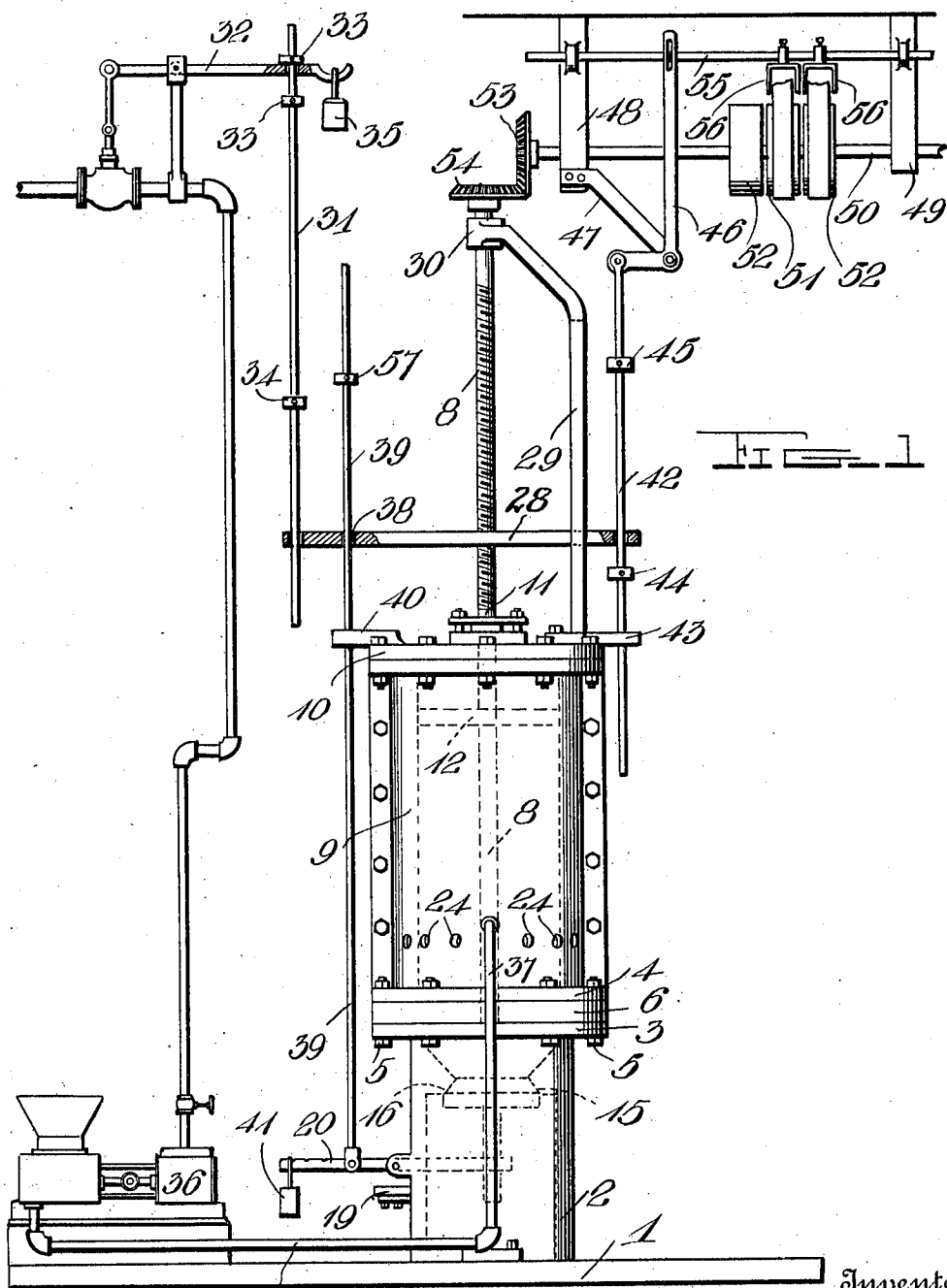


H. C. McLEARN.
PRESS.
APPLICATION FILED AUG. 1, 1911.

1,026,876.

Patented May 21, 1912.

3 SHEETS-SHEET 1.



Witnesses

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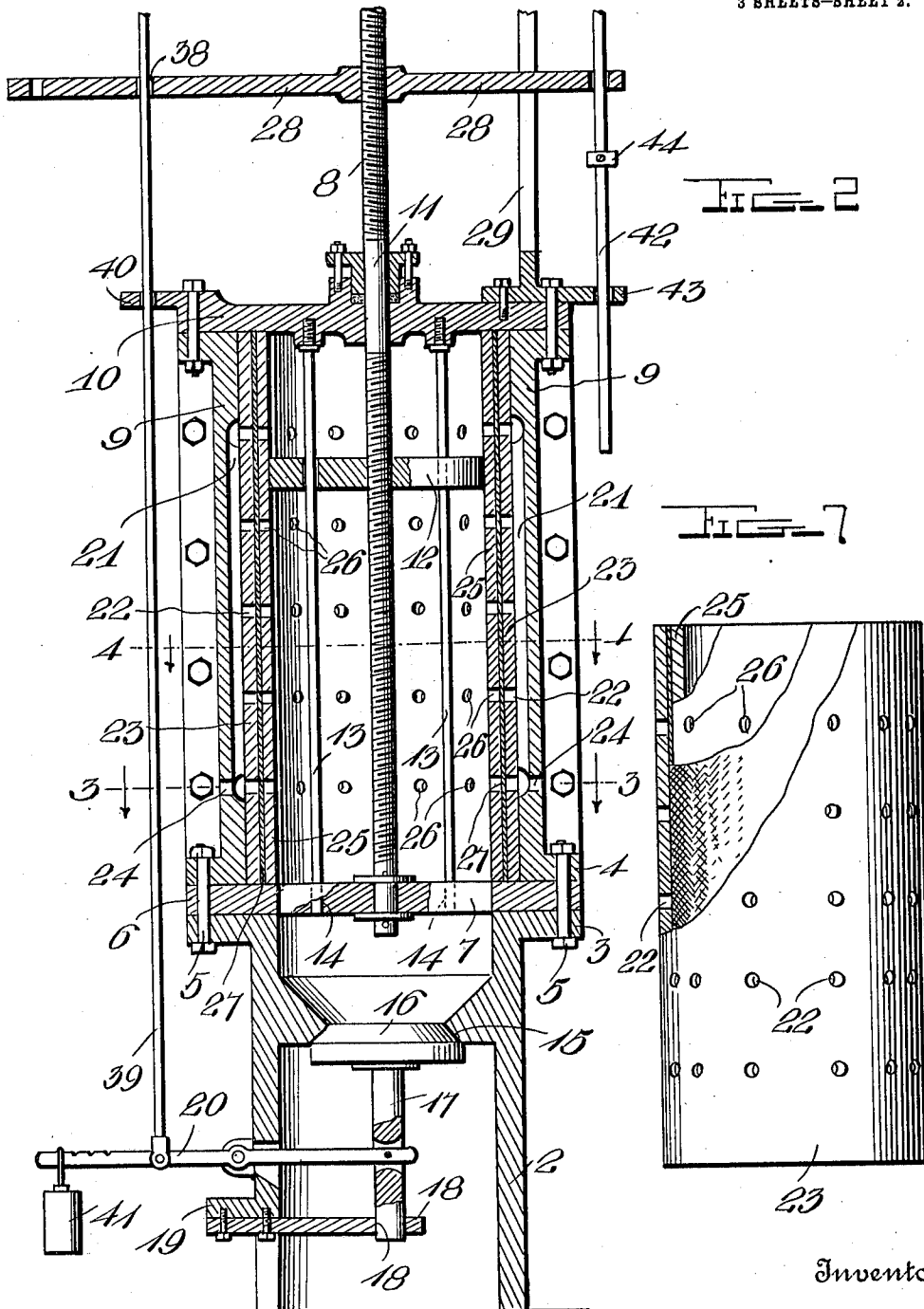
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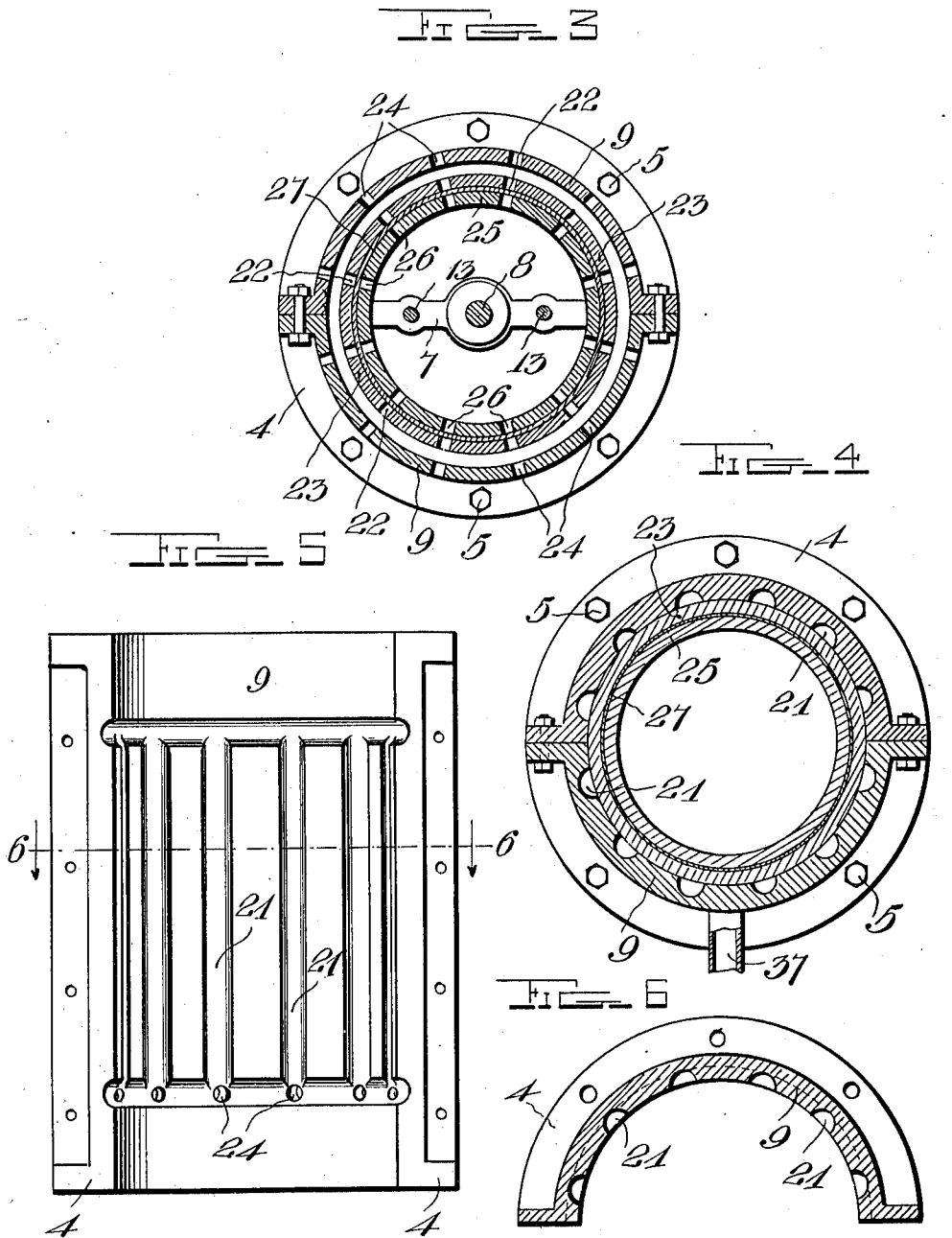
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UNITED STATES PATENT OFFICE.

HERMAN C. McLEARN, OF YARMOUTH, MAINE.

PRESS.

1,026,876.

Specification of Letters Patent.

Patented May 21, 1912.

Application filed August 1, 1911. Serial No. 641,723.

To all whom it may concern:

Be it known that I, HERMAN C. McLEARN, a citizen of the United States, residing at Yarmouth, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Presses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to presses and particularly to that type which are adapted to express the liquors from white lead and similar substances.

The object of the invention is to provide a thoroughly efficient and rapidly operated press of this character whereby considerable material may be acted upon and the consistency of the material properly determined.

A further object of the invention is the provision of novel means for reversing the operation of the press and for automatically dumping the contents after compressing and subsequently admitting fresh material.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation; Fig. 2 is a vertical longitudinal section through the press; Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1; Fig. 4 is a similar view on the line 4—4 of Fig. 2; Fig. 5 is an elevation showing the interior of one-half of the shell; Fig. 6 is a horizontal section on the line 6—6 of Fig. 5; Fig. 7 is a side elevation partly in section of the filtering cylinder.

Referring more especially to the drawings, 1 represents a support upon which the base 2 of a press is secured. This base is in the form of a cylindrical structure and is provided on its upper end with an attaching flange 3, to which the flange 4 is secured by means of the bolts 5, with a flange 6 arranged between the flanges 3 and 4 and supporting a bearing bracket 7, in which the pressure screw 8 has its lower end journaled. The upper flange 4 is carried by the separate halves of a shell 9 which extends vertically from the base 2 and is provided on

its upper end with a bushing collar 10, which permits the passage of the smooth portion 11 of the operating screw 8. This screw carries upon its lower portion a follower 12 which is guided in its movement by oppositely positioned guide rods 13 carried by the bushing collar 10 and engaged with apertures 14, within the bracket 7, on opposite sides of the screw 8. Immediately below the flange 3 within the base 2, is formed a valve seat 15 against which the controlling valve 16 is adapted to rest. This valve is provided with a guide stem 17 which slides in a bearing 18 held upon the raised upper end 19 above the base and is operatively connected with a controlling lever 20 pivoted to the base and operated and controlled in a manner to be hereinafter described.

The inside of the halves of the shell are grooved, as shown at 21, throughout a portion of their length so as to register with the rows of apertures 22 formed in the outer cylinder 23, and is also provided with a plurality of openings 24 arranged adjacent their lower end which permit the liquors expressed from the fresh material to pass off. An inner cylinder is shown at 25, provided with apertures 26 arranged to register with the apertures 22 in the cylinder 23 and between the inner and outer cylinders 25 and 23, there is secured a filtering fabric 27 through which the liquors pass.

The operating screw is provided, on one-half, or the half which is within the cylinders, with a right hand screw thread and on the opposite half, or the half without the cylinder, with a left hand screw thread. Mounted upon this latter half is a cross arm 28 which, when the screw 8 is turned, as will be hereinafter described, will move upon the screw in an opposite direction from the follower, irrespective of the direction of rotation of the screw. This cross arm is guided in its movement and prevented from rotating with the screw by a supporting arm 29 having a bearing 30 at its upper end in which the screw is journaled. This supporting arm 29 is carried by the bushing collar 10 and straddles the cross arm 28 for a purpose which will be clearly understood. Each end of the cross arm 28 is apertured and passing through the aperture in the left hand end is a valve rod 31 which is connected to a valve lever 32, as shown,

the collars 33 being so positioned upon the rod 31 as to permit considerable play of the rod before the lever 32 is operated. The cross arm engages a collar 34 upon the rod
5 and operates the same and a weight 35 carried by the lever 32 returns the same to normal position after it has been released by the cross arm. This valve lever 32 controls the steam inlet to the pump 36 which
10 is adapted to feed a supply of the fresh material to the pipe 37, leading to the interior of the cylinder 25.

Immediately adjacent the aperture at the left hand end, is a similar aperture 38
15 which permits the passage of an operating rod 39 connected to the valve lever 20 and passing through a guide lug 40 carried upon the bushing collar 10. A suitable counter weight 41 is carried upon the valve lever
20 so as to normally hold the valve in closed position. This weight is adjustable upon the lever so as to overcome the pressures to which the material in the press is subjected.

Running parallel with the supporting arm 25 29 is a shifting rod 42, which passes through the aperture in the cross bar at the right hand end thereof and through an alined aperture in a lug 43 carried upon the bushing collar. The rod is provided with two
30 collars 44 and 45, the former adapted to be engaged upon the downward movement of the bar and the latter adapted to be engaged upon the upward movement of the cross bar. The rod 42 is connected to the end of a bell
35 crank lever 46 pivoted upon a bracket 47 carried by a shaft bearing 48. The bearing 48, together with a similar bearing 49 spaced apart therefrom, support the driving shaft 50 which has mounted thereon the tight pulley 51 and two loose pulleys 52. The outer
40 end of the shaft has a bevel gear 53 which engages a similar gear 54 carried upon the upper end of the operating screw 8.

Slidably mounted in the upper portion of 45 the bearing 49, is a shifter rod 55 which carries a pair of straddling forks 56 adapted to engage the reversing belts which travel upon the pulleys 51 and 52. The opposite end of this rod is connected to the bell crank
50 lever, so that the shifter forks are operated as will now be described. We will assume that the press is full of fresh material and that the shaft 50 is driven in such a direction as to carry the plunger or follower 12 downwardly and the cross bar 28 upwardly.
55 When the cross bar has traveled a certain distance in an upward direction, it engages the collar 34 upon the rod 31 and cuts off the steam to the pump which then stops and
60 as the plunger or follower passes farther on down, the collar 57 upon the rod 39 is engaged by cross bar 28 and the valve 16 operated to discharge the material from the press. Subsequently to this operation, the
65 collar 45 is engaged by the cross arm and

the belt shifted so as to bring the reverse belt upon the pulley 51 and thus reverse the operation, the plunger coming up toward the head of the press and the cross arm going
70 down to meet it. After a short distance has been traveled by the cross arm in its downward movement, the collar 57 is released and the weight 41 acts to close the valve 16. Immediately after this, the collar 34 is released
75 and the weight 35 acts to open the steam valve so that the pump 36 is started and fresh material injected into the cylinder through the pipe 37. When the follower has reached the height of its upward movement
80 and the cross bar has reached its lowest point, the collar 44 is engaged by the latter and the shifter rod operated to again move the forward belt upon the pulley 51 to reverse the operation and start compressing
85 the material again. The force of the pump while acting tends also to filter the fluids in the material through the fabric 27 and after the pump has stopped its operation and the follower acts upon the material, the
90 liquors are forced outwardly through the apertures 26 and 22, through the fabric 27 into the grooves 21 and out of the apertures 24. These liquors may be taken off in any suitable manner, and as such devices are well known, it was not deemed necessary to
95 illustrate herein.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation. 100

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims. 105

Having thus described my invention, what I claim is:

1. A press comprising a plurality of perforated cylinders, the perforations therein being arranged in an annular series, and the perforations of the respective series being in longitudinal alinement with those of the adjacent series, filtering fabric arranged between said cylinders, a shell surrounding said cylinders and having longitudinally extending grooves on its inner face registering with said perforations, said shell having outlets at the lower ends of said grooves, a plunger operating in said cylinders, and means for the exit of the compressed material from the cylinders. 110 115 120

2. A press comprising a cylinder, a plunger operating in said cylinder, an automatically operated valve for the exit of the compressed material, and means to automatically reverse the action of the plunger subsequently to the opening of the valve. 125

3. In a press, the combination with a cyl- 130

inder, of a valve for the exit of the compressed material from said cylinder, a plunger operating shaft, and means carried by the plunger operating shaft for controlling the action of the valve.

4. In a press, the combination with a cylinder, of a valve controlling the exit of the compressed material from said cylinder, a plunger operating to compress the material in said cylinder, means for operating said plunger, means controlled in the operation of said plunger for releasing the exit valve, and means controlled subsequently to the release of said valve for reversing the operating means.

5. A press comprising a cylinder, a rod therein having right and left hand threads thereon, a plunger mounted on the rod and operated by one set of threads, to reciprocate within the cylinder, a member carried by the rod and operated by the opposite set of threads, a valve for the exit of the com-

pressed material, and a connection between the valve and said member.

6. A press comprising a cylinder, a rod therein having right and left hand threads thereon, a plunger mounted on the rod and operated by one set of threads, to reciprocate within the cylinder, a member carried by the rod and operated by the opposite set of threads, a valve for the exit of the compressed material, a connection between the valve and said member, means for rotating the threaded rod, and means controlled by said member for reversing the rotation thereof.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HERMAN C. McLEARN.

Witnesses:

DAVID ENGEL,
H. V. WALE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."