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A. W. FARRELL

RINSING AND BLUING ATTACHMENT FOR ROTARY DRIERS

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Fig. 1

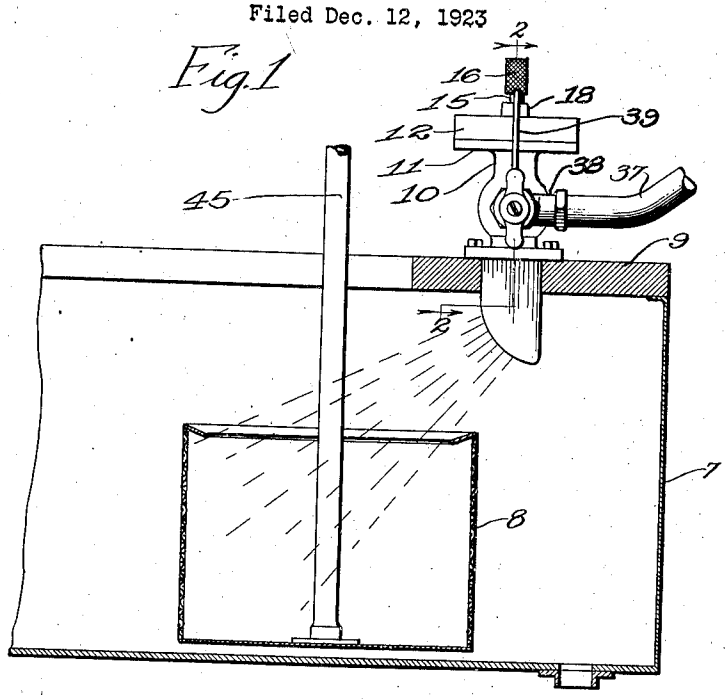


Fig. 2

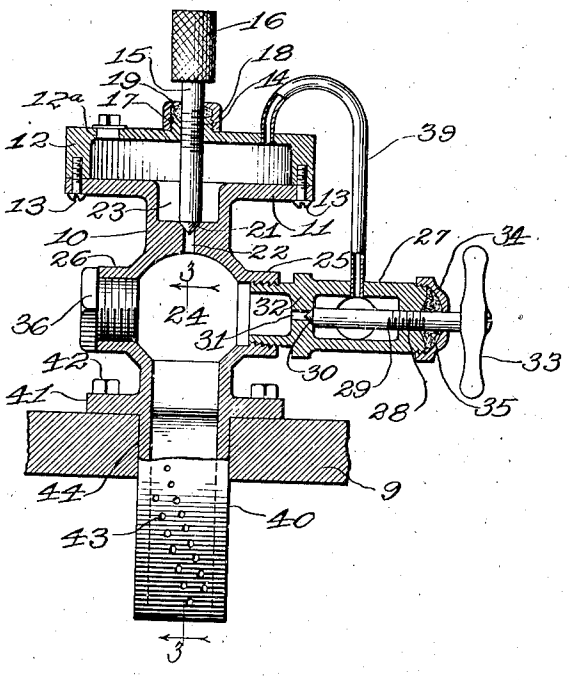
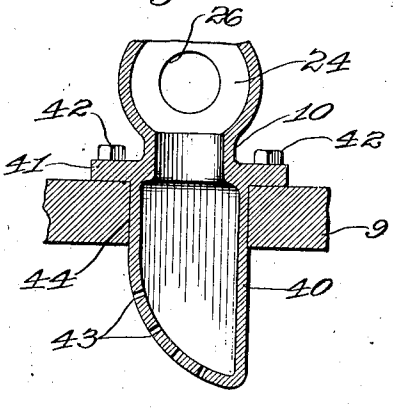


Fig. 3



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UNITED STATES PATENT OFFICE.

ARCHIE W. FARRELL, OF CHICAGO, ILLINOIS.

RINSING AND BLUING ATTACHMENT FOR ROTARY DRIERS.

Application filed December 12, 1923. Serial No. 680,189.

To all whom it may concern:

Be it known that I, ARCHIE W. FARRELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rinsing and Bluing Attachments for Rotary Driers, of which the following is a specification.

This invention relates, generally, to means for rinsing and bluing fabrics, such as, wearing apparel, table linen, sheets, pillow cases, and the like, after they have been thoroughly washed, but particularly to a device for the above named purposes, which is designed for use in connection with a rotary or centrifugal drier for clothes and the like, by preference of the type disclosed in my co-pending application for Letters Patent, Serial Number 602,288, filed November 20, 1922; in which the container for the clothes or fabrics to be dried thereby, is mounted on the lower end of a vertically disposed rotatable shaft so as to rotate therewith, and has its upper end open for the insertion of the articles to be dried and its walls perforated for the passage of water extracted from the articles by centrifugal action incident to the rapid rotation of the container and its supporting shaft. This foraminous container is mounted within another suitably mounted tub or container for rotation therein, used to restrain and temporarily hold the extracted water.

My rinsing and bluing attachment for rotary driers has for one of its objects the provision of a simple, effective and automatically operable device for rinsing, and when desired, for bluing the fabrics or clothes while they are in the drying or perforated container, thereby enabling the centrifugal action to be utilized in disseminating or diffusing the water supplied thereto from the attachment and thus more quickly and thoroughly rinse the articles.

Another object is to provide a rinsing attachment in which either hot or cold water may be employed as a rinsing agent.

Still another object is the provision of means whereby water will be discharged from the attachment into the drying receptacle and against the articles to be rinsed in the form of fine jets, or spray, and so directed as to contact with the same from about the bottom of said receptacle to its top.

A further object is to furnish an attachment of but few parts which can be easily assembled and readily mounted on the outer container of the drier and connected to a supply of water under pressure.

In the accompanying drawing, which serves to illustrate an embodiment of the invention,—

Fig. 1 is a view in side elevation of the attachment showing it mounted on the top of the outer container of a rotary drier, which container, as well as the rotary container of a drier, is shown in section.

Fig. 2 is an enlarged view partly in section and partly in elevation of the attachment taken on line 2—2 of Fig. 1 looking in the direction indicated by the arrows, and Fig. 3 is a fragmental sectional view taken on line 3—3 of Fig. 2 looking in the direction indicated by the arrows.

Referring now more particularly to Fig. 1 of the drawings, the reference numeral 7 designates the outer receptacle or tub, while the numeral 8 indicates the inner rotatable and perforated container of a centrifugal or rotary drier for clothes and the like of the type disclosed in my aforesaid pending application for patent and above briefly described.

My improved attachment is shown as being mounted on the top 9 of the tub or outer container of the drying apparatus, and consists of a vertically disposed body member designated as a whole by the numeral 10, which member has on its upper end a horizontally disposed annular flange 11 on the upper surface of which is secured an inverted cup or cap 12 which may be held in water-tight connection with the flange 11 by means of screwbolts 13 inserted through suitable openings in the flange 11 near its periphery and engaging openings in the lower portion of the wall of the member 12. The top of the member or cap 12 is provided centrally with a screw-threaded opening 14 for engagement with a needle valve 15 which has on its upper end a milled enlargement 16 for the convenience of turning said valve in order to properly adjust it. Around the opening 14 in the top of the cup 12 an externally screw-threaded and upwardly extended boss 17 is provided, with which a packing gland 18 or follower surrounding the upper portion of the valve 15, co-acts to hold in position between the boss 17 and the gland 18, suitable packing 19 used to prevent leakage around said valve.

The lower end of the valve 15 is downwardly tapered, and is adapted to co-operate with the correspondingly tapered upper end 21 of a port 22 which leads from a cavity 23 provided in the upper end of the body 10 to the cavity 24 or mixing chamber of said body. As shown, the body 10 is provided on each side of its chamber 24 with a short tubular coupling portion 25 and 26 which communicate with the cavity 24 and are internally screw-threaded, thus provided what is commonly known as a T-coupling. In screw engagement at one of its ends with one of said coupling portions, say the coupling 25, is an elongated valve casing 27 which has a screw-threaded opening 28 in its outer end through which is extended a needle valve 29, the inner end of which is tapered and co-operates with a correspondingly tapered seat 30 in the outer end of a port 31 provided in a partition 32 with which said casing is provided near its inner end, for regulating the flow of water from the casing 27 to and through the chamber 24 of the body 10 of the attachment. The outer end of the valve 29 is provided with a handle 33 for turning the same for its proper adjustment.

Surrounding the outer portion of the valve 29 and in screw engagement with the outer end of the casing 27 is a gland 34 employed for holding the packing 35 around said valve and between said gland and the outer end of the casing. The coupling opposite the one to which the valve casing 27 is connected, say the coupling 26, is provided with a screw-plug 36 for closing the same, but it is manifest that a valve casing similar to the casing 27 and equipped with a similar valve, and having communication with a supply of hot water, can be substituted for the plug 26, by which arrangement it will be understood that either hot or cold water can be supplied to the chamber 24 of the body 10 and from thence to the container holding the articles to be rinsed. The casing 27 has communication through a pipe or piece of hose 37 with a supply of water under pressure, which pipe is connected by means of a coupling 38 in a well known way to said casing. Leading from the upper portion of the casing 27 is a by-pass pipe or tube 39 which communicates at its upper end with the cup 12 preferably through its top as shown. By this arrangement it is manifest that the water pressure in the valve casing 27 and in the chamber formed by the cup 23 and upper portion of the body 10, will be equalized. Below the coupling portions 25 and 26 the body 10 is provided with a downward hollow extension 40 which has at its upper portion a flange 41 provided with openings through which screw-bolts 42 are extended to engage the top 9 of the support for the attachment, which support is usually the outer container 7 of the centrifugal drier.

The front lower portion of the extension 40 of the body 10 or that portion thereof adacent the perforated rotatable container of the drier is deflected or curved downwardly and outwardly from the container 8 as is clearly shown in Figs. 1, and 3 of the drawings, and is provided in the face of said deflected portion with a series of fine perforations 43 which are preferably arranged in diagonally disposed rows and in staggered relation to one another as shown in Fig. 2 of the drawing. By this arrangement the water passing from the valve casing 27, cup 12, into the chamber 24, and from thence through the extension 40, will be caused to be discharged into the container 8 holding the articles to be rinsed in such a way that the spray or jets of water emitted from the extension 40, will extend from about the upper portion of the container 8 to its central lower portion as indicated by dotted lines in Fig. 1 of the drawing. It will be understood that as the garments or articles in the container 8 will be forced by centrifugal action against the walls of said container, a central cavity will thus be formed by the garments or articles, and that as the water is discharged from the extension 40 in the manner above described the inner wall of the garments or articles will be thoroughly and constantly saturated and thus cause most efficient rinsing of the articles.

From the foregoing and by reference to the drawings, and particularly to Figs. 1 and 2 thereof, it will be seen and understood that the parts of the device, with the exception of the water pipe 37, can be assembled in such a way that the attachment can be mounted on its support 9 as a unit by simply inserting the extension 40 through an opening 44 in said support, in which position the attachment may be secured by means of the screw-bolts 42 which may be screwed into the upper surface of the support. The rotatable shaft 45 which supports the perforated container 8 so as to rotate therewith may be driven by any suitable means, as is apparent. For the purpose of permitting bluing to be placed in the chamber provided by the cup 12, the top of the latter is provided with an opening 12^a in which is detachably secured a screw-plug or other suitable closure therefor.

By means of the adjustable valves 15 and 29, it is obvious that the flow of water from the bluing chamber 12 and valve casing 27 respectively can be controlled or shut off in either or both when desired.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, the combination with a suitably supported upright hollow body member provided at its upper portion with a valve controlled chamber having communication with a supply of water under pressure, and means for the discharge of water in jets or spray-like form in its lower portion, of a valve controlled casing in communication with the cavity of said member below said chamber and having communication with a supply of water under pressure.

2. In a device of the class described, the combination with a suitably supported upright hollow body member provided at its upper portion with a valve controlled chamber and means in its lower portion for the discharge of water in the form of jets or spray, of a valve controlled casing in communication with the cavity of said member below said chamber and having communication with a supply of water under pressure, and a by-pass pipe uniting said chamber and casing.

3. In a device of the class described, the combination with an upright hollow body member adapted to be vertically mounted on the top of the outer container of a rotary drier, said member having a portion thereof extended below the top of said container and provided with a downwardly and outwardly deflected perforated wall adjacent and facing the rotary container of the drier for the discharge of water into the last named container, the said member provided at its upper portion with a valve controlled chamber, of a valve controlled casing in communication with the cavity of said member below said chamber and having communication with a supply of water under pressure, and a by-pass pipe uniting said chamber and casing.

ARCHIE W. FARRELL.