

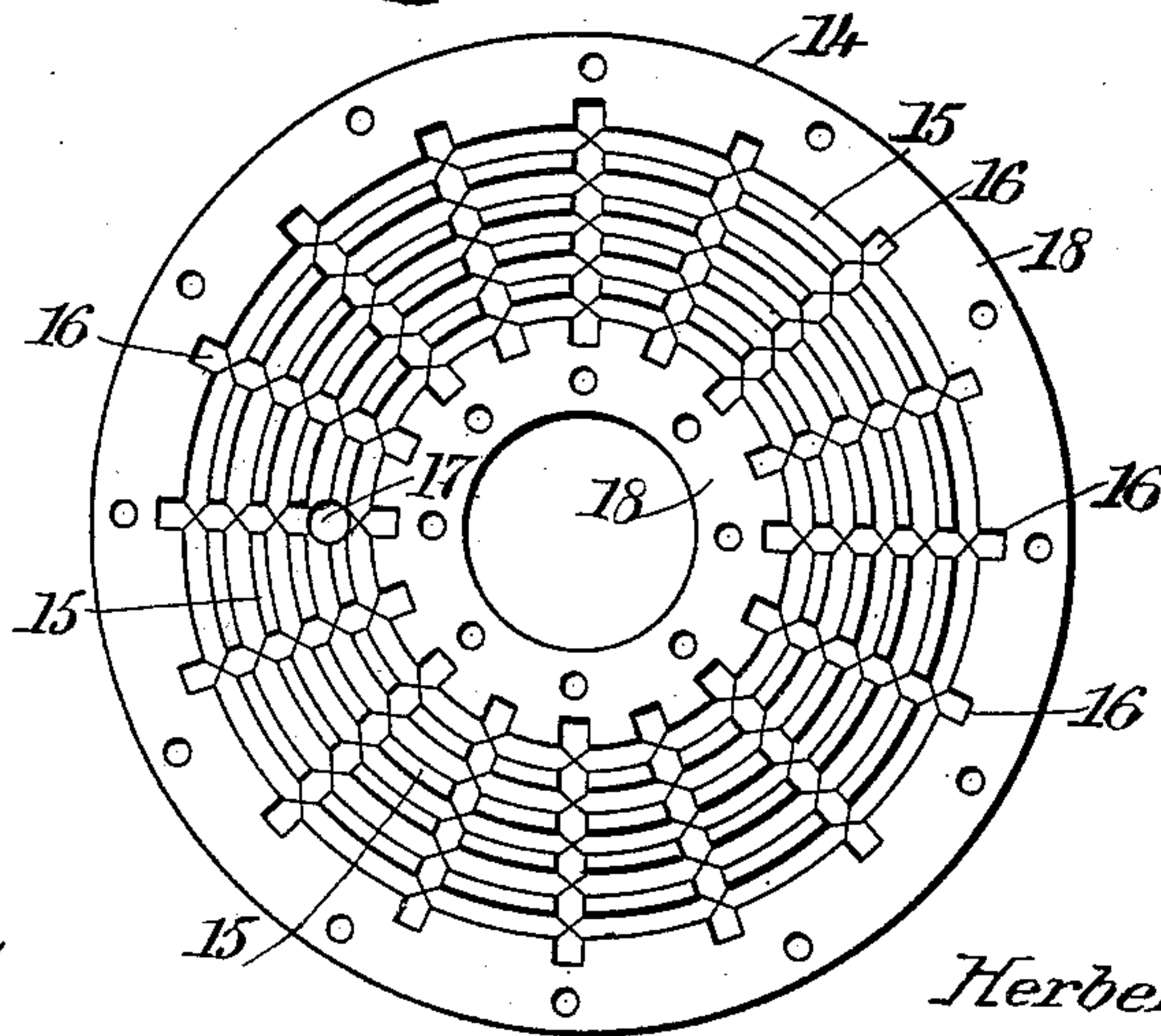
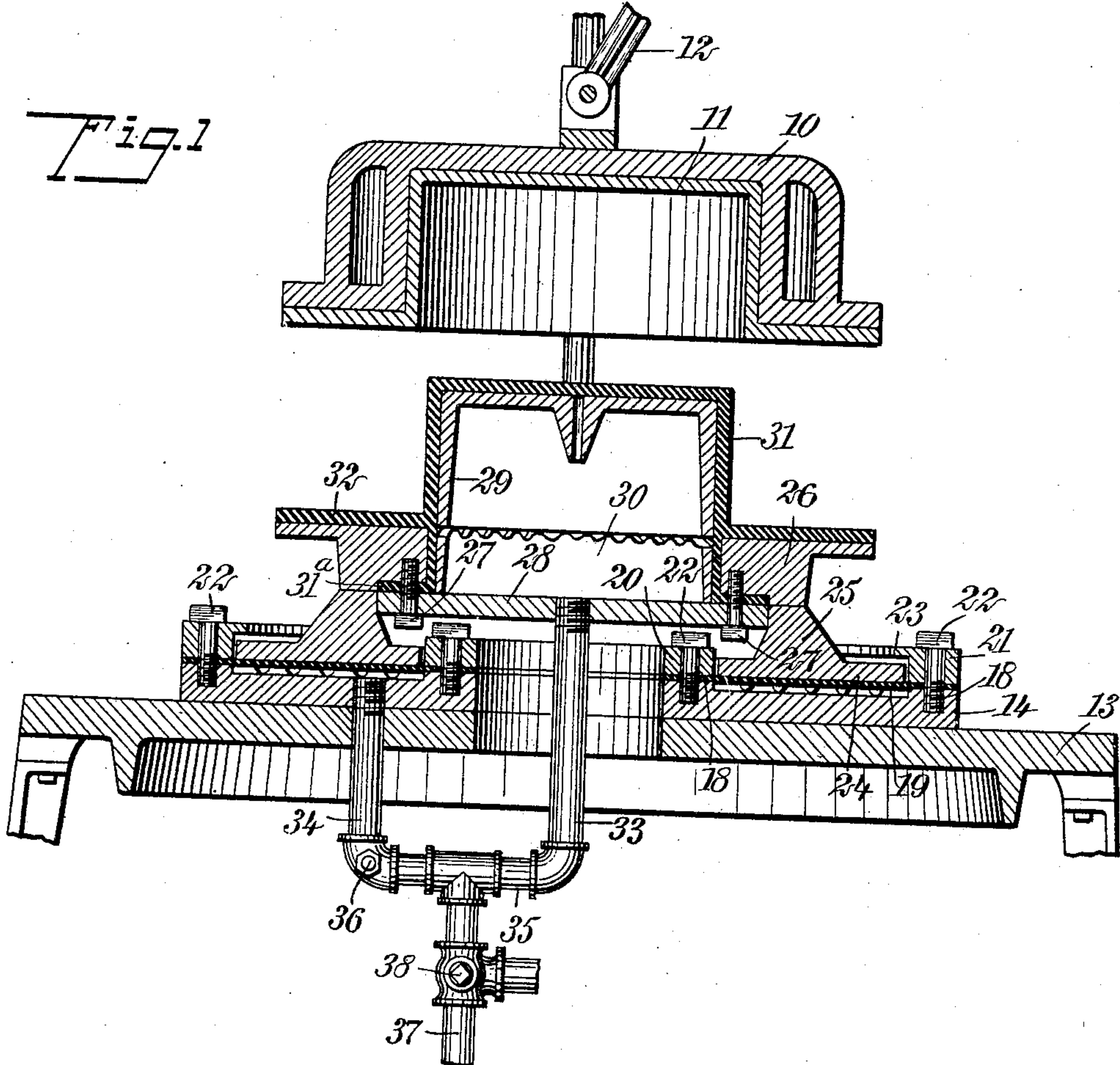
No. 829,759.

PATENTED AUG. 28, 1906.

H. S. BLAKE.

HAT PRESS.

APPLICATION FILED NOV. 18, 1906.



WITNESSES:
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Fig. 2

UNITED STATES PATENT OFFICE.

HERBERT SLOCOMB BLAKE, OF MIDDLETOWN, NEW YORK.

HAT-PRESS.

No. 829,759.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed November 18, 1905. Serial No. 288,088.

To all whom it may concern:

Be it known that I, HERBERT SLOCOMB BLAKE, a citizen of the United States, and a resident of Middletown, in the county of Orange and State of New York, have invented a new and Improved Hat-Press, of which the following is a full, clear, and exact description.

My invention relates to improvements in machines for pressing and finishing straw and other hats. It is especially designed for use on that type of hat-press in which one of the dies is provided with an elastic casing which is expanded within the hat during the pressing operation for the purpose of insuring that the pressure is applied to all parts of the crown.

The principal object of the invention is to provide means whereby the die which has the elastic casing can be forced against the companion die with the requisite pressure and simultaneously with the application of pressure to the interior of the casing.

Machines of this character have usually been so constructed that the metal die is brought into close proximity to the die having the elastic casing, and then the pressure is applied by forcing the metal die against the other while the fluid is forced into the hollow casing.

My present invention contemplates the movement of the solid die, if desired, into a proper position for commencing the pressing operation; but the compression itself is obtained by simultaneously expanding the casing and forcing the die which holds it against the other die.

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 both views.

Figure 1 is a central vertical sectional view of a portion of a hat-machine, showing my present improvements, and Fig. 2 is a plan of one of the elements thereof.

I have shown the device applied to that type of machine in which the upper die is a solid one and is designed to move toward and from the other die in order to bring the parts in proper position for operation and for the removal of the hats; but it is to be understood that it could be applied to that type of machine in which the upper die is mounted in a stationary position.

A heater 10 is shown as provided with an

inner metal die 11 of the usual construction and with a lever 12 for moving it up and down. Below this die is mounted a stationary plate 13, on which is supported a second plate 14. This plate is provided with two series of grooves 15 and 16 upon its upper surface. The grooves 15 are preferably circular in form, and the grooves 16 are radial, whereby they cross each other. This plate is provided with a perforation 17 for a purpose to be described, this perforation intersecting with one or more of the above-mentioned grooves. The plate 14 is provided with two concentric projections 18, which inclose the entire system of grooves. Above this plate and resting on the upper surfaces of these projections is an elastic diaphragm 19, preferably formed of india-rubber or a similar compound. This diaphragm is circular in form and is held upon the projections at its edges by means of a pair of rings 20 and 21, these rings being circular in form and secured to the plate 14 by bolts 22 or the like. The ring 21, which is on the outside, is provided with a circular inwardly-extending flange 23.

Located upon the diaphragm 19 is a circular plate 24, constituting a piston. This plate extends to within a short distance of the inner surface of the outer ring 21, and the flange 23 constitutes a stop for preventing the piston from rising above a certain point. The piston has a circular projection 25, and on this projection rests a brim-plate 26. Connected with this plate by means of bolts 27 is a base-plate 28, and above this base-plate is mounted a metallic core 29, such as is usually employed in machines of this character. This core rests on a ring 30 on the plate 28, the upper surface of the ring having indentations for permitting air to escape between it and an elastic casing 31, which surrounds it. This casing is fixed to the plate 26 and has outwardly-turned flanges 31^a clamped between 26 and 28. Air passing through the indentations into the ring 30 enters the space between the casing and the core 29, thereby expanding the casing. Mounted on the plate 26 is a rubber or metal plate 32, which may be connected with the casing 31. It constitutes means for engaging and pressing the brim of the hat, the main part of the elastic casing being designed to enter the crown.

Whether the die 10 is stationary or movable is not material in this invention, as it has

to do chiefly with the feature of the die which in the present instance is shown as the lower die.

In order to provide for introducing a pressure medium—as, for example, water—into the casing 31 and into the chamber formed in the plate 14 between the projections 18, I have shown a pipe 33, passing through the plate 28 and a pipe 34, passing into the opening 17 in the plate 14, the former supplying the casing 31 and the latter the chamber in the plate 14. A connection 35 is provided between these two pipes, and it is connected with the pipe 34 by means of a reducing-valve 36. A supply-pipe 37 is in communication with the connection, and a three-way valve 38 is provided, so that the fluid introduced into the two receptacles can be readily withdrawn therefrom. The function of the reducing-valve is to enable the crown and brim pressure to be equalized. The pressure on the piston 24 is applied upon a large area relative to that of the top of the casing 31, and it is obviously not desirable to locate the connections in such a manner that any pressure will be taken off the crown of the hat and applied to the brim.

The operation of the device is very simple and will be readily understood. The hat being placed upon the casing 31 with the brim extending out on the flange 32 and the two dies placed in a convenient position relative to each other, the lower die receives the larger, and when the surfaces are in contact water or other fluid from the supply-pipe 37 is supplied simultaneously to the pipes 33 and 34. The water enters the space between the core 29 and the casing 31, as has been described, and it also enters the several grooves on the plate 18 at a compensating pressure. This causes the casing to expand and the piston 24 to rise. Pressure is therefore applied against the die 10 as if the latter were stationary and entirely by the movement of the lower die and the expansion of the casing. This movement is obviously small. It will be understood, however, that the most efficient operation of the device can be obtained in this manner and that the manipulations necessary to produce a hat are decreased, the pressure and connections which have to be present in order to use the expansible casing for the interior of the crown being not materially increased by the use of the apparatus for raising the die and applying pressure. When the hat has been pressed, the fluid can be readily exhausted by turning the valves in such a manner as to allow it to escape through the ends of the connection 35.

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

1. A hat-press comprising a stationary plate, a chambered plate supported by said stationary plate, a piston in the chamber of the chambered plate, an elastic diaphragm on which the piston is mounted, a hat-die supported by said piston, said chambered plate having a wall provided with grooves, and means for introducing a fluid into said grooves.

2. A hat-press comprising a stationary plate, a chambered plate supported by said first-named plate, a piston in the chamber, an elastic diaphragm on which the piston is mounted, a hat-die supported by said piston and having an elastic casing, and means for simultaneously introducing a pressure agent into said casing and into said chamber, below the piston.

3. A hat-press comprising a stationary plate, a chambered plate supported by said stationary plate, a piston in the chamber, an elastic diaphragm on which the piston is mounted, a hat-die supported by said piston, and having an elastic casing, and means for simultaneously introducing a pressure agent into said casing and into said chamber under the piston, said means comprising a pipe underneath the chamber, a pipe underneath the die, a connection between the pipes, and a reducing-valve between the first-named pipe and the connection.

4. A hat-press comprising a plate provided with a chamber and two concentric projections constituting walls of said chamber, an elastic diaphragm resting on the tops of said projections, and a pair of rings located on the diaphragm and secured to said projections.

5. A hat-press comprising a plate provided with a chamber and two concentric projections constituting walls of said chamber, an elastic diaphragm resting on the tops of said projections, and a pair of rings located on the diaphragm and secured to said projections, one of said rings being provided with a flange projecting toward the interior of said chamber, a piston resting on said diaphragm and adapted to engage said flange, and a hat-die supported by said piston.

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

HERBERT SLOCOMB BLAKE.

Witnesses:

JNO. M. RITTER,
ALBERT E. FAY.