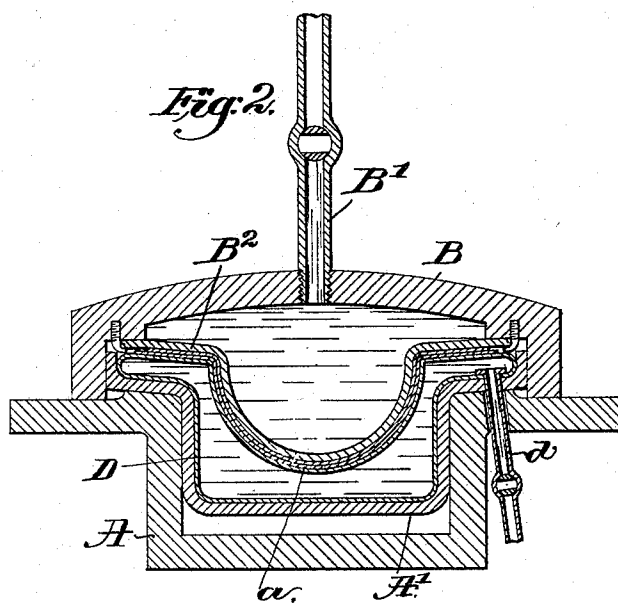
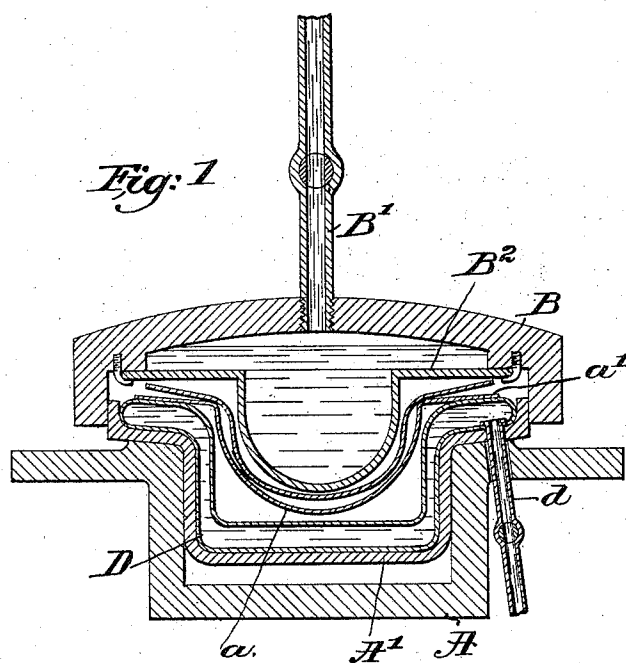


(No Model.)

J. ROWLEY.
HAT PRESSING APPARATUS.

No. 535,773.

Patented Mar. 12, 1895.



Witnesses.
Fred S. Gumbel.
Thomas F. Drummond

Inventor:
Joseph Rowley,
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UNITED STATES PATENT OFFICE.

JOSEPH ROWLEY, OF CAMBRIDGE, MASSACHUSETTS.

HAT-PRESSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 535,773, dated March 12, 1895.

Application filed May 2, 1894. Serial No. 509,800. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ROWLEY, a subject of the Queen of Great Britain, residing at Cambridge, in the county of Middlesex, State of Massachusetts, have invented an Improvement in Pressing Apparatus for Head-Coverings and other Articles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of hats from felt and other substances, it is customary to press the same in a shaping die, commonly designated as a "hat dish." These dies or dishes are commonly made of metal, and are set into a supporting frame, the brim part of the dish resting on the frame, and to enable the said dish to withstand the strain exerted by the action of the flexible hat-shaped bag or diaphragm actuated by hydraulic or pneumatic pressure, the brims of the dishes as well as their sides have been made quite thick, and the dishes have thus been made quite heavy and expensive.

I have aimed to provide a pressing apparatus wherein a comparatively thin and light weight dish could be used practically, and I have been able to accomplish my invention by, for the first time, mounting the dish upon a flexible support, and for the best results the said flexible support will be made as a bag or diaphragm containing a fluid, the support adapting itself to the exterior of the dish as the diaphragm at the concave side of the dish is being expanded to force into said dish the hat or head covering to be pressed.

Figure 1, in vertical section, shows a sufficient portion of a pressing machine to enable my invention to be understood, and Fig. 2, a like view but with both bags or diaphragms expanded.

The base plate or bed A, supported in practice on a suitable frame, not shown, the metallic pot A' therein, and the bell or dome B having the inlet B' and an attached flexible bag or diaphragm B², are and may be all substantially as in other well known hat presses, the said parts in practice having combined with them in usual manner devices whereby the relative positions of the dome or pot may be changed to thereby effect their separation for the introduction or removal of the hat dish

to be described, and the insertion of the hat to be pressed, or for the removal of the hat after having been pressed, but as such actuating devices are old and well known and not of my invention, I have not deemed it necessary to herein describe the same.

The inlet B' is in communication with a reservoir containing a fluid under pressure, as water or air under pressure, so as to at any desired time effect the inflation of the bag or diaphragm, as for instance, as provided for in United States Patent No. 63,435, or in other usual or suitable manner.

The hat dish or die is shown as having a body *a* and a projecting brim *a'*, and this body and brim are made of comparatively thin metal, and the body and brim may be of substantially the same thickness.

Usually the metallic die or dish used has had its body part made quite thick and the brim has been made much thicker than the body, and only the brim has been laid on the wall of the pot in which the body of the dish entered.

Where the brim is supported rigidly and has to withstand all the pressure of the diaphragm B², the dish has to be made very strong.

In accordance with my invention, the dish or die is made very much thinner comparatively than any other hat dish known to me, and its brim is substantially of the same thickness as the body, and such dish or die is consequently quite light in weight, so thin and light that were it not for the peculiar manner in which I support said dish or die, it could not be used practically.

In my experiments, I realized that if I could counter-balance the pressures within and without the dish or die, and could so distribute the lines of pressure that no more strain could be put onto the dish or die at one than at every other spot, the dish or die,—it being commonly made of metal by casting,—might be made comparatively thin and yet not break or crack, notwithstanding the hat or other article being pressed was subjected to a high pressure. I accordingly devised the pressing apparatus herein described, in which I have supported the dish or die externally on a flexible bag or diaphragm D preferably of india rubber or its compounds, said bag or dia-

phragm being contained in the usual pot A' and having operatively connected with it a suitable inlet pipe *d*, by which to fill it with fluid either water or air, so that when the bag or diaphragm B² is inflated, the bag or diaphragm D fitting the exterior of the dish or die supports the same externally, the two bags or diaphragms working in opposition, or one toward the outer and the other toward the inner side of the dish or die, and the pressure both inside and outside is therefore flexible or self-adapting and results in subjecting the dish or die to substantially equal pressure throughout and the dish or die is not strained at one more than at another point, and yet the hat or other article in the dish or die may be subjected to any desired pressure.

This invention is not limited to the exact shape shown for the bags or diaphragms, nor to the exact shape shown for the dish or die, as the shape may be varied according to the shape of the hat or article to be pressed.

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

1. In a pressing apparatus, the following instrumentalities: viz;—a dish or die to re-

ceive the article to be pressed, a flexible bag or diaphragm to support the exterior of said dish or die, a pipe to inflate said bag or diaphragm, to cause the exterior of said dish or die to be subjected thereby to substantially uniform strains throughout its extent and means to force the dish or die into the flexible bag or diaphragm, substantially as described.

2. In a pressing apparatus, a pot A', a support therefor, a dish or die to receive the article to be pressed, a bag or diaphragm to sustain said dish or die, a bag or diaphragm to enter said dish or die, and pipes to inflate respectively the bag or diaphragm entering the dish or die and the sustaining bag or diaphragm, to cause the dish or die to be subjected at all times to substantially uniform strains outside and inside, whatever may be the extent or degree of pressure on the article being pressed, substantially as described.

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

JOSEPH ROWLEY.

Witnesses:

GEO. W. GREGORY,
EMMA J. BENNETT.