

SharkNinja v. Dyson

IPR2023-01322 (Pat. No. 10,433,687)

SharkNinja's Oral Argument Presentation

December 5, 2024



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Overview of the Challenged Patent

01

'687 Patent

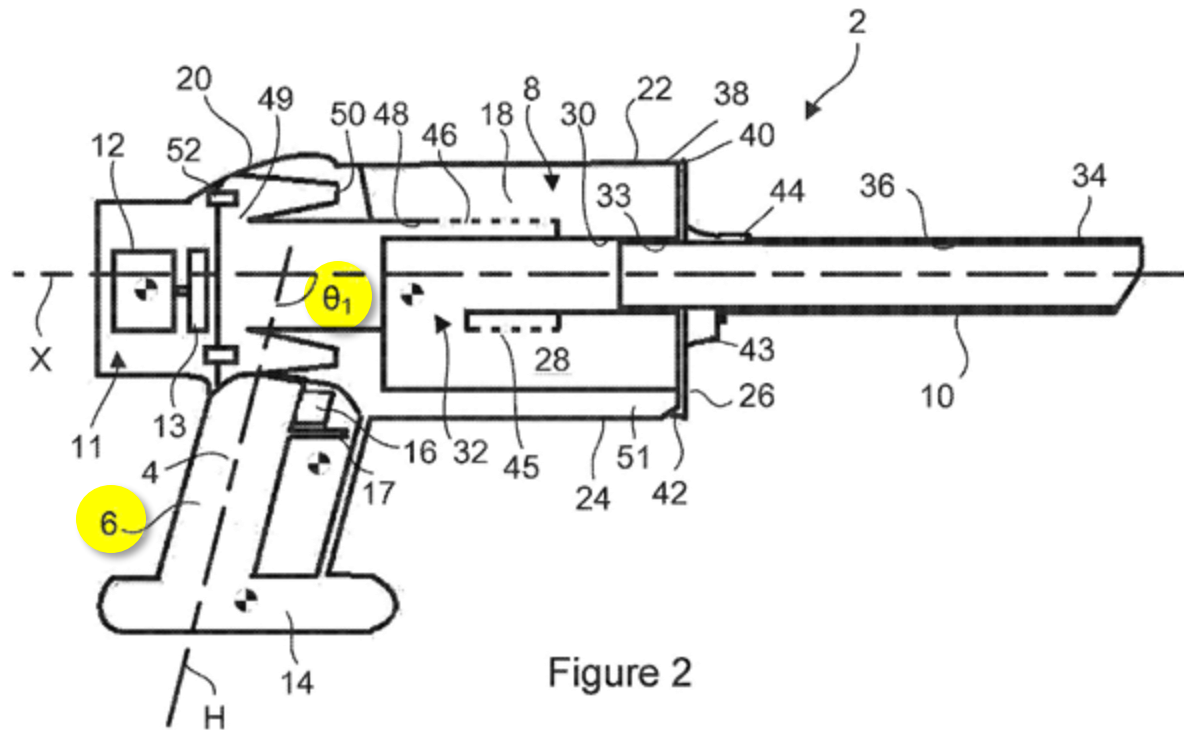


Figure 2

“The handle 6 is arranged in a ‘**pistol grip configuration**,’ and in particular, ‘the handle axis H is arranged **at 110 degrees** with respect to the longitudinal axis X of the cyclonic separating unit 8,’ as demonstrated by **angle θ_1** .”

Pet., 7; Ex.1001 at 2:61-67

'687 Patent

End wall 26 of dirt collector 38 “can be moved from an open position . . . to a closed position.”

Pet., 8; Ex.1001 at 3:49-53, 3:56-61

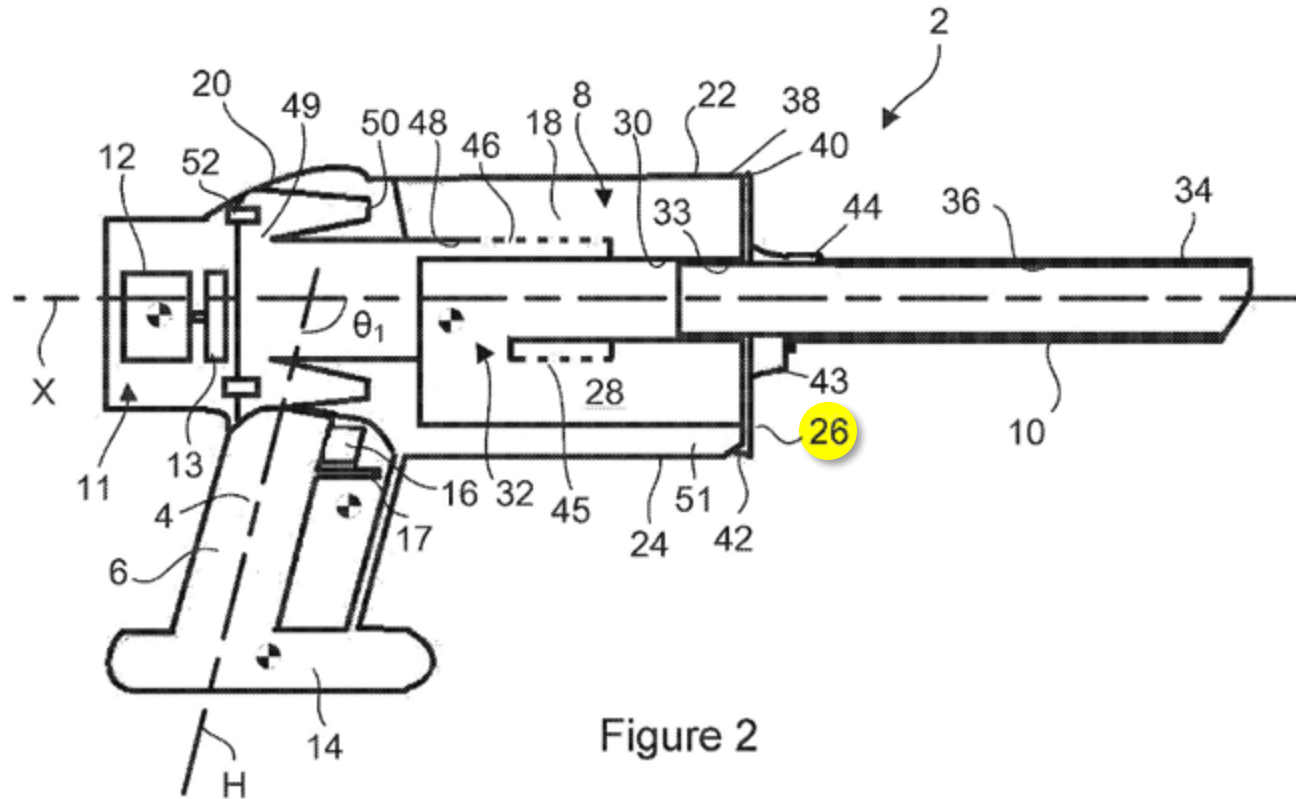


Figure 2

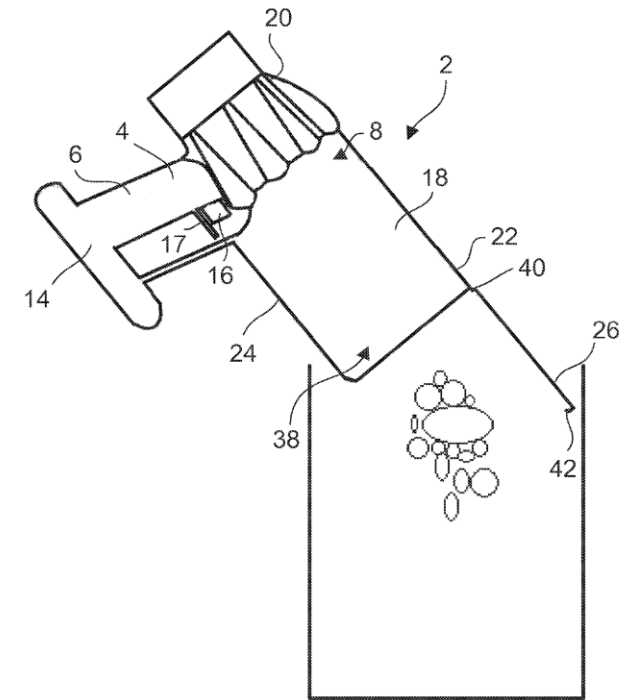


Figure 8

Claim 1 of the '687 Patent

Limitation	Claim Language
1.pre	A handheld vacuum cleaner, comprising:
1.a	a handle by which the vacuum cleaner is supported during normal use;
1.b	a cyclonic separating unit having a longitudinal axis and a dirt collector at one end of the cyclonic separating unit,
1.c	the cyclonic separating unit comprising an end wall having a closed configuration in which dirt is retained within the dirt collector by the end wall and an open configuration for the removal of dirt from the dirt collector, wherein the end wall is movable relative to the longitudinal axis and, when the end wall is in the closed configuration, the longitudinal axis extends through a region bounded by a perimeter of the end wall,
1.d	wherein the handle has a <i>pistol grip configuration</i> in which the handle is inclined with respect to the cyclonic separating unit to form an angle of not less than 85 degrees and not greater than 140 degrees between a handle axis and the longitudinal axis of the cyclonic separating unit, and wherein the handle axis and the longitudinal axis intersect within the vacuum cleaner.

Claims 1-4, 8, and 10 Are Invalid

Claims 1-4, 8, and 10 are invalid under four grounds:

- **Ground 1:** Obviousness over Conrad '630 and Conrad '787
- **Ground 2:** Obviousness over Conrad '630 and Dyson
- **Ground 3:** Obviousness over Matsumoto and Conrad '787
- **Ground 4:** Obviousness over Matsumoto and Dyson

Grounds 1 and 2

Obviousness over Conrad '630 and
Conrad '787 (Ground 1) or Dyson (Ground 2)

02

Grounds 1 & 2

Roadmap

1. A POSITA would have been motivated to combine Conrad '630 and Conrad '787 / Dyson because:
 - a) Conrad '630 discloses the dust bin of Claim 1 and its advantages.
 - b) Conrad '630 does not disclose a handle in the claimed “pistol grip configuration,” but explicitly teaches that the “handle 102 may be provided . . . at the rear 110 and may be of any design.” (Conrad '630 (Ex.1004), ¶ 52).
 - c) Providing a handle at the rear that conforms with the teachings of Conrad '787 / Dyson would improve comfort, provide a better grip, and allow for more flexibility to orient the vacuum when using the vacuum with attachments and therefore improved usability.
2. Patent Owner’s arguments are premised on ***inaccurate representations*** of ***specific use cases*** using a ***device different*** from the combinations proposed by Petitioners.
3. Patent Owner’s arguments that the proposed combinations are inferior fail.
4. Ground 2 Only: The Conrad '630-Dyson combination discloses Element 1[d] and Claim 2.

Grounds 1 & 2: Issue 1(a)

Conrad '630's Vacuum

CONRAD '630

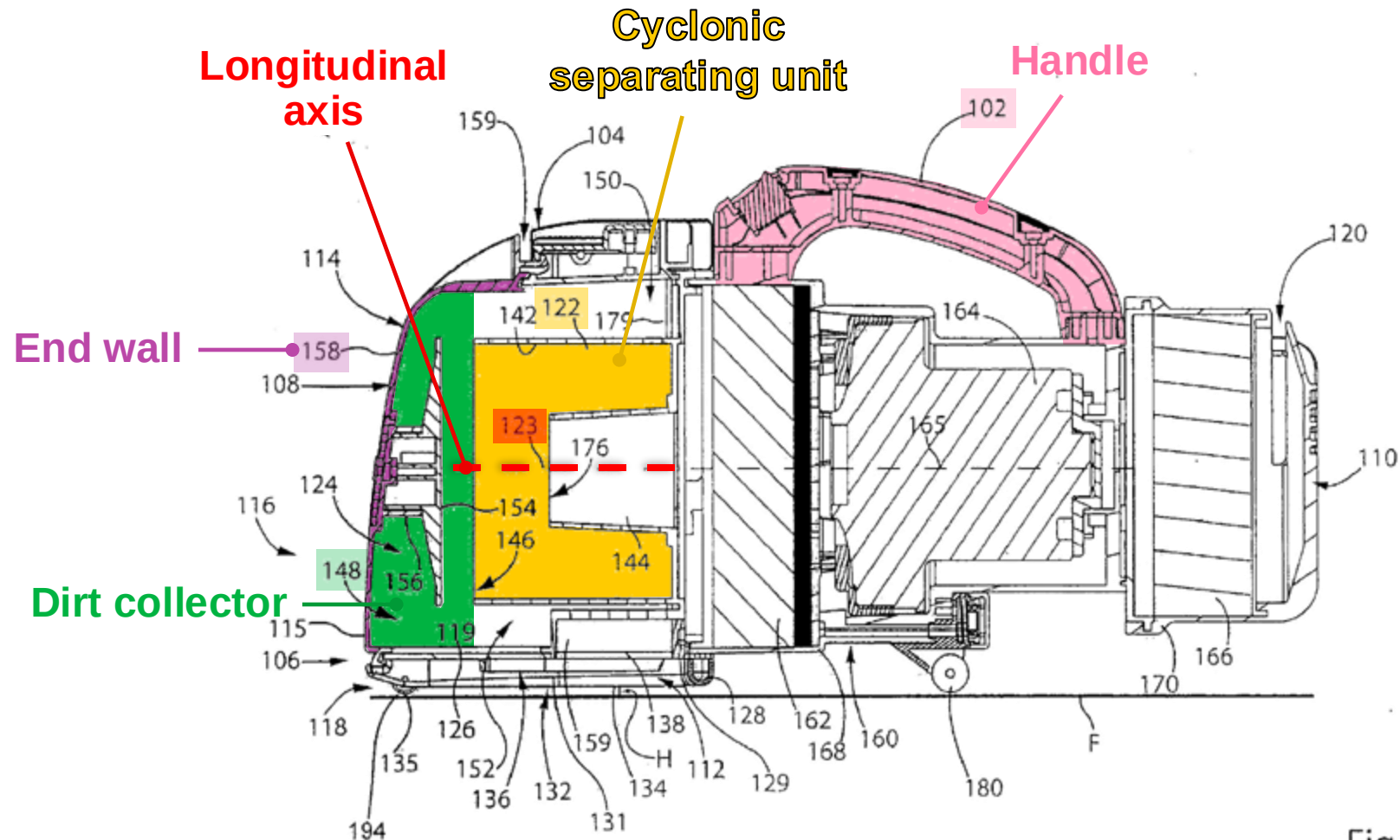


Fig. 6

Grounds 1 & 2: Issue 1(a) Conrad '630's Dust Bin

CONRAD '630

Conrad '630

“[D]irt collected in the chamber may be transported to a disposal site (e.g., a garbage can) **without the dirt being dispersed** as the dirt collection chamber is conveyed to the disposal site.”

Conrad '630 (Ex.1004), ¶ 6; Pet. at 20; Fester Decl. (Ex. 1003, ¶ 35.)

Mr. Fester's Declaration

“A POSITA would have therefore sought to . . . retain[] the advantages of Conrad '630's design, including its improved dustbin configuration.”

Fester Decl. (Ex.1003), ¶¶ 68, 35; Pet. at 27; Ex.1004, ¶¶ 6,7, 19

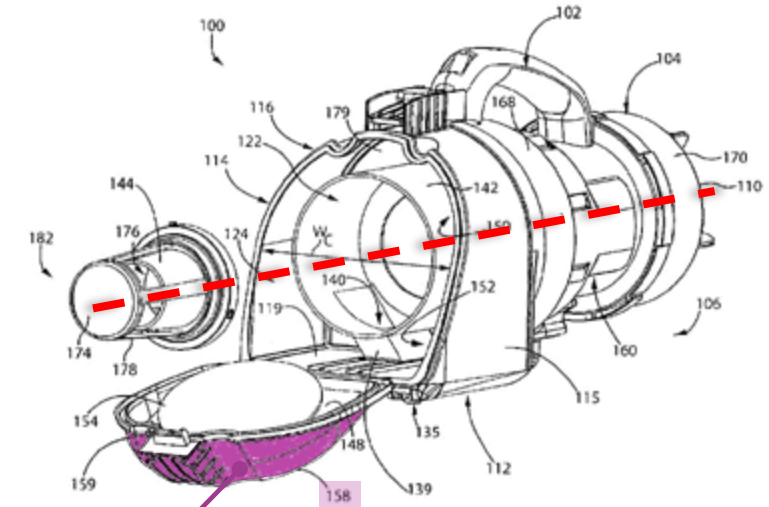


Fig. 5

End wall

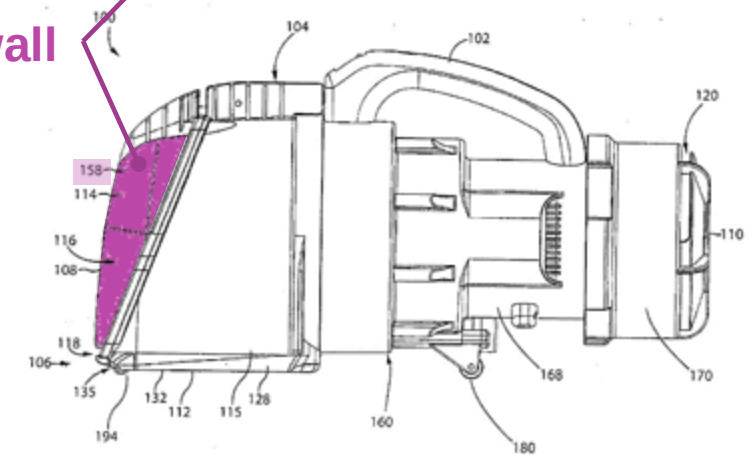
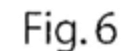


Fig. 1

CONRAD '630



Conrad '630 (Ex.1004), ¶ 52; Pet. at 17;
Fester Decl. (Ex. 1003), ¶ 32.

Fester Decl. (Ex.1003), ¶¶ 68, 35; Pet. at 27;
Conrad '630 (Ex.1004), ¶¶ 6, 7, 19.

Ground 1: Issue 1(c) Conrad '787's Handle

CONRAD '787

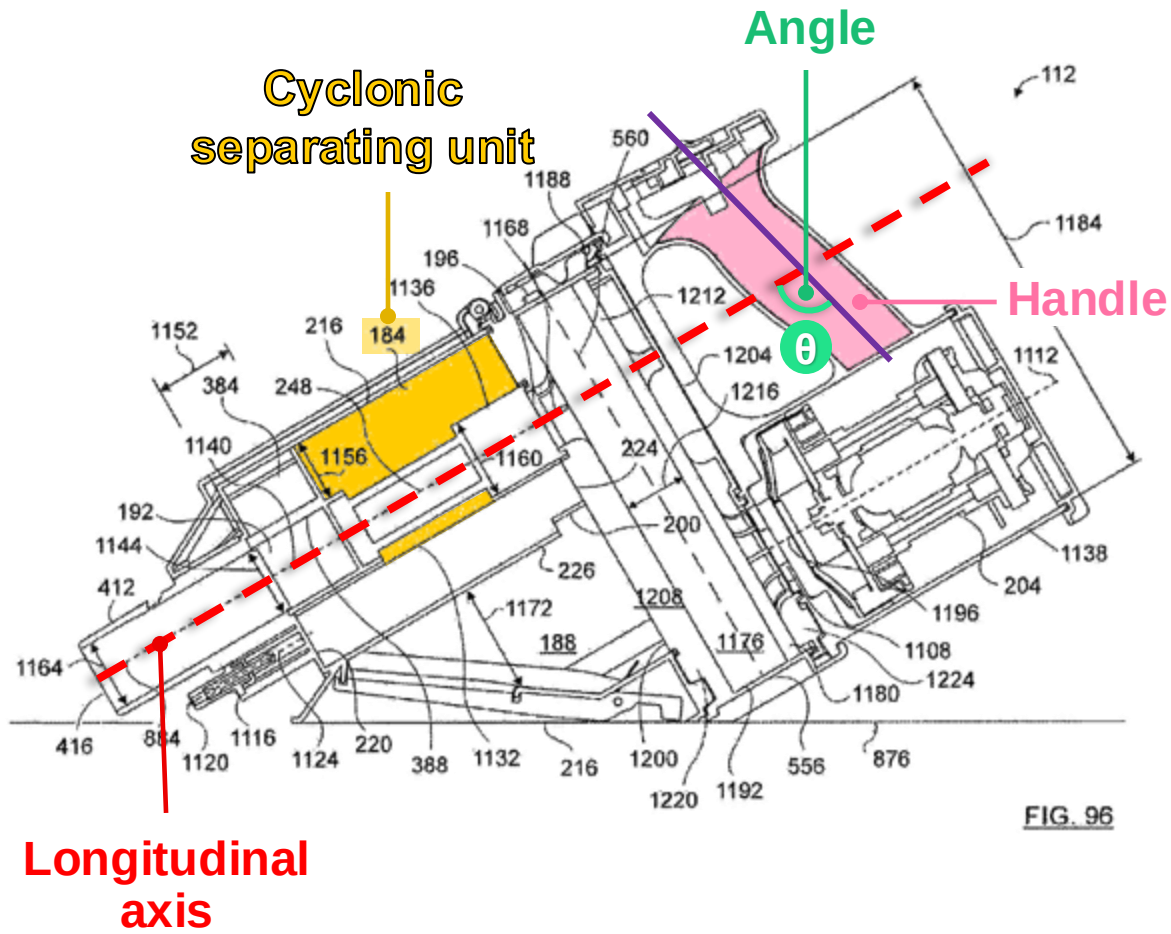


FIG. 96

Mr. Fester's Declaration

“The advantages associated with Conrad '787's handle—such as improved comfort—would motivate the combination.”

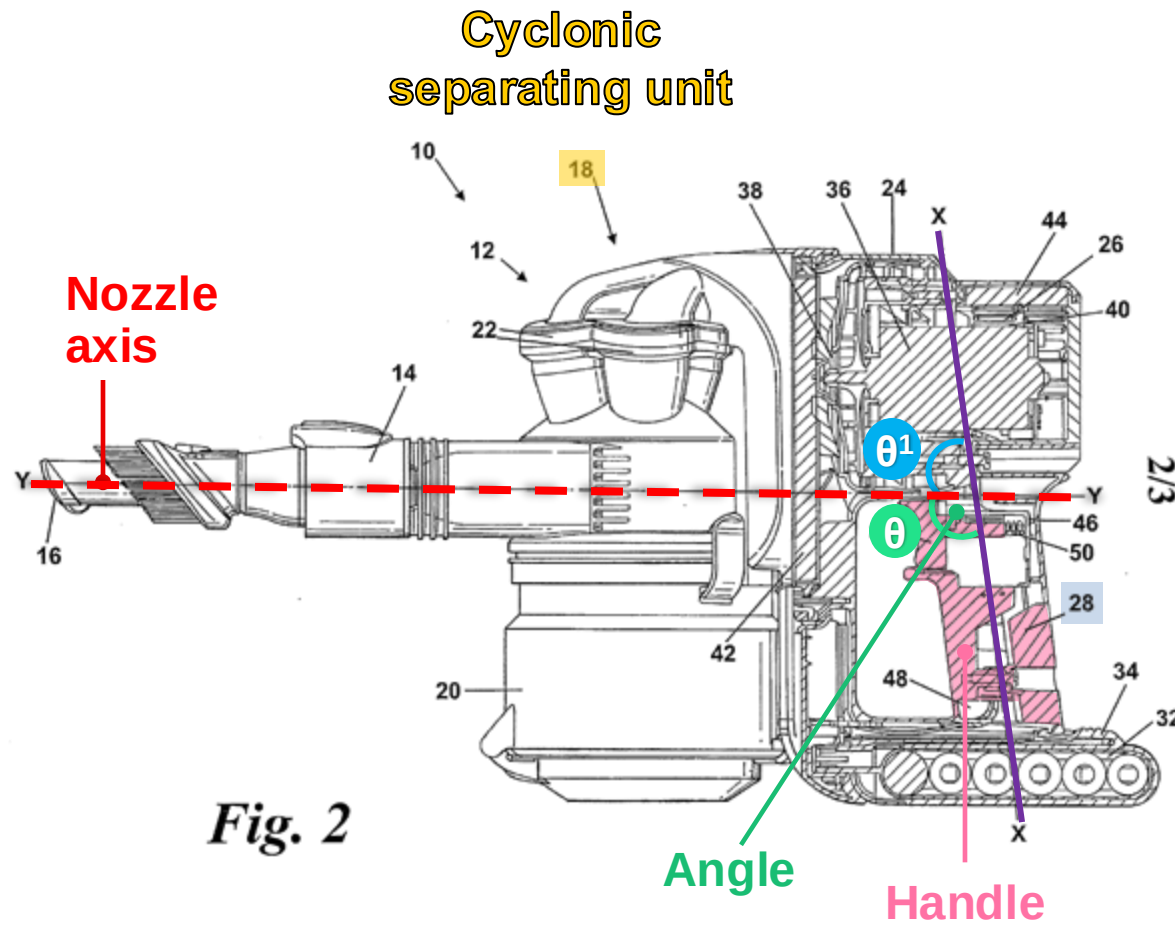
Fester Decl. (Ex.1003), ¶ 67; Ex.1006, ¶¶ 314, 317;
Pet. at 23-28.

“A POSITA would have recognized additional advantages associated with providing the handle at the rear, including that the user will have a better grip and more comfort when using the handheld vacuum with an attachment, which would allow more flexibility in using the handheld vacuum with an attachment for different types of cleaning.”

Fester Decl. (Ex.1003), ¶ 65; Pet. at 23-28.

Ground 2: Issue 1(c) Dyson's Handle

DYSON



Mr. Fester's Declaration

“[T]he advantages associated with Dyson’s handle—such as improved comfort—would further motivate the combination.”

Fester Decl. (Ex.1003), ¶ 127; Dyson (Ex. 1007), 2:17-19, 4:27-29; Pet. at 52-56.

“[B]ecause both vacuums are designed to be used with attachments, a POSITA would have recognized additional advantages associated with providing the handle at the rear, including that the user will have a better grip and more comfort when using the handheld vacuum with an attachment.”

Fester Decl. (Ex.1003), ¶¶ 127, 125-126; Pet. at 52-56.

COMBINATION

Fig. 6 is a cross-sectional view of a device 100. The device includes a housing 102 and an internal component 120. A green highlighted section 102 is shown, which appears to be a seal or gasket. Other components labeled include 104, 150, 159, 114, 158, 108, 116, 124, 148, 115, 106, 118, 135, 152, 136, 132, 131, 138, 134, 133, 126, 128, 129, 162, 168, 160, 180, 164, 165, 170, 166, 179, 176, 142, 122, 179, 144, 146, 154, 119, 156, 123, 125, 127, 129, 130, 137, 140, 141, 143, 145, 147, 149, 151, 153, 155, 157, 158, 159, 161, 163, 167, 169, 171, 172, 173, 174, 175, 177, 178, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200.

Fig.6

Fester Decl. (Ex.1003), ¶¶ 64-76, 123-132; Pet., 28, 55-56.

Grounds 1 & 2: Issue 1(c)

Petitioners' Additional Mock-Ups

COMBINATION

Declaration of Joseph Fester in Support of Petition
for *Inter Partes* Review of U.S. Patent No. 10,433,687

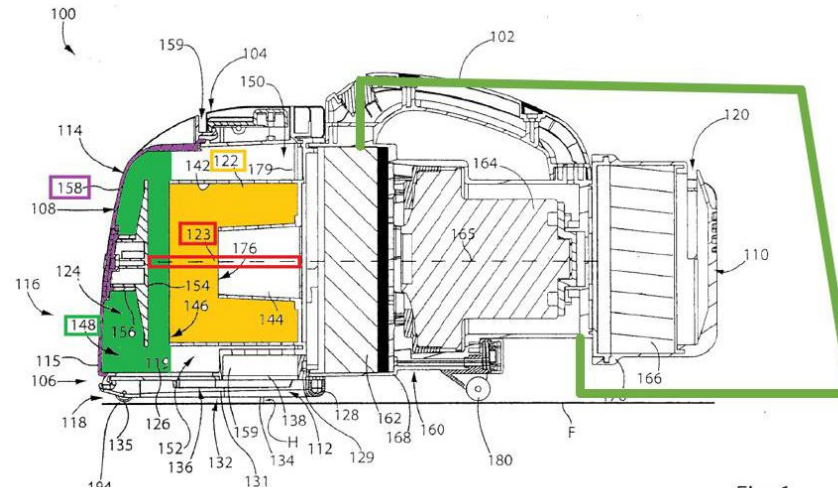


Fig. 6

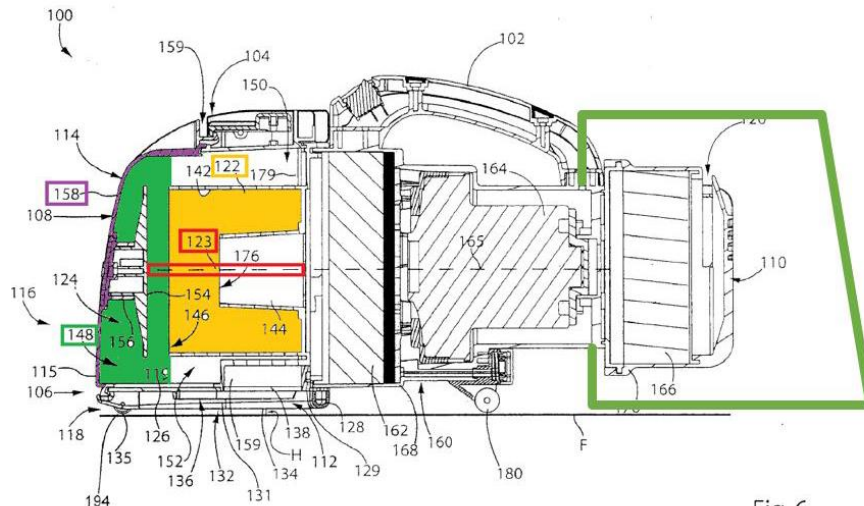


Fig. 6

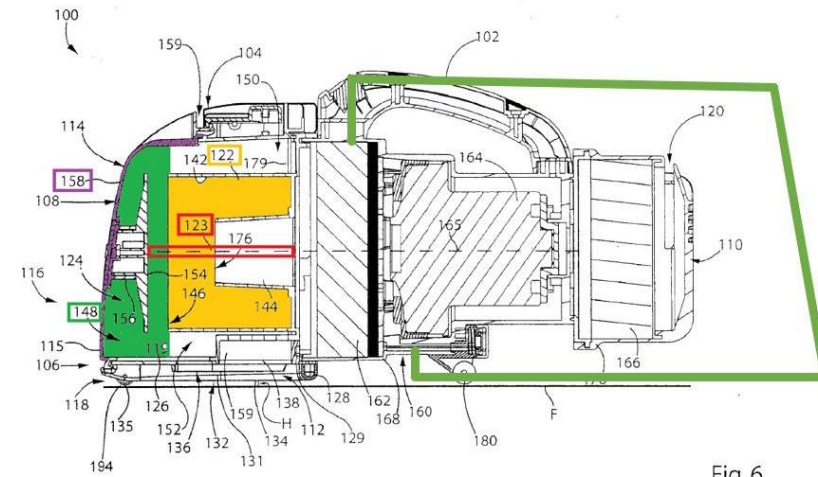


Fig. 6

Grounds 1 & 2: Issue 1(c)

Proposed Combination Improves Usability and Comfort



Deposition of Joseph Fester

“I would again point to the general motivation which was speaking to more flexibility in using the handheld vacuum with an attachment for different types of cleaning. So the different types of cleaning are going to require – or different use cases so that points to using the different handles . . .”

“So the optionality would allow the user to hold the vacuum at a somewhat horizontal angle for cleaning horizontal surfaces and then use the pistol grip of 787 at the rear for vertical surfaces.”

Fester Dep. Tr. (Ex.2018) at 135:16-136:2, 91:14-22; Reply to POR at 9-10; Pet. at 27; Fester (Ex. 1003) at ¶¶ 67, 72; Conrad 787 (Ex. 1006), ¶314.



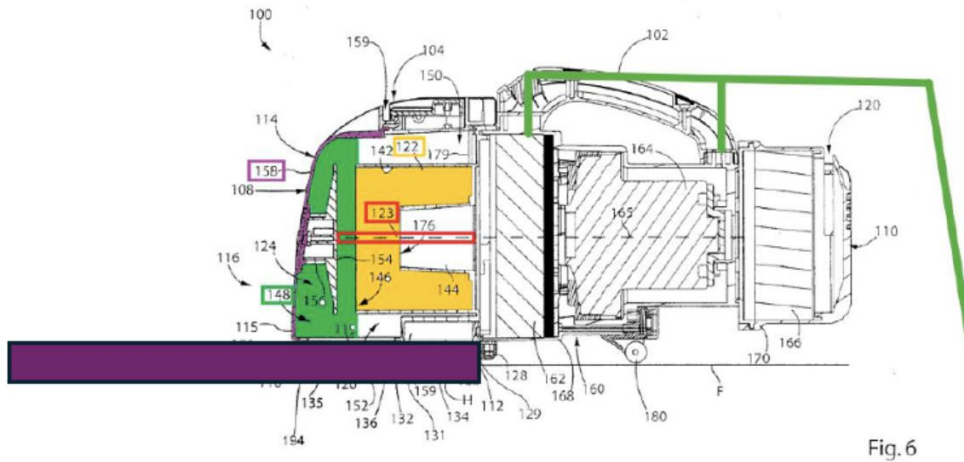
Deposition of Donald Davidshofer

“Depending on the substrate you’re cleaning, it could be a curtain. It could be a couch. It could be a floor. It could be something on your kitchen counter, just wherever the dust or dirt is that you want to pick up or contain, the orientation is conducive to the matter that you’re picking up and where it is.”

Davidshofer Dep. Tr (Ex. 1011) at 23:18-24:10; Reply to POR at 4-5, 7-10.

Grounds 1 & 2: Issue 1(c)

Proposed Combination Improves Usability and Comfort



Mockup of Figure 6 of Conrad '630 to show an alternative design of the handle consistent with the teachings of Conrad '630 and Dyson.

Ex-1003, 65 (further annotated to add a crevasse tool (purple)).



Deposition of Donald Davidshofer

- Q. Does Conrad '663 disclose using attachments that are directly attached to the nozzle of the vacuum.
- A. Yes.
- Q. Does Conrad '663 disclose using wands, brushes, crevice tools, and other hoses with the vacuum?
- A. It does.
- Q. And do you agree that that **nozzle 412 may be directly connected to any of these attachments?**
- A. **That's what it is suggesting, yes.**

Davidshofer Dep. Tr (Ex. 1011) at 80:1-81:1; Reply to POR at 7-9, 18-20; Davidshofer Decl. (Ex. 2017), ¶¶76; Fester Dec. (Ex. 1003), ¶¶71-72; Pet., 24-27, 53-55; Conrad 663 (Ex. 1008) at Fig. 3b, 11:50-52, 12:7-12.

Grounds 1 & 2: Issue 2

Patent Owner's Inaccurate Mock-ups



AA



BB



CC



DD

POR, 18.



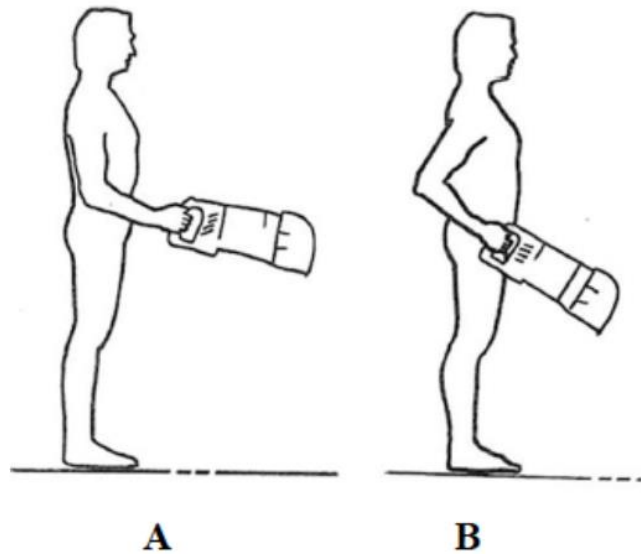
Deposition of Donald Davidshofer

- Q. Did you consider the ergonomics of the handle when you drew it in *Diagram AA*?
- A. It was considered. It was not advised.
- Q. Why was it not advised?
- A. Because a person of ordinary skill in the art **would not** actually design something similar this.

Davidshofer Dep. Tr (Ex. 1011) at 59:7-13, 59:13-63:18; see Reply to POR at 5-6.

Grounds 1 & 2: Issue 2

Patent Owner's Inaccurate Mock-ups



POR, 22.

Patent Owner's arguments are premised on **inaccurate representations** of **specific use cases** using a **device different** from the combinations proposed by Petitioners.

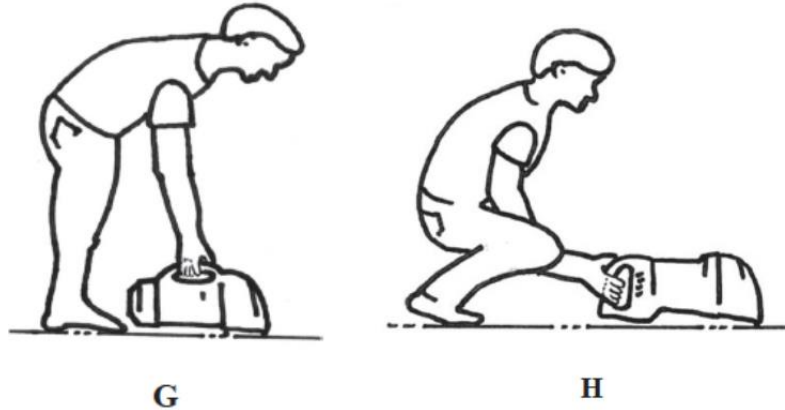
See generally Reply to POR at 11-15, 20.

“[T]he Conrad’630 vacuum as it was modified by Petitioners (Ex-1011, 68:2-20) [] **would offer the user the option of holding the vacuum from the top** if the use case so demanded.”

Reply to POR at 12.

Grounds 1 & 2: Issue 2

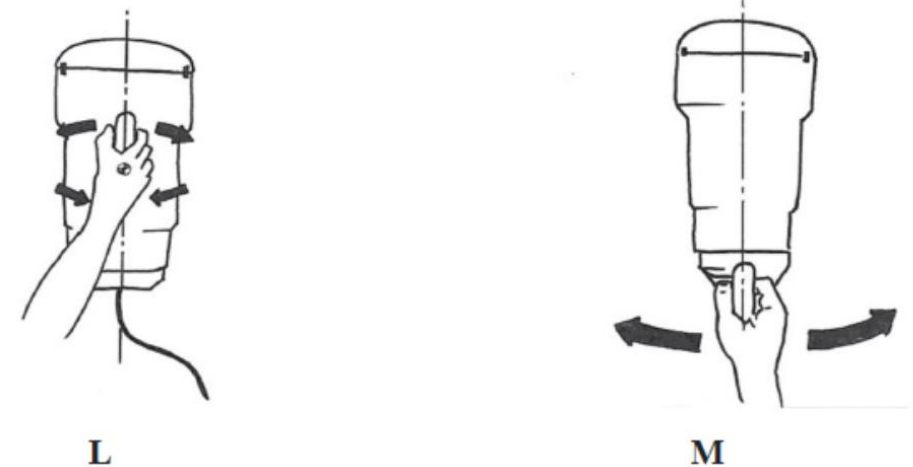
Patent Owner's Inaccurate Mock-ups



POR, 26-27.

“Figure H . . . shows PO’s version of the modified Conrad’630 and ignores Petitioners’. Mr. Davidshofer conceded that Mr. Fester’s proposed combination can be picked up in the same way as the original Conrad’630 vacuum.”

Reply to POR at 13;
Davidshofer Depo Tr. (Ex. 1011) at 73:12-74:2.



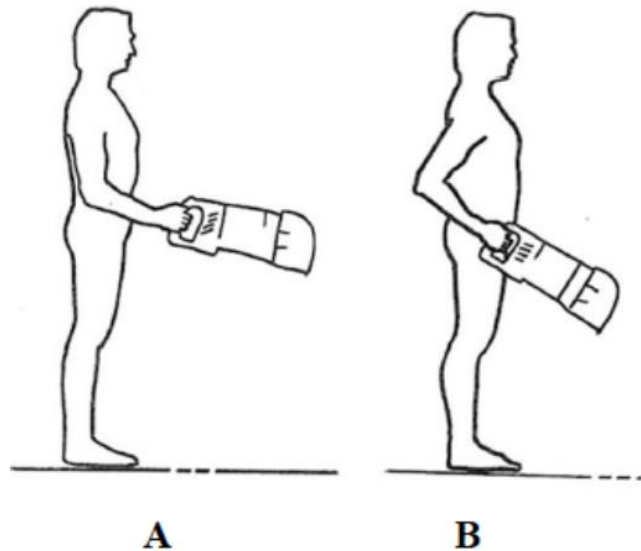
POR, 32.

“A POSITA would have known that handheld vacuums very often had handles at the rear, and users have little difficulty ‘control[ling] the nozzle on the cleaning surface.’ In Petitioners’ proposed modified vacuum, a user would have multiple options for holding and maneuvering the vacuum, depending on surface and preference.”

Reply to POR at 14-15; Fester Decl (Ex. 1003), ¶¶14-15, 69.

Grounds 1 & 2: Issue 3

The Proposed Combinations Are Not Inferior



POR, 22.



Deposition of Donald Davidshofer

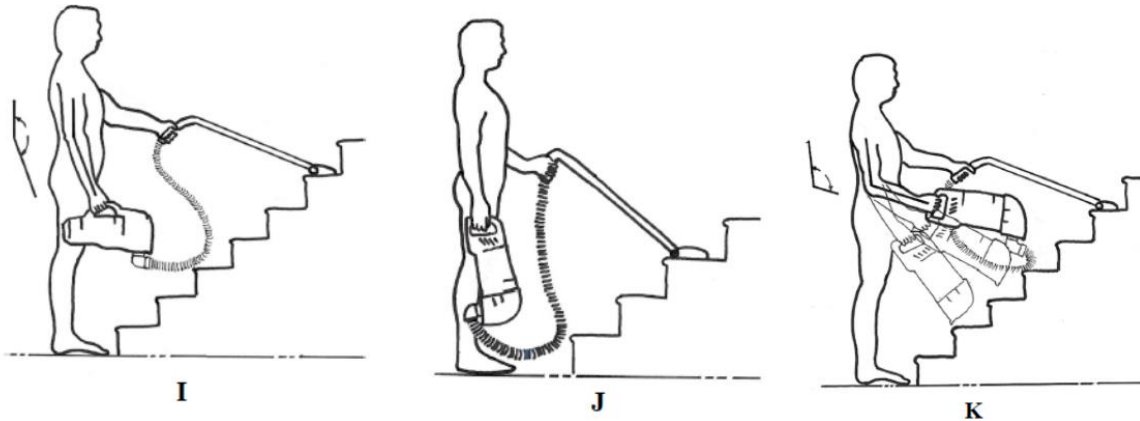
Q. Do you have an opinion as to **where the surface to be cleaned would be located?**

A. I do not.

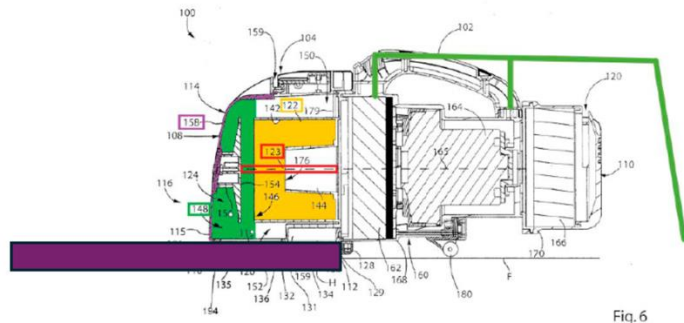
Davidshofer Dep. Tr (Ex. 1011) at 69:6-7.

Grounds 1 & 2: Issue 3

The Proposed Combinations Are Not Inferior



POR, 28-30.



Mockup of Figure 6 of Conrad '630 to show an alternative design of the handle consistent with the teachings of Conrad '630 and Dyson.

Ex-1003, 65 (further annotated to add a crevasse tool (purple)).

“[A] POSITA would have understood that the vacuum of Conrad '630 **can be used with attachments** other than hoses, including ones that may be **directly connected to nozzle 412**, such as **wands, brushes and crevasse tools**—despite that being a key motivation for the combination.”

Reply to POR at 7-9, 18-20; Davidshofer Dec. (Ex. 2017), ¶76; Fester Dec. (Ex. 1003), ¶¶ 69-72; Pet., 24-27, 53-55.

“[A] POSITA would have recognized additional advantages associated with providing the handle at the rear . . . which would allow **more flexibility** in using the handheld vacuum with an attachment for **different types of cleaning.**”

Fester Dec. (Ex. 1003), ¶ 69; Pet. at 27.

Ground 2 Only: Issue 4 Discloses Element 1[d] and Claim 2

COMBINATION

Declaration of Joseph Fester in Support of Petition for *Inter Partes* Review of U.S. Patent No. 10,433,687

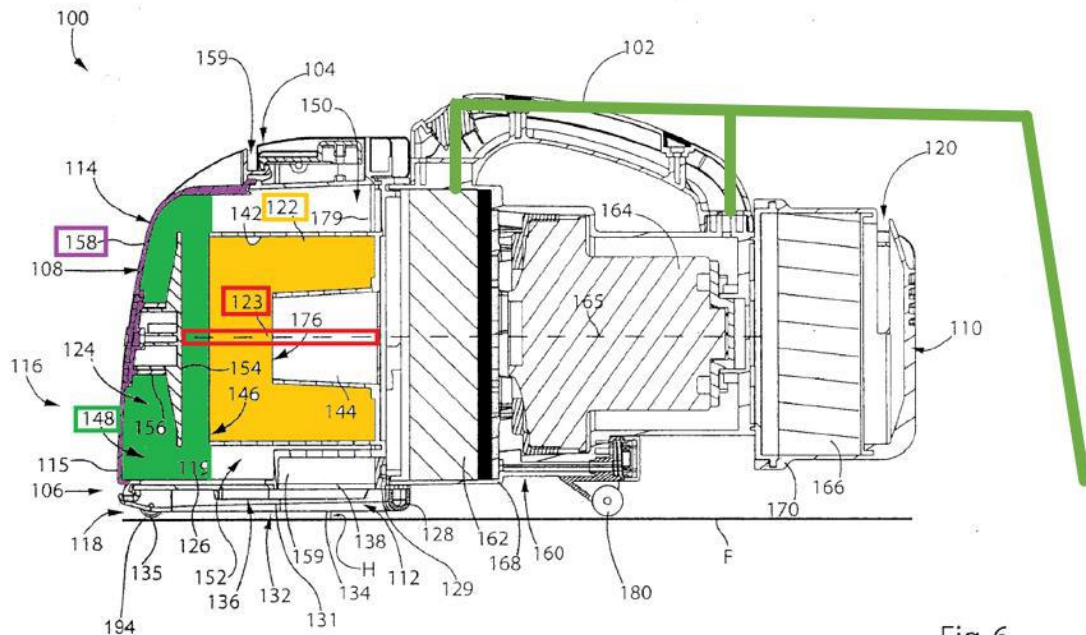


Fig. 6

Mr. Fester's Declaration

The *Combined* Device Discloses Limitation 1[d] & Claim 2

131. A POSITA **could have designed other handles** that attach to the vacuum cleaner of Conrad '630 and which incorporate the teachings of Dyson. Such vacuum cleaners would also **fall within the scope of the challenged claims.**

144. . . . [A] POSITA **would have designed a combined handheld vacuum** that has a handle on the rear (as taught by Conrad '630), and which handle was shaped in a pistol grip configuration and which had an incline relative to the longitudinal axis that was within the specific range for angle θ (green) taught by Dyson, **which falls within the claimed range of claim 1.**

Fester Decl. (Ex.1003), ¶¶ 131, 144; see also Pet., 55, 58; Reply to POR at 16-17.

Claims 2-4, 8, and 10 of the '687 Patent

Claim	Claim Language
2	The handheld vacuum cleaner of claim 1, wherein the handle is inclined with respect to the cyclonic separating unit to form an angle of not less than 100 degrees and not greater than 125 degrees between the handle axis and the longitudinal axis of the cyclonic separating unit.
3	The handheld vacuum cleaner of claim 1, wherein the end wall comprises an end wall of the cyclonic separating unit.
4	The handheld vacuum cleaner of claim 1, wherein the end wall is arranged to pivot between the closed configuration and the open configuration.
8	The handheld vacuum cleaner of claim 1, wherein the dirt collector is disposed forward of the handle.
10	The handheld vacuum cleaner of claim 1, wherein the cyclonic separating unit comprises a cyclonic separator having an axis that defines the longitudinal axis of the cyclonic separating unit.

Grounds 3 and 4

Obviousness over Matsumoto and
Conrad '787 (Ground 3) or Dyson (Ground 4)

03

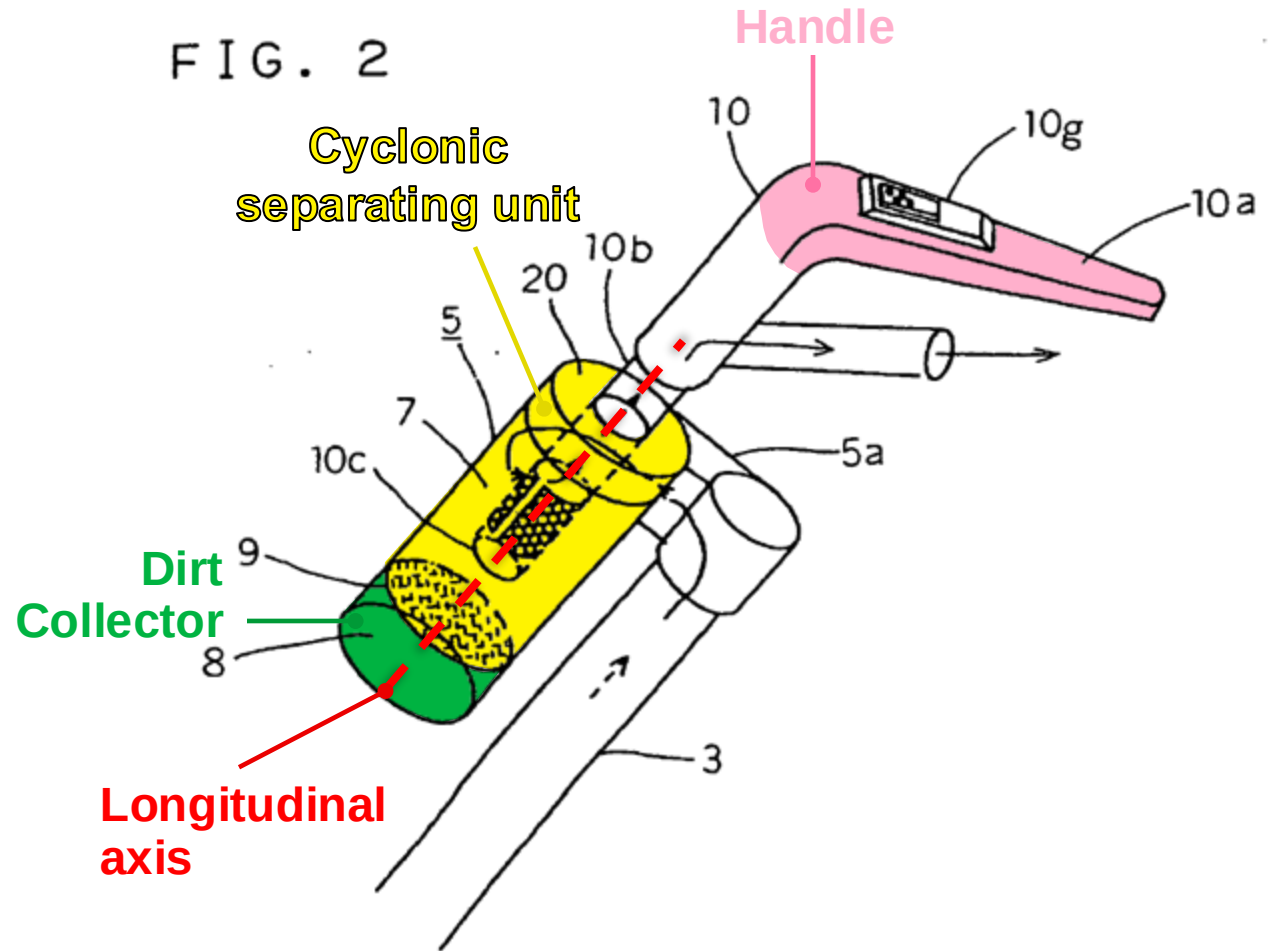
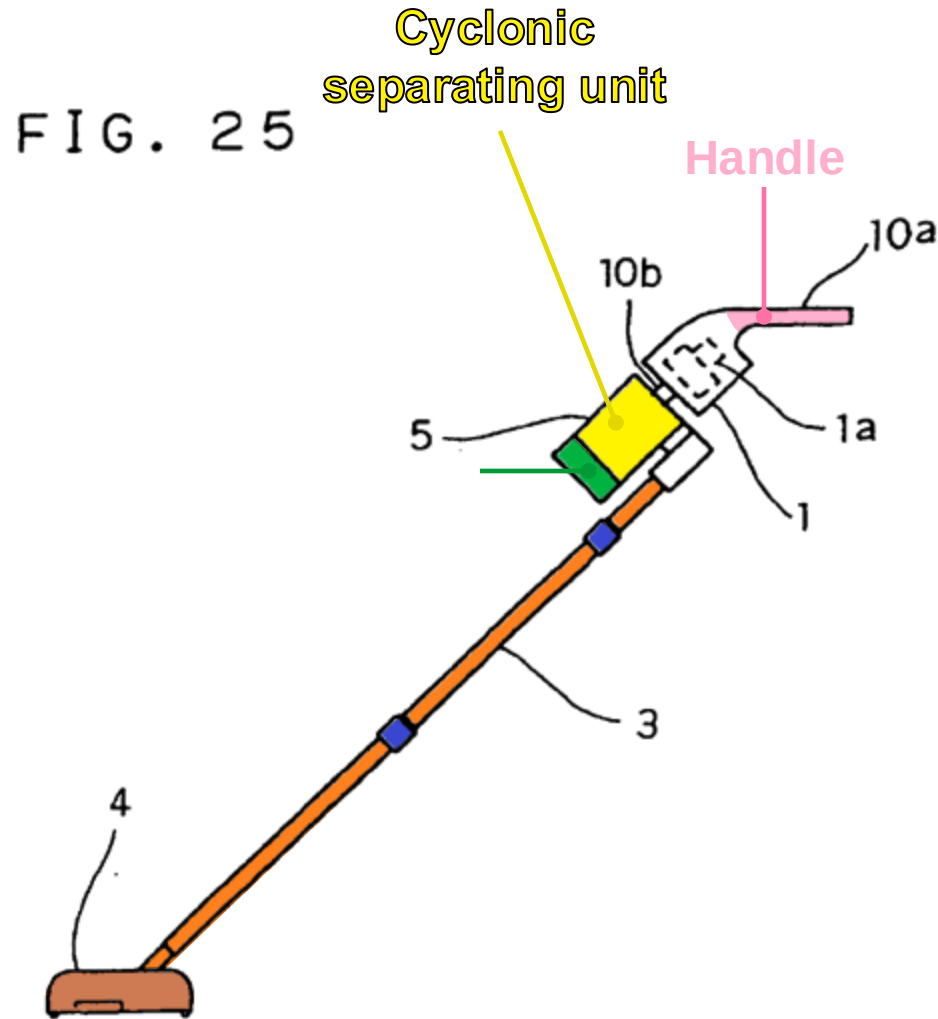
Grounds 3 & 4 Roadmap

1. Matsumoto discloses a handheld stick-type vacuum cleaner, and a POSITA would have understood that Matsumoto's vacuum cleaner could be used as a handheld vacuum.
2. A POSITA would have been motivated to combine Matsumoto and Conrad '787 / Dyson because:
 - a) Matsumoto discloses the dust bin of Claim 1 and its advantages
 - b) Matsumoto does not disclose a handle in the claimed "pistol grip configuration," but a POSITA would have recognized that its handle is unergonomic and uncomfortable, and likely to break.
 - c) Providing a handle that conforms with the teachings of Conrad '787 / Dyson's teachings would improve comfort and provide a more reliable handle.
3. Patent Owner's arguments that the proposed combinations are uncomfortable fail.
4. Patent Owner's arguments about the risk of fracturing confirms Petitioners' rationale for the proposed combinations, as the proposed combinations have a smaller and structurally more robust handle.
5. Ground 4 Only: The Matsumoto-Dyson combination discloses Element 1[d] and Claim 2.

Grounds 3 & 4: Issue 1

Matsumoto's Vacuum

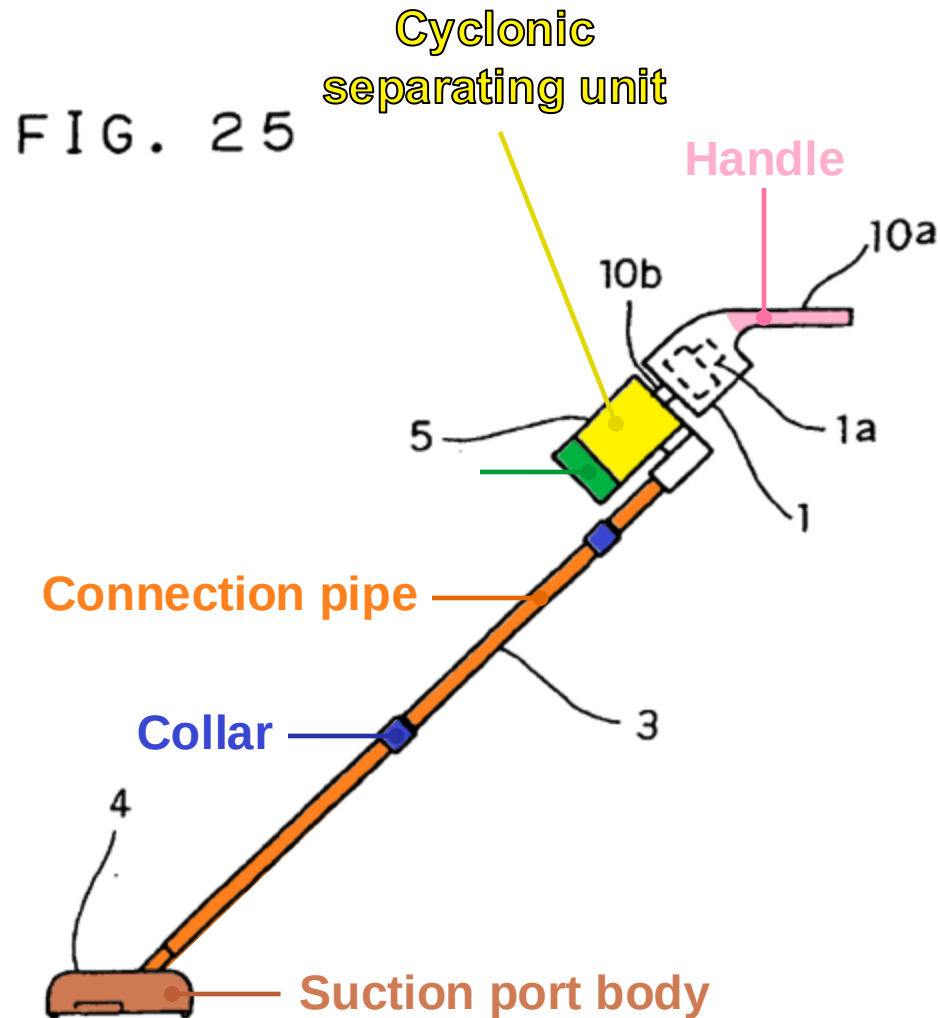
MATSUMOTO



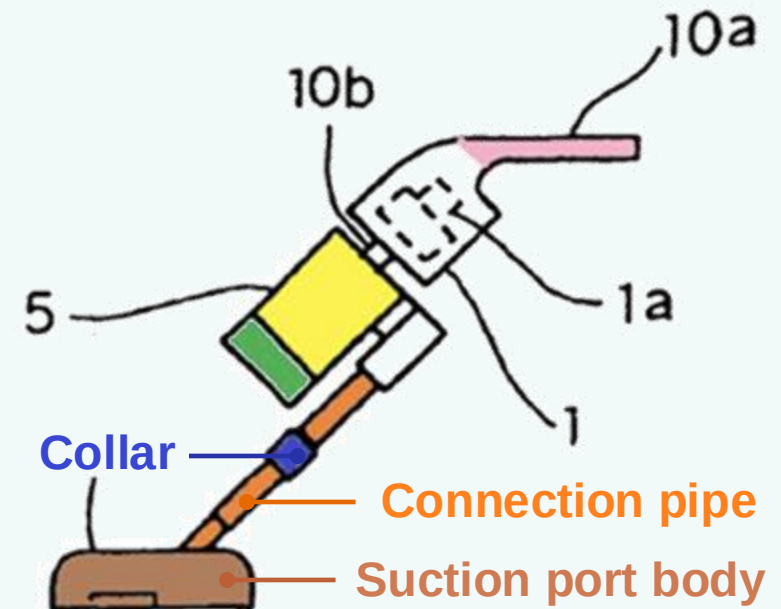
Grounds 3 & 4: Issue 1

Matsumoto's Vacuum

MATSUMOTO



Mr. Fester's Declaration



Grounds 3 & 4: Issue 1

Matsumoto's Vacuum

Matsumoto

Matsumoto describes a vacuum with a “**handle . . . to be held by the user. . . . [I]t is possible to miniaturize a vacuum cleaner** and enhance the operability thereof.”

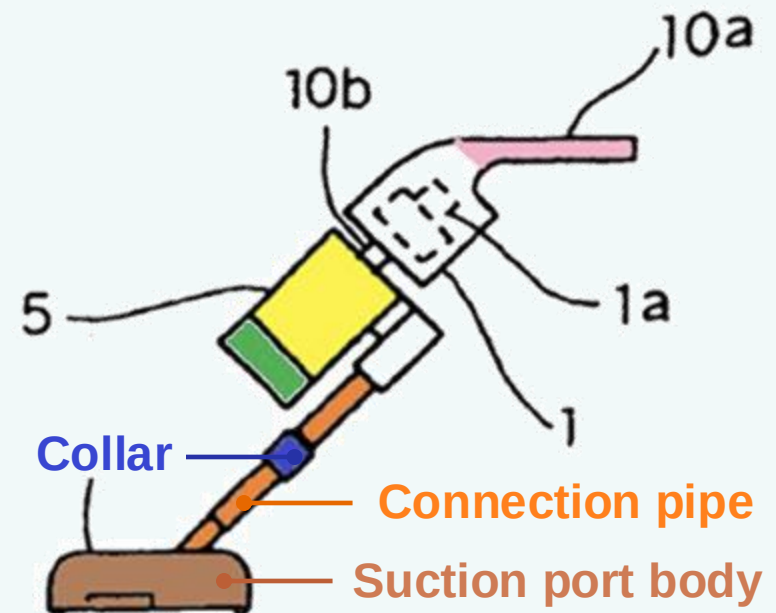
Matsumoto (Ex. 1005), ¶¶, 26, 68; Pet. at 64, 91; Institution Decision at 28.

Mr. Fester's Declaration

A “POSITA would have understood that Matsumoto could be used as a handheld vacuum by using only the uppermost connection pipe 3, and connecting suction port body 4 (or another attachment) to the shortened connection pipe 3.”

Fester Decl. (Ex.1003), ¶¶ 68, 35; Pet. at 65, 70; Ex.1004, ¶¶ 6,7, 19.

Mr. Fester's Declaration



Grounds 3 & 4: Issue 1

Matsumoto's Vacuum



Deposition of Donald Davidshofer

- Q. Is it your opinion that claim 1 of the '687 patent would only be satisfied by a handheld vacuum cleaner?
- A. I didn't consider that. **However, it could possibly not be limited to a handheld vacuum.**
- * * *
- Q. What is a **bayonet mount**?
- A. A bayonet mount is a rotatable feature that once engaged, you rotate for a locking mechanism.
- Q. So if a bayonet mount was used to attach suction port 4, suction port 4 could be removed?
- A. Not all bayonet mounts **are removable**.
- Q. And some of them are?
- A. **Some of them are**, but it does not show one way or intimate one way or another on this.

Davidshofer Dep. Tr (Ex. 1011) at 94:22-95:11, 98:22-99:11;
Reply to POR at 25.

Mr. Davidshofer's Declaration

124. A POSITA reviewing these figures in light of Matsumoto's disclosures could have concluded that the blue portions were . . . physical friction-fit interfaces, physical **bayonet mount interfaces**, structural elements to strengthen the air path, or design features for aesthetic purposes.”

Davidshofer Decl. (Ex. 2017) at ¶ 124; Reply to POR at 26-27.

Grounds 3 & 4: Issue 2(a) Matsumoto's Dust Bin

Matsumoto

“[T]he openable lid 8c makes the disposal of refuse easier.”

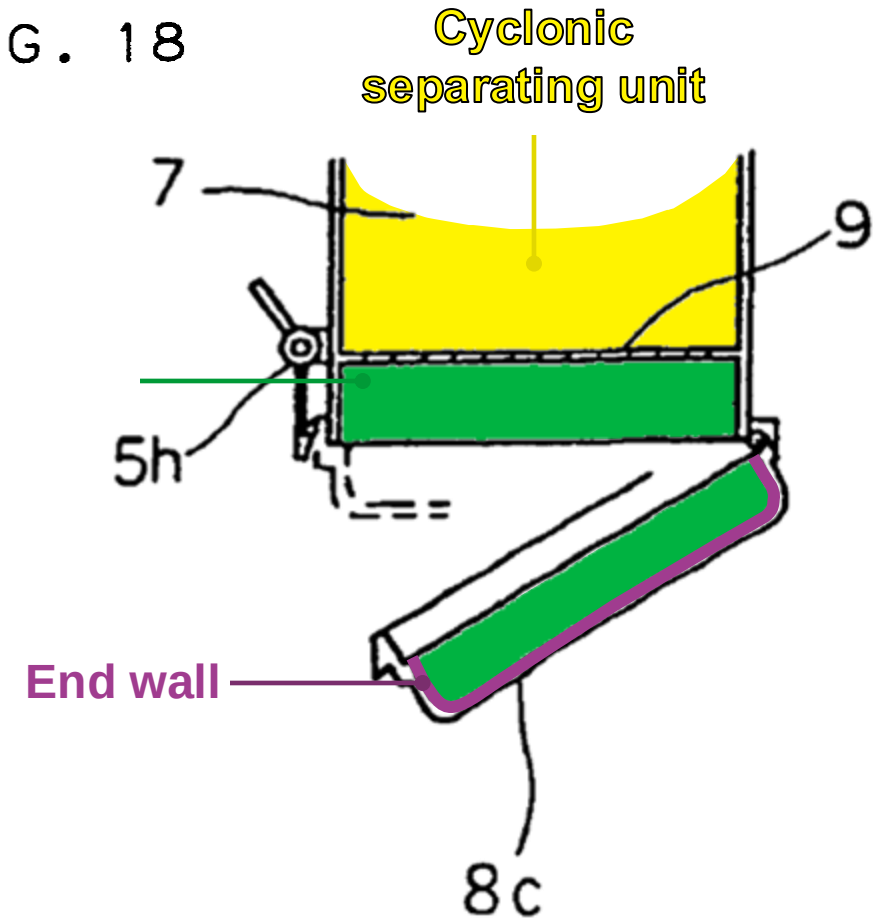
Matsumoto (Ex. 1005), ¶ 46; Pet. at 63-64, 78, 85-86.

Mr. Fester's Declaration

“A POSITA would have therefore sought to . . . retain[] the improved dustbin configuration of Matsumoto.”

Fester Decl. (Ex. 1003), ¶¶ 167, 215; Pet. at 67, 92.

FIG. 18

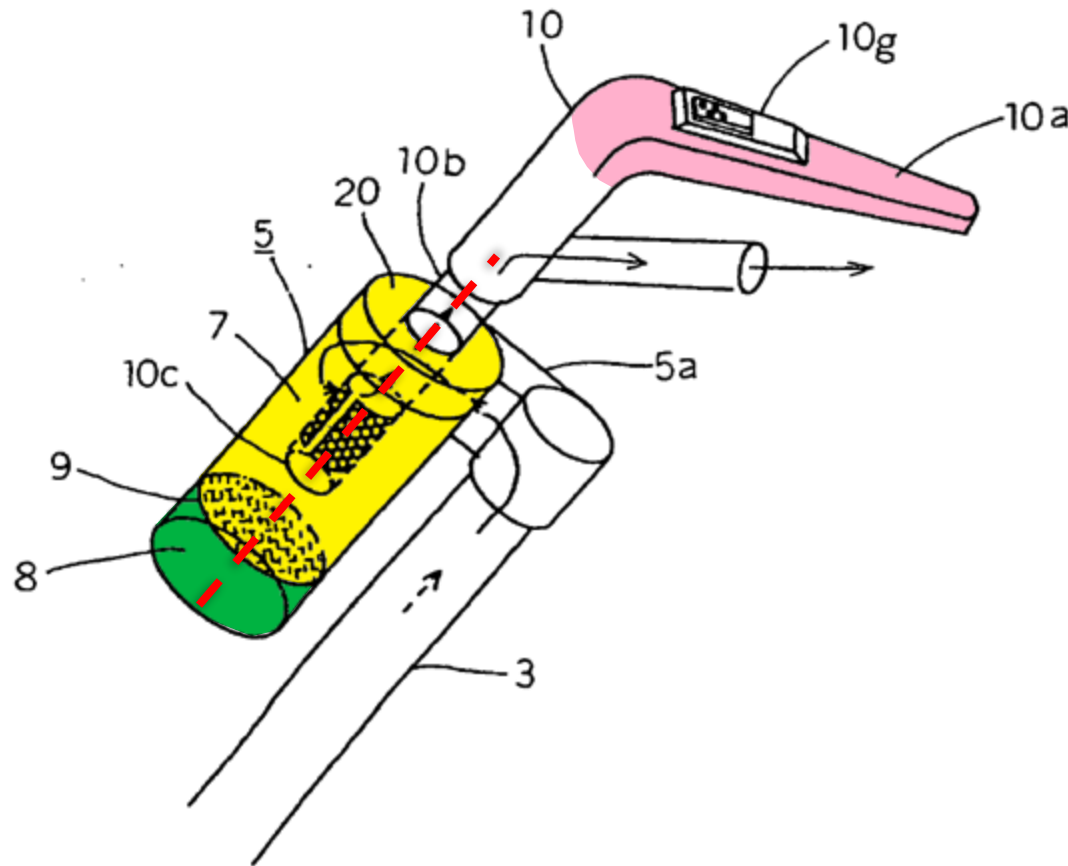


Grounds 3 & 4: Issue 2(b)

Matsumoto's Handle

MATSUMOTO

FIG. 2



Mr. Fester's Declaration

165. [A] POSITA would have understood that Matsumoto's long and skinny handle 484 is unergonomic and uncomfortable because of its shape, angle and orientation. . . . A POSITA would have known in 2015 that since the date of Matsumoto in 1999, handle configurations that offered improved comfort were commonplace.

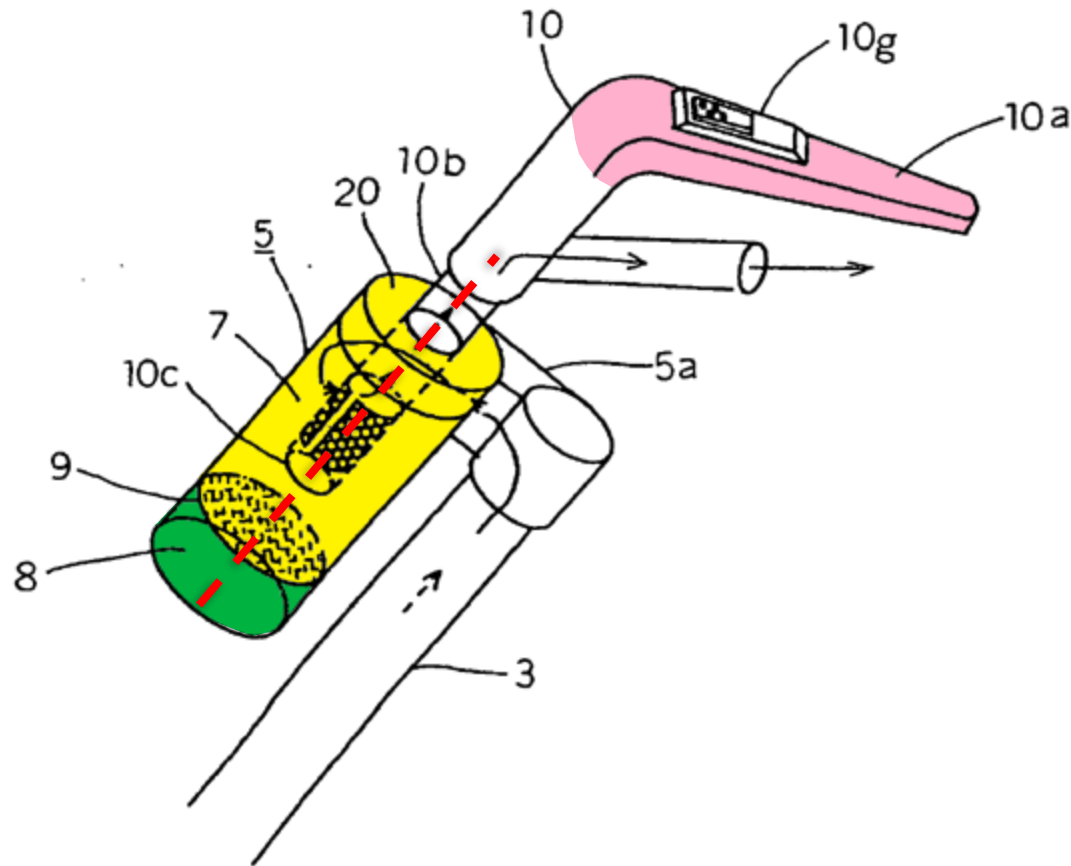
166. The long skinny handle is essentially a cantilever absorbing the constant forces of the user's hand as the vacuum is maneuvered back and forth. That means that a POSITA would have recognized that Matsumoto's handle is likely to break because of its design.

Fester Decl. (Ex. 1003), ¶¶ 165-66.

Matsumoto (Ex. 1005), Fig. 2 (annotated); Pet. at 66-68, 91.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

34



Deposition of Joseph Fester

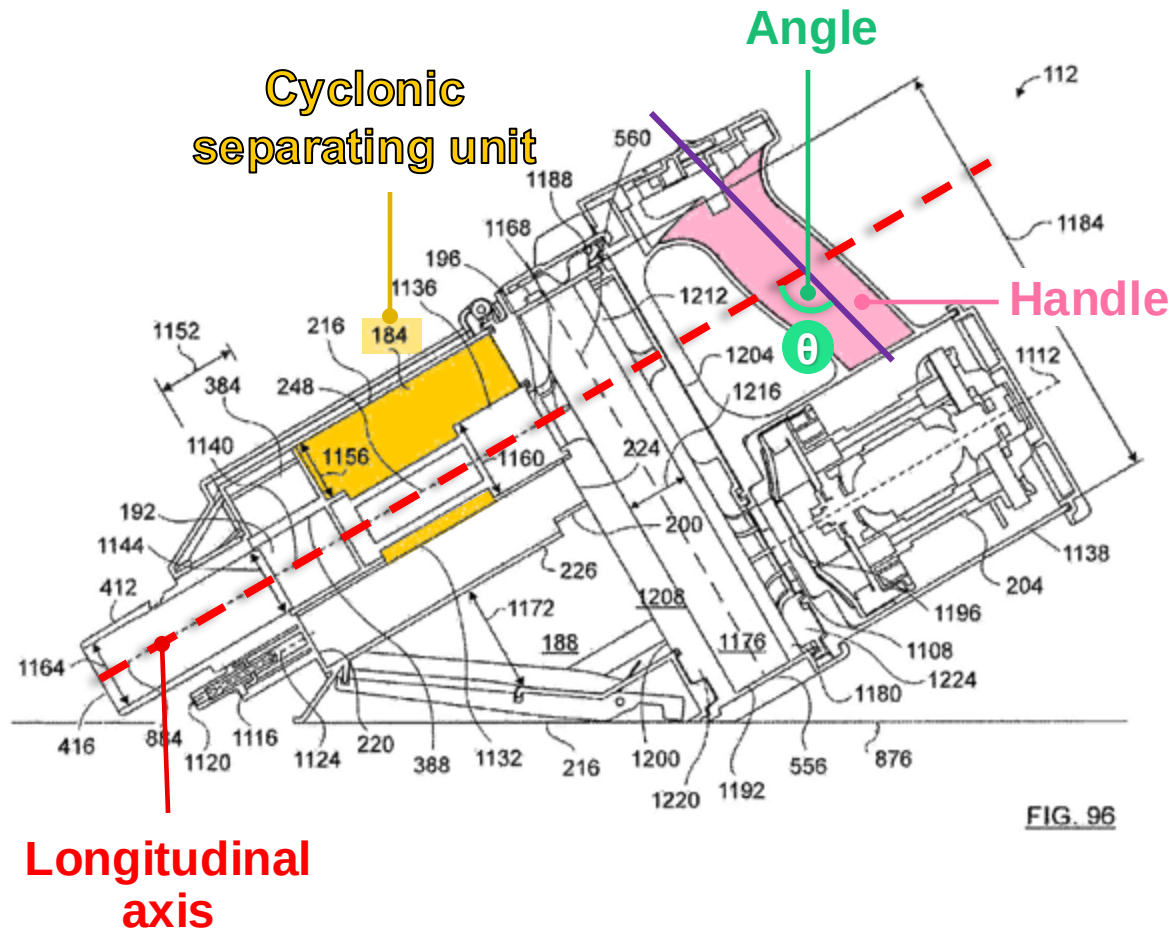
“Well, having worked at Bissell for 11-ish years and having our quality group on site and having a recurring quality meeting that discussed issues that we would have with failures . . . There were handle designs that worked well and there were handle designs that broke well, and this is a handle design that **would break well** as in it would not be a robust design.”

Fester Dep. Tr. (Ex.2018) at 168:1-169:7; Reply to POR at 21-22.

Ground 3: Issue 2(c)

Conrad '787's Handle: More Comfortable And Reliable

CONRAD '787



Mr. Fester's Declaration

167. A POSITA would have recognized that Conrad's handle would be **more comfortable and more reliable**. Moreover, in 2015 (at the time of the priority of the '687 patent), a POSITA would have known that handheld vacuum cleaners with handles that have a "pistol-grip" configuration were commonplace **due to the added comfort in use**, in particular as compared with vacuum cleaners from the time Matsumoto's priority application was filed in 1999.

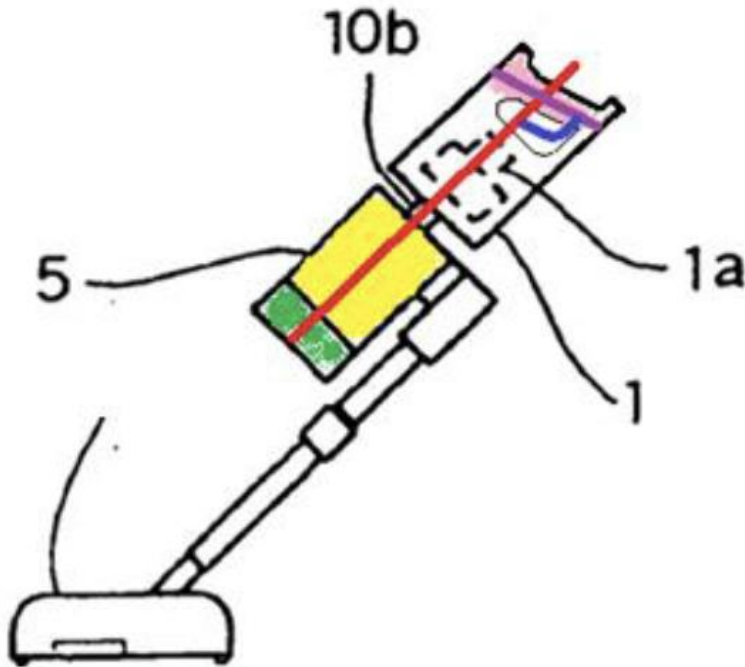
Fester Decl. (Ex. 1003), ¶ 167.

Ground 3: Issue 2(c)

Matsumoto-Conrad '787 Combination: More Comfortable And Reliable

COMBINATION

Declaration of Joseph Fester in Support of Petition
for *Inter Partes* Review of U.S. Patent No. 10,433,687



Mr. Fester's Declaration

“A POSITA would have therefore sought to take advantage of the **improved handle configuration** provided in Conrad '787 while retaining the advantages of Matsumoto's design, including its **improved dustbin configuration**.”

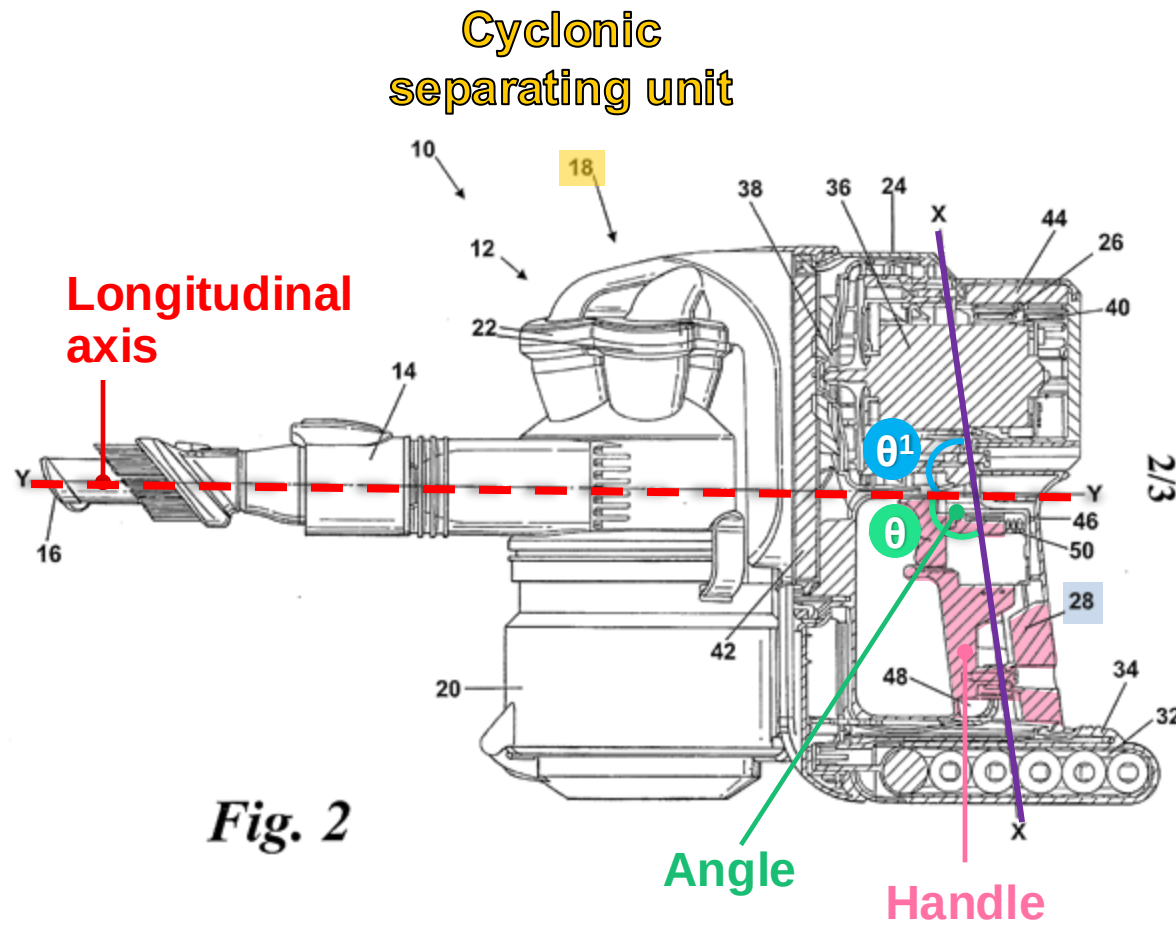
Fester Decl. (Ex. 1003), ¶ 169; Pet. at 64-70.

“[T]he POSITA would have designed a combined handheld vacuum that has a shaped in a pistol grip configuration and which had an incline relative to the longitudinal axis that was within the specific range for angle θ (green) taught by Conrad '787, which falls within the claimed range of claim 1.”

Fester Decl. (Ex. 1003), ¶ 185; Pet., 80-82.

Ground 4: Issue 2(c) Dyson's Handle

DYSON



Mr. Fester's Declaration

215. A POSITA would have recognized that Dyson's handle would be more comfortable and more reliable. Moreover, in 2015 (at the time of the priority of the '687 patent), a POSITA would have known that handheld vacuum cleaners with handles that have a "pistol-grip" configuration were commonplace due to the added comfort in use, in particular as compared with vacuum cleaners from the time Matsumoto's priority application was filed in 1999.

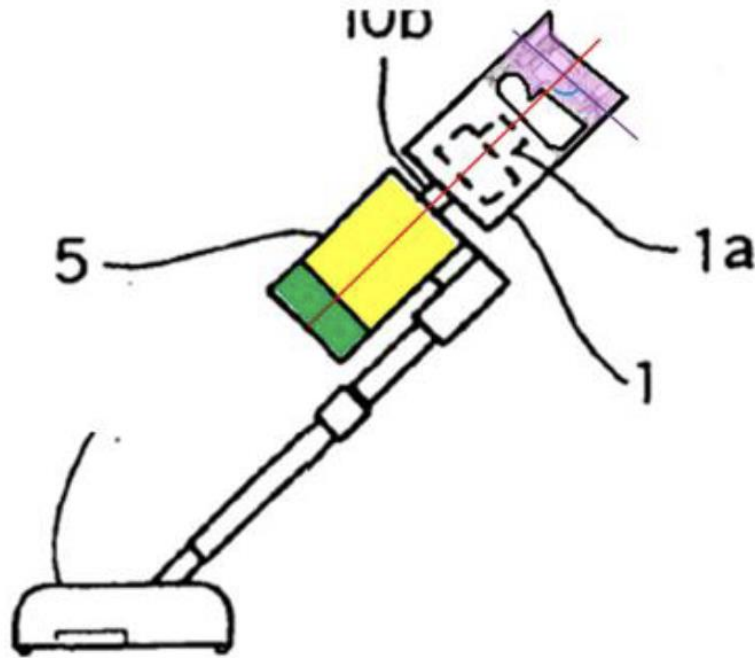
Fester Decl. (Ex. 1003), ¶ 215; Pet. at 94-95.

Ground 4: Issue 2(c)

Matsumoto-Dyson Combination: More Comfortable And Reliable

COMBINATION

**Declaration of Joseph Fester in Support of Petition
for *Inter Partes* Review of U.S. Patent No. 10,433,687**



Mr. Fester's Declaration

“A POSITA would have therefore been motivated to combine the two references in a way that incorporates Dyson’s teachings concerning the handle 28, including the shape and angle arrangement disclosed by Dyson.”

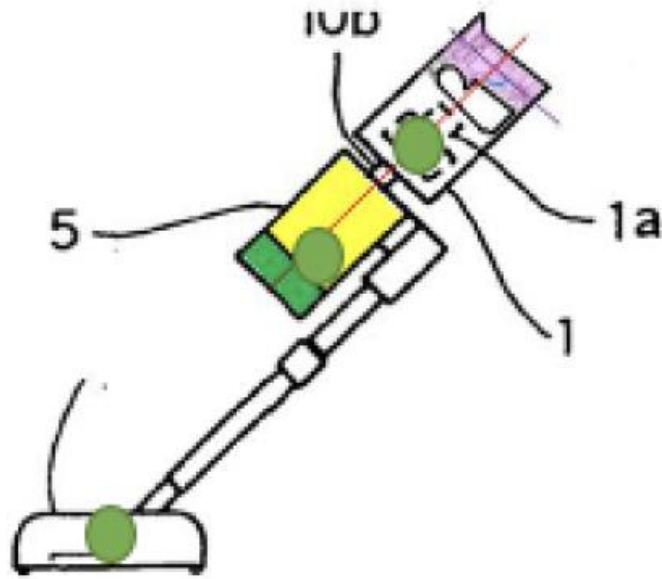
Fester Decl. (Ex. 1003), ¶ 217; Pet. at 91-94.

“[T]he POSITA would have designed a combined handheld vacuum that has a shaped in a pistol grip configuration and which had an incline relative to the longitudinal axis that was within the specific range for angle θ (green) taught by Dyson, which falls within the claimed range of claim 1.”

Fester Decl. (Ex.1003), ¶¶ 226; Pet., 94-97.

Grounds 3 & 4: Issue 3

The Modified Vacuum Is Not Uncomfortable



Pet., 94 (annotated)



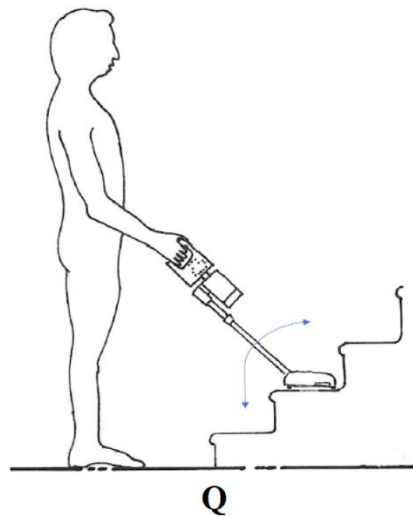
Deposition of Donald Davidshofer

- Q. And does the suction port 4 that you just identified rest on the surface being cleaned during the operation of this device?
- A. It could. I don't say it will.
- Q. And in instances where the suction port 4 is resting on the surface to be cleaned, would the weight of the vacuum be supported by the surface being cleaned?
- A. In that instance, **some of the weight would be supported by the floor.**

Davidshofer Dep. Tr (Ex. 1011) at 110:16-25; Reply to POR at 24.

Grounds 3 & 4: Issue 3

The Modified Vacuum Is Not Uncomfortable



Deposition of Donald Davidshofer

Q. How did you determine the size of the vacuum relative to the size of the stairs?

A. It's an **arbitrary sketch**. It's not intended to be representative of physical size.

* * *

Q. And do you agree that if the person in Diagram Q **changed their position, they could maintain a straight arm while vacuuming the stairs using the vacuum?**

A. **I haven't considered that. I don't know.**

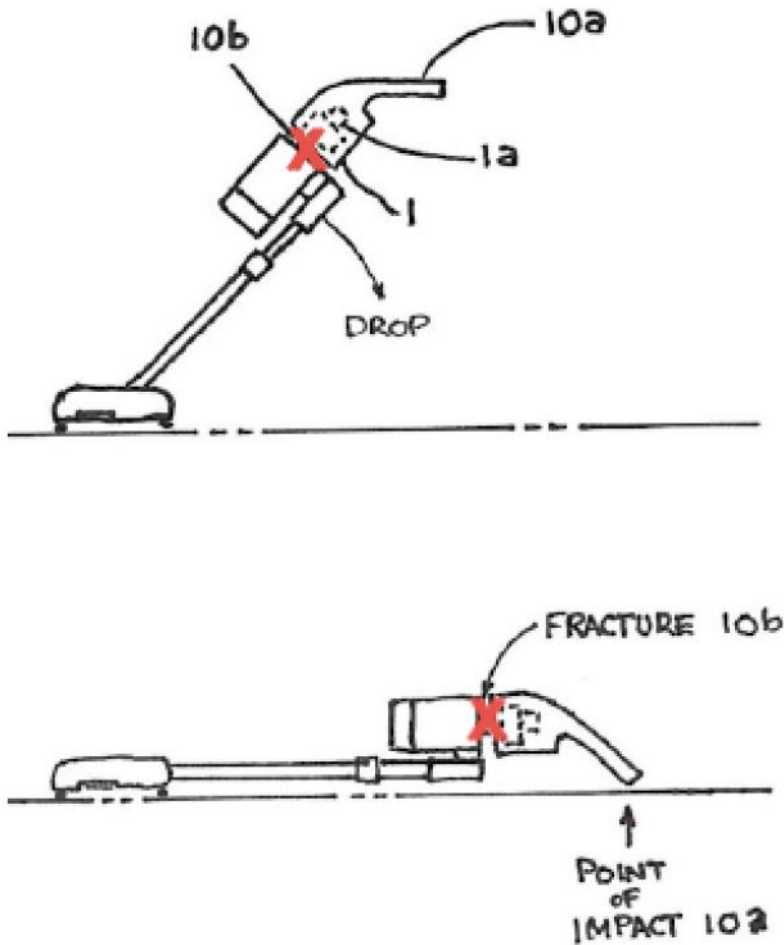
* * *

Q. How many hours did you spend preparing your declaration?

A. Over the course of several months, **probably 10 or 12 hours.**

Davidshofer Dep. Tr (Ex. 1011) at 112:2-5, 112:17-21, 115:9:12;
Reply to POR at 24-25, 1.

Grounds 3 & 4: Issue 4: The Proposed Combinations Have A Smaller And Structurally More Robust Handle



R



Deposition of Donald Davidshofer

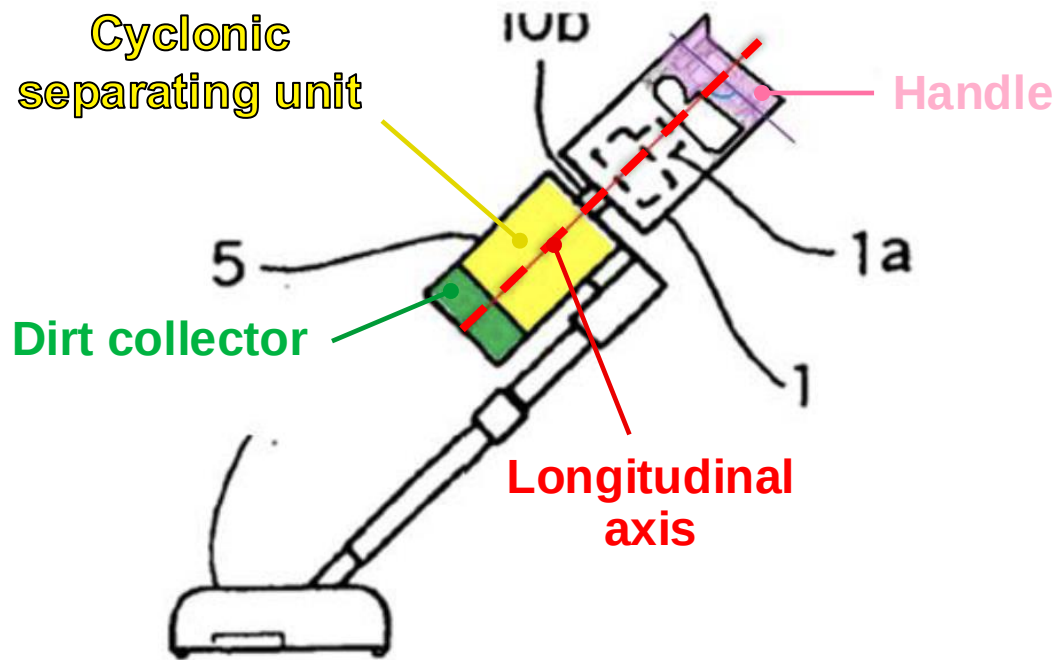
- Q. Is the handle shown in the diagram in the middle longer in the X axis compared to the handle shown in the diagram on the left?
- A. In this – in these images, **the original as in 10a appears to be larger in the X axis.**
- * * *
- Q. And would using a handle that is **shorter in length reduce the risk of a fracture?**
- A. **Possibly, yes.**

Davidshofer Dep. Tr (Ex. 1011) at 100:13-19; Reply to POR at 22-23.

Ground 4 Only: Issue 5 Discloses Element 1[d] and Claim 2

COMBINATION

Declaration of Joseph Fester in Support of Petition
for *Inter Partes* Review of U.S. Patent No. 10,433,687



Mr. Fester's Declaration

The *Combined* Device Teaches Limitation 1[d] & Claim 2

226. [T]he POSITA would have designed **a combined handheld vacuum** that has a shaped in a pistol grip configuration and which had an incline relative to the longitudinal axis **that was within the specific range for angle θ (green) taught by Dyson, which falls within the claimed range of claim 1.**

227. The **combined vacuum** inherently discloses a handle that falls **within the claimed angle range of Element 1[d].**

228. Similarly, in the proposed combination, the handle axis (purple) and the longitudinal axis (red) **intersect within the vacuum cleaner.**

Fester Decl. (Ex.1003), ¶¶ 226-228, 232 (discussing claim 2);
see also Pet., 94-98; Reply to POR at 27.

Secondary Considerations

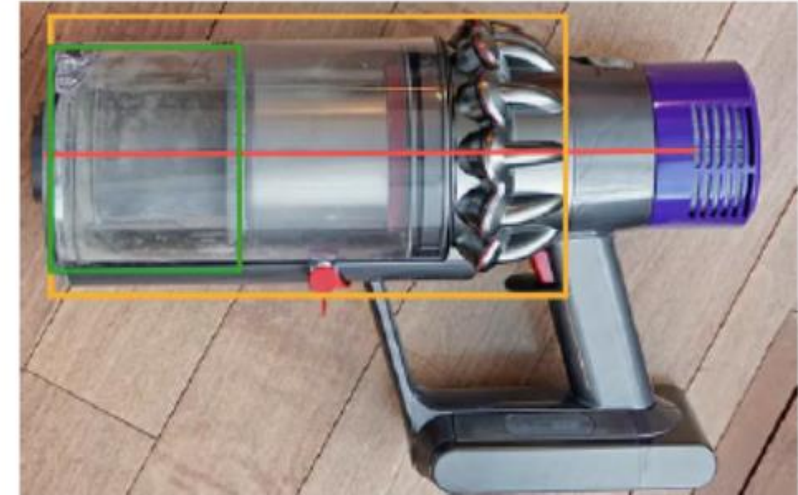
(All Grounds)

04

Patent Owner's Commercial Vacuum Cleaners



Dyson V6 (DC58) Handheld Vacuum Cleaner.



**Closed Configuration
EX-2021 (annotated)**

Ex-1003, 5 (Dyson V6); POR, 72 (Dyson V10).

Point-and-Shoot Feature Relates To The Dustbin, Not The Handle

CNET

The dustbin now empties from the front, not the bottom like the old model. That improvement may sound minor but it's quite welcome. This solution is easier to aim towards the trash can. That prevents less collected dirt from escaping back to the floor. Also new is an indicator light for the filter. It's designed to light up when your filter needs a cleaning.

CNET Article (Ex. 2022) at 4

Mashable

The first time you pick it up, though, you may be a little surprised by the weight. The V10 weighs 5.9 pounds, which is just 0.2 pounds more than the most recent top-of-the-line model, the V8. But it's not just the extra ounces: In this new design, the bin faces forward, whereas every pervious Dyson handheld had it facing downward, just in front of the trigger handle.

Mashable Article (Ex. 2023) at 3

Conrad '630

“[D]irt collected in the chamber may be transported to a disposal site (e.g., a garbage can) without the dirt being dispersed as the dirt collection chamber is conveyed to the disposal site.”

Conrad '630 (Ex.1004), ¶ 6.

Matsumoto

“[T]he openable lid 8c makes the disposal of refuse easier.”

Matsumoto (Ex.1005), ¶ 46.

