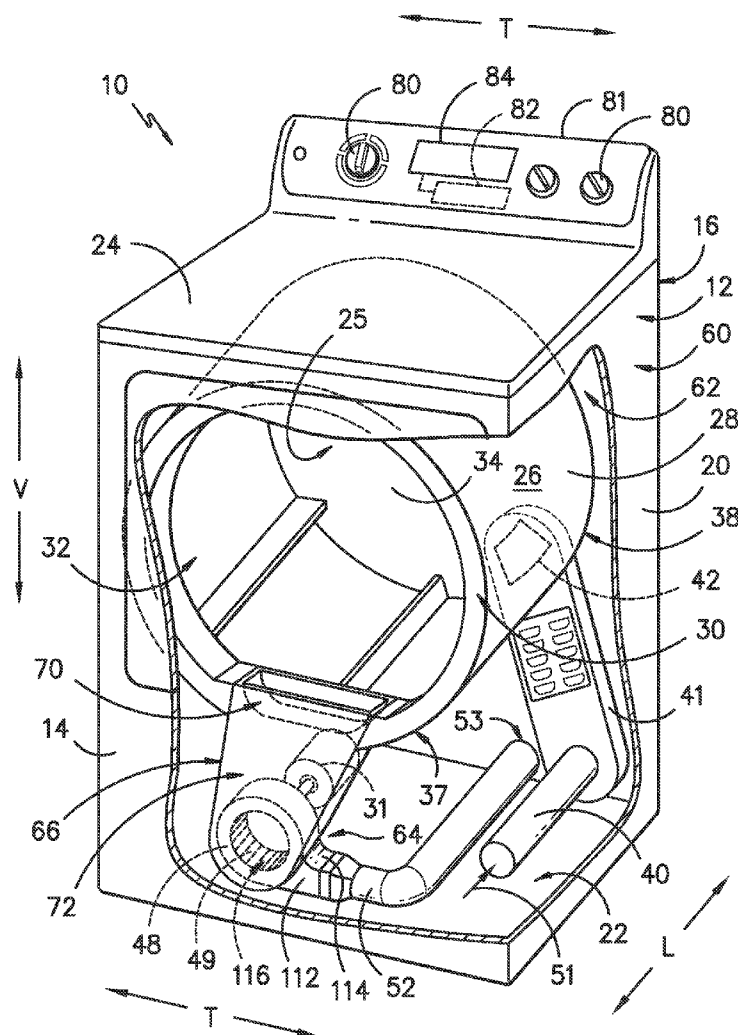




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DIAGNOSING RESTRICTIONS IN DRYER
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2058/2883 (2013.01)(71) Applicant: **General Electric Company,**
Schenectady, NY (US)(72) Inventor: **Zhiquan Yu,** Mason, OH (US)(21) Appl. No.: **14/331,296**(22) Filed: **Jul. 15, 2014****Publication Classification**(51) **Int. Cl.**
D06F 58/28 (2006.01)(57) **ABSTRACT**

Dryer appliances, methods for diagnosing restrictions in dryer appliance, and blower for dryer appliances are provided. A blower includes a blower fan and a scroll housing including an outer wall, the outer wall defining an interior, the blower fan rotatably mounted within the interior. The scroll housing includes a spiral portion, an outlet portion generally tangentially aligned with the spiral portion, and a cutoff wall extending from the outlet portion into the interior, the cutoff wall including a cutoff tip. The scroll housing further includes a tap aperture defined in the outer wall within a tap region, the tap region defined along a line between the cutoff tip and a joint location between the spiral portion and the outlet portion.



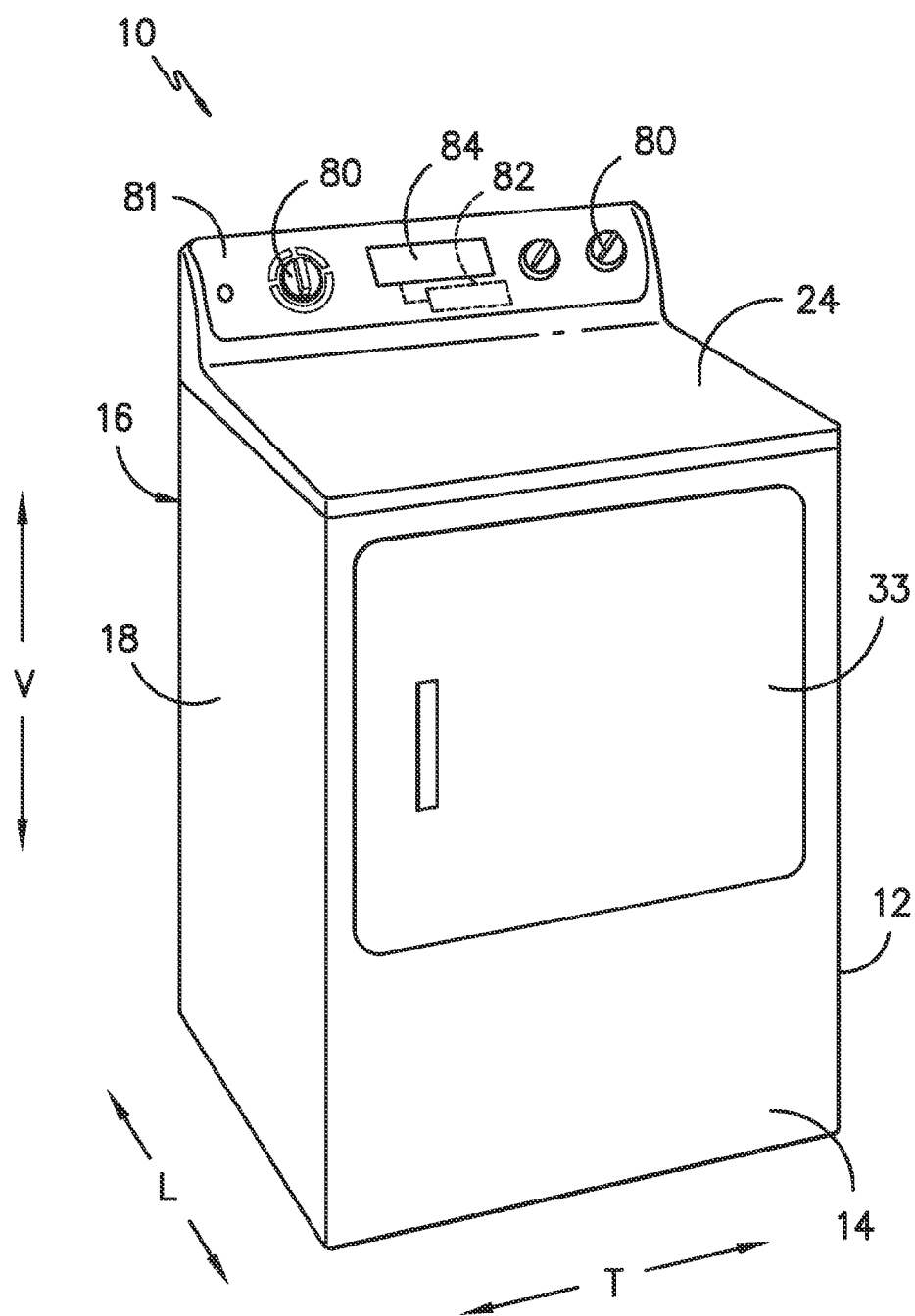


FIG. -1-

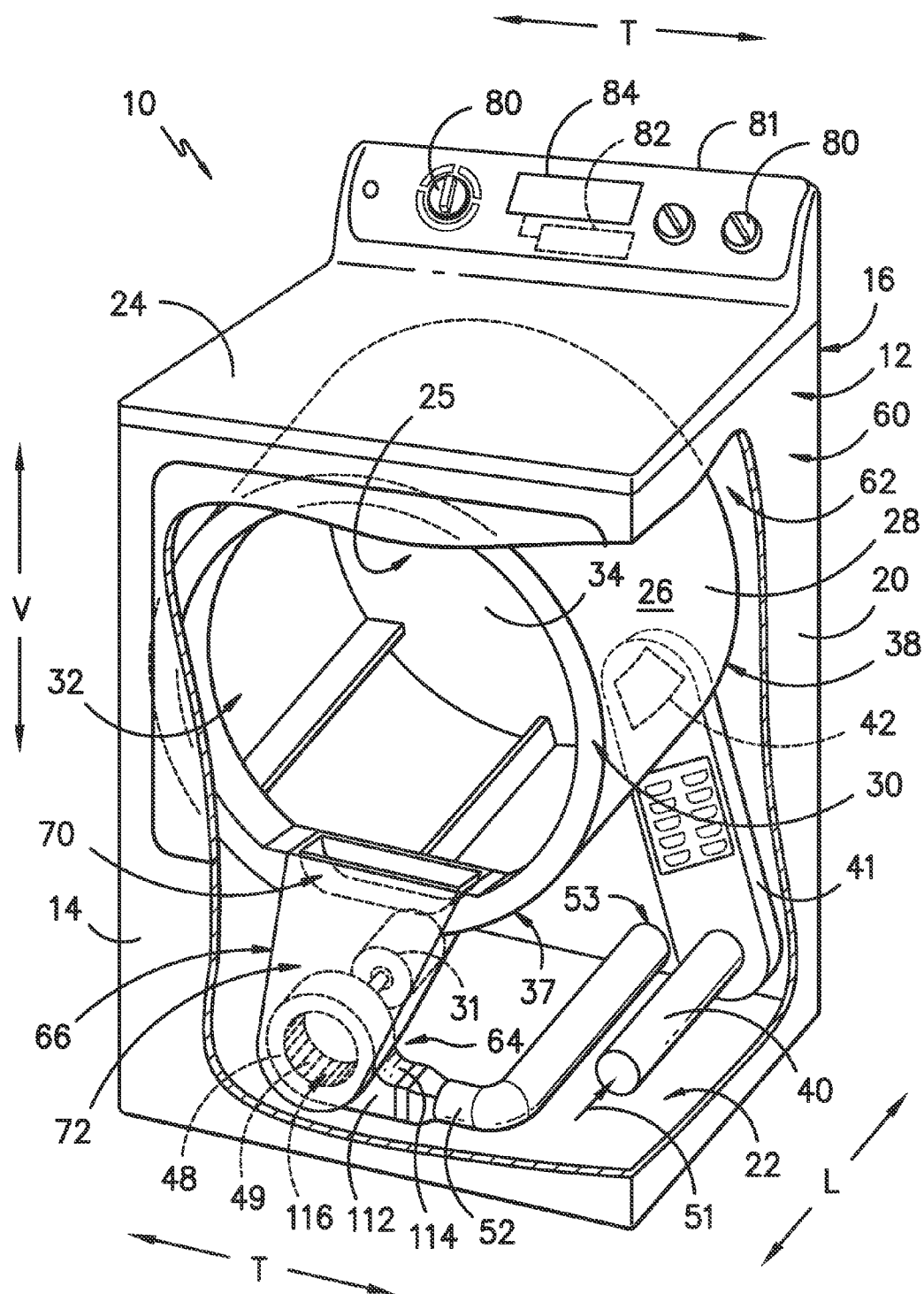
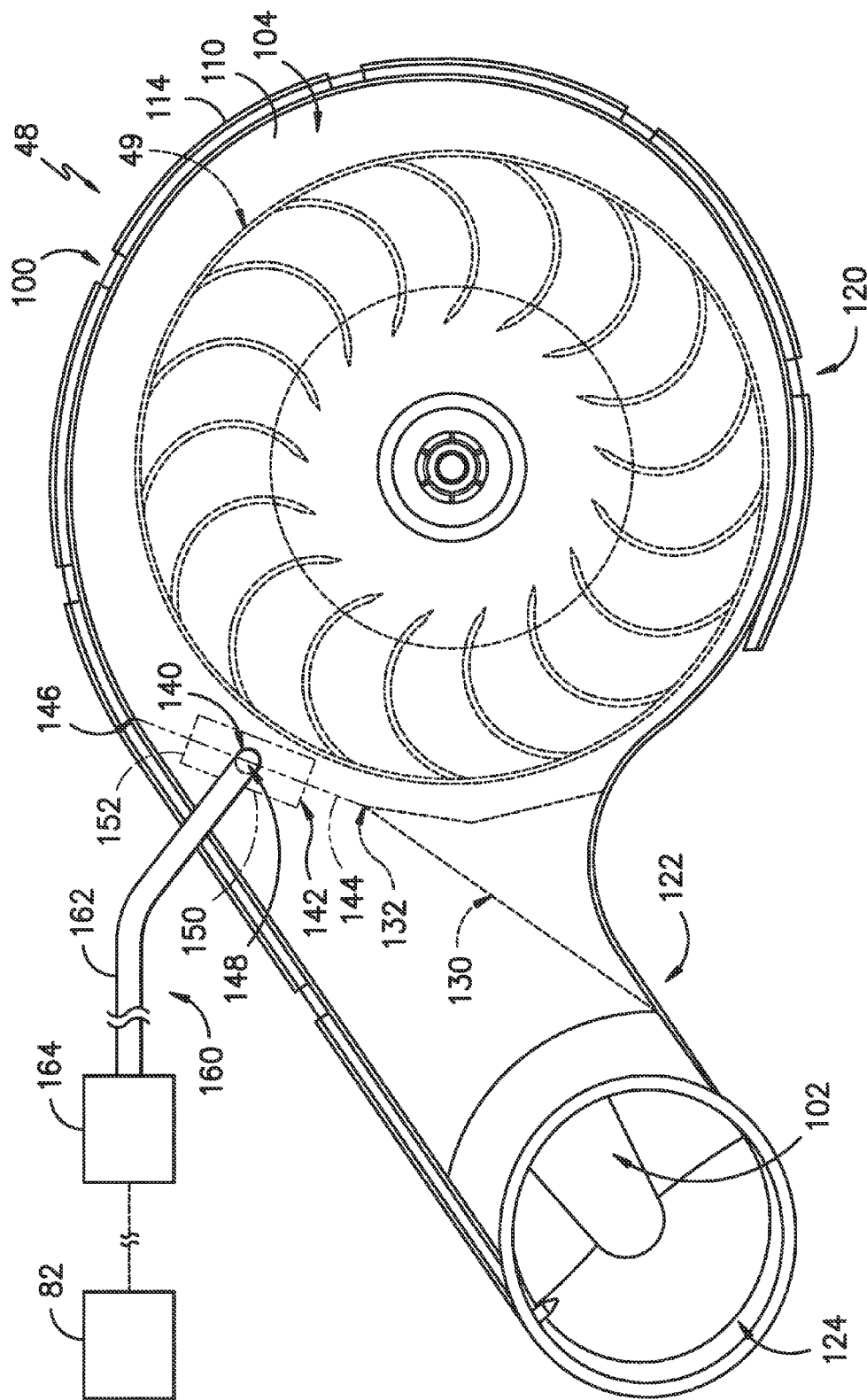


FIG. -2-



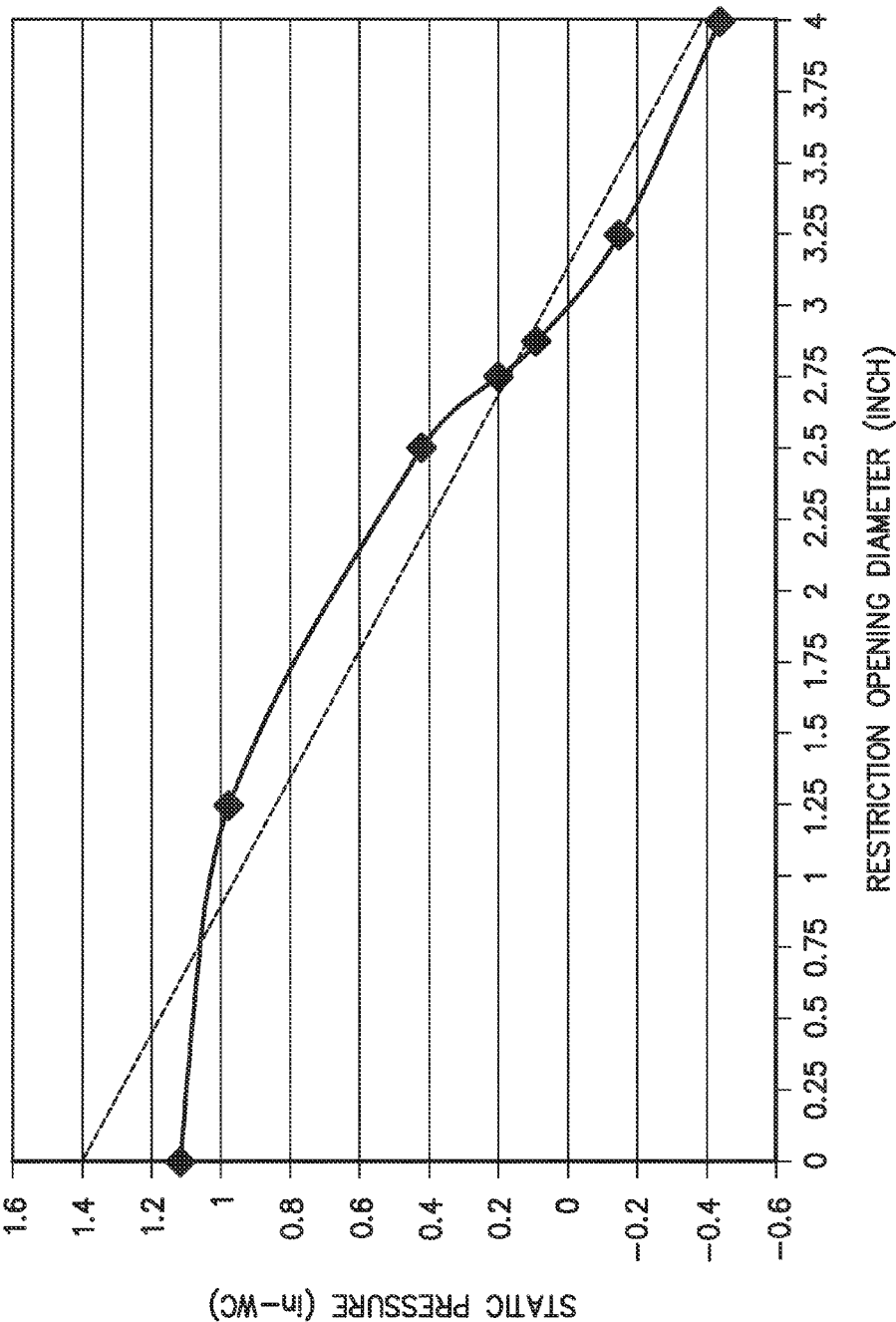
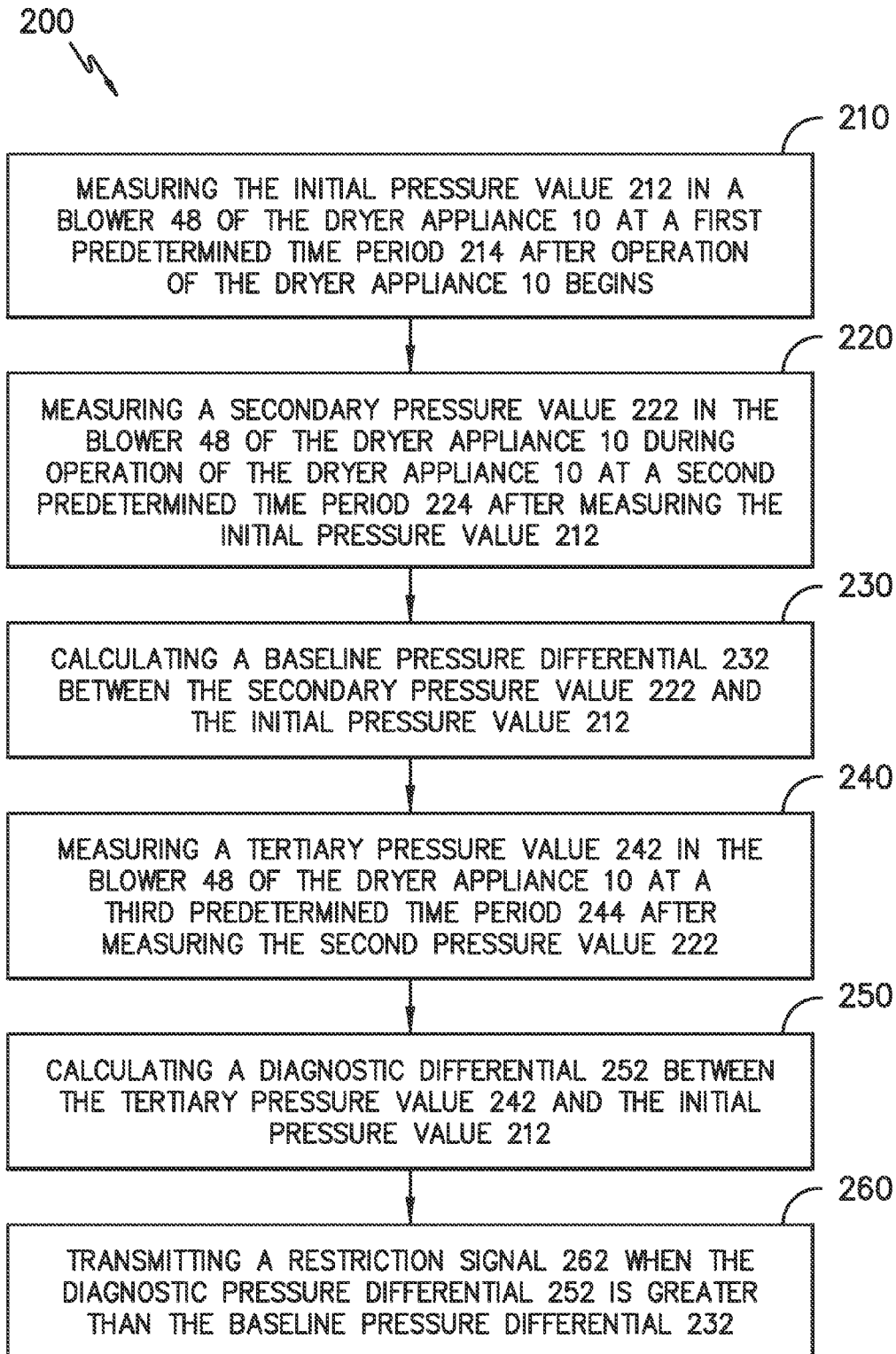
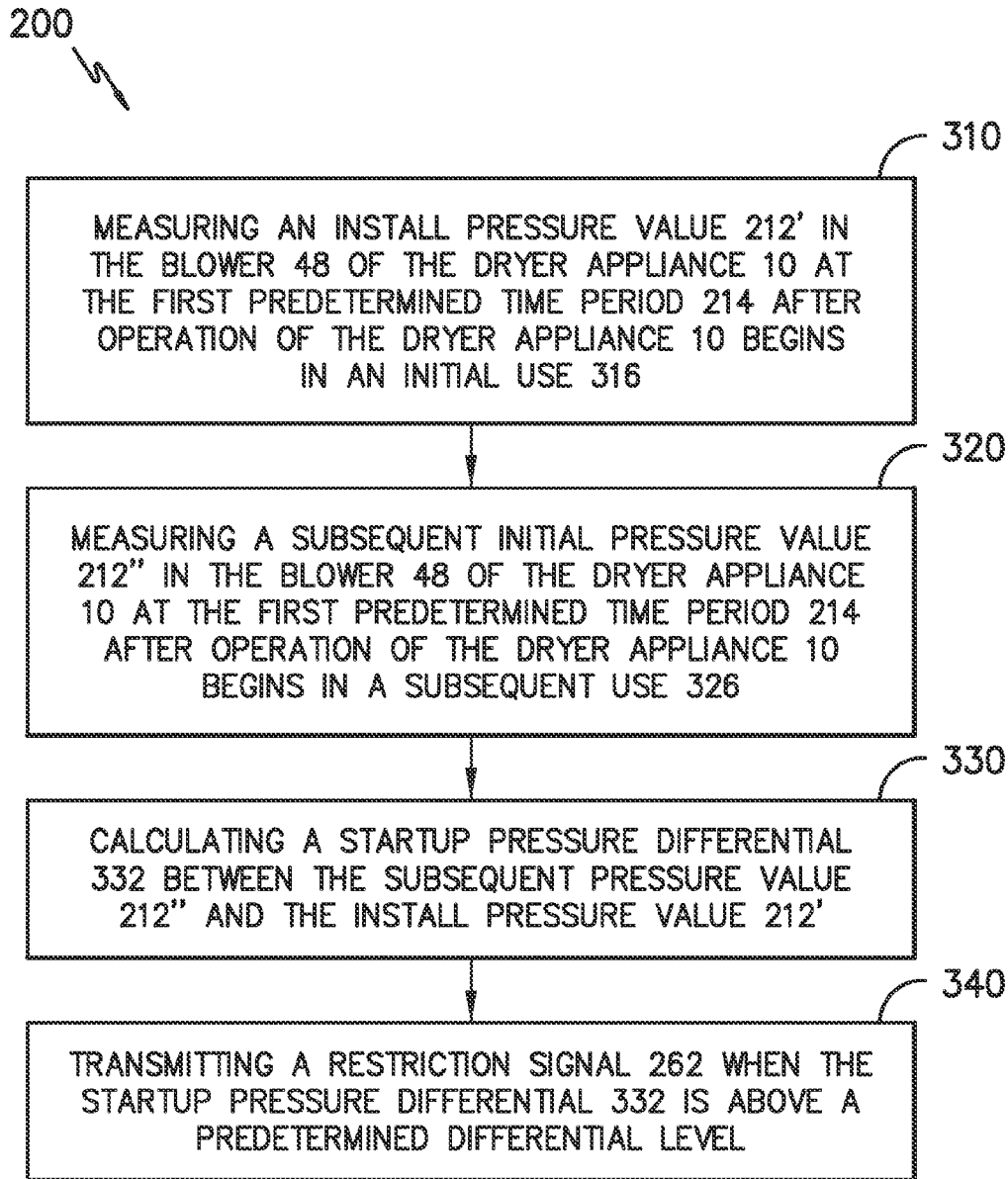


FIG. -4-

*FIG. -5-*

*FIG. -6-*

DRYER APPLIANCES AND METHODS FOR DIAGNOSING RESTRICTIONS IN DRYER APPLIANCES

FIELD OF THE INVENTION

[0001] The present subject matter relates generally to dryer appliances and associated methods, and more particularly to methods and apparatus for diagnosing restrictions in dryer appliances.

BACKGROUND OF THE INVENTION

[0002] Dryer appliances generally include a cabinet with a drum mounted therein. In many dryer appliances, a motor rotates the drum during operation of the dryer appliance, e.g., to tumble articles located within a chamber defined by the drum. Alternatively, dryer appliances with fixed drums have been utilized. Dryer appliances also generally include a heater assembly that passes heated air through the chamber of the drum in order to dry moisture-laden articles disposed within the chamber. This internal air then passes from the chamber through a vent duct to an exhaust conduit, through which the air is exhausted from the dryer appliance. Typically, a blower is utilized to flow the internal air from the vent duct to the exhaust duct. When operating the blower may pull air through itself from the vent duct, and this air may then flow from the blower to the exhaust conduit.

[0003] One issue that exists with dryer appliances is the possibility of restrictions in, for example, the vent duct or exhaust conduit. Restrictions decrease the effective operating size of the passages through which air flows during operation, and can be caused by, for example, lint build-up or other impediments lodged in such passages. Restrictions can prevent proper airflow, thereby increasing drying cycle time, reducing drying power efficiency, and/or reducing drying of articles in the dryer appliances. In some cases, restrictions can cause damage to dryer appliances, and can even result in fires. Accordingly, the ability to diagnose restrictions is of upmost importance.

[0004] Attempts have been made to diagnose restrictions in dryer appliances. For example, attempts have been made to utilize temperature differentials to diagnose restrictions. Further, attempts have been made to measure pressure differentials in, for example, the exhaust conduit and other various dryer appliance locations. These attempts typically prove to be costly and/or ineffective. Accordingly, improved dryer appliances and methods for diagnosing restrictions in dryer appliances are desired.

BRIEF DESCRIPTION OF THE INVENTION

[0005] In one embodiment, a dryer appliance is provided. The dryer appliance includes a cabinet defining an interior, and a drum positioned within the interior, the drum defining a chamber for receipt of articles for drying. The dryer appliance further includes an outlet assembly positioned within the interior, the outlet assembly including a vent duct, a blower, and an exhaust conduit. The blower includes a blower fan and a scroll housing comprising an outer wall, the outer wall defining an interior, the blower fan rotatably mounted within the interior. The scroll housing includes a spiral portion, an outlet portion generally tangentially aligned with the spiral portion, and a cutoff wall extending from the outlet portion into the interior, the cutoff wall including a cutoff tip. The scroll housing further includes a tap aperture defined in the

outer wall within a tap region, the tap region defined along a line between the cutoff tip and a joint location between the spiral portion and the outlet portion.

[0006] In another embodiment, a blower for a dryer appliance is provided. The blower includes a blower fan and a scroll housing including an outer wall, the outer wall defining an interior, the blower fan rotatably mounted within the interior. The scroll housing includes a spiral portion, an outlet portion generally tangentially aligned with the spiral portion, and a cutoff wall extending from the outlet portion into the interior, the cutoff wall including a cutoff tip. The scroll housing further includes a tap aperture defined in the outer wall within a tap region, the tap region defined along a line between the cutoff tip and a joint location between the spiral portion and the outlet portion.

[0007] In another embodiment, a method for diagnosing a restriction in a dryer appliance is provided. The method includes measuring an initial pressure value in a blower of the dryer appliance at a first predetermined time period after operation of the dryer appliance begins, measuring a secondary pressure value in the blower of the dryer appliance during operation of the dryer appliance at a second predetermined time period after measuring the initial pressure value, and calculating a baseline pressure differential between the secondary pressure value and the initial pressure value. The method further includes measuring a tertiary pressure value in the blower of the dryer appliance at a third predetermined time period after measuring the second pressure value, and calculating a diagnostic pressure differential between the tertiary pressure value and the initial pressure value. The method further includes transmitting a restriction signal when the diagnostic pressure differential is greater than the baseline pressure differential.

[0008] These and other features, aspects and advantages of the present invention will become better understood with reference to the following description and appended claims. The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] A full and enabling disclosure of the present invention, including the best mode thereof, directed to one of ordinary skill in the art, is set forth in the specification, which makes reference to the appended figures.

[0010] FIG. 1 provides a perspective view of a dryer appliance in accordance with one embodiment of the present disclosure.

[0011] FIG. 2 provides a perspective view of the dryer appliance of FIG. 1 with portions of a cabinet of the dryer appliance removed to reveal certain components of the dryer appliance.

[0012] FIG. 3 provides a side view of a blower for a dryer appliance in accordance with one embodiment of the present disclosure.

[0013] FIG. 4 provides a graph illustrating data correlating pressure values and effective airflow opening size in accordance with one embodiment of the present disclosure.

[0014] FIG. 5 is a flow chart illustrating method steps in accordance with one embodiment of the present disclosure.

[0015] FIG. 6 is a flow chart illustrating method steps in accordance with another embodiment of the present disclosure.

DETAILED DESCRIPTION

[0016] Reference now will be made in detail to embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, not limitation of the invention. In fact, it will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. For instance, features illustrated or described as part of one embodiment can be used with another embodiment to yield a still further embodiment. Thus, it is intended that the present invention covers such modifications and variations as come within the scope of the appended claims and their equivalents.

[0017] FIG. 1 illustrates a dryer appliance 10 according to an exemplary embodiment of the present subject matter. FIG. 2 provides another perspective view of dryer appliance 10 with a portion of a cabinet or housing 12 of dryer appliance 10 removed in order to show certain components of dryer appliance 10. While described in the context of a specific embodiment of dryer appliance 10, using the teachings disclosed herein it will be understood that dryer appliance 10 is provided by way of example only. Other dryer appliances having different appearances and different features may also be utilized with the present subject matter as well. Dryer appliance 10 defines a vertical direction V, a lateral direction L, and a transverse direction T. The vertical direction V, lateral direction L, and transverse direction T are mutually perpendicular and form an orthogonal direction system.

[0018] Cabinet 12 includes a front panel 14, a rear panel 16, a pair of side panels 18 and 20 spaced apart from each other by front and rear panels 14 and 16, a bottom panel 22, and a top cover 24. These panels and cover collectively define an external surface 60 of the cabinet 12 and an interior 62 of the cabinet. Within interior 62 of cabinet 12 is a drum or container 26. Drum 26 defines a chamber 25 for receipt of articles, e.g., clothing, linen, etc., for drying. Drum 26 extends between a front portion 37 and a back portion 38, e.g., along the lateral direction L. In exemplary embodiments the drum 26 is rotational. Alternatively, however, the drum 26 may be fixedly mounted within the interior 62.

[0019] Drum 26 is generally cylindrical in shape, having an outer cylindrical wall or cylinder 28 and a front flange or wall 30 that may define an entry 32 of drum 26, e.g., at front portion 37 of drum 26, for loading and unloading of articles into and out of chamber 25 of drum 26. Drum 26 also includes a back or rear wall 34, e.g., at back portion 38 of drum 26. In alternative embodiments, entry 32 may be defined in top cover 24 and cylinder 28, and front wall 30 may be a generally solid wall.

[0020] A motor 31 may be in mechanical communication with a blower 48 such that motor 31 rotates a blower fan 49, e.g., of the blower 48. Blower 48 is configured for drawing air through chamber 25 of drum 26, e.g., in order to dry articles located therein as discussed in greater detail below. In alternative exemplary embodiments, dryer appliance 10 may include an additional motor (not shown) for rotating fan 49 of blower 48 independently of drum 26.

[0021] Drum 26 may be configured to receive heated air that has been heated by a heating assembly 40, e.g., in order to dry damp articles disposed within chamber 25 of drum 26. Heating assembly 40 includes a heating element (not shown), such as a gas burner or an electrical resistance heating element, for heating air. As discussed above, during operation of

dryer appliance 10, motor 31 rotates fan 49 of blower 48 such that blower 48 draws air through chamber 25 of drum 26. In particular, ambient air enters heating assembly 40 via an entrance 51 due to blower 48 urging such ambient air into entrance 51. Such ambient air is heated within heating assembly 40 and exits heating assembly 40 as heated air. Blower 48 draws such heated air through duct 41 to drum 26. The heated air enters drum 26 through an outlet 42 of duct 41 positioned at rear wall 34 of drum 26.

[0022] Within chamber 25, the heated air can remove moisture, e.g., from damp articles disposed within chamber 25. This internal air in turn flows from the chamber 25 through an outlet assembly 64 positioned within the interior 62. The outlet assembly 64 includes a vent duct 66, the blower 48, and an exhaust conduit 52. The exhaust conduit 52 is in fluid communication with the vent duct 66 via the blower 48. During a dry cycle, internal air flows from the chamber 25 through the vent duct 66 to the blower 48 and through the blower 48 to the exhaust conduit 52, and is exhausted from the exhaust conduit 52, such as through outlet 53.

[0023] In exemplary embodiments, vent duct 66 can include a filter portion 70 and an exhaust portion 72. The exhaust portion 72 may be positioned downstream of the filter portion 70 (in the direction of flow of the internal air). A screen filter of filter portion 70 (which may be removable) traps lint and other particulates as the internal air flows there-through. The internal air may then flow through the exhaust portion 72 and the blower 48 to the exhaust conduit 52.

[0024] After the clothing articles have been dried, they are removed from the drum 26 via entry 32. A door 33 provides for closing or accessing drum 26 through entry 32.

[0025] A cycle selector knob 80 is mounted on a cabinet backslash 81 and is in communication with a processing device or controller 82. Signals generated in controller 82 operate motor 31 and heating assembly 40 in response to the position of selector knobs 80. Alternatively, a touch screen type interface may be provided. Additionally, a display 84, such as an indicator light or a screen, may be provided on cabinet backslash 82. The display 84 may be in communication with the controller 82, and may display information in response to signals from the controller 82. As used herein, "processing device" or "controller" may refer to one or more microprocessors or semiconductor devices and is not restricted necessarily to a single element. The processing device can be programmed to operate dryer appliance 10. The processing device may include, or be associated with, one or more memory elements such as e.g., electrically erasable, programmable read only memory (EEPROM).

[0026] It should be understood that, while FIGS. 1 and 2 illustrate embodiments wherein dryer appliance 10 is a horizontal axis dryer appliance, in other embodiments dryer appliance 10 may be, for example, a vertical axis dryer appliance or another suitable dryer appliance. In a vertical axis dryer appliance 10, for example, cylinder 28 of drum 26 may extend along the vertical axis V between rear wall 34 and front wall 30. Accordingly, the present disclosure is not limited to horizontal axis dryer assemblies. Rather, any suitable dryer appliance is within the scope and spirit of the present disclosure.

[0027] Referring now to FIG. 3, blower 48 may include the blower fan 49 and a scroll housing 100. The blower fan 49 may be rotatably mounted within an interior 102 of the scroll housing 100. The interior 102 may be defined by an outer wall 104 of the scroll housing. The outer wall 104 may include a

first outer face **110**, a second opposite outer face **112** (see FIG. 2) and a curved wall **114** between the outer faces **110**, **112** that generally defines the periphery of the blower **48**. The opposite outer face **112** may define an inlet opening **116** through which air may enter the interior **102**, such as generally along an axial direction.

[0028] Scroll housing **100** may include a spiral portion **120** and an outlet portion **122**. As shown, the spiral portion **120** has a generally curvilinear shape, and houses the blower fan **49**. The outlet portion **122** is generally tangentially aligned with the spiral portion **120**. Air that flows into the spiral portion **120** through opening **116** may be converted from axial flow to radial flow by the blower fan **49**, and may then flow past the fan **49** from the spiral portion **120** to the outlet portion **122**. The air may then be exhausted from the outlet portion **122** through an exhaust opening **124** defined in the outlet portion **122**. The outlet portion **122** may be in fluid communication with the exhaust conduit **52**, such that air from the outlet portion **122** flows into the exhaust conduit **52**.

[0029] Scroll housing **100** may further include a cutoff wall **130**. The cutoff wall **130** may generally be disposed within the interior **102**, and may serve to direct air flow in desired directions, such as into the outlet portion **122** from the spiral portion **120**. Cutoff wall **130**, and in particular the cutoff tip **132** thereof, may further prevent air from flowing back into the spiral portion **120** from the outlet portion **122**. Cutoff wall **130** may extend from the outlet portion **122** into the interior **102**. In exemplary embodiment, as shown, cutoff wall **130** may be generally wedge shaped. Cutoff wall **130** may further include a cutoff tip **132**. Cutoff tip **132** may be a portion of the cutoff wall **130** that extends furthest into the interior **102** from the portion of the outer wall **104** that the cutoff wall **130** is in contact with, such as from the curved wall **114**, such as when viewed as illustrated in FIG. 3.

[0030] As discussed, improved methods and apparatus for diagnosing restrictions in dryer appliances **10** are desired. Accordingly, the present disclosure is directed to such improvements, which include the use of pressures to diagnose restrictions. Specifically, pressures at specific locations within the scroll housing **100** may be utilized. In particular, a tap aperture **140** may be defined in the outer wall **104**, such as the first outer face **110**. Pressure measurements may be taken through the tap aperture **140** and utilized to diagnose the existence of restrictions and the effective opening size for airflow through the outlet assembly **64**, such as through the vent duct **66**, exhaust conduit **52**, and/or downstream duct work, such as duct work downstream of outlet **53**. The present inventors have further discovered that particular locations of the tap aperture **140** in the outer wall **104**, such as in the first outer face **110**, advantageously provide pressure reading which can be correlated to restriction existence and effective opening size due to the existence of a restriction.

[0031] For example, and as illustrated in FIG. 3, tap aperture **140** may be defined within a tap region **142**. The tap region **142** may be defined along a line **144** drawn between cutoff tip **132** and a joint location **146** between the spiral portion **120** and the outlet portion **122**. Notably, the line **144** may be drawn in a view as illustrated in FIG. 3, such as along the first outer face **110** of the outer wall **104**. The joint location **146** may be a location along the outer wall **104** where a transition occurs, for example, between a generally linear portion of the wall **104** that defines the outlet portion **122** and a generally curvilinear portion of the wall **104** that defines the spiral portion **120**.

[0032] In exemplary embodiments, the tap region **142** is centered on a center point **148** of the line **144**. Further, the tap region **142** may be generally rectangular. In some embodiments, the tap region **142** may include one or more long sides **150**, which may for example run parallel to the line **144**, and which may for example be approximately 80%, such as approximately 60%, such as approximately 40%, of a length of the line **144**. Additionally or alternatively, the tap region **142** may include one or more short sides **152**, which may for example run perpendicular to the line **144**, and which may for example be approximately 40%, such as approximately 20%, such as approximately 10%, of a length of the line **144**. The entirety of the tap aperture **140** may be defined within the tap region **142**. In exemplary embodiments, the tap aperture **140** may be centered on the line **144**, such as at the center point **148**.

[0033] To measure pressures from tap aperture **140**, dryer appliance **10** may further include a pressure measurement assembly **160**. Pressure measurement assembly **160** may include, for example, a hose **162** connected to the tap aperture **140** for example at one end of the hose **162**. Pressure measurement assembly **160** may further include a pressure sensor **164** connected to the hose **162**, such as at an opposite end of the hose **162**. Pressure sensor **164** may thus be in fluid communication with the tap aperture **140**, and pressure measurements can be measured through the hose **162** by the pressure sensor **164**. Pressure sensor **164** may be, for example, a pressure transducer or other suitable device suitable for measuring air pressures. The pressure sensor **164** may be in communication with the controller **82**, such that pressure measurements taken thereby are transmitted to the controller **82**.

[0034] Referring now to FIGS. 4, 5 and 6, the present disclosure is further directed to methods for diagnosing restrictions in dryer appliances **10**, as denoted generally by reference numeral **200**. Such methods may measure pressure values at a variety of time intervals, and utilize these pressure values to determine if restrictions exist in the dryer appliance **10**, such as in the outlet assembly **64**. In exemplary embodiments, the pressure values as discussed herein may be taken from a tap aperture **140** as discussed herein. Further, such various methods steps may in exemplary embodiments be performed by controller **82**, which may for example operate pressure sensor **164** to take pressure measurements, such as by receiving signals corresponding to pressure measurements from the pressure sensor **164**, as required.

[0035] Referring now to FIG. 5, a method **200** may include, for example, the step **210** of measuring an initial pressure value **212** in a blower **48** of the dryer appliance **10** at a first predetermined time period **214** after operation of the dryer appliance **10**, such as in a dry cycle generally, begins. The first predetermined time period **214** may in some embodiments be immediately, such as within a minute, after dryer appliance **10** operation begins. In other embodiments, the first predetermined time period **214** may be one minute or more after dryer appliance **10** operation begins.

[0036] Method **200** may further include, for example, the step **220** of measuring a secondary pressure value **222** in the blower **48** at a second predetermined time period **224** after measuring the initial pressure value **212**. The second predetermined time period **224** may, for example, be approximately one minute or more after the initial pressure value **212** is taken. Method **200** may further include, for example, the step **230** of calculating a baseline pressure differential **232**

between the secondary pressure value 222 and the initial pressure value 212, such as by subtracting the initial pressure value 212 from the secondary pressure value 222.

[0037] Method 200 may further include, for example, the step 240 of measuring a tertiary pressure value 242 in the blower 48 at a third predetermined time period 244 after measuring the second pressure value 222. The third predetermined time period 244 may, for example, be between approximately five minutes and approximately 10 minutes. Method 200 may further include, for example, the step 250 of calculating a diagnostic pressure differential 252 between the tertiary pressure value 242 and the initial pressure value 212, such as by subtracting the initial pressure value 212 from the tertiary pressure value 242.

[0038] Notably, in some embodiments, the steps 240, 250 of measuring a tertiary pressure value 242 and calculating a diagnostic pressure differential 252 are performed in a continuous loop during operation of the dryer appliance 10. The third predetermined time period 244 may, for example, be a time interval, such as for example every time the predetermined time period 244 elapses, such as every five to ten minutes, after the second pressure value 22 has been measured, the steps 240 and 250 may be performed.

[0039] In some cases, the diagnostic pressure differential 252 may be less than or equal to the baseline pressure differential 232. Such differential may indicate the absence of a restriction or the worsening of a restriction, so no action may be taken. In other cases, however, the diagnostic pressure differential 252 may be greater than the baseline pressure differential 232. This differential may indicate the existence of a restriction or of a worsening of a restriction. Accordingly, a method 200 may further include the step 260 of transmitting a restriction signal 262 when the diagnostic pressure differential 252 is greater than the baseline pressure differential 232. Such signal 262 may, for example, be sent to the display 84, such that a user may see an indication of the restriction signal 262 and know to clear the restriction, have the dryer appliance 10 repaired, etc.

[0040] Notably, in some embodiments, the restriction signal 262 may not be limited to a single restriction signal 262. For example, different restriction signals 262 may be transmitted based on the size of the difference between the diagnostic pressure differential 252 and the baseline pressure differential 232. In one embodiment, for example, the restriction signal 262 may be a warning signal when the diagnostic pressure differential 252 is greater than the baseline pressure differential 232 within a first predetermined range, and the restriction signal 262 may be a clear signal when the diagnostic pressure differential 252 is greater than the baseline pressure differential 232 within a second predetermined range greater than the first predetermined range. The warning signal may indicate to the user that in the near future, clearing of the restriction may be required. The clear signal may be a more urgent signal that clearing of the restriction is immediately required. In some cases, in particular when a clear signal is indicated, operation of the dryer appliance 10 may be terminated when a restriction signal 262 is transmitted. Such termination may, for example, prevent the dryer appliance 100 from overheating and facilitate immediate clearing of the restriction.

[0041] FIG. 4 is a graph illustrating a correlation between pressure (measured at a tap aperture 140) and outlet assembly 64 opening size. The opening size varies in the graph to represent the existence of restrictions that block portions of an

opening and thus change the effective opening size. The data points and solid line indicate measured values and a data curve drawn based on these values. The dotted line indicates a line drawn based on an equation that approximates the trend of this data. As illustrated, pressure and outlet assembly 64 opening size can be correlated. This information, such as the equation approximating this data, can be experimentally determined for a dryer appliance 10 and utilized in controller 82 such that controller 82 can perform the methods as discussed herein.

[0042] In addition to diagnosing restrictions during the course of a single operation of the dryer appliance 10, methods in accordance with the present disclosure may further include steps for diagnosing restrictions based on pressure values measured at the beginning of each operation during the course of the life of the dryer appliance 10. Accordingly, and referring now to FIG. 6, a method 200 may further include, for example, the step 310 of measuring an install pressure value 212' in the blower 48 at the first predetermined time period 214 after operation of the dryer appliance 10 begins in an initial use 316. The install pressure value 212' may be the initial pressure value 212 measured during the initial use 316. Initial use 316 may be a first use of the dryer appliance 10 after the dryer appliance 10 is initially installed at a location, such as in a residence.

[0043] Method 200 may further include, for example, the step 320 of measuring a subsequent initial pressure value 212" in the blower 48 at the first predetermined time period 214 after operation of the dryer appliance 10 begins in a subsequent use 326. The subsequent pressure value 212" may be the initial pressure value 212 measured during any subsequent use 326. Subsequent use 326 may be any use of the dryer appliance 10 initial use 316. Method 200 may further include, for example, the step 330 of calculating a startup pressure differential 332 between the subsequent pressure value 212" and the install pressure value 212'. Further, method 200 may include the step 340 of transmitting a restriction signal 262 when the startup pressure differential 332 is above a predetermined differential level. The predetermined differential level may, for example, be empirically determined for the dryer appliance 10 and programmed into the controller 82.

[0044] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they include structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

What is claimed is:

1. A dryer appliance, comprising:

a cabinet defining an interior;

a drum positioned within the interior, the drum defining a chamber for receipt of articles for drying;

an outlet assembly positioned within the interior, the outlet assembly comprising a vent duct, a blower, and an exhaust conduit, the blower comprising:

a blower fan;

- a scroll housing comprising an outer wall, the outer wall defining an interior, the blower fan rotatably mounted within the interior, the scroll housing comprising:
- a spiral portion;
 - an outlet portion generally tangentially aligned with the spiral portion;
 - a cutoff wall extending from the outlet portion into the interior, the cutoff wall comprising a cutoff tip; and
 - a tap aperture defined in the outer wall within a tap region, the tap region defined along a line between the cutoff tip and a joint location between the spiral portion and the outlet portion.
2. The dryer appliance of claim 1, wherein the tap region is centered on a centerpoint of the line.
 3. The dryer appliance of claim 1, wherein the tap region has a long side of approximately 80% of a length of the line.
 4. The dryer appliance of claim 1, wherein the tap region has a short side of approximately 40% of a length of the line.
 5. The dryer appliance of claim 1, wherein the tap region is generally rectangular.
 6. The dryer appliance of claim 1, further comprising a pressure measurement assembly connected to the scroll housing.
 7. The dryer appliance of claim 6, wherein the pressure measurement assembly comprises a hose connected to the tap aperture.
 8. The dryer appliance of claim 7, wherein the pressure measurement assembly comprises a pressure sensor connected to the hose and in fluid communication with the tap aperture.
 9. A blower for a dryer appliance, the blower comprising:
 - a blower fan;
 - a scroll housing comprising an outer wall, the outer wall defining an interior, the blower fan rotatably mounted within the interior, the scroll housing comprising:
 - a spiral portion;
 - an outlet portion generally tangentially aligned with the spiral portion;
 - a cutoff wall extending from the outlet portion into the interior, the cutoff wall comprising a cutoff tip; and
 - a tap aperture defined in the outer wall within a tap region, the tap region defined along a line between the cutoff tip and a joint location between the spiral portion and the outlet portion.
 10. The blower of claim 9, wherein the tap region is centered on a centerpoint of the line, has a long side of approximately 80% of a length of the line, and has a short side of approximately 40% of a length of the line.
 11. The blower of claim 9, wherein the tap region is generally rectangular.
 12. The blower of claim 9, further comprising a pressure measurement assembly connected to the scroll housing.
 13. The blower of claim 12, wherein the pressure measurement assembly comprises a hose connected to the tap aperture.

14. The blower of claim 13, wherein the pressure measurement assembly comprises a pressure sensor connected to the hose and in fluid communication with the tap aperture.

15. A method for diagnosing a restriction in a dryer appliance, the method comprising:

- measuring an initial pressure value in a blower of the dryer appliance at a first predetermined time period after operation of the dryer appliance begins;
- measuring a secondary pressure value in the blower of the dryer appliance during operation of the dryer appliance at a second predetermined time period after measuring the initial pressure value;
- calculating a baseline pressure differential between the secondary pressure value and the initial pressure value;
- measuring a tertiary pressure value in the blower of the dryer appliance at a third predetermined time period after measuring the second pressure value;
- calculating a diagnostic pressure differential between the tertiary pressure value and the initial pressure value; and
- transmitting a restriction signal when the diagnostic pressure differential is greater than the baseline pressure differential.

16. The method of claim 15, wherein the steps of measuring a tertiary pressure value and calculating a diagnostic pressure differential are performed in a continuous loop during operation of the dryer appliance.

17. The method of claim 15, wherein the restriction signal is a warning signal when the diagnostic pressure differential is greater than the baseline pressure differential within a first predetermined range, and wherein the restriction signal is a clear signal when the diagnostic pressure differential is greater than the baseline pressure differential within a second predetermined range greater than the first predetermined range.

18. The method of claim 15, further comprising:

- measuring an install pressure value in the blower of the dryer appliance at the first predetermined time period after operation of the dryer appliance begins in an initial use;
- measuring a subsequent initial pressure value in the blower of the dryer appliance at the first predetermined time period after operation of the dryer appliance begins in a subsequent use;
- calculating a startup pressure differential between the subsequent pressure value and the install pressure value; and
- transmitting a restriction signal when the startup pressure differential is above a predetermined differential level.

19. The method of claim 15, wherein pressure values are taken from a tap aperture defined in an outer wall of a scroll housing of the blower, the tap aperture defined within a tap region, the tap region defined along a line between a cutoff tip and a joint location between a spiral portion and an outlet portion of the scroll housing.

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