(No Model.)

J. MARSHALL.

HAT BLOCK.

No. 533,908 Patented Feb. 12, 1895.

Fig 1.

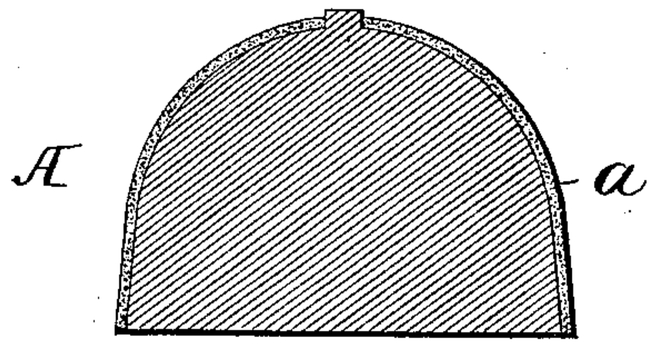


Fig 2.

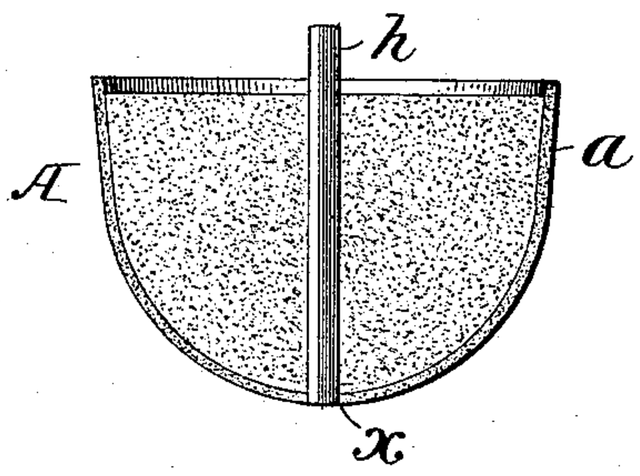
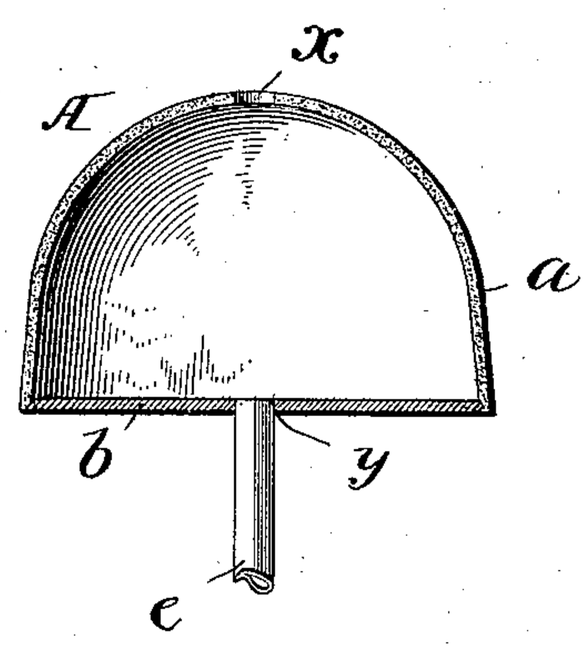


Fig 3.



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UNITED STATES PATENT OFFICE.

JAMES MARSHALL, OF FALL RIVER, MASSACHUSETTS.

HAT-BLOCK.

SPECIFICATION forming part of Letters Patent No. 533,908, dated February 12, 1895.

Application filed August 18, 1893. Serial No. 483,459. (No model.)

To all whom it may concern:

Be it known that I, JAMES MARSHALL, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Formers or Blocks for Stretching Hats; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

In the manufacture of former blocks for hat-making machinery, that is, those blocks upon the outside of which the felt hat blank is placed to be stretched, which operation is known as blocking out, it has been common to turn up a block of wood of one or more pieces to the proper shape. The use of wood is objectionable, however, as the moisture in the felt blank causes it to swell, and consequently some of the hats are stretched too much. Iron blocks are found objectionable on account of their weight and their tendency to rust and ruin the hats, and blocks made of copper are objectionable because of the great expense of their construction. The use of an expanding head formed of a series of pieces known as fingers properly pivoted together, is also common, but this construction has been found unsuitable for shaping hats to be finished in a hydraulic press, as it is necessary that the hat should be of the exact shape of the die that is used therein and the use of an expanding head will not accomplish this. On the other hand it leaves the hat full of ridges and when the die in the hydraulic press descends it comes in contact with these ridges and mashes the hat in the press.

In order to overcome the objections to the use and manufacture of blocks of the ordinary construction, I have produced a block consisting partly of copper and partly of another metal, as white metal, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view of the shell portion of the block as constructed in accordance with my invention. Fig. 2 is a similar view of both the shell and the base, showing the interior filled with sand, which is subsequently emptied on the withdrawal of the rod which is also shown in said figure. Fig. 3 is a section of the completed former.

The improved former A consists of a shell *a* of copper, which is semi-spherical or approximately semi-spherical, and a base or backing *b* which is in the form of a comparatively thin plate joined permanently at its edges to the edges of the semi-spherical hollow shell *a* as best illustrated in Fig. 3. In order to economically manufacture the former of this character, I first make the shell *a* of copper. This shell is made to have any configuration desired, and while it may be variously formed, I prefer to make it by the well known process of electro-deposition. Thus a wooden block or plaster cast is made of the shape desired and submitted to the electrolytic process, when it is covered with a coating of sufficient thickness, usually about one-sixteenth of an inch, more or less, thereby forming a shell with a very smooth exterior surface, and it will be readily seen that it can be quickly and accurately formed of any shape or style to suit; and while I prefer to make it by the process of electro-deposition, it will be evident that it may be otherwise formed by spinning the metal over the plaster cast or wooden block, by casting it in a two-part mold, or in any other desirable manner.

It will be understood of course that in order to secure or furnish to the shell a smooth or plain external surface, the said shell is placed within the hollow of a mold of suitable shape and the electro deposition of metal is laid upon the outer surface of the shell in contact with the surface of the mold. In this way the desired smooth or plain exterior surface is obtained.

After the shell *a* is formed, whatever may be the mode by which it is made, it is filled with sand or other pulverized substance, and a stick or rod *h* is placed with its lower end in an opening *x* which has previously been made in the shell and standing vertically, and a body of sand is then deposited in the shell *a* around the stick *h* with its upper surface a short distance below the upper edge of the shell *a*. Upon this sand is then poured molten white metal or other metallic alloy or composition, the heat of which causes the edge of the shell *a* to become fused or partly fused

so that the base and the shell are fused or brazed together at their contacting points, thereby forming a solid, impervious, air-tight joint not likely to open or leak, while an opening is also formed in the center of the base when the stick *h* is withdrawn. After the metal base *b* has hardened and cooled, the stick *h* is withdrawn and the sand is permitted to run out through one of the openings *x*, *y*. The former will then be complete and it is connected by a screw connection or otherwise with an inlet pipe *e* through which compressed air may be forced.

In the manufacture of hats, the moist felt hat is drawn over the block or former A, and the bottom edges of the hat are secured to the usual clamps (which need not be here shown or described), and the block is then moved vertically upward so as to stretch or shape the hat upon it, while the clamps maintain hold of the lower portion. After the hat has been stretched to the proper extent, the block is lowered and the hat released and compressed air is then forced through the pipe *e* which enters between the former and the hat and overcomes the cohesion between the two, so that the hat may be readily removed. The block may be so constructed, however, as to permit the operator to remove it from its supporting frame and blow through the openings, which method is now in use, and release the hat from the block in this manner.

I claim—

1. A former for hat-blocking machines, consisting of a semi-spherical metallic shell, and a base secured thereto, said shell and base having openings formed therein, substantially as described.

2. A former for hat-blocking machines, consisting of a semi-spherical shell of electro-deposited material having a smooth exterior surface and a base of fusible metal secured to said shell and having openings in the crown and base, substantially as described.

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

JAMES MARSHALL.

Witnesses:
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