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3,417,481

ATTACHMENT FOR DRYERS OR THE LIKE

Filed June 16, 1966

2 Sheets-Sheet 1

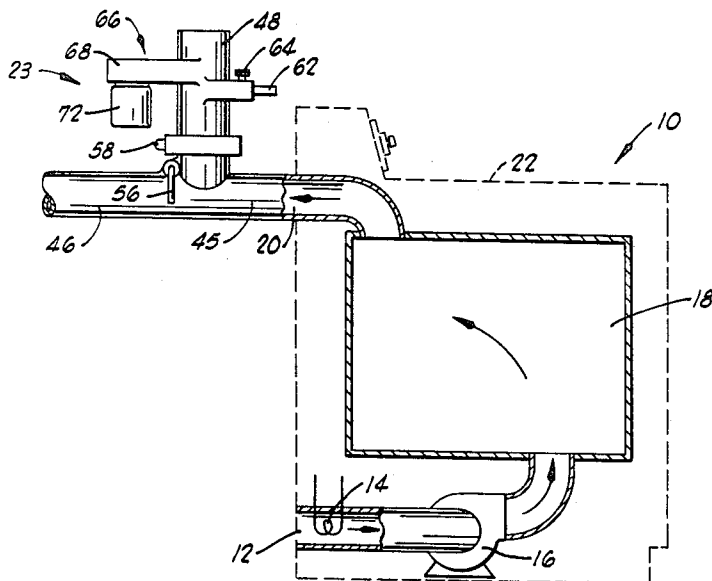


FIG. 1

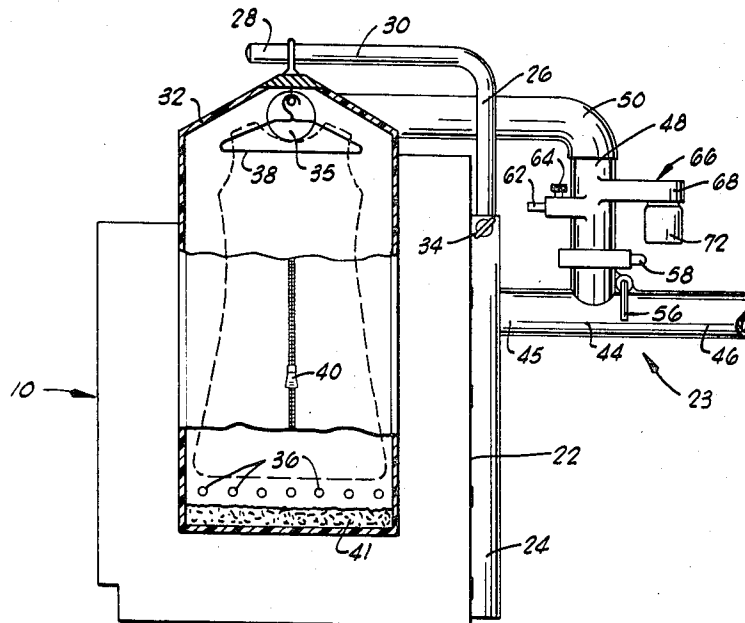


FIG. 2

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2 Sheets-Sheet 2

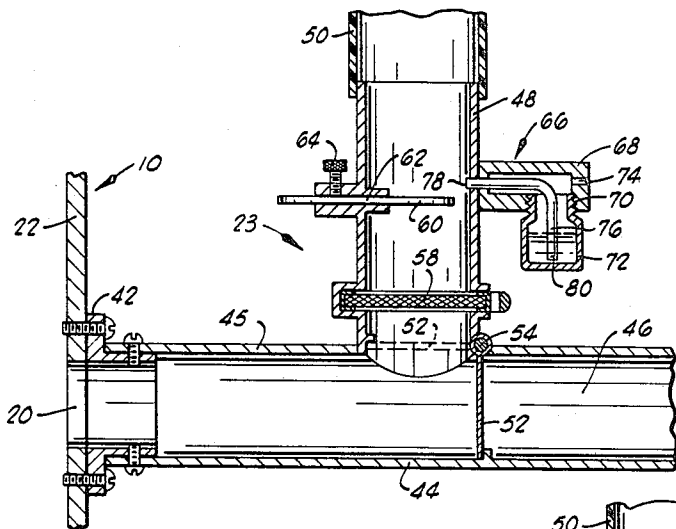


FIG. 4

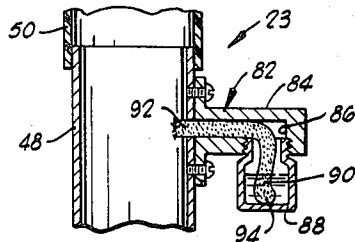


FIG. 4A

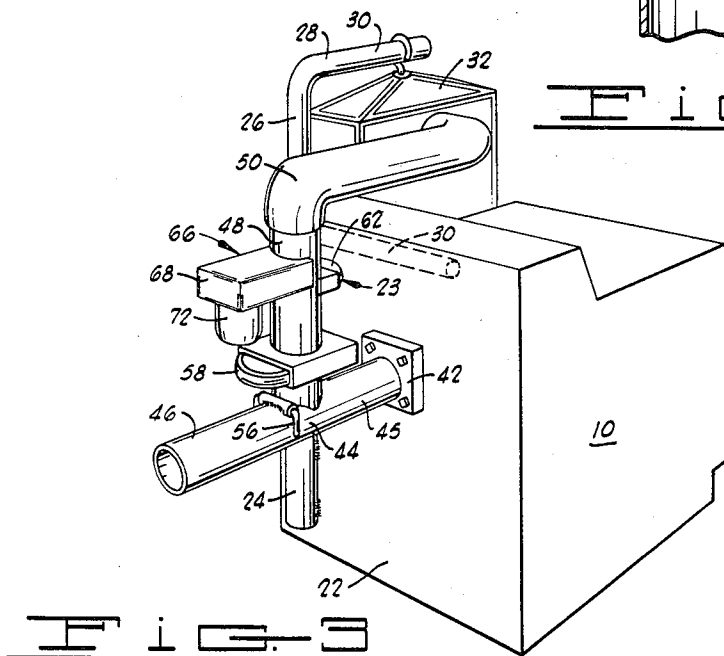


FIG. 3

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ATTACHMENT FOR DRYERS OR THE LIKE

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ABSTRACT OF THE DISCLOSURE

An attachment for clothes dryers for introducing treated air to a treating chamber located exteriorly of the dryer. The attachment includes a bifurcated conduit which can be connected to the hot air exhaust from the dryer, with one of the outlets from this bifurcated conduit connected through a suitable valve means to the means forming the treating chamber. A treating material container is mounted on the outlet of the bifurcated conduit which is connected to the treating chamber, and includes, in association therewith, means for introducing a volatile treating material into a stream of hot air discharged through the outlet from the bifurcated conduit connected to the treating chamber.

This invention relates generally to improved attachments for use in connection with hot air clothes dryers or the like. More particularly, but not by way of limitation, this invention relates to an improved attachment providing an external treating chamber wherein exhaust air from the dryer is utilized for treating clothing and the like.

Various forms of attachments for dryers and the like have been constructed in the past wherein dry air from the dryers is utilized for various purposes. Exemplary of the previously constructed attachments are those illustrated in U.S. Patent No. 3,064,360 issued Nov. 20, 1962, to W. C. Sholin and U.S. Patent No. 3,197,886 issued to C. R. Brame et al. on Aug. 3, 1965. The patent to Sholin illustrates a hair drying attachment that is interconnected with the dryer to utilize exhaust air from the dryer.

The attachment disclosed in the patent to Brame provides an external drying chamber, that is, a clothing bag supported on the dryer for drying items exteriorly of the drying chamber in the dryer. As shown therein, the external drying chamber is connected in communication with the dryer at a point between the hot air blower and the drying chamber located in the dryer, thus, only dry air is supplied to the external drying chamber.

While the described attachments function satisfactorily, it is important to note that the hair drying attachment of Sholin is useful for only the intended purpose, that is, for the purpose of drying hair and the exhaust air from the dryer must be dry when entering the attachment. Also, the attachment illustrated in the Brame et al. patent can be utilized only to supply warm or hot dry air to the external drying chamber.

This invention generally contemplates an attachment for clothes dryers or the like having a drying chamber, an exhaust port located downstream of the chamber, and circulation means for forcing air through the chamber and exhaust port, the attachment comprises: a bifurcated conduit having a common inlet end arranged for connection with the exhaust port on the dryer, a first outlet end in communication with the atmosphere and a second outlet end; valve means operably disposed in the conduit, the valve means including a valve member movable between a position closing the first outlet end and a position closing the second outlet end; means forming a treating chamber located exteriorly of the dryer; the treating chamber including inlet and outlet ports; and, conduit means connecting the second outlet end of the bifurcated conduit and the inlet port of the treating chamber in fluid

2

communication, whereby exhaust air from the dryer is directed through the treating chamber when the valve member is in the position closing the first outlet end of the bifurcated conduit.

One object of the invention is to provide an improved attachment for clothes dryers that can be quickly and easily attached to existing dryers.

Another object of the invention is to provide an improved attachment for clothes dryers or the like wherein various treating materials can be introduced into the attachment for performing treating operations on the clothes.

Another object of the invention is to provide an improved attachment for clothes dryers wherein clothing contained in a treating chamber can be automatically moistened and then dried to remove wrinkles and the like therefrom.

A still further object of the invention is to provide an improved treating attachment for clothes or the like wherein deodorization, mildew proofing, moth proofing, etc. treating materials can be induced into the attachment with the exhaust air from the dryer.

The foregoing and additional objects and advantages of the invention will become more apparent as the following detailed description is read in conjunction with the accompanying drawings wherein like reference characters denote like parts in all views and wherein:

FIG. 1 is a schematic diagram illustrating the circulation and heating system for air in a conventional dryer;

FIG. 2 is a left side view of a conventional dryer having the attachment constructed in accordance with the invention connected therewith;

FIG. 3 is a rear perspective view illustrating the attachment mounted on the dryer;

FIG. 4 is an enlarged, vertical cross-sectional view illustrating, in more detail, the structure of a portion of apparatus of the attachment constructed in accordance with the invention; and,

FIG. 4A is a fragmentary, cross-sectional view illustrating an additional apparatus for introducing treating materials into the attachment.

Referring to the drawing and to FIG. 1 in particular, shown therein in dash lines and generally designated by the reference character 10 is a conventional clothes dryer. The clothes dryer 10 includes an air inlet 12, a heating element 14, which may be either electrical or of the flame-type, a blower or pump 16, a drying chamber 18, which usually encompass a tumbling device (not shown) and an air exhaust port 20. As clearly illustrated therein, the exhaust port 20 is located in the rear wall 22 of the cabinet of the dryer 10. The system illustrated in FIG. 1 is shown schematically and may also include such items as electric motors for driving the blower 16 and various controls for actuating the heating elements and motor in the desired sequence.

As illustrated in FIG. 1 and more clearly in FIGS. 2 and 3, an attachment 23 constructed in accordance with the invention is connected in fluid communication with the exhaust port 20. The attachment 23 includes a tubular member 24 that is attached to the rear wall 22 of the dryer 10.

The tubular member 24 is sized to telescopically receive a vertical portion 26 of a generally L-shaped support rod 28. As clearly illustrated, the support rod 28 also includes a horizontally disposed portion 30 that is connected with a bag 32 forming an external treating chamber. A thumb screw 34 (see FIG. 2) is threadedly connected with the tubular member 24 and is arranged to engage the vertical portion 26 of the support rod 28 whereby the support rod 28 is adjustably retained in the tubular member 24.

Manifestly, the height or location of the horizontal

portion 30 of the support rod 28 is determined by the position of the vertical portion 26 in the tubular member 24. Also, loosening the screw 34 permits the support rod 28 to be telescoped relatively into the tubular member 24 and pivoted therein, whereby the horizontal portion 30 of the support rod 28 can be disposed in the hidden position illustrated in dash lines in FIG. 3.

As shown most clearly in FIG. 2, the bag 32 includes an inlet port 35 located relatively near the upper end thereof and a plurality of exhaust ports 36 located in the bottom of the bag 32 or relatively near the bottom thereof. The bag 32 is arranged to support a plurality of hangers 38 for supporting clothing and the like therein. It will be understood that the bag 32 is preferably constructed from a relatively flexible plastic material such as is common in hanger-type bags. The bag 32 will be provided with a closing device, such as the zipper 40 as is also common in such bags. It will be understood that the bag 32 may be constructed of any material or in any desired configuration suitable to the application to which the bag is to be applied.

As shown in FIG. 2, the bag 32 preferably has the exhaust ports 36 spaced from the bottom thereof. With the ports 36 located as shown, a compartment is formed in the lower end of the bag 32 for receiving a water absorbing material 41, such as a chemical desiccant, towel-ing, or absorbing tissue. The material 41 is preferably of the type that will dry by evaporation.

As shown most clearly in FIG. 3, an adapter member 42 is attached to the rear or back 22 of the dryer 10. The adapter member 42 is aligned with the air exhaust port 20 as shown most clearly in FIG. 4.

A T-shaped or bifurcated conduit 44 has a common end 45 connected with the adapter member 42. A first outlet end 46 thereof is exposed to the atmosphere whereby exhaust air passing therethrough can follow the normal path of exhaust air from such dryers as is well known to those skilled in the art.

The other end 48 of the bifurcated conduit 44 is connected to a plastic tube or hose 50 that has its opposite end connected with the inlet port 35 in the bag 32. Preferably, the hose 50 is releasably connected with the bag 32, whereby it can be quickly and easily disconnected when not in use.

As shown most clearly in FIG. 4, a flapper valve member 52 is pivotally connected with the bifurcated conduit 44 as illustrated at 54. The pivotal connection between the conduit 44 and the valve member 52 includes an operating handle or lever 56 (see FIGS. 2 and 3) so that the valve member 52 is rotatable between a position closing the outlet end 46 of the conduit 44 as illustrated in solid lines in FIG. 4 and a position closing the outlet end 48 of the conduit 44 as illustrated in dash lines in FIG. 4. As shown, one outlet end is open when the other is closed.

A removable filter 58 is disposed in the end 48 of the conduit 44. The filter 58 is optional since most dryers include an internal filter in the exhaust conduit for removing lint, dust, etc.

A restriction member 60 is located in the outlet end 48 of the conduit 44 downstream of the filter 58. An operating member 62 has one end connected with the restriction member 60 and extends through the wall of the outlet end 48. A threaded knob 64 is in threaded engagement with the conduit 44 and is arranged to engage the operating member 62, whereby the restriction member 60 can be adjustably positioned as desired in the end 48.

An induction device generally designated by the reference character 66 is mounted on the end 48 of the conduit 44 as illustrated in FIG. 4. The induction device 66 includes a mounting member 68 having a partially threaded opening 70 extending therethrough. The threaded portion of the opening 70 is sized to receive the threaded neck of a treating material container 72. A vent port 74 extends through the wall of the mounting member 68 pro-

viding communication between the interior of the container 72 and the atmosphere.

A relatively small diameter induction tube 76 is positioned within the mounting member 68 and extends through the wall of the outlet end 48 of the conduit 44. An open end 78 on the tube 76 extending through the outlet end 48 is located relatively adjacent and preferably slightly downstream of the restriction member 60. The opposite end 80 of the induction tube 76 is located near the bottom of a container 72.

The fragmentary view of FIG. 4A illustrates a device 82 that can be utilized with the attachment 23 if desired. The device 82 includes a mounting member 84 connected with the outlet end 48 of the conduit 44 and having a partially threaded opening 86 extending there-through. The threaded portion of the opening 86 is sized to receive the threaded end of a treating material container 88.

A wick 90 extends through the opening 86. One end 92 of the wick 90 is located inside the conduit 44 and is exposed to the air flowing therethrough. A second end 94 of the wick 90 is disposed in the treating material container 88. Thus, it will be apparent that liquid treating materials, such as effervescing deodorants, will be introduced in small quantities into the air flowing through the outlet end 48 of the conduit 44 when the device 82 is used.

OPERATION

The attachment 23, described in detail hereinbefore, may be utilized to perform several different functions in conjunction with the dryer 10. For example, if the dryer 10 is to be used in the normal manner for drying clothes, that is, if wet clothes are to be placed within the drying chamber of the dryer 10 and no use is to be made of the attachment 23, the valve handle 56 is moved to the position wherein the valve member 52 is disposed as illustrated in dash lines in FIG. 2. When the valve member 52 is in this position, exhaust air passing through the exhaust port 20 of the dryer 10 flows through the conduit 44 and out the end 46 thereof to the atmosphere.

If it is desired to remove wrinkles or the like from clean clothing, the clothing is hung on the hangers 38 in the hanger bag 32 as shown in dash lines in FIG. 2. The valve member 52 is moved into the position illustrated in solid lines in FIG. 4, so that exhaust air passing from the dryer 10 flows through the conduit 44 and upwardly through the outlet end 48 thereof.

The attachment 23 may be utilized in two different ways, that is, if wet clothing is to be dried, in addition to removing the wrinkles from the clothing, the clothes are simply inserted in the dryer 10 in the usual manner. The dryer 10 is then placed in operation whereby the relatively moist exhaust air passes from the exhaust port 20 of the dryer 10 through the conduit 44 and the tube 50 into the bag 32. As the moist air passes there-through, the clothes contained in the bag 32 are moistened and then subsequently dried as the clothing in the dryer 10 becomes more dry.

If no clothes are to be dried, wrinkles or the like may be removed from clothing in the bag 32 by filling the container 72 with water and screwing it into the mounting bracket 68. The restriction member 60 is then adjusted to create an increase in velocity of the air flowing through the outlet end 48 of the conduit 44 whereby a small quantity of the water in the container 72 is induced into the air stream. Thus, moist air is passed over the clothing in the bag 32. As the container 72 empties, the air becomes less and less moist, thereby drying the clothing contained in the bag 32.

Similarly, the container 72 may be filled with a deodorant or other treating compositions such as liquid moth proofing or anti-mildew chemicals, whereby clothing contained in the bag 32 are subjected to treatment as the air flows through the conduit 44 into the bag 32.

The device 82 can be utilized alone or simultaneously with the induction device 66. When used simultaneously, it can be appreciated that, for example, a deodorant placed in the container 88 will be introduced through the wick 90 into the attachment 23 and, ultimately, into the bag 32 while moisture or other treating materials are induced into the attachment 23 through the device 66. Thus, it is possible with the attachment 23 to perform several simultaneous treating operations.

From the foregoing detailed description, it is believed apparent that an attachment constructed in accordance with the invention promotes the versatility of the dryer 10. That is, the dryer 10 may be utilized not only for the normal purpose of drying wet clothes, but also to perform various treating operations on clothing contained within the bag 32.

With the recent advent of wash and wear clothing, it is believed that the attachment provides many advantages in that the clothing does not have to be tumbled to be dried, but can be hung so that it will be extremely smooth and free of wrinkles as the drying process takes place. The desiccant 41 contained in the bottom of the bag 32 will effectively prevent water from wet clothing or the like dripping onto the floor below the bag 32.

Having described but a single embodiment of the invention, it will be understood that many changes and modifications can be made thereto without departing from the spirit of the invention or from the scope of the annexed claims.

What I claim is:

1. An attachment for clothes dryers or the like having a drying chamber, an exhaust port located downstream of said chamber, and circulation means for forcing air through the chamber and exhaust port, said attachment comprising:

a bifurcated conduit having a common inlet end arranged for connection with the exhaust port on the dryer, a first outlet end in communication with the atmosphere, and a second outlet end;

valve means operably disposed in said conduit, said valve means including a valve member movable between a position closing said first outlet end and a position closing said second outlet end;

means forming a treating chamber located exteriorly of the dryer, said treating chamber including inlet and outlet ports;

conduit means connecting the second outlet end of said bifurcated conduit and the inlet port of said treating chamber in fluid communication whereby exhaust air from the dryer is directed through said treating chamber when said valve member is in the position closing the first outlet end of said bifurcated conduit;

a treating material container positioned adjacent said second outlet end; and

means for conveying a treating material from said treating material container to the interior of said bifurcated conduit adjacent said second outlet means.

2. The attachment of claim 1 and also including means for introducing treating material in said conduit, said means including a mounting member connected with the second outlet end of said conduit, a treating material container, and a wick having one end disposed in said second outlet end and the other end located in said treating material container.

3. The attachment of claim 1 and also including: restriction means located in the second outlet end of said bifurcated conduit, said restriction means being adjustable to vary the flow area extending there-through whereby the velocity of said exhaust air is varied; and,

induction means including a treating material container connected in communication with said second outlet end adjacent said restriction means whereby an increase in exhaust air velocity caused by said

restriction means induces treating material from said container into said exhaust air stream and, thus, into said treating chamber.

4. The attachment of claim 3 wherein said restriction means includes:

a restriction member located in the second outlet end of said bifurcated conduit; and,

an operating member connected with said restriction member and operably interconnected with said bifurcated conduit, whereby said restriction member can be positioned as desired in said second outlet end to produce the required exhaust air velocity to induce the treating material into said exhaust air stream.

5. The attachment of claim 4 wherein

said induction means also includes

a mounting member releaseably connecting said container with said bifurcated conduit, and

a relatively small diameter induction tube extending through said mounting member into said container and having one end disposed adjacent the inner periphery of said bifurcated conduit downstream of said restriction means and the other end disposed in said container;

the inlet port in said means forming the treating chamber being located adjacent a top end portion thereof and said outlet ports being located adjacent a bottom end portion thereof; and,

said attachment also includes

a tubular mounting bracket adapted to be connected to the back of the dryer,

a generally L-shaped support member having a vertically disposed portion sized to slidably fit into said tubular mounting bracket and a horizontally disposed portion supportingly engaging said means forming the treating chamber, and

connection means releaseably connecting said support member and mounting bracket whereby said support member can be telescoped and pivoted relative to said mounting bracket into a relatively hidden position behind the dryer when not in use supporting the treating chamber.

6. The attachment of claim 3 wherein said induction means also includes:

a mounting member releaseably connecting said container with said bifurcated conduit; and,

a relatively small diameter induction tube extending through said mounting member into said container and having one end disposed adjacent the inner periphery of said bifurcated conduit downstream of said restriction means and the other end disposed in said container.

7. The attachment of claim 6 and also including a desiccant located in the bottom end portion of said means forming the treating chamber.

8. The attachment of claim 1 and also including:

a tubular mounting bracket adapted to be connected to the back of the dryer;

a generally L-shaped support member having a vertically disposed portion sized to slidably fit into said tubular mounting bracket and a horizontally disposed portion supportingly engaging said means forming the treating chamber; and,

connection means releaseably connecting said support member and mounting bracket whereby said support member can be telescoped and pivoted relative to said mounting bracket into a relatively hidden position behind the dryer when not in use supporting the treating chamber.

9. An attachment for clothes dryers or the like having a drying chamber, an exhaust port located downstream of said chamber, and circulation means for forcing air through the chamber and exhaust port, said attachment comprising:

means forming a treating chamber located exteriorly of

7

the dryer said treating chamber including inlet and outlet ports;

conduit means having one end arranged to be connected with the exhaust port of the dryer and having the other end connected with the inlet port in said treating chamber, whereby exhaust air from said dryer flows through said conduit means into said treating chamber;

restriction means located in said conduit means, said restriction means being adjustable to vary the flow area through said conduit means thereby varying the velocity of exhaust air flowing therethrough; and,

induction means including a treating material container connected in communication with said conduit means, said induction means being located adjacent said restriction means whereby an increase in air velocity caused by said restriction means induces treating material from said container into said exhaust air stream and, thus, into said treating chamber.

10. The attachment of claim 9 wherein said induction means also includes:

a mounting member releaseably connecting said container with said bifurcated conduit; and,

a relatively small diameter induction tube extending through said mounting member into said container and having one end disposed adjacent the inner periphery of said bifurcated conduit downstream of said restriction means and the other end disposed in said container.

11. The attachment of claim 10 wherein said restriction means includes

a restriction member movably located in the second outlet end of said bifurcated conduit, and an adjusting member connected with said restriction member and operably interconnected with said bifurcated conduit, whereby said restriction member can be positioned in said second outlet end to produce the required exhaust air velocity

8

to induce the treating material into said exhaust air stream; and,

said attachment also includes

a tubular mounting bracket adapted to be connected to the back of the dryer,

a generally L-shaped support member having a vertically disposed portion sized to slidably fit into said tubular mounting bracket and a horizontally disposed portion supportingly engaging said means forming the treating chamber, and

connection means releaseably connecting said support member and mounting bracket whereby said support member can be telescoped and pivoted relative to said mounting bracket into a relatively hidden position behind the dryer when not in use to support the treating chamber.

References Cited

UNITED STATES PATENTS

3,256,616	6/1966	McGoldrick	34—91
2,389,433	11/1945	Hough	34—87
3,064,360	11/1962	Sholin	34—91
2,762,133	9/1956	Leclabart	34—72
2,831,268	4/1958	Cox	34—151 XR
2,850,810	9/1958	Lyons	34—163
2,983,050	5/1961	Alaback	34—90
3,034,221	5/1962	Tuck et al.	34—80 XR
3,197,886	8/1965	Brame et al.	34—90

FOREIGN PATENTS

1,169,238 France.

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U.S. Cl. X.R.

34—90, 163