W. INMAN.

DYEING APPARATUS.

APPLICATION FILED FEB. 24, 1913.

1,166,989.

Patented Jan. 4, 1916.

Fig. 1.

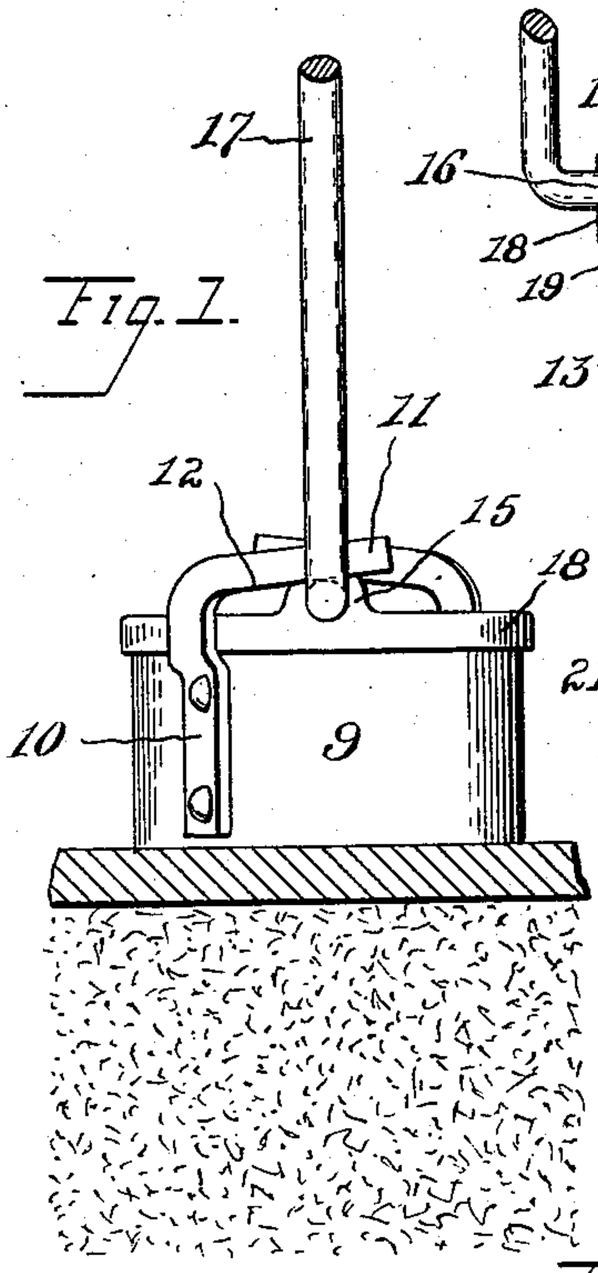


Fig. 2.

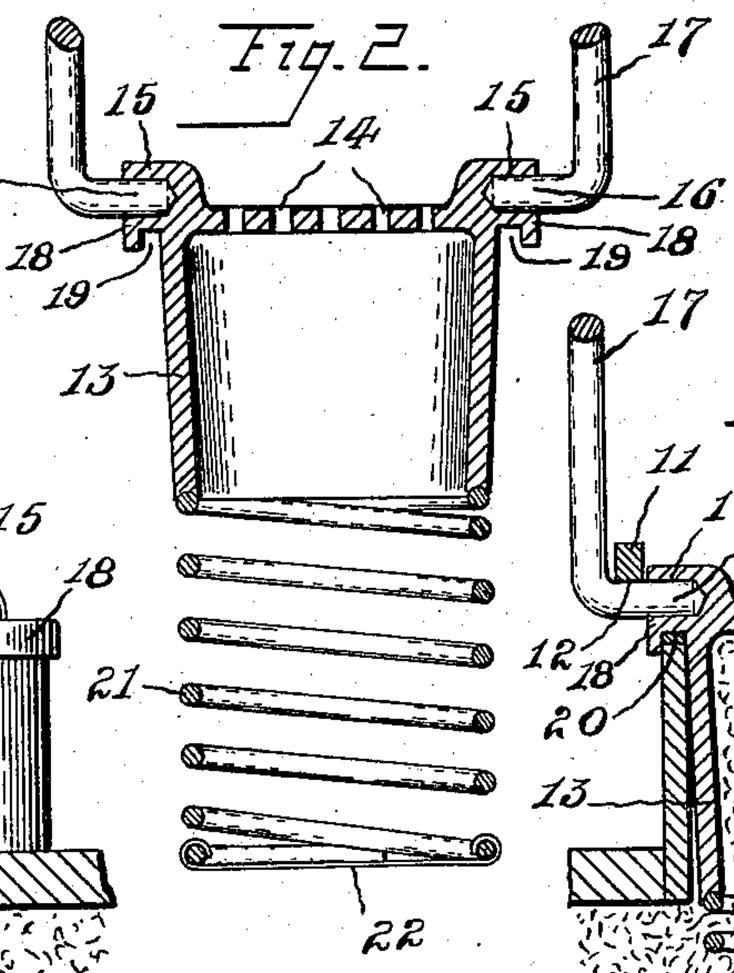


Fig. 3.

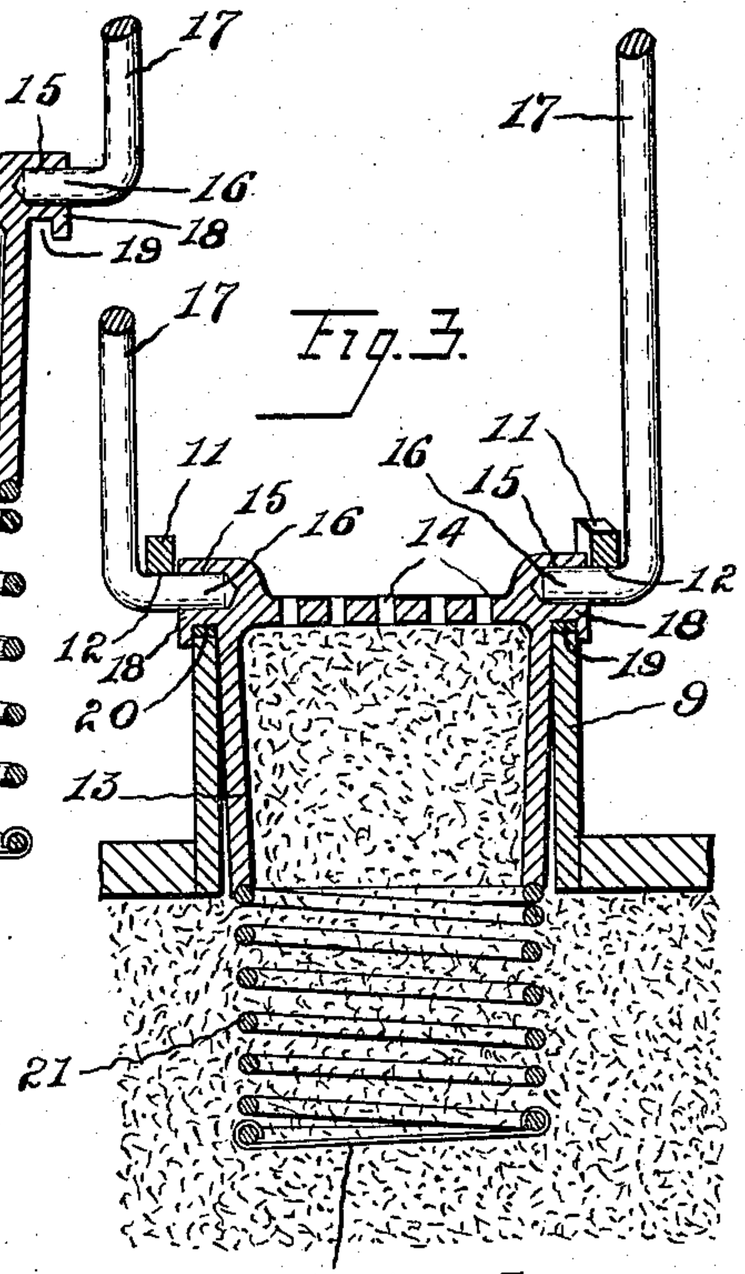


Fig 4

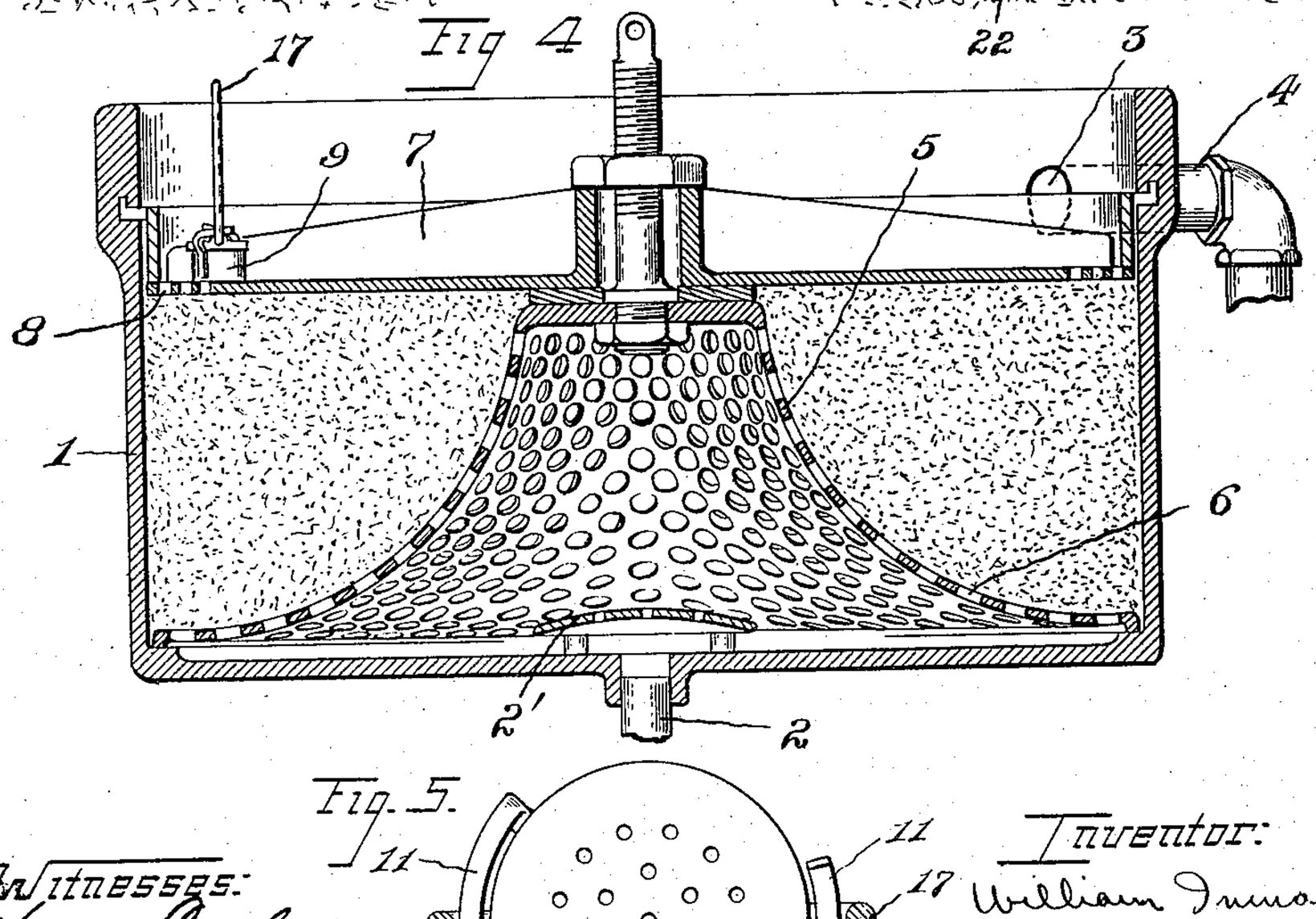
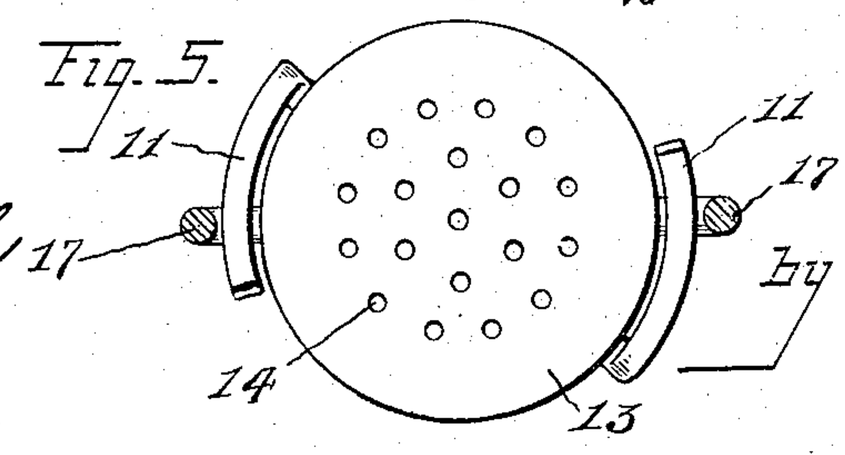


Fig. 5.



Witnesses:

Herman Eisele

C. H. Tresck.

Inventor:

William Inman,

by B. W. Brockett

his Attorney

UNITED STATES PATENT OFFICE.

WILLIAM INMAN, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE PSARSKI DYEING MACHINE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DYEING APPARATUS.

1,166,989. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed February 24, 1913. Serial No. 750,261.

To all whom it may concern:

Be it known that I, WILLIAM INMAN, a subject of the King of England, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Dyeing Apparatus, of which the following is a specification.

This invention relates generally to improvements in apparatus for dyeing permeable material and particularly to mechanism for testing or trying the batch during operation so as to determine the development of the work during the operation of the machine.

More specifically the invention relates to a device utilized in conjunction with a dyeing machine whereby a portion of the mass is treated in a manner identical with the main body of the mass so as to determine the condition of the main body and ascertain what is taking place inside of the dyeing machine, and the device comprises a cylindrical member mounted in the cover of a dyeing machine and open to the inside of the machine and to the outside thereof for receiving a cylindrical box having liquor discharge openings in its upper wall, and a yielding portion at its lower open end whereby the device itself may yield and the material therein may be compacted with compression of the mass, the discharge openings in the top of the device furnishing a discharge for the liquor which passes through the portion of the mass within the test device.

Mechanism is also provided for quickly applying the device and removing it from the dyeing machine.

The invention may be further briefly summarized as consisting in the construction and combination of parts hereinafter set forth in the followinng description, drawings and claims.

Referring to the drawings, Figure 1 is a side elevation of a portion of the device, showing its application to the cover and showing a portion of the mass below; Fig. 2 is a sectional view of the test receptacle; Fig. 3 is a sectional view of the device as applied to a portion of the cover; Fig. 4 is a vertical section of a dyeing machine with the device in place; and Fig. 5 is a top plan view, with the bail in section.

In carrying out the invention any preferred form and construction of parts may be employed so long as they possess the necessary characteristics, but I have shown one form and construction in the drawings which is highly effective in operation, and in such embodiment 1 represents a suitable tank having a liquor inlet pipe or connection 2 and a liquor discharge 3 communicating with a discharge pipe 4, the discharge 3 being arranged in the wall of the tank near the upper edge thereof. An inverted dished perforated baffle plate 2′ may be mounted above the liquor inlet to the tank for deflecting the main liquor passage laterally in the tank. Resting upon the bottom of the tank on the inside is a mass forming and liquor distributing member 5 provided with liquor discharge openings 6. Secured within the tank and resting upon the mass forming and liquor distributing member is a suitable cover 7 provided with liquor discharge openings 8. All of these parts are of any preferred construction, and the construction of this entire mechanism is only important in so far as it forms a part of the combination as will later appear.

I prefer to apply the testing apparatus by providing the cover with an upwardly extending cylindrical member 9 either secured in an opening in the cover or integral therewith and having a cylindrical opening extending therethrough. This cylindrical member is provided with diametrically disposed latching devices comprising a body portion 10 secured to the side of the cylindrical member 9 and having arc-shaped camming portions 11 inclined slightly as shown in Fig. 1 above and beyond the upper edge of the cylindrical member and forming cam faces 12. These arc-shaped portions 11 secure the test receptacle in place as will later appear.

The test receptacle comprises an inverted cylindrical box 13 slightly tapering from its base to its open end and having at its base suitable liquor discharge openings 14. This box is provided with suitable diametrically disposed sockets 15 for the reception of inwardly extending arms 16 of a bail or handle 17. These arms 16 extend sufficiently beyond the sockets 15 to permit them to engage under the arc-shaped members 11 so as by their engagement with the cam faces 12 to force the box tightly down within the cylindrical member 9. The test box has an annular extension 18 which is provided with a

recess 19 containing a packing 20 which is adapted to be forced against the upper edge of the cylindrical member 9. This construction prevents leakage at this point. Secured to the edge of the test box is a yielding mass retainer member 21 preferably in the form of a spring having across its bottom a retaining wire or member 22 which holds the mass in the receptacle and prevents its dropping out. The yielding portion of this test device and the retaining wire or member may be varied as desired, but the principal feature of this or any analogous construction is that there shall be a yielding retaining means for the mass at this point.

In operation, the user places a sample of the mass within the box and within the yielding portion and inserts it in the cover when the dyeing machine is packed. During the operation of the machine the mass forming and liquor supplying means forces the mass outwardly and upwardly toward the discharge near the periphery of the cover, thus compacting the material at this point to a high degree. The liquor then passes out through the discharge openings in the cover and through the discharge openings in the test receptacle. If the operator wishes to know the condition of the material in the dyeing machine, he rotates the test device by means of the bail 17 until the arms 16 are free of the arc-shaped portions 11, when the test receptacle may be freely removed from the machine and the sample may be inspected.

Having described my invention, I claim:—

1. In dyeing apparatus, a tank, a liquor distributing member, a cover for said tank having an upwardly extending portion, one of said portions having a discharge and a test device mounted in said portion having communication with the interior at a point near the discharge and also having a discharge for producing circulation of dye liquor through the test device.

2. In dyeing apparatus, a tank, a liquor distributing member, a cover for said tank having an upwardly extending cylindrical portion, one of said portions having a discharge and a test device mounted in said cylindrical portion having communication with the interior at a point near the discharge and also having a discharge for producing circulation of dye liquor through the test device.

3. A test device for dyeing machines comprising a supporting member mounted in the cover of the dyeing machine, and a removable test box mounted in said support and having discharge openings, and a yielding retaining means secured to said box for holding the mass within the same.

4. A test box for dyeing machines comprising a yielding retaining device for the sample or mass to be tested.

5. In combination with a dyeing machine comprising a tank, a distributing member, a cover, a supporting member carried by the cover adjacent to the main discharge therein, a test device removably mounted in said support and comprising an inverted box having discharge openings in its bottom, and a yielding retaining portion extending into the dyeing chamber of the dyeing machine.

6. In combination with a dyeing machine comprising a tank, a distributing member, a cover, a supporting member carried by the cover adjacent to the main discharge therein, a test device having diametrically opposed sockets, a bail mounted in said sockets, and camming arms mounted upon the support adapted to engage the bail and secure the test box in place.

7. In combination with a dyeing machine comprising a tank, a distributing member, a cover, a support mounted in the cover and open at the top and bottom, a testing device mounted in said support and comprising an inverted cylindrical box having openings in its bottom, a yielding retaining portion extending beyond the open end of said box and into the dyeing chamber, and suitable latching mechanism between the test device and the support.

8. In combination with a dyeing machine comprising a tank, a distributing member, a cover, a support mounted in the cover and open at the top and bottom, a testing device mounted in said support, and comprising an inverted cylindrical box having openings in its bottom, a yielding retaining portion extending beyond the open end of said box and into the dyeing chamber, and suitable latching mechanism between the test device and the support, comprising arc-shaped arms secured to the support and having camming surfaces, and a bail secured to the test box and having portions adapted to engage under said arc-shaped arms.

In testimony whereof I affix my signature in presence of two witnesses as follows:

WILLIAM INMAN.

Witnesses:
G. O. FARQUHARSON,
C. H. TRESCH.