figure 15). Push down on the Coverplate until it snaps into place (Figure 16). Both sides should snap into place."  

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		  

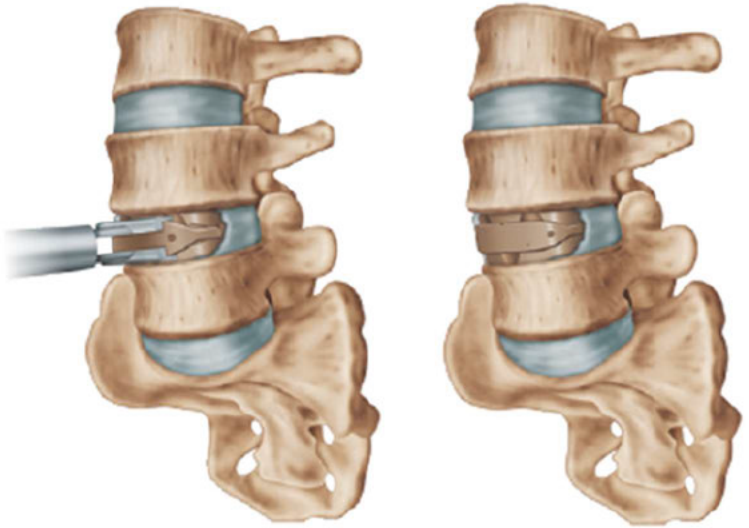
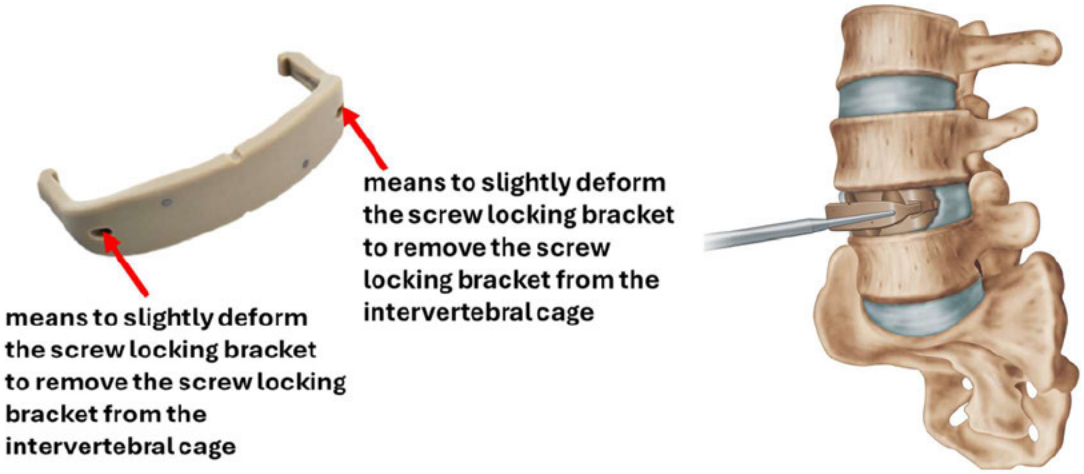
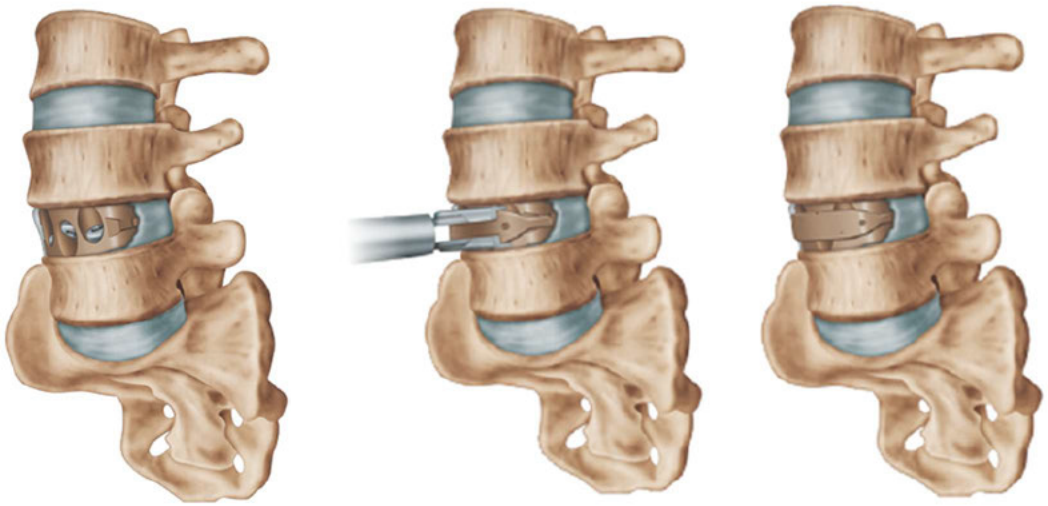
U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 25**	
25	The method of claim 24, and further comprising press fitting the screw locking bracket to the intervertebral cage.	The '738 Accused Instrumentalities include the method of claim 24, as described above. The method further includes press fitting the screw locking bracket to the intervertebral cage. For example, Medtronic promotional material for the Sovereign™ spinal system instructs the user to "Attach the Coverplate by aligning it to the grooves in the side of the Interbody Spacer (Figure 15). Push down on the Coverplate until it snaps into place (Figure 16). Both sides should snap into place." 

EXHIBIT D1 - U.S. PATENT 10,064,738
Infringement Claim Chart

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 28**	
28	The method of claim 24, wherein the plurality of surface features on the side surface and the second side surface are patterned all the way next to the top surface of the top wall so as to be adjacent the top surface of the top wall.	The '738 Accused Instrumentalities include the method of claim 24, as described above. The plurality of surface features on the side surface and the second side surface are patterned all the way next to the top surface of the top wall so as to be adjacent the top surface of the top wall. *See* Claim 5.
Row	**Claim 30**	
30	The method of claim 24, wherein the screw locking bracket comprises means to slightly deform the screw locking bracket to remove the screw locking bracket from the intervertebral cage.	The '738 Accused Instrumentalities include the method of claim 24, as described above. The screw locking bracket comprises means to slightly deform the screw locking bracket to remove the screw locking bracket from the intervertebral cage.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
		 Exemplary Sources https://www.medtronic.com/content/dam/medtronic-wide/public/united-states/customer-support-services/reimbursement/sovereign-spinal-system-billing-and-coding-guide.pdf https://www.catablog.com/post/medtronic-sofamor-danek-sovereign-ibf-w-screws-lumbar-t-lumbar-screw-catalog-7975525 https://www.medtronic.com/me-en/healthcare-professionals/therapies-procedures/spinal-orthopaedic/olif/products/olif51.html https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 31**	
31	The method of claim 30, wherein the means comprises a	The '738 Accused Instrumentalities include the method of claim 30, as described above. The means comprises a flexion portion of the screw locking bracket.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	flexion portion of the screw locking bracket.	For example, Medtronic promotional material for the Sovereign™ spinal system states "If it becomes necessary to remove the Interbody Spacer, remove the Coverplate using the Coverplate Remover. This is done by inserting the ball tip end of the instrument into the side hole in the Coverplate. Flex the arm out to loosen it from the Interbody Spacer and then pull back the Coverplate from the Interbody Spacer Construct."  Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 32**	
32	The method of claim 24, and further comprising contacting both the first and second screw heads with the screw locking bracket when the screw locking	The '738 Accused Instrumentalities include the method of claim 24, as described above. The method further includes contacting both the first and second screw heads with the screw locking bracket when the screw locking bracket is connected to the intervertebral cage.

U.S. Patent 10,064,738		Medtronic Infringing Activity[1]
	bracket is connected to the intervertebral cage.	 Exemplary Sources https://neurospineproductreview.com/storage/products/pdfs/sovereign-surgical-technique.pdf
Row	**Claim 33**	
33	The method of claim 24, wherein the screw locking bracket comprises a first hook at the first end portion that is sized to fit in the first slot and a second hook at the second end portion that is sized to fit in the second slot.	The '738 Accused Instrumentalities include the method of claim 24, as described above. The screw locking bracket comprises a first hook at the first end portion that is sized to fit in the first slot and a second hook at the second end portion that is sized to fit in the second slot. *See* Claim 3.