

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

DYSON, INC. and	)	
DYSON TECHNOLOGY LIMITED,	)	
	)	
Plaintiffs,	)	
	)	Case No. 14-cv-779
v.	)	
	)	Judge John W. Darrah
SHARKNINJA OPERATING LLC and	)	
SHARKNINJA SALES COMPANY,	)	
	)	
Defendants.	)	

**MEMORANDUM OPINION AND ORDER**

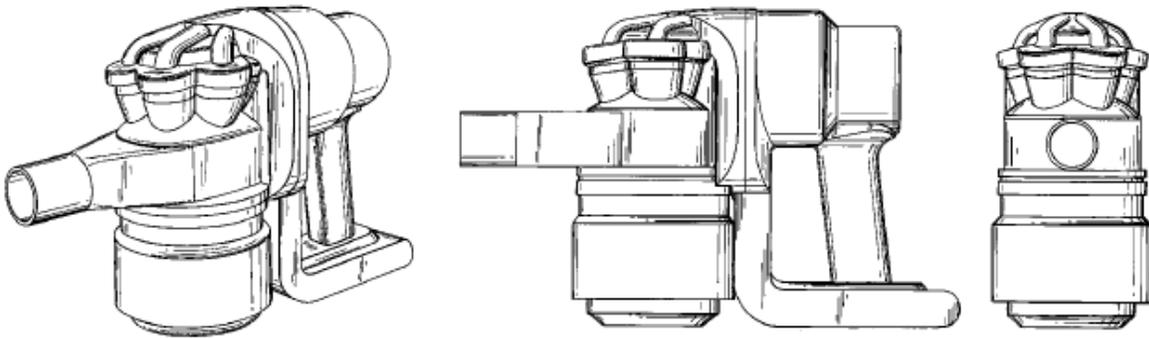
Plaintiffs Dyson, Inc. and Dyson Technology Limited (collectively, the “Plaintiffs”) filed a Second Amended Complaint against Defendants SharkNinja Operating LLC and SharkNinja Sales Company (collectively, the “Defendants”), alleging three counts of design infringement associated with United States Design Patents No. D577,163 (the “163 Patent”), No. D668,010 (the “010 Patent”), and No. D668,823 (the “823 Patent”). On March 2, 2016, the Court held a claims-construction hearing, which included the argument of counsel for each party and the submissions of written briefs by each party. The Court also considered the PowerPoint presentations presented by the parties at the hearing.

**BACKGROUND**

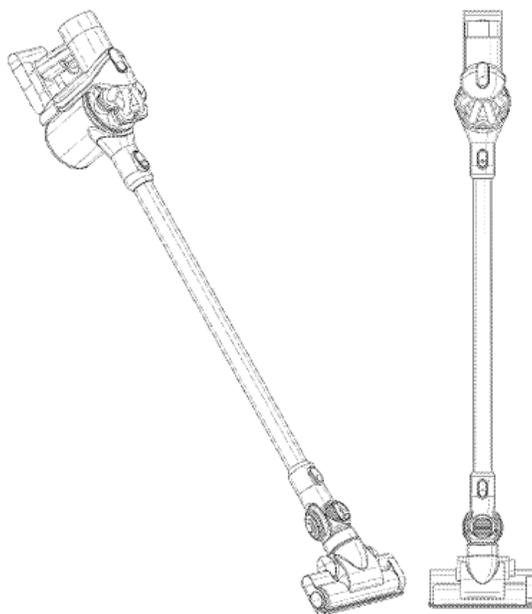
Dyson, Inc. is an Illinois corporation with its principal place of business in Chicago, Illinois. Dyson Technology Limited is a private limited company organized and existing under the laws of England and Wales with its principal place of business in Malmesbury, United Kingdom. Plaintiffs sell a number of different hand held vacuum cleaner products in the United States. SharkNinja Operating LLC is a limited-liability company

organized under the laws of Delaware with its principal place of business located in Newton, Massachusetts. SharkNinja Sales Company is also a limited-liability company organized under the laws of Delaware with its principal place of business located in Newton, Massachusetts. Defendants sell vacuum cleaners under the “Shark Rocket” brand.

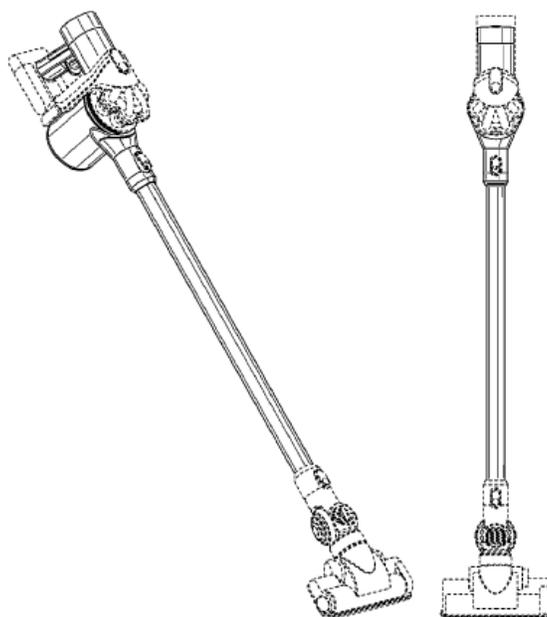
On May 12, 2014 Dyson filed an Amended Complaint, asserting three counts of infringement of the ‘163, ‘010, and ‘823 Patents. The ‘163 Patent, titled “Cleaning Appliance,” was filed on January 18, 2007, and issued on September 16, 2008, and claims the ornamental design for a cleaning appliance.



(Amend. Compl. Ex. A.) The ‘010 Patent, titled “Vacuum Cleaner,” was filed on February 8, 2011, and issued on September 25, 2012, and claims the ornamental design for a vacuum cleaner.



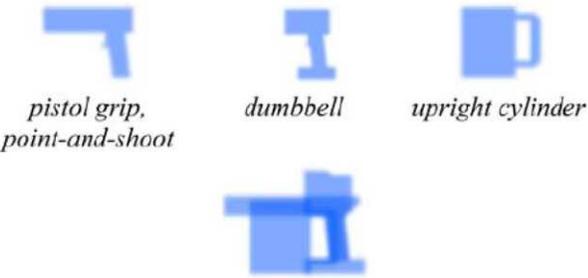
(Amend. Compl. Exh. B.) The '823 Patent, titled "Vacuum Cleaner," was filed on February 4, 2011, and issued on October 9, 2012, and claims the ornamental design for a vacuum cleaner.

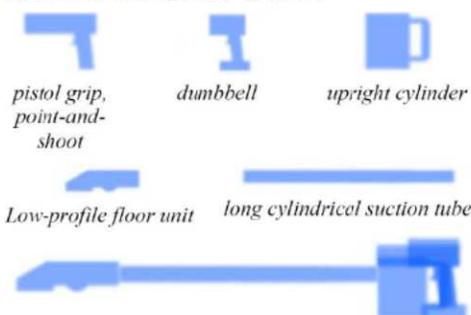


(Amend. Compl. Exh. C.)

Dyson accuses three Shark Rocket vacuum series of infringement: the HV300 series, the HV310 series, and the HV320 series. Products within those series share the same essential design features and differ only in accent colors or accessory packages.

The parties proposed constructions are as follows:

<u>Patent No.</u>	<u>Plaintiffs' Construction</u>	<u>Defendants' Construction</u>
D577,163	No construction necessary.	<p>The claim is limited to the ornamental aspects of the design shown in the drawings and further limited by functional elements. Thus, the '163 patent should be construed as:</p> <p>The '163 patent is for the ornamental aspects of the design of a cleaning appliance shown and described in the drawings. The claimed design incorporates three functional elements and an overall configuration that serve as a functional "skeleton" and are not protected by the '163 patent, including the <i>pistol grip, point-and-shoot</i> layout, the <i>dumbbell</i> layout, and the <i>upright cylinder</i>, as illustrated and combined below:</p> <div style="text-align: center;">  <p><i>pistol grip, point-and-shoot</i>      <i>dumbbell</i>      <i>upright cylinder</i></p> <p><i>Underlying functional elements</i></p> </div> <p>The '163 patent does protect the ornamental "skin," <i>i.e.</i>, all of the particular ornamental aspects adorning these functional elements (if any), the most significant being the "crown" or array of conical secondary cyclones above the primary cyclone chamber, the straight pistol grip handle, the cylindrical motor housing, the flat rectangular battery pack, the "L"-shaped coupling in front of the pistol grip handle, the cylindrical primary cyclone chamber, the triangular coupling between the primary cyclone chamber and the suction nozzle, and the purely cylindrical suction nozzle.</p>

<u>Patent No.</u>	<u>Plaintiffs' Construction</u>	<u>Defendants' Construction</u>
D668,010	The ornamental design for a vacuum cleaner, as shown and described in the replacement drawings (Figures 1-7) located at J.A. 184-189	<p><b>Uncorrected drawings:</b> The drawings in the uncorrected '010 patent are indefinite and cannot be corrected by the Court under 35 U.S.C. §§ 254-255.</p> <p><b>Corrected drawings:</b> Alternatively, if the Court holds it can correct the patent drawings, the claim is limited to the ornamental aspects of the design shown in the drawings and further limited by functional elements. Thus, the '010 patent claim should be construed as:</p> <p>The '010 patent is for the ornamental aspects of the design of a cleaning appliance shown and described in the drawings. The claimed design incorporates five functional elements and an overall handheld unit-tube-floor unit configuration that serve as a functional "skeleton" and are not protected by the '010 patent, including the <i>pistol grip, point-and-shoot</i> layout, the <i>dumbbell</i> layout, the <i>upright cylinder</i>, the <i>long cylindrical suction tube</i>, and the <i>low-profile floor unit</i>, as illustrated and combined below:</p>  <p style="text-align: center;"><i>Underlying functional elements</i></p> <p>The '010 patent does protect the ornamental "skin," <i>i.e.</i>, all of the particular ornamental aspects adorning these functional elements (if any), the most significant being the "crown" or array of conical secondary cyclones above the primary cyclone chamber, the straight pistol grip handle, the cylindrical motor housing, the flat rectangular battery pack, the cylindrical primary cyclone chamber, the triangular coupling between the primary cyclone chamber and the suction nozzle, the purely cylindrical suction nozzle, as well as the cylindrical cuffs connecting the tube to the handheld vacuum cleaner and floor unit, the cylindrical coupling on the floor unit, and the ball-shaped wheel design.</p>

<u>Patent No.</u>	<u>Plaintiffs' Construction</u>	<u>Defendants' Construction</u>
D668,823	No construction necessary.	<p>The claimed design is limited to the ornamental aspects of the design shown in the drawings and further limited by functional elements. Thus, the '823 patent claim should be construed as:</p> <p>The '823 patent is for the ornamental aspects of the design of a vacuum cleaner as shown and described in the drawings. The claimed design incorporates three functional elements and an overall handheld unit-tube-floor unit configuration that serve as a functional "skeleton" and are not protected by the '823 patent, including the <i>pistol grip, point-and-shoot</i> layout, the <i>upright cylinder</i>, and the <i>long cylindrical suction tube</i>, as illustrated and combined below:</p> <div data-bbox="873 758 1292 1079" data-label="Image"> <p>The diagram shows three blue-colored components. At the top left is a 'pistol grip, point-and-shoot' handle. At the top right is an 'upright cylinder' motor housing. Below these is a long horizontal 'long cylindrical suction tube'. At the bottom, the suction tube is connected to a handheld vacuum cleaner unit.</p> </div> <p style="text-align: center;"><i>Underlying functional elements</i></p> <p>The '823 patent does protect the ornamental "skin," <i>i.e.</i>, all of the particular ornamental aspects adorning these functional elements (if any), the most significant being the straight pistol grip handle, the cylindrical motor housing, the cylindrical primary cyclone chamber, the triangular coupling between the primary cyclone chamber and the suction nozzle, the purely cylindrical suction nozzle, as well as the cylindrical cuff connecting the tube to the handheld vacuum cleaner.</p>

### LEGAL STANDARD

Claim construction is a question of law. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970 (Fed. Cir. 1995). Claim construction involves "determining the meaning and scope of the patent claims asserted to be infringed." *Id.* at 976. Design patents only cover the ornamental features of a design. *OddzOn Prod., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1405 (Fed. Cir.

1997). “Where a design contains both functional and nonfunctional elements, the scope of the claim must be construed in order to identify the non-functional aspects of the design as shown in the patent.” *Id.* In general, “a product feature is functional if it is essential to the use or purpose of the article or if it affects the cost or quality of the article.” *Inwood Labs., Inc. v. Ives Labs., Inc.*, 456 U.S. 844, 850 n. 10 (1982). Specifically, a design patent is invalid if its overall appearance is dictated by its function. *Sport Dimension, Inc. v. Coleman Co.*, 820 F.3d 1316, 1320 (Fed. Cir. 2016) (citing *Egyptian Goddess, Inc. v. Swisa, Inc.*, 543 F.3d 665, 668 (Fed. Cir. 2008)). Even if certain elements have functional purposes, a design claim can be valid because a design patent’s claim protects “an article of manufacture, which necessarily serves a utilitarian purpose.” *Id.* (citations and quotations omitted). Several factors should be considered when determining whether a design is dictated by function:

whether the protected design represents the best design; whether alternative designs would adversely affect the utility of the specified article; whether there are any concomitant utility patents; whether the advertising touts particular features of the design as having specific utility; and whether there are any elements in the design or an overall appearance clearly not dictated by function.

*Id.* at 1322 (citing *PHG Technologies, LLC v. St. John Cos.*, 469 F.3d 1361, 1366 (Fed. Cir. 2006))<sup>1</sup>.

Claim construction must separate out ornamental aspects of features, which are protected, and purely functional aspects of features, which are not. *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1333 (Fed. Cir. 2015). However, a design does not go unprotected “simply because the ‘primary features’ of the design [can] perform functions.” *Id.* at

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<sup>1</sup> The Federal Circuit determined that, while these factors were originally used in determining invalidity, “they may serve as a useful guide for claim construction functionality as well.” *Sport Dimension, Inc.*, 820 F.3d at 1322.

1329. The functionality of elements does not preclude those elements from having protectable ornamentation. *Sport Dimension, Inc.*, 820 F.3d at 1321.

### ANALYSIS

The parties dispute what aspects of the design patent are functional, if any.

In *OddzOn*, the Federal Circuit approved a claim construction where the district court removed the generalized football shape, tail, and fins from the scope of the design claim and limited the claim to the ornamental aspects of those features: a “slender, straight tailshaft” and “three fins symmetrically arranged around the tailshaft,” each “gentl[y] curv[ing] up and outward [to] create[ ] a larger surface area at the end furthest from the ball” and “flar[ing] outwardly along the entire length of the tail-shaft” with the “fins seemingly protrud[ing] from the inside of the football.” *OddzOn*, 122 F.3d at 1400. The football shape, when combined with the fins, allowed the ball to be thrown like a football but go farther than a traditional foam football; and, therefore, the general football-and-fins shape was functional. *Id.* at 1406 (“It is the football shape combined with fins on a tail that give the design these functional qualities.”).

In *Richardson*, the district court found that certain elements of a multi-function tool were driven purely by utility:

The jaw, for example, has to be located on the opposite end of the hammer head such that the tool can be used as a step. The crowbar, by definition, needs to be on the end of the longer handle such that it can reach into narrow spaces. The handle has to be the longest arm of the tool to allow for maximum leverage. The hammer-head has to be flat on its end to effectively deliver force to the object being struck.

*Richardson v. Stanley Works, Inc.*, 597 F.3d 1288, 1294 (Fed. Cir. 2010).

In *Ethicon*, the district court found that the “U”-shaped trigger, the torque knob, and the rounded button on an ultrasonic surgical device were dictated by function:

. . . the “U”-shaped trigger operates the clamping arm of the ultrasonic shears. . . . Its “open” design allows the user to exert higher input forces by employing multiple fingers, thus lessening hand fatigue and strain. . . . The torque knob and rounded button provide functional controls for the ultrasonic shears. . . . Their placement relative to the trigger offers ergonomic access, and the fluted shape of the torque knob permits a user to operate the knob with one finger.

*Ethicon*, 796 F.3d at 1334. However, the district court improperly ignored that “the trigger ha[d] a particular curved design, the torque knob ha[d] a particular flat-front shape, and the activation button ha[d] a particular rounded appearance,” which were covered by the design patent. *Id.*

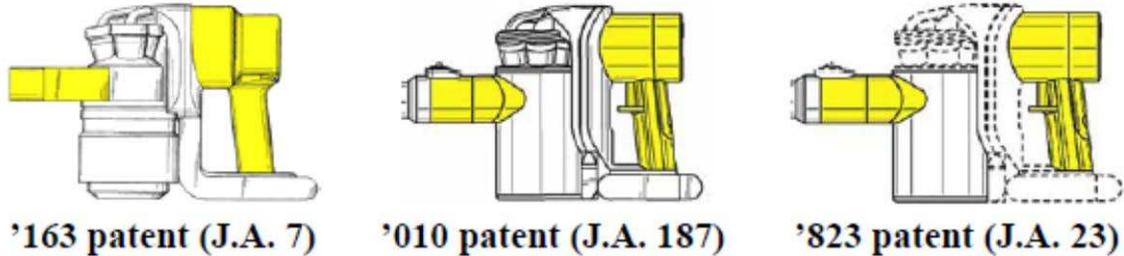
In *Sport Dimension*, the Federal Circuit struck down a claim construction because the district court wrote functional features of a personal flotation device out of the design patent entirely. *Sport Dimension*, 820 F.3d at 1321. The district court found that the armbands and tapered torso were functional after noting that it was the best available design for a personal flotation device, that there was a co-pending utility patent touting the utility of the armbands and tapered torso, and that the defendant promoted the particular utility of the armbands and tapered torso in its advertisements. *Id.* at 1322. However, the Federal Circuit held the design patent included “the shape of the armbands and side torso tapering, to the extent that they contribute to the overall ornamentation of the design.” *Id.* at 1323.

Features that are primarily functional are not protected by a design patent; however, the shape and ornamentation of functional features are protected to the extent that they contribute to the overall ornamentation of the design.

### *Grip*

Here, Defendants describe the “pistol grip, point-and-shoot” element as including: the cylindrical motor housing, the straight, pistol-grip handle, and the purely cylindrical suction

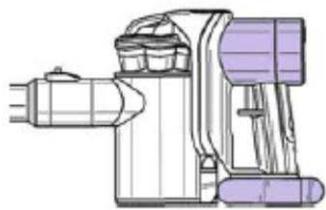
nozzle and triangular coupling. Defendants argue that the pistol grip aligns the suction nozzle with the user's hand and forearm, which is easier and more comfortable to use.



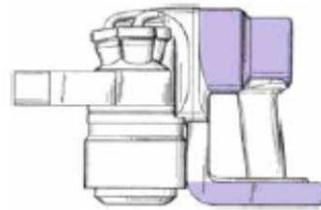
A grip, in and of itself, is functional, as there must be a way for a user to hold the vacuum. Additionally, the vertical orientation of the grip is mentioned as a benefit in a co-pending utility patent: “The orientation of the handle is such that, when the user grips the handle, the user’s hand forms a fist in a manner similar to that adopted when gripping a saw. This ensures that the user’s wrist is not strained more than necessary when manipulating the handheld vacuum cleaner for cleaning purposes.” U.S. Patent No. 8,837,204, at 2:66-3-2. The pistol-grip element is functional. However, the cylindrical motor housing, the cylindrical suction nozzle, and triangular coupling are not dictated by function. There is no particular utilitarian benefit to those features and shapes. The cylindrical motor housing, the cylindrical suction nozzle, and triangular coupling are protected by the design patents. The shape and ornamentation of the grip is protected to the extent that it contributes to the overall ornamentation of the design.

#### *Motor and Battery*

Defendants describe the “power tool, dumbbell” element as including: the cylindrical motor housing and the flat, rectangular battery pack. Defendants argue the arrangement of the heavy motor and battery pack above and below the handle is functional because it balances the weight of the vacuum.



**'010 patent (J.A. 187)**



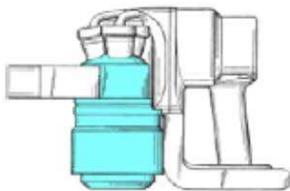
**'163 patent (J.A. 7)**

However, a specific arrangement of two or more features can be covered by a design patent. *See Ethicon*, 796 F.3d at 1334 (Fed. Cir. 2015) (scope of design patents “encompasses the depicted ornamental aspects of certain combinations of the trigger, torque knob, and activation button elements of ultrasonic surgical shears, in specific relative positions and orientations.”).

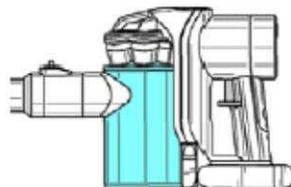
Additionally, the arrangement of the motor and the battery is not essential to the use of an article or dictated by the function of the vacuum. The arrangement of the motor and the battery is protected by the design patents.

#### *Upright Cylinder*

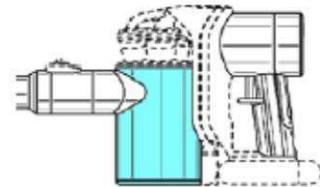
Defendants describe the “upright cylinder” element as including a cylindrical primary cyclone chamber. Defendants argue that the upright cylinder locates the center of gravity close to the hand, which minimizes the “moment” acting on the wrist.



**'163 patent (J.A. 7)**



**'010 patent (J.A. 187)**



**'823 patent (J.A. 23)**

The upright cylinder has claimed benefits in a co-pending utility patent: “The cyclonic separator is positioned close to the handle which also reduces the moment applied to the user’s wrist when the handheld vacuum cleaner is in use.” U.S. Patent No. 8,387,204, at 2:66-3-2. However those

benefits are about the position of the cylinder, not its shape. While the element provides ergonomic functions, its design is not dictated by function. There is no argument that the cylinder could not be many different shapes and/or sizes and function in the same manner. The upright cylinder is protected by the design patents.

### *Suction Tube*

Defendants describe the “long, cylindrical suction tube” element as including: a cylindrical suction tube and cylindrical cuffs connecting the tube to the handheld vacuum cleaner and floor unit. Defendants argue that this element is functional because it connects the vacuum cleaner to the floor unit and is the simplest and most efficient shape. Defendants also argue that the cuffs are functional because they allow the tube to connect the vacuum and the floor unit.

**'010 patent (J.A. 187):**



**'823 patent (J.A. 23):**



The tube itself is functional; however, there is no particular utilitarian advantage to having a cylindrical suction tube. The design is protected, even though the primary feature can perform functions such as connecting the hand unit and the floor unit. Additionally, alternative designs would not adversely affect the utility of the tube; there is no utility patent for the cylindrical tube, and advertising does not tout the particular feature of the cylindrical tube as having specific utility. Similarly, while the cuffs have a functional purpose, connecting the tube to the vacuum and the floor unit, their particular shape and ornamental features are not dictated by function. There is no particular practical advantage to having a cylindrical cuff.

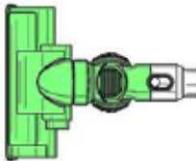
The long tube is determined by function, but the cylindrical shape and ornamentation of the tube and the cylindrical cuffs are protected by the design patent.

*Floor Unit*

Defendants describe the “low-profile floor unit” element as including: a ball-shaped wheel design and a cylindrical coupling on the floor unit. Defendants argue that the low-profile design of the floor unit is functional because it can reach under furniture, it is shaped to hold a cylindrical brush, and the spherical wheels allow the unit to roll and turn more easily.



**'010 patent (J.A. 187)**



**'010 patent (J.A. 185)**



**'010 patent (J.A. 184)**

The cylindrical coupling on the floor unit is not dictated by function. There is no particular advantage to having a cylindrical coupling. Similarly, the ability to hold a cylindrical brush does not determine the shape of the floor unit. Several possible designs could hold a cylindrical brush. However, the spherical wheels are determined by function. They have a utilitarian advantage due to better turning and tracking ability than traditional wheels. The low-profile aspect of the floor unit is also functional; as mentioned above, it is designed to reach under furniture. However, the ornamentation of both the low-profile floor unit and the spherical wheels are protected to the extent that they contribute to the overall ornamentation of the design.

*'010 Patent*

Defendants argue that the '010 Patent is invalid because it is not clear what is claimed in the drawings. “[A] patent is invalid for indefiniteness if its claims, read in light of the

specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v.*

*Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). A patentee may exclude features from a claimed design by showing those features in broken lines; the failure to use broken lines

indicates inclusion of those features in the claimed design. *Contessa Food Prod., Inc. v.*

*Conagra, Inc.*, 282 F.3d 1370, 1378 (Fed. Cir. 2002) *abrogated on other grounds by Egyptian*

*Goddess, Inc. v. Swisa, Inc.*, 543 F.3d 665 (Fed. Cir. 2008).



**Uncorrected '010 patent (J.A. 13)**



**“Ribbon Copy” of uncorrected '010 patent (Evans Decl. Ex. 11, Fig. 2.)<sup>8</sup>**

Plaintiffs argue that the '010 Patent is not invalid because it is clear what is being claimed when looking at the prosecution history. On February 9, 2012, the design patent was rejected by the United States Patent and Trademark Office (“USPTO”) due to the lack of clarity between solid and broken lines. (J.A. 168). Plaintiffs submitted new drawings on May 8, 2012, which clearly show the claimed aspects of the design. (J.A. 181-89.) On July 12, 2012, the Patent Office accepted the replacement drawings and issued a Notice of Allowance. (J.A. 197-98). The Notice of Allowance specifically states: “The replacement drawings filed 5-8-12 are approved. In view thereof, the rejection under 25 USC 112, first and second paragraphs is withdrawn.” (J.A. 198.) Considering the prosecution history, including the replacement drawings, and the

Notice of Allowance being specifically based on the replacement drawings, the '010 Patent is not invalid.

Defendants argue that, even if the '010 Patent is not indefinite, the patent cannot be corrected to be construed as the replacement drawings. A patent may only be corrected where the error is evident on the face of the patent. *H-W Tech., L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1333 (Fed. Cir. 2014). A district court can correct a patent when “(1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims.” *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357 (Fed. Cir. 2003). It is evident from the face of the patent that the drawings are incorrect. The drawings contain only dotted lines, which are meant to show features that are excluded from the patent. The USPTO would not issue a design patent for an application that covered nothing. One again, considering the prosecution history, the correction is not subject to debate. The patent was allowed on the basis of the replacement drawings submitted on May 8, 2012.

The '010 Patent is construed as the replacement drawings submitted to the USPTO on May 8, 2012, subject to the functionality findings discussed above.

## **CONCLUSION**

The patents are construed as the ornamental design of the drawings contained in the patents themselves for the '163 Patent and the '823 Patent and as the replacement drawings for the '010 Patent, subject to the functionality findings. The straight, pistol-grip handle, the long tube, and the low-profile floor unit are functional features that are not protected by the design patent; but the shape and ornamentation of those features are protected to the extent that they contribute to the overall ornamentation of the design. The spherical wheels are functional

features that are not protected by the design patent, but the ornamentation of the spherical wheels are protected to the extent that it contributes to the overall ornamentation of the design.

Date: October 13, 2016

/s/   
JOHN W. DARRAH  
United States District Court Judge