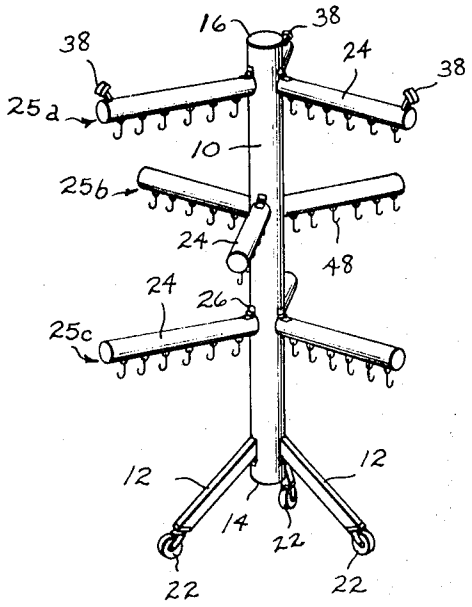
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COLLAPSIBLE CLOTHES DRYER

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Fig. 1



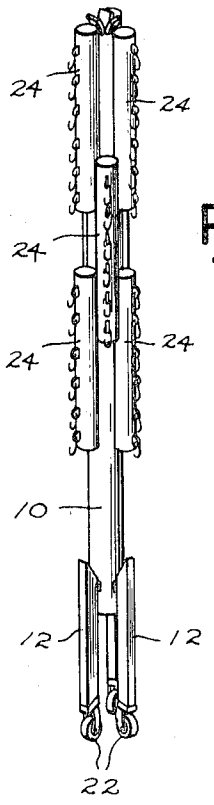


Fig. 2

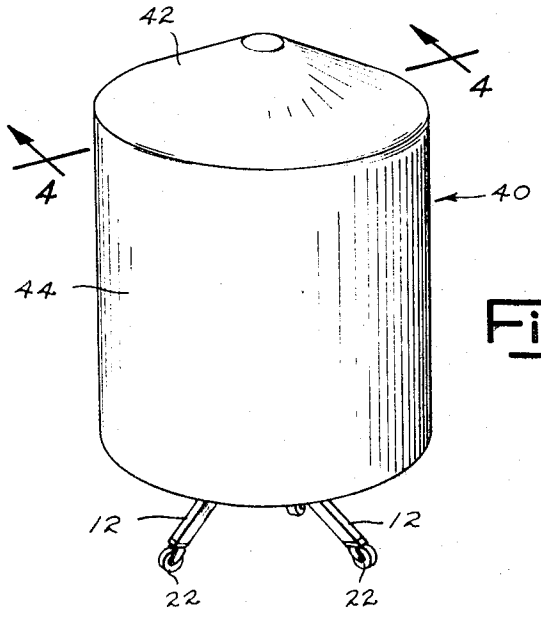


Fig. 3

INVENTOR.
JOHN GLOWACKI

BY
Oltsch & Knoblock

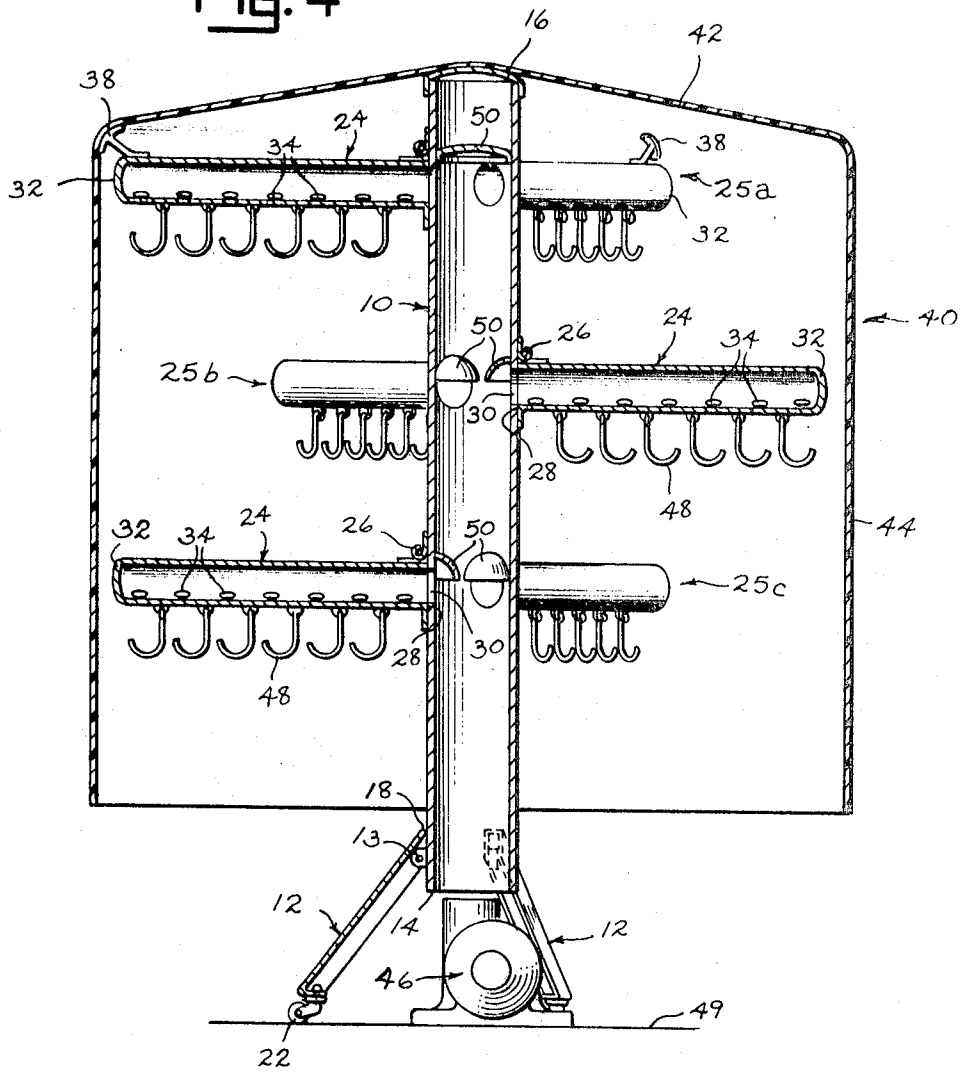
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COLLAPSIBLE CLOTHES DRYER

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Fig. 4



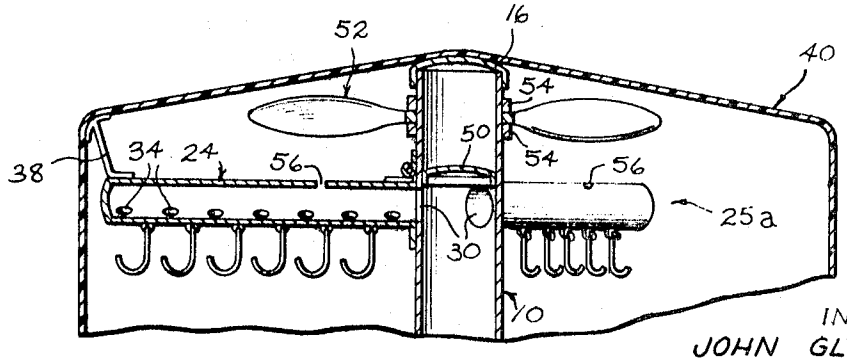


Fig. 5

INVENTOR.
JOHN GLOWACKI

BY
Oltorh & Knoblorh

ATTORNEYS

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3,626,602

COLLAPSIBLE CLOTHES DRYER

John Glowacki, 425 N. Euclid Ave.,
Benton Harbor, Mich. 49022

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Int. Cl. F26b *13/00*
U.S. Cl. 34—151 11 Claims

ABSTRACT OF THE DISCLOSURE

A collapsible clothes dryer having a vertically oriented central duct in which a plurality of clothes supporting ducts project laterally outwardly therefrom. The clothes supporting ducts are pivotally connected to the central duct so as to be shiftable from their laterally projecting position to a position generally paralleling the central duct. Each clothes supporting duct has one end in communication with an opening in the central duct when positioned in its laterally projecting position and includes a plurality of openings which extend longitudinally along the clothes supporting duct. Means are provided for introducing heated air into the central duct. The heated air enters the clothes supporting ducts and passes out the openings therein to cause drying of the clothing carried by the clothes supporting ducts. A flexible hood is positioned over the clothes supporting ducts and serves to retain the heat from the air which passes out the openings in such ducts.

SUMMARY OF THE INVENTION

This invention relates to a clothes dryer and has specific application to a clothes dryer which can be collapsed and conveniently stored when not in use.

In this invention a central duct is provided with one end thereof preferably closed. A plurality of clothes supporting ducts or tubular arms project laterally from the central duct at longitudinally spaced intervals along the duct. Means are provided for pivotally connecting each clothes supporting duct to the central duct so as to enable each clothes supporting duct to be swung from its laterally projecting position when in use to a position generally paralleling the central duct when the dryer is stored. Each clothes supporting duct has one end in communication with an opening in the central duct when positioned in its laterally projecting position. The central duct is supported in an upright position when the dryer is in use with its closed end uppermost. Means is provided for introducing heated air into the central duct which passes into the clothes supporting ducts and out the openings therein. A flexible hood, which can be conveniently folded and stored, is preferably positioned over the clothes supporting ducts and serves as a means for retaining the heat from the air which is emitted from the openings in the clothes supporting ducts.

When it is desired to store the dryer between periods of use, the hood is removed from the dryer and folded. The clothes supporting ducts are then folded against the central duct so as to provide a compact unit which can be conveniently stored in a minimum of space with the folded cover. The dryer of this invention would have application in those homes having a minimum of available living space. This device would also have application for hunting, fishing and skiing lodges in which the dryer may be quickly assembled and utilized to dry clothing and then disassembled and packed when its usage is not desired. The means utilized to provide the drying air can be an integral heater and blower unit which may be gasoline or electrically powered.

Accordingly, it is an object of this invention to provide a clothes dryer which is of economical manufacture and which can be collapsed and conveniently stored in a minimum of space.

Another object of this invention is to provide a collapsible dryer for clothes, including gloves, shoes and boots, which is of efficient and simple operation.

Still another object of this invention is to provide a collapsible clothes dryer which can be utilized at hunting, fishing, skiing and other type lodges and recreational places and which can be operated upon battery or gasoline power.

Other objects of this invention will become apparent upon a reading of the invention's description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of one embodiment of the clothes dryer of this invention.

FIG. 2 is a view of the clothes dryer of FIG. 1 shown in collapsed form.

FIG. 3 is a perspective view of the clothes dryer of FIG. 1 having a hood mounted thereover.

FIG. 4 is a sectional view taken along line **4—4** of FIG. 3.

FIG. 5 is a fragmentary sectional view of the clothes dryer in FIG. 4 shown in modified form.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The preferred embodiments illustrated are not intended to be exhaustive or to limit the invention to the precise forms disclosed. They are chosen and described in order to best explain the principles of the invention and its application and practical use to thereby enable others skilled in the art to best utilize the invention.

The embodiment of the clothes dryer illustrated in FIGS. 1–4 includes a central tubular member or duct **10** which is supported when the dryer is in use in an upright orientation by legs **12** located adjacent the lower end **14** of the duct. The upper end **16** of the duct **10** is preferably capped. Legs **12** are preferably in a tripodic arrangement and connected to duct **10** so as to be foldable into a position generally paralleling duct **10** when the dryer is nto in use. The means of attaching legs **12** to duct **10** can assume any of a variety of constructions and may consist of hinges **13** interconnecting the lower end **14** of duct **10** to the upper end portions of legs **12.** Each hinge **13** is spaced from the upper edge **18** of its connected leg **12** so as to enable the lower end portion of the leg to be swung outwardly and the leg angled, as illustrated in FIG. 2, with upper leg edge **18** abutting the side of duct **10.** To enable the dryer to be moved from location to location while standing, each leg **12** may have a caster **22** attached to its lower end.

A plurality of tubular arms or ducts **24** project laterally outwardly from duct **10.** Each duct **24** is pivotally connected to duct **10** by a hinge **26** or similar attachment means at end edge **28** so as to permit the duct to be swung between its operative laterally projecting position with end edge **28** thereof abutting the side wall of duct **10** as illustrated in FIG. 1 and a collapsed position generally paralleling duct **10** as illustrated in FIG. 2. The opening in end **28** of each duct **24** registers with an opening **30** in duct **10** when duct **24** is in its laterally projecting position. The opposite end **32** of each duct **24** is preferably capped. At least one and preferably two or more rows of openings **34** extend longitudinally along the lower side of each duct **24.** Although rows of openings **34** are preferred, other type opening means, such as longitudinally extending slots, may be utilized in ducts **24.**

Ducts **24** are preferably of equal length and are divided into two or more groups spaced longitudinally

along duct **10**. The ducts **24** in each such group lie radially disposed and in coplanar relationship about the axis of duct **10**. In the illustrated embodiment of this invention, there three groups **25***a, b* and *c* of ducts **24** with each such group consisting of three equiangularly spaced ducts or arms lying in a plane perpendicular to the axis of duct **10**. The ducts **24** of the middle group **25***b* of ducts are preferably positioned out of angular alignment with the other two groups **25***a* and **25***c* of ducts **24**.

The ducts **24** in the uppermost group **25***a* of ducts are preferably inwardly spaced from upper end **16** of duct **10** with each such duct **24** carrying a support **38** at its outer end **32**. A hood **40** having enclosed top **42** and a depending skirt portion **44** is positioned over upper end **16** of duct **10** and around ducts **24** when duct **10** is supported in its upright orientation with arms **24** thereof projecting laterally outwardly. Hood **40** is preferably constructed from a flexible fireproof material and has its top **42** supported by upper end **16** of duct **10** and supports **38** of ducts **24** in duct group **25***a* with skirt portion **44** thereof encircling, preferably with clearance, duct groups **25***b* and *c*. A combined heater element and blower unit **46** is positioned so as to direct heated air into duct **10** at the lower end **14** thereof and upwardly into the duct. The heated air passes through openings **30** in duct **10** and into ducts **24** where it exits through duct openings **34**. The heater element and blower unit may consist of an electrical heating unit combined with an electrically powered centrifugal blower, or a gasoline powered blower utilized in conjunction with a gas or oil actuated heating unit. The heater element and blower unit **46** can rest upon floor **49** below the lower end **14** of duct **10**, as illustrated, so as to direct the air directly up through the interior of duct **10**. As an alternative, the lower end **14** of the duct may be capped and a flexible hose attached between the lower end of duct **10** and unit **46** for directing heated air from the heater and blower unit which may be positioned within the near vicinity of duct **10**. Clothes may be draped over ducts **24** or suspended from hangers or drying racks which are supported by hooks **48** attached to ducts **24**.

Heated air in passing through duct **10** and into ducts **24** exits through openings **34** in ducts **24** and passes over and around the clothes, thereby causing the drying thereof. To assist in directing the air flow into ducts **24**, a plurality of baffles **50** may be connected within duct **10** and positioned adjacent openings **30** therein. Hood **40** serves as a retainer for the heated air as it is emitted from ducts **10**, thus accelerating the drying of the clothes. The heated air escapes from the open bottom of hood **40** and causes skirt portion **44** of the hood to expand and be held out of contact with the articles of clothing supported by ducts **24**.

In order to promote circulation of the air within hood **40**, a fan **52** (see FIG. 5) may be journaled about duct **10** between upper end **16** of the duct and upper duct group **25***a*. Fan **52** is supported between spaced collar members **54** which are suitably secured to duct **10**. The ducts **24** of upper duct group **25***a* have openings **56** which are formed in their upper surfaces and which are positioned under the vane portions of fan **52**. As air is forced upwardly into duct **10** and outwardly into extended ducts **25** by blower units **46**, a sufficient amount of the air is emitted through openings **56** and caused to impinge upon fan **52**, thus causing the rotation of the fan. As fan **52** rotates, it aids in the circulation of the air within hood **40**. As an alternative to providing a combined heater and blower unit for the dryer, the heating elements can be of an electrical type which are arranged within duct **10**. With the heating elements located within duct **10**, a blower need only be provided to force air along the interior of the duct in heat transferring contact with the heating elements. In this manner, the air is heated within duct **10** and then passes outwardly through ducts **24**.

The dryer may be stored when not in use by removing hood **40** and swinging ducts **24** and support legs **12** into their collapsed positions as shown in FIG. 2. The hood is then folded, and duct **10** with folded ducts **24** and legs **12**, heater unit **46**, and hood **40**, conveniently stored. When it is desired to use the dryer, legs **12** of the dryer are opened so as to cause duct **10** to be supported in its upright orientation and ducts **24** swung into their laterally projecting position. Hooks **48** may then be applied to the ducts **24** and the clothes and other material desired to be dried attached thereto. Once the clothes are in position, hood **40** is positioned over duct **10** and heater unit **46** located under duct **10**. The heater unit is then started so as to cause heated air to travel upwardly through duct **10** into ducts **24** and around the clothing, in the hooded enclosure. For convenience, heater unit **46** may be provided with a timer which regulates its operating time.

It is to be understood that the invention is not to be limited to the details herein given, but may be modified within the scope of the appended claims.

What I claim is:

1. A collapsible clothes dryer comprising a central elongated duct, a plurality of tubular arms carried by said duct and each projecting laterally from said duct, means pivotally connecting said arms to said duct for enabling each arm to be swung from its laterally projecting position to a position generally paralleling said duct, each arm adapted to support an article of clothing when in its said laterally projecting position, said duct having a plurality of openings in the side wall thereof, each arm having one end portion in communication with one of the openings in said duct side wall when in its said laterally projecting position and having opening means extending longitudinally therealong, means supporting said duct in an upright orientation, means for introducing heated air into said duct whereby said air passes through the openings in said duct side wall into said arms and out the opening means in said arms, and a hood removably positioned over and encircling said arms.

2. The dryer of claim **1** wherein said duct has upper and lower end portions, said hood being supported at least in part by the upper end portion of said duct and including a skirt portion encircling said arms.

3. The dryer of claim **1** wherein said hood is flexible and includes a skirt portion encircling said arms and an upper wall portion positioned above said arms.

4. The dryer of claim **3** wherein at least one of said arms is located adjacent the upper end of said duct and includes means for supporting said hood.

5. The dryer of claim **1** wherein said duct supporting means includes legs connected to the lower end portion of the duct and pivoted relative to said duct between a supporting position and a folded position.

6. The dryer of claim **1** and including means carried by said duct within said hood for causing circulation of said air as it issues from the opening means in said arms.

7. The dryer of claim **6** wherein said means for causing circulation of said air includes a fan rotatably mounted to said duct adjacent the upper end thereof.

8. The dryer of claim **7** wherein at least one of said arms is located adjacently below said fan and has an opening therein located so as to direct a portion of the air flowing into said one arm against said fan to cause the rotation thereof.

9. The dryer of claim **1** wherein the lower end of said duct is open and said means for introducing air into said duct is positioned so as to direct said air into said lower duct end.

10. The dryer of claim **1** wherein said one end portion of each arm abuts said duct when its arm is in its said laterally projecting position, a hinged connector secured to said one end portion of each arm and said duct enabling each arm to be swung between its said laterally projecting position and its duct paralleling position.

11. A collapsible clothes dryer comprising an elongated duct closed at one end and having a plurality of open-

ings therein, a plurality of arms for supporting clothing projecting laterally from said duct at longitudinally spaced intervals along said duct, means pivotally connecting each arm to said duct so as to enable each arm to be swung from a laterally projecting position to a position generally paralleling said duct, each arm having one end in registry with one of said openings in said duct when in its laterally projecting position, each arm having a plurality of openings extending longitudinally therealong, means supporting said duct in an upright orientation with said closed end uppermost, means for introducing air into said duct at the opposite end of said duct from said closed end so as to cause said air to enter said duct and

pass therethrough into said arms and thereafter out the openings in said arms into the proximity of the clothing supported by said arms.

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CARROLL B. DORITY, JR., Primary Examiner

U.S. Cl. X.R.

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