H. E. West.

Pressing Bonnets.

No. 20837 Patented Jul. 6, 1858.

Fig. 1.

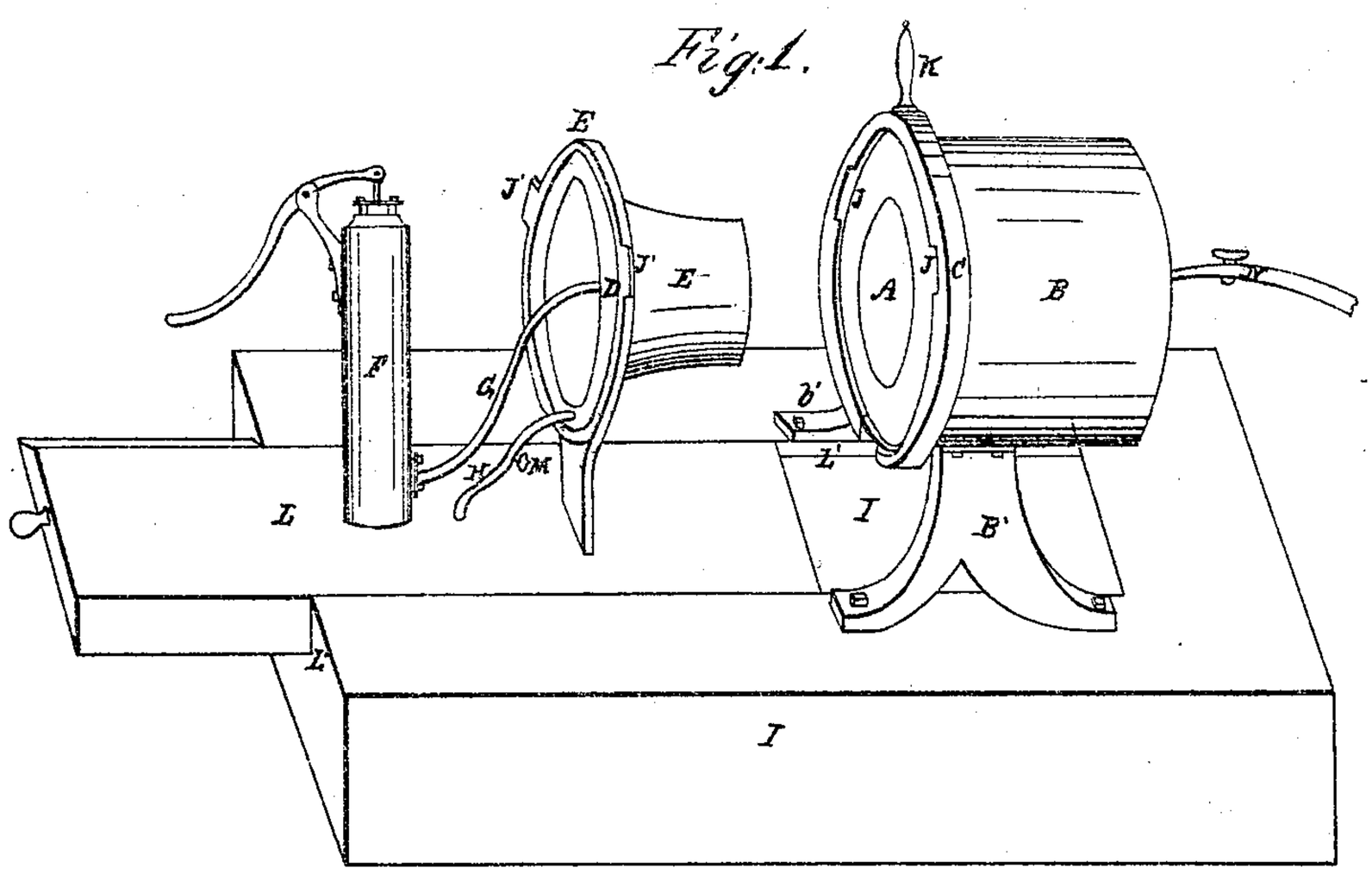
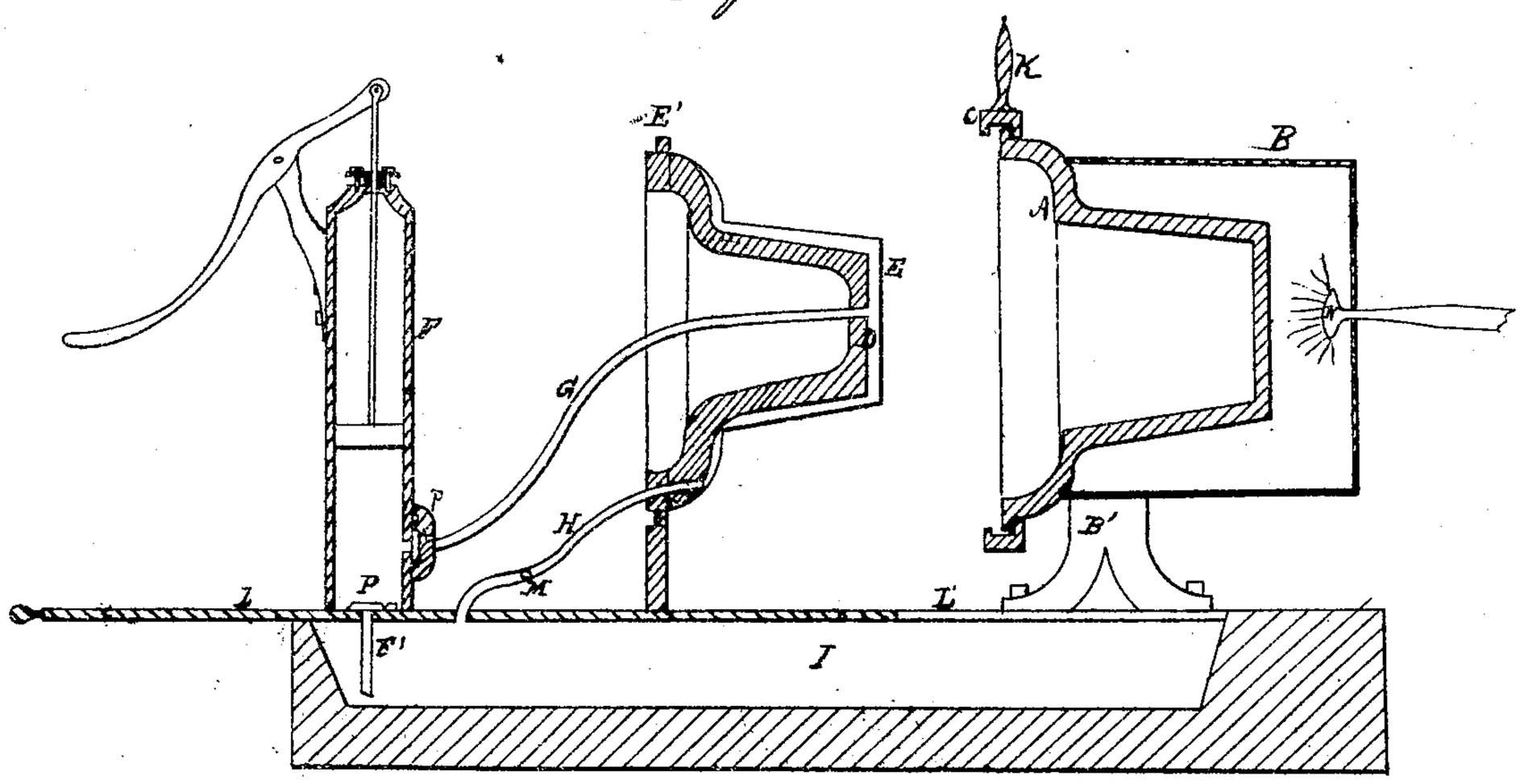


Fig. 2.



Witnesses
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HIRAM E. WEST, OF NORTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR PRESSING STRAW BONNETS AND OTHER ARTICLES OF VARYING THICKNESS.

Specification forming part of Letters Patent No. **20,837**, dated July 6, 1858.

To all whom it may concern:

Be it known that I, HIRAM E. WEST, of Norton, in the county of Bristol and State of Massachusetts, have invented a new and useful machine or apparatus for molding, forming, shaping and pressing articles that can be molded, formed, shaped, and pressed by a flexible presser operated by some fluid substance forced against it; and I do hereby declare that the same is described and represented in the following specification and drawings.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and the mode of using it, referring to the drawings, in which the same letters indicate like parts in each of the figures.

Figure 1 is a machine made according to my invention for forming and shaping hats or bonnets, by pressing them into a mold by means of a flexible presser operated by some fluid forced against it. Fig. 2 is a sectional elevation representing Fig. 1 cut longitudinally through the center.

In the drawings, A is a mold, in which the bonnet or hat is to be formed or shaped and pressed, made of cast metal and provided with a case or covering B, as shown in Fig. 2, leaving a space between the mold and case for steam or a flame of gas from the pipe N to heat the mold. This mold and case is supported by the standards B′ B′, which connect it to the trough I, which trough may be made in the form shown in the drawings or of such other form as will answer the purpose. This trough I is intended to hold water or other fluid, and is provided with a cover L, arranged to slide in grooves L′ to traverse the stand D, and flexible presser E to and from the mold A, so as to apply the hat or bonnet to be shaped and pressed, and remove it when done.

D is a metal stand made in the form shown in the drawings or in such other form as will answer the purpose, and fastened to the cover L so as to move with it.

E is a flexible covering or presser covering the outside of the stand D, and fastened to it by the hoop E′, as shown in the drawings. This flexible presser E may be either elastic or non-elastic if it is made large enough to fill the mold when it is distended, and so as to be easily compressed to apply the article to be shaped or molded and pressed by it. I have found a presser for this purpose to do good service when made of india-rubber and operated by cold water from the trough I, forced into the space O between the flexible presser E and stand D, through the pipe G, by the pump F, which is fastened to the cover L at a convenient distance from the stand D. The water in the trough I is drawn up through the supply-pipe F′ by the pump F and forced through the pipe G into the space O, the valves P P preventing its return, and after it has distended the flexible presser, as required, it is allowed to escape through the pipe N (by turning the cock M) into the trough from whence it was taken.

The mold A is provided with a flange, to which the grooved rim or hoop C is fitted to turn freely and provided with a handle K, and there are some scores J J in the hoop C, into which scores the lugs J′ J′ on the stand enter when the stand is carried up to the mold and the hoop is turned by the handle K so as to lock the stand and and mold firmly together while the bonnet is shaped in the mold and pressed.

To press a straw bonnet after it is bleached, it is properly moistened and placed upon the flexible presser E, which is then placed with the stand D in the mold (which is properly heated for the purpose) and locked there. The operator now works the pump F, and forces the water into the space *o*, under the flexible presser E, and spreads or expands it, forcing the bonnet against the sides of the mold which surrounds it, and compelling it to assume the exact form of the interior of the hot mold, which shapes it while the flexible presser presses it hard against the hot mold, which heats the bonnet and evaporates the moisture in it, which is condensed on the presser by the cold water inside, so that after the bonnet has been pressed a proper time in the mold, it may be released by turning the cock M and letting the water which distended the presser return to the trough when the flexible presser collapses or shrinks from the bonnet, which remains in contact or near the hot mold, which evaporates and drives the moisture from the bonnet, which moisture is

condensed by the cold, flexible, and collapsed presser, except what escapes with it in the form of steam when the presser is removed, by turning the rim C to release it, and pushing the stand D back, leaving the bonnet in the hot mold nearly or quite dry and more perfectly pressed than it could be done, or has ever been done, by any process or apparatus in use prior to my invention.

In finishing bonnets it is important to obtain as even and uniform surface as possible on the exterior without breaking the braid or ripping the sewing where one portion of the braid overlaps another. This even and uniform surface is more perfectly made by my machine than by any apparatus previously devised, because the pressure is uniform against all parts of the mold and the bonnet, even if the bonnet is thicker in some parts than others.

In pressing straw bonnets by the modes in common use unless sufficient time is allowed for the hot flat to evaporate the moisture that is far too much time for simply pressing the bonnet; but if it is taken from the pressing-block before it is well dried its surface is liable to become more or less uneven. With my machine and the use of cold water to expand the flexible presser, and a hot mold, the moisture in the bonnet is driven from it and condensed upon the flexible presser as it collapses and shrinks from the bonnet, leaving the bonnet nearly or quite dry.

As the pressure with my machine is uniform upon all parts of the bonnet at the same time, a bonnet made of inferior braid, or an old bonnet in which the braid is more or less defective, can be pressed and reshaped with far less risk by it than by the common methods.

With my machine ten bonnets can be pressed in the same time and with the same amount of labor required to press one bonnet by the modes heretofore practiced, and any amount or degree of pressure can be given that may be required; besides, the finish given to the bonnet is far superior to that given by any other machine or process heretofore used.

Although I have only described an apparatus for and the process of shaping and pressing bonnets, I contemplate that the apparatus may be modified by skillful artisans and adapted to the molding and shaping of such articles and substances as can be molded, shaped, and pressed by a flexible presser acted upon by a fluid substance.

I believe I have described and represented the best mode or form of the machine or apparatus which I have invented for the purposes above mentioned known to me, so as to enable any person skilled in the art to make and use it. I will now state what I desire to secure by Letters Patent, to wit:

I claim—

1. A mold either hot or cold to form the article pressed, in combination with the flexible presser operated by a fluid substance either liquid or gaseous, substantially as described, so as to press the article or substance to be shaped or molded into the mold and give it the form or shape required.

2. The use of cold water or other cold liquid to operate the flexible presser, in combination with a hot mold, so that the cold flexible presser will condense the moisture evaporated or driven from the article pressed by the hot mold and leave said article nearly or quite dry.

3. The process of shaping bonnets, hats, and other articles by pressing them into or onto a mold either hot or cold by means of a flexible presser operated by some liquid or gaseous substances, substantially as described.

HIRAM E. WEST.

Witnesses:

S. C. MOREY,

LEML. T. TALBOT.