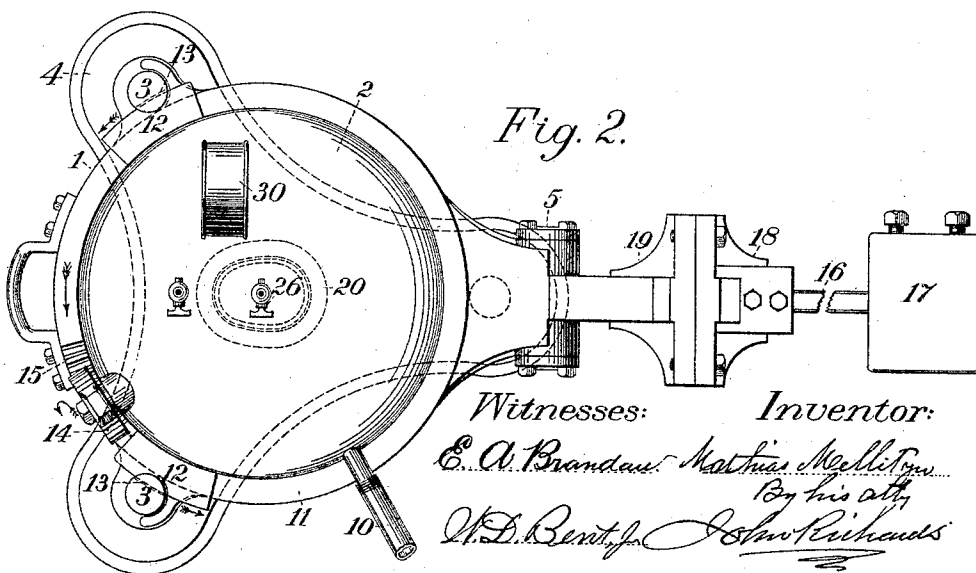
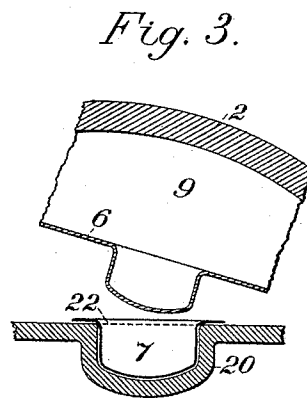
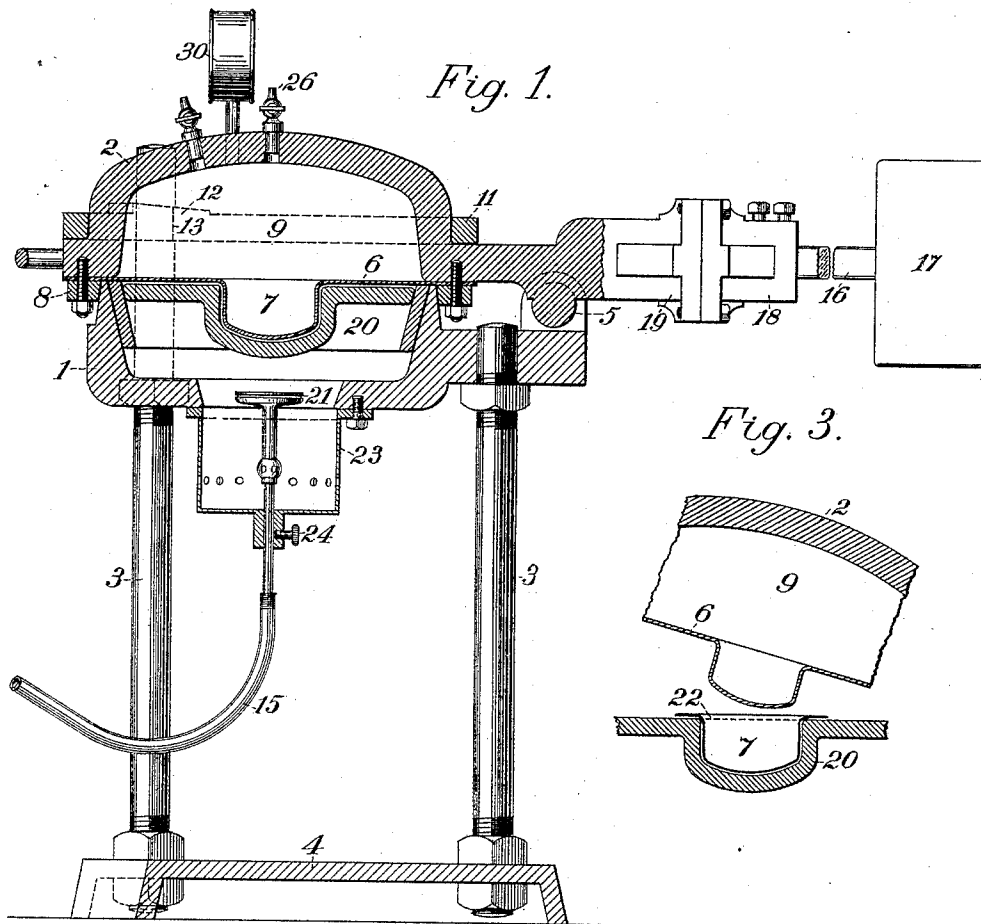


M. MELLITZER.
HAT PRESSING MACHINE.

No. 460,395.

Patented Sept. 29, 1891.

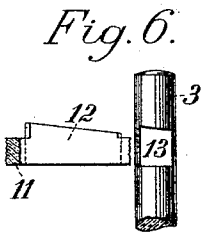
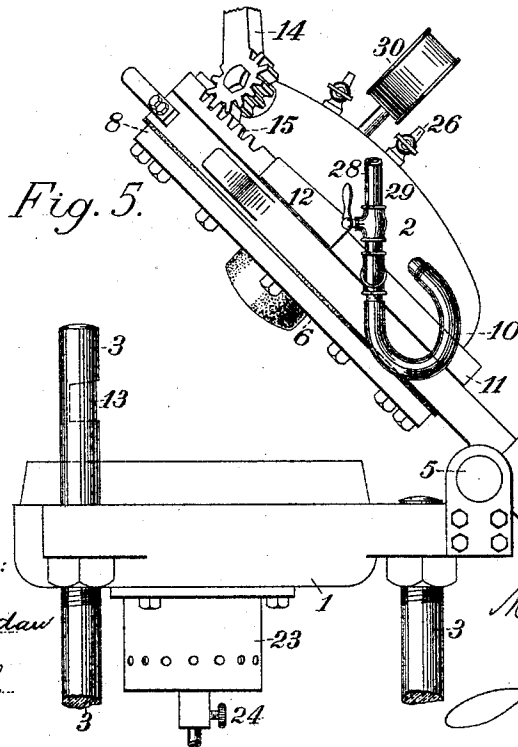
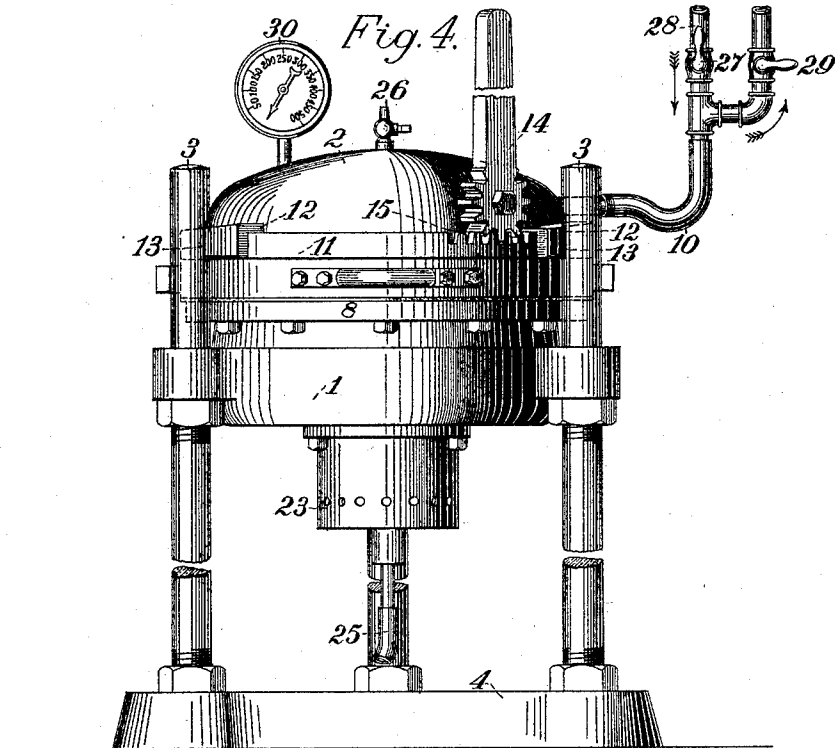


Witnesses: *E. A. Brandau* *Matthias Mellitzer*
Inventor: *By his atty*
W. D. Bent *John Richards*

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UNITED STATES PATENT OFFICE.

MATHIAS MELLITZER, OF SAN FRANCISCO, CALIFORNIA.

HAT-PRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 460,395, dated September 29, 1891.

Application filed April 3, 1891. Serial No. 387,531. (No model.)

To all whom it may concern:

Be it known that I, MATHIAS MELLITZER, a citizen of the United States, residing in the city and county of San Francisco, and State of California, have invented certain Improvements in Hat-Pressing Machines; and I hereby declare the following description, with the drawings accompanying the same, to be a full, clear, and exact specification of my invention.

My invention relates to machinery for pressing and forming hats by the pressure of water or other fluid; and it consists in the employment of a flexible diaphragm impervious to the fluid and elastic enough to conform to the shape of the molds into which the hat-bodies are pressed, the fluid under pressure being applied on one side of the diaphragm by means of a close vessel, to which the diaphragm is fastened.

My invention also includes the various mechanical expedients to perform the work by means of the elastic diaphragm named, including means of opening, closing, and securing the press, as will be more fully pointed out and explained in the accompanying drawings, in which—

Figure 1 is a vertical section through the main parts of one of my improved hat-pressing machines. Fig. 2 is a plan view of the same machine. Fig. 3 is a detail of Fig. 1, showing the position of the hat-blank before the press is closed. Fig. 4 is a complete elevation of the machinery, showing the mechanism for locking the press when it is closed and in use. Fig. 5 shows the press opened ready to receive a blank form to be pressed, and Fig. 6 is a detail showing the manner of locking the press when it is closed.

Reference-numbers on the different figures indicate corresponding parts of the machine.

In my system of pressing and forming hats by means of an elastic diaphragm with a fluid under pressure applied to one side I dispense with internal dies or forms, employing only a matrix, into which the hat-forms are pressed, the fluid pressing equally over all parts and producing the required shape. The interposed diaphragm, being of impervious material, preferably of india-rubber, prevents contact with the pressing-fluid.

Referring to the drawings, 1 is the base or

main part of the pressing-machine, and 2 the movable part. The posts 3 answer as a support for the various parts and also as a strong connection between fixed plate 1 and the movable part 2, as will be hereinafter explained. The base-plate 4 is made hollow, so that fastening-nuts can be placed on the posts or rods 3, as shown in Fig. 1.

The upper main plate of the press is hinged at 5 by a strong pin, and on its inner or lower face is attached a diaphragm 6, of india-rubber or other material that will readily conform to the shape of the hat and bottom die, as shown at 7. This diaphragm 6 is fastened to the top part of the press by means of a ring 8, securely fastened by screws, as shown in Fig. 1, forming a chamber 9 above, into which the pressing-fluid passes through the flexible pipe 10.

When the upper portion 2 of the press is closed, it is fastened by means of a ring 11, having formed thereon ledges 12, which pass into corresponding notches 13, in the posts 3, when the ring is partially revolved. To revolve this ring 11, there is employed a segmental lever 14. (Shown in Figs. 4 and 5.) The ring 11 fits loosely around the top chamber of the press 2 and, besides the ledges 12, has on its upper side a toothed rack 15, into which meshes a corresponding toothed segment on the lever 14. By moving this lever 14 backward or forward the ledges 12 engage in or are released from the notches 13 accordingly, so that the fastening and loosening of the top of the press 2 are performed instantly, securing it at three points when shut—namely, at the two posts 3 and by the hinge 5.

To render the adjustment of the top of the press convenient and rapid, I employ a lever 16 and a counter-weight 17. The latter having a motion coincident with the top part of the press 2, there is a perfect balance at all positions. The lever 16 is fastened to a bracket 18, bolted to another one 19, formed integrally with the top of the press 2, so that the lever and weight can be detached when required.

At the bottom of the hat-mold I place a burner 21 or other suitable means of heating and warming the mold 20 to promote shaping and setting of the hat-blank 22 when it is pressed into the mold. Around this gas-

burner 21 is a shield 23 to confine the heated air and direct it to the form or mold 20. The gas-burner can be adjusted up or down by means of the screw 24, the flexible pipe 25 yielding accordingly.

Referring now to the operating-machine, the lever 14 is thrown forward to release the ledges 12, and the upper part of the press is raised, as shown in Fig. 5. The required form or mold 20 is placed in the machine, as shown in Fig. 1, and the hat-blank 22 laid in, as shown in Fig. 3. The top part of the press 2 is then closed down, and the lever 14 moved back, turning the ring 11, so that the ledges 12 engage in the notches 13 and press down the top part of the press 2, as shown in Figs. 1 and 4. The small cock 26 is then opened to permit the escape of air, and the valve 27 is opened to admit water or other fluid through the pipe 28, which is supplied under pressure from an accumulator or other source where the pressure is generated. The cock 26 is then closed and the chamber 9 is filled, pressing downward on the elastic diaphragm 6 and forcing the hat-blank 22 into the mold at 7 with a force corresponding to the initial pressure from the pipe 28, or as indicated by the gage 30. When the hat-blank 22 is set, the cock 29 is opened to permit the escape of the fluid from the chamber 9. The lever 14 is pulled forward, releasing the top part of the press 2, which can then be raised to the position shown in Fig. 5, the finished hat removed, another

blank inserted, and the process repeated as before described.

Having thus described the nature and objects of my invention with the manner of constructing and applying the same, what I claim as new, and desire to secure by Letters Patent, is—

1. In a hat-pressing machine, the combination, with the upper and lower chambers and the upright posts 3, notched at 13, of the annular ring 11, which fits loosely around the top chamber and is provided on its upper edge with the ledges 12 and the toothed rack 15, together with a corresponding toothed segment on the lever 14, engaging the rack 15, substantially as described.

2. The combination of the upper part 2, having the internal chamber 9, provided with a flexible diaphragm 6, the lower part 1, having a mold or matrix 20, the upright posts 3, notched at 13, the annular ring 11, which fits loosely around the top chamber 2 and is provided on its upper edge with the ledges 12 and the toothed rack 15, and a corresponding toothed segment on the lever 14 engaging the rack 15, all substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

MATHIAS MELLITZER.

Witnesses:

W. D. BENT, Jr.,

ALFRED A. ENQUIST.