U. MOLINARI & E. VALOPPI.

CLOTHES DRIER.

APPLICATION FILED MAY 22, 1912.

1,055,938. Patented Mar. 11, 1913.

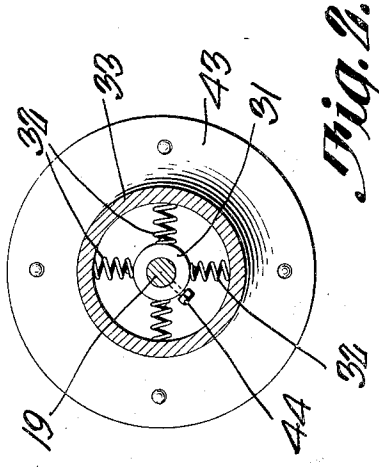


Fig. 2.

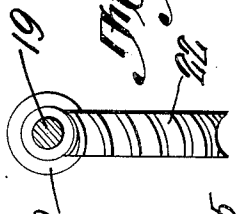


Fig. 3.

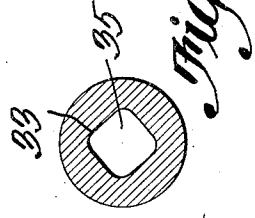


Fig. 4.

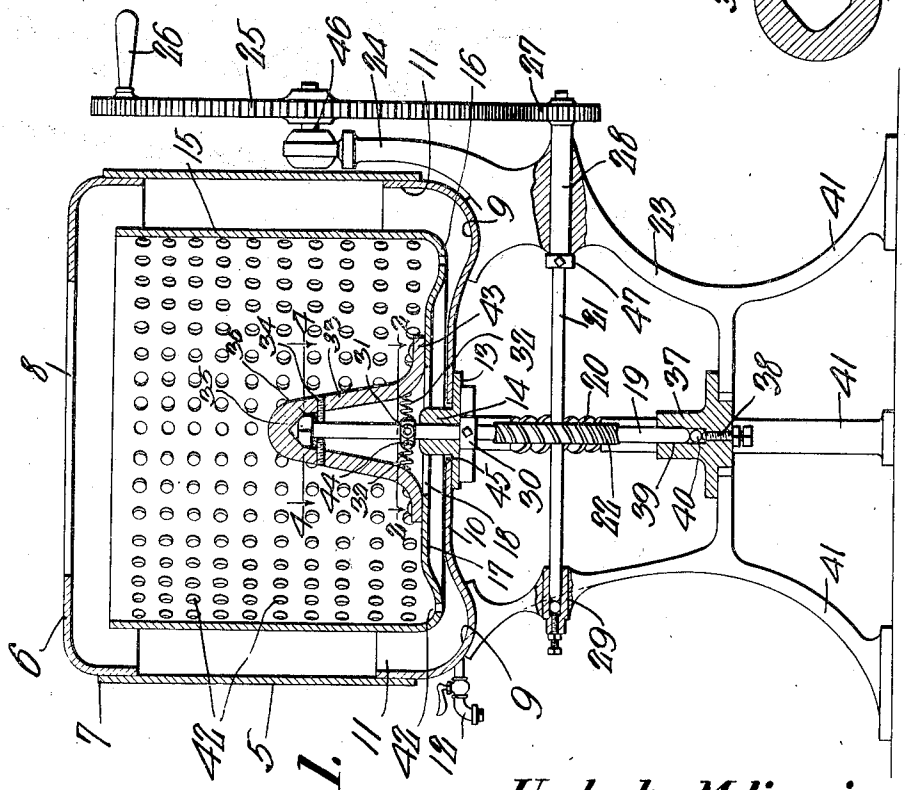


Fig. 1.

Witnesses

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UMBERTO MOLINARI AND EUGENE VALOPPI, OF SCRANTON, PENNSYLVANIA.

CLOTHES-DRIER.

1,055,938. Specification of Letters Patent. Patented Mar. 11, 1913.

Application filed May 22, 1912. Serial No. 699,046.

To all whom it may concern:

Be it known that we, UMBERTO MOLINARI and EUGENE VALOPPI, citizens of the United States, residing at Scranton, in the county of Lackawanna, State of Pennsylvania, have invented a new and useful Clothes-Drier, of which the following is a specification.

This invention relates to clothes driers, and has for its primary object to provide a clothes drier adapted particularly for domestic purposes and which shall remove the water and moisture from the clothes by centrifugal force in order to dry the clothes.

A further object of the present invention is to provide for certain improvements in centrifugal clothes driers, and to provide a machine of this character which is simple and convenient to operate for effectively drying the clothes, and into which the clothes and other textiles may be inserted after they have been washed to thoroughly dry the clothes and textiles without wringing same, hanging same upon a line to dry or without otherwise drying the clothes.

To the above and other ends, this invention resides in the novel construction and combination of parts elicited in the following description and pointed out in the appended claim, it being understood that this machine is susceptible of alterations or deviations in its details within the scope of the appended claim without departing from the spirit of the invention.

The invention is illustrated in its preferred embodiment in the accompanying drawings, wherein similar reference characters denote corresponding parts, and wherein,—

Figure 1 is an elevation of the machine, parts being broken away and parts being shown in section. Fig. 2 is an enlarged sectional detail taken on the line 2—2 of Fig. 1. Fig. 3 is a fragmental view on an enlarged scale of a detail. Fig. 4 is a sectional detail on an enlarged scale taken on the line 4—4 of Fig. 1.

Referring specifically to the drawings, the numeral 5 designates a cylindrical casing, which is preferably constructed of sheet metal of suitable character, and which has a bottom 10, this bottom being preferably stamped from sheet metal and separate from the casing 5 with its edges upturned to provide an annular flange 11. This flange 11 enters the lower end of the casing 5 and is secured thereto in any suitable manner, and this bottom 10 is provided with an axial or central opening 45 and is depressed around the periphery thereof to provide an annular channel 9. The casing 5 is supported on a frame or under structure 23, which frame is secured to the casing and which is provided with a plurality of legs 41.

A cylindrical basket 15 is arranged within the casing 5 and is disposed concentrically therein in a spaced relation with the sides and bottom of the casing, the bottom of the basket being depressed around the periphery thereof to provide an annular channel 16, which channel is arranged above the channel 9 of the casing. The basket 15 is provided with numerous perforations 42 in the sides thereof, which perforations extend into the depressed portion of the bottom, and the bottom of the basket is also provided with an axial or central opening 18. The sides of the basket 15 and the channel 16 thereof in being provided with perforations are thereby made foraminous. A socket 33 is secured to the bottom of the basket over the opening 18 therein, this socket 33 having a lower external flange 43 which is riveted or otherwise secured to the bottom of the basket, and the said socket 33 tapering toward its upper end.

A bearing 14 passes through the opening 45 in the bottom of the casing and has an annular flange 13 on its lower end, which flange is secured to the bottom of the casing. A vertical shaft 19 passes through the bearing 14, or is journaled through the bearing, and has a head 35 on its upper end engaging the end of the socket 33. The head 35 is non-circular in outline or contour, and the socket 33 is of a similar contour at its upper end to receive the head 35 and prevent a rotation of the socket 33 relative to the shaft 19. The head 35, however, has the upper side thereof curved or rounded to permit the socket 33 to swing upon the end of the shaft. A washer 36 is arranged on the shaft 19 and abuts against or bears against the under side of the head 35, and screws or other members 34 are engaged through the sides of the socket 33 and pass under the washer 36 to support the washer. The washer 36 and the screws 34 provide means for engaging the socket upon the shaft to prevent the basket from being lifted from the shaft, and in addition to retaining the

socket on the shaft, the screws or adjustable members are designed to contact with the shaft for limiting the swinging movements of the basket. Thus by adjusting the screws 34 the swinging movements of the basket may be limited. A collar 31 is also arranged on the shaft 19 above the bearing 14 and within the socket 33, the said collar 31 having a set screw 44 for engaging the shaft to retain the collar in position, and a plurality of coiled springs or resilient members 32 are disposed between the collar 31 and the sides of the socket 33, the ends of the said springs being secured to the said collar and socket. A bearing 37 is supported by the frame 23 and has an upper socket 39 receiving the lower end of the shaft 19. A ball 40 is disposed in the socket 39 below the end of the shaft 19, and a jam bolt 38 is screw-threaded into the lower end of the bearing 37 to enter the bottom of the socket 39, for the purpose of raising the ball 40 against the end of the said shaft to form an anti-frictional support for the shaft. The collar 30 is secured on the shaft 19 below the bearing 14 and which rests or abuts against the bearing 14 to prevent the upward movement of the shaft. This shaft 19 may be rotated by a mechanism to be directly described.

The frame 23 is provided with opposite bearings 28 and 29, the former being an elongated bearing and the latter being an anti-frictional bearing, and a horizontal shaft 21 passes through the bearing 28 and enters the bearing 29. This shaft 21 has a worm wheel 22 mounted thereon and fixed thereto, which worm wheel meshes with a worm 20 fixed to the upright shaft 19, the worm 20 being of a large pitch. The pinion 27 is secured to the shaft 21 adjacent the outer end of the bearing 28, and a gear wheel 25 which meshes with the pinion 27 is supported at the side of the casing 5 by means of an arm 24 projecting upward from the frame 23 and carrying a shaft 46 upon which the gear wheel 25 is mounted. This gear wheel 25 is provided with a handle 26 for convenience in rotating same, and the shaft 21 has a collar 47 secured thereto adjacent the inner end of the bearing 28 to retain the said shaft in position. Thus when the gear wheel 25 is rotated, rotary motion is imparted to the vertical shaft 19, in which event the basket 15 will be rotated therewith.

The casing 5 is also provided with an inturned annular flange 6 at its upper end, which flange is secured to the said casing by means of an annular depending flange 7 which fits into the upper end of the casing and is secured thereto in any suitable manner. The flange 6 projects over the upper edge of the basket 15 and provides a contracted opening 8 into the basket 15. A drain cock 12 is secured to the casing to permit the channel 9 to be drained as will be hereinafter described.

In operation, the clothes and textiles after being washed are inserted into the basket 15 through the opening 8, and the gear wheel 25 is then rotated manually which will cause the basket 15 to rotate rapidly, which rotation will cause the moisture and water to be thrown outwardly by centrifugal force against the casing 5. This operation is continued for a period, which in practice is about twenty minutes, and the clothes and textiles will then be free from moisture. The socket 33 prevents the clothes from becoming entangled with the shaft 19, and a spring 32 tends to maintain the basket 15 in vertical position, but permits the basket to yield laterally upon the head 35 as a fulcrum. The water passes from the basket 15 through the apertures 42 and enters the channel 9 in the casing, in which event, the water may be drawn from the casing by opening the drain cock 12 to permit the water to flow from the channel 9. Any water or moisture which might accumulate at the central portion of the bottom 10 will be shed into the channel 9, and the channel 16 of the basket will also cause the water on the bottom of the basket to be shed into the said channel, the water then passing through the channel through the perforation 42 into the channel 9. The gear wheel 25 being of a diameter considerably larger than the pinion 27, and the worm 20 having a comparatively large pitch, provides for the rotation of the basket 15 on a ratio much greater than the rotation of the gear wheel 25. The flange 6 prevents the clothes from entering the casing 5. This machine may therefore be employed for rapidly drying clothes in a convenient and effective manner.

It is understood that the shaft 19 may be driven in various manners, or the same may be driven by an electric or other motor.

Various materials may be employed in the construction of this machine and the dimensions and proportions may be altered as may be desired or essential, and it is understood that this machine may be otherwise altered or modified in its details within the scope of the appended claim without departing from the spirit of the invention.

Having described the invention, what is claimed as new is:—

In a centrifugal clothes drier, a casing, a basket therein having an opening in its bottom, a conical socket secured to the basket over the opening, an upright rotary shaft journaled through the bottom of the casing and having a head at its upper end engaging within the end of the socket, the sides of the head being of non-circular contour and the top of the head being rounded, the socket embracing the top and sides of the

head in a manner to permit the basket to swing slightly in various directions on the head of the shaft, a washer on the shaft below the head, and screws threaded inwardly through the socket below the washer to support the washer directly under the head.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

UMBERTO MOLINARI.
EUGENE VALOPPI.

Witnesses:
JAMES DOMANICO,
A. EDWARDS.