

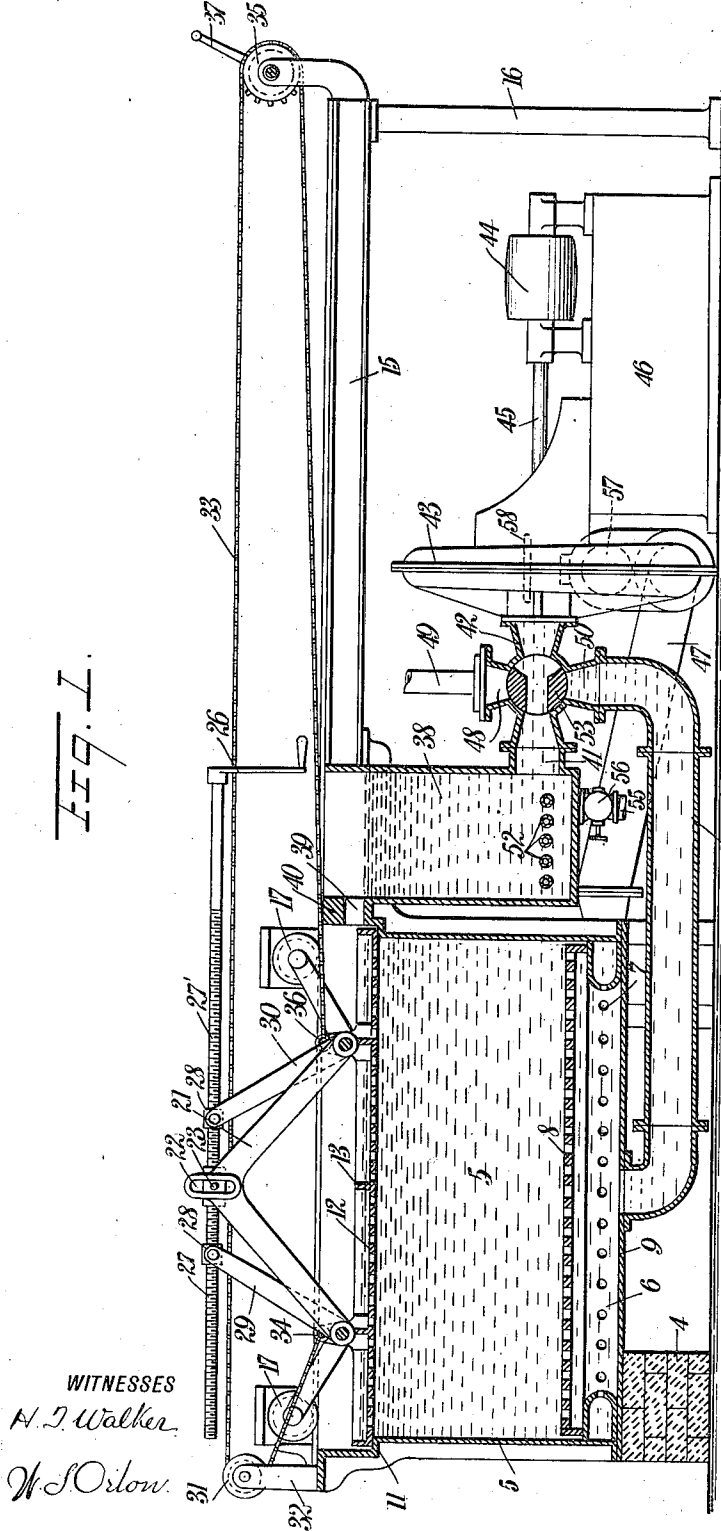
C. P. DELAHUNTY.
DYEING MACHINE.
APPLICATION FILED OCT. 30, 1911.

1,059,845.

Patented Apr. 22, 1913.

2 SHEETS-SHEET 1.

Fig. 1.



WITNESSES
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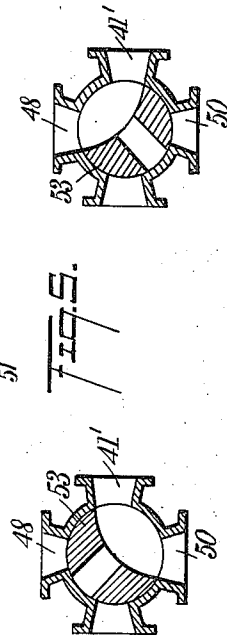


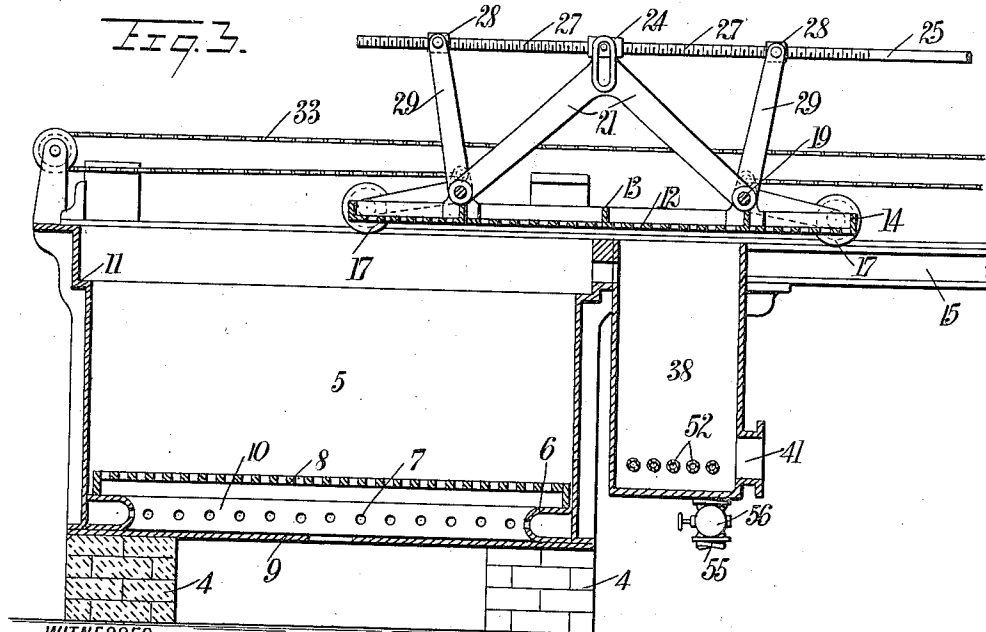
Fig. 5.

Fig. 4.

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2 SHEETS—SHEET 2.



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CLARENCE P. DELAHUNTY, OF WEST PITSTON, PENNSYLVANIA.

DYEING-MACHINE.

1,059,845.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed October 30, 1911. Serial No. 657,482.

To all whom it may concern:

Be it known that I, CLARENCE P. DELAHUNTY, a citizen of the United States, and a resident of West Pittston, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Dyeing-Machine, of which the following is a full, clear, and exact description.

My invention relates to a new and improved form of dyeing machine, and more particularly relates to a means for pumping the dyeing substances through the vat.

A further object of my invention is to feed the dyeing and washing agents from the bottom of the vat through the materials that are to be dyed.

A further object of my invention is to provide a single valve-control for governing the passage of the dyeing and washing materials through the vat.

A still further object of my invention is to provide a device of the above-indicated character, so constructed that the washing water will pass through the vat but once.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claim.

I attain the above-outlined objects by positioning an overflow tank in fluid connection with the vat, and from this tank draw the overflow substance through a pump, the flow of substance to the pump being controlled by a valve construction, which also controls the admission of clean water to the vat.

For a more detailed description of the invention, reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a longitudinal vertical sectional view taken on the line 1—1 of Fig. 2, and showing a preferred embodiment of my invention, and also showing the cover in place on the vat; Fig. 2 is a plan view, looking down upon the preferred embodiment of my invention, the right-hand standards being broken away; Fig. 3 is a view similar to Fig. 1, with certain parts omitted, showing the cover in a raised and partly retracted position; Fig. 4 is a sectional view of the control valve shown in Fig. 1 in posi-

tion, forming a fluid connection between the vat and pump; and Fig. 5 is a view similar to Fig. 4 with the valve in position to form a fluid connection between the water inlet and pump.

Mounted upon suitable supports or foundations 4 is a dyeing vat 5, preferably of metal, which is shown of a general rectangular construction. Disposed in the bottom of the vat, and projecting from the side walls thereof, is a distributing pipe 6, having perforations 7 through the inner face thereof. Resting upon the pipe 6 is a perforated false bottom 8, positioned some distance from the bottom 9 of the vat 5, thereby holding the material to be dyed off the bottom and affording a space 10, in which the sediment or dirt from the dyed material may collect without contaminating the bottom layer of goods. The upper sides of the vat are offset to form shoulders 11, upon which shoulders is adapted to rest a perforated cover 12. The cover in machines of this character must necessarily be of considerable weight, and in this instance is shown to be of heavy metal construction, having reinforced ribs 13 extending transversely across and edge flanges 14 surrounding the same. It has been found difficult to manipulate a cover of this character, and to facilitate the positioning of the cover on the vat, and to uncover the vat there are mounted on opposite sides of the vat and extending beyond one end of the same, a pair of parallel tracks supported at one end upon suitable standards 16. Mounted upon the track 15 are pairs of wheels 17 spaced apart a distance substantially equal to the length of the cover 12. The wheels 17 at each end of the cover are each loosely mounted on one end of an arm 18, the other end of which arm is rigidly connected to a transversely disposed rod 19 journaled in a pair of transversely disposed lugs 20 mounted on the upper side of the cover 12, adjacent its lateral edges. The two rods 19 are connected by means of a pair of spaced inverted and vertically extending V-shaped members 21. In the apex of each of these members is formed a vertically extending slot 22, movable in which is a pin 23 extending from opposite sides of a holding block 24, which block is positioned between the V-shaped members 21, substantially above the center of the cover 12, and

journalled on a threaded rod 25 adapted to be actuated by a crank 26 at one end. The threads on the rod are of opposite character on the opposite sides of the block 24, indicated at 27 and 27'. Each threaded end is engaged by a block 28 to which are pivoted the arms 29 whose other ends are rigidly connected with the rod 19 by means of a hub 30. This forms a lever connection, whereby rotation of the rod 25 in one direction will separate the blocks 28 and cause the lifting of the cover. Rotation of the rod 25 in the opposite direction will return the cover 12 upon its supporting shoulder 11, compressing the material in the vat 5. When in its raised position, the cover 12 may be drawn along the track 15, to uncover the vat, by means of a chain 33 operating over a sprocket wheel 35 and a pulley 31 and having its ends attached to a pair of studs 34 and 36 adjacent the rods 19. The pulley 31 is mounted upon a bracket 32, and the sprocket wheel 35 is adapted to be operated by a crank 37.

Disposed at one end of the vat 5, and preferably at the end from which the tracks 15 extend, is an overflow tank 38. The top of the tank is on a level with the top of the vat 5, and fluid connection is afforded between the tank and vat by means of a port 39 disposed in the wall 40 separating the tank from the vat, and positioned above the shoulder 11. At the lower end of the tank 38 is an outlet 41, in fluid connection with one of the ports of a four-port valve casing 42, the port of which valve casing opposite the outlet 41 is in fluid connection with a pump 43 of any suitable construction through a pulley 44 mounted on a shaft 45, all of which is supported on a suitable foundation 46. The fluid from the pump is driven through a pipe 47 to the pipe 6 in the bottom of the vat 5. The upper port 48 of the valve casing 42 is in fluid connection with a water supply pipe 49, and the lower port 50 is in fluid connection with a pipe 51 leading to the center of the bottom 9 of the vat 5. Disposed in the bottom of the tank 38 are suitable heating pipes 52. The ports in the valve casing 42 are controlled by a valve plug 53, which has a passageway extending diametrically therethrough, one end of which is enlarged so as to open communication between two adjacent ports in the valve casing. This plug is controlled by a suitable form of hand-lever 54.

Extending from the lower or any other convenient point of the overflow tank 38 is an exhaust port 55, controlled by a suitable valve 56, which may lead to a drain or sewer connection. Leading from the pump 43 is a drain outlet 57, leading to a receiving tank or drain, which outlet is controlled by any suitable form of valve 58, which is a two-way valve controlling the connection between the pipe 47 and the pump 43, and the

connection between the pump 43 and the outlet 57, so that with one of these connections open, the other is closed.

If it is desired to heat the dye as it is passed through the articles, steam may be admitted through the pipe 52, thereby heating the dye or other substance in the tank 38.

In its operation, it is to be understood that the articles to be dyed or cleaned are placed in the vat 5, and the cover is moved into place, as shown in Fig. 1, compressing the articles, if desired. The dyeing substance is then placed in the vat 5, overflowing into the tank 38 to fill the system, and the valve plug is rotated into the position shown in Fig. 1. Starting the pump 43, it will be seen that the dyeing substance is drawn from the tank 38 through the pump, through the pipe 47 into the pipe 6, from whence it passes through the perforations 7, through the false bottom 8, through the material to be dyed, and through the port 39 back to the overflow tank 38, and this operation is continued until the articles are sufficiently dyed. After the material has been dyed, the dye-stuff is withdrawn by actuating the valve 58, closing the fluid connection between the pipe 47 and the pump, and opening the drain-pipe 57, with the valve 53 in the position shown in Fig. 1. This will drain the dye-stuff from the tank 38 into any suitable storage tank. Then, by rotating the valve 53 into the position shown in Fig. 4 connection is made through the pipe 51 and the pump 43, to drain the dye-stuff from the vat 5. In order to wash the dye-stuff from the material within the vat, the plug 53 may be rotated so as to bring the pipes 49 and 51 into direct communication, whereby the fresh water may flow directly into and through the vat, but if the fresh water supply is lacking in force the valve 53 may be rotated into the position shown in Fig. 5, opening connection between the water pipe 49 and the pump, through the port 48 and outlet 41', and closing the fluid connection through the outlet 41' and port 50, then, closing the outlet 57 and opening the connection between the pump and the pipe 47; fresh water is admitted from the pipe 49 through the pump, through the pipe 47, through the vat 5 and overflow tank 38, out to the sewer connection through the exhaust 55. It is noted that by this system, the fresh water passes but once through the material.

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

The herein-described dyeing machine comprising, in combination, a vat adapted to contain the material to be operated upon, an overflow tank communicating with the vat, a valve casing having four outlet ports, a valve in said casing adapted to bring any

two of said ports into communication and
to seal the remaining two ports, a pump, a
fresh water supply connection with one of
the valve casing ports, fluid connections be-
5 tween the remaining three ports and the vat,
the tank, and the pump respectively, and a
valved sewer connection leading from the
overflow tank, substantially as set forth.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

CLARENCE P. DELAHUNTY.

Witnesses:

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C. G. DELAHUNTY.