WORSLEY & DORSEY.

Die for Forming Bars of Soap.

No. 39,784. Patented Sept. 1, 1863.

Fig. 2.

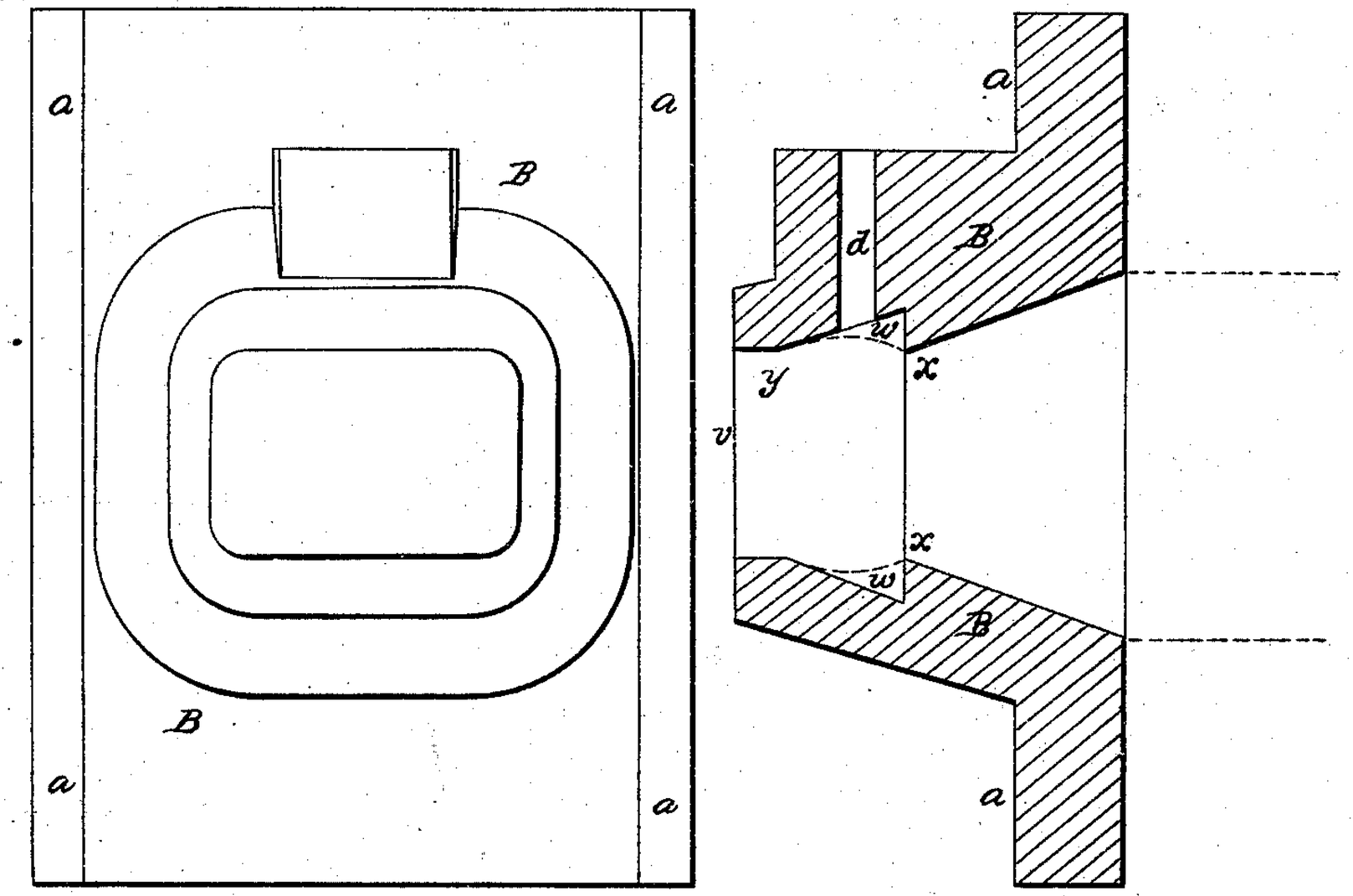


Fig. 4.

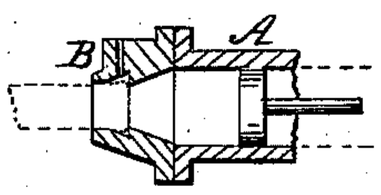
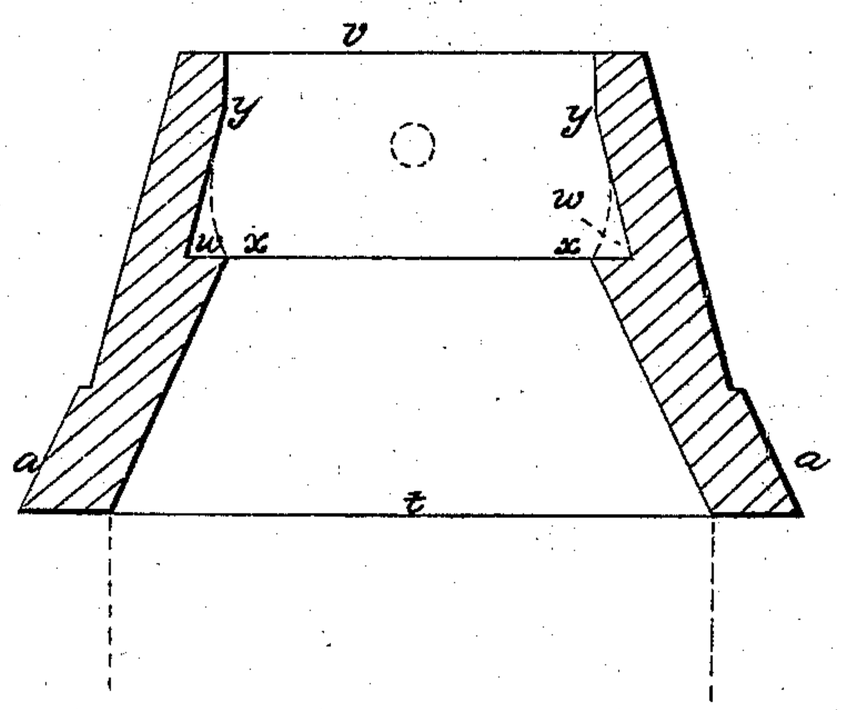


Fig. 3.



Witnesses:
Charles E. Foster
Charles Howson.

Inventors:
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UNITED STATES PATENT OFFICE.

THOMAS WORSLEY AND GEORGE W. DORSEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO THOMAS WORSLEY.

IMPROVED DIE FOR FORMING BARS OF SOAP.

Specification forming part of Letters Patent No. **39,784**, dated September 1, 1863; antedated April 11, 1862.

To all whom it may concern:

Be it known that we, T. WORSLEY and G. W. DORSEY, both of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Dies for Forming Bars of Soap; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Our invention relates to an improvement in dies, through which soap ground to a pulpy mass is forced for the purpose of shaping it into bars; and our invention consists in forming in the die a recess communicating with a vessel containing water or other suitable fluid, which surrounds the soap as it is being forced through the die and serves as a lubricant, so that the surface of the bar of soap may be smooth and even and free from that torn and ragged appearance which it presents after being forced through a die of the ordinary construction.

In order to enable others to make and use our invention, we will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of our improved die for forming bars of soap; Fig. 2, a front view; Fig. 3 a sectional plan, and Fig. 4 a sectional view drawn to a reduced scale and illustrating the operation of our improvement.

Similar letters refer to similar parts throughout the several views.

Our improved die consists of a block, B, of cast-iron or other suitable metal, provided with dovetailed flanges *a a* for fitting into dovetailed guides on the end of the cylinder A, Fig. 4, this cylinder having a piston or plunger, D, by means of which the soap ground to a pulpy mass is forced through the die. The opening in the die through which the soap has to be forced is of the form best observed in Figs. 1 and 3, the opening being largest at the rear of the die and gradually diminishing in size to the point *x*, where it is of the same size, or nearly the same size, as the bar of soap to be formed. At this point *x* the opening is enlarged by the recess *w*, and is again gradually contracted until it reaches the point *y*, where the opening is of the same size, or nearly the same size, as it is at the point *x*, and from the point *y* to the point *v* of the die the opening is straight. Looking toward the front of the die, the opening may be of the shape seen in Fig. 2, or it may be of any other shape to which it is desirable to reduce the soap.

In the usual dies for forming bars of soap there is a simple tapering opening, through which the soap previously ground and mixed to a pulpy mass is forced. However smooth this opening may be, the surface of the bar is torn, ragged, and uneven—a defect which our improvement has been especially designed to obviate.

It will be observed on reference to Fig. 1 that there is in the die a vertical orifice, *d*, communicating with the recess *w*. To the top of the die, or to any object adjacent thereto, is secured a vessel containing water, alcohol, or other suitable fluid, which is allowed to pass down the orifice *d* and into the recess *w*, so that, as the soap is being forced through the die it is surrounded by fluid. As the soap passes from the recess *w* through the front of the die, it carries with it a portion of the fluid, which serves as a lubricant and prevents that friction of the soap against the inside of the die which causes the ragged and uneven appearance alluded to above.

We claim as our invention and desire to secure by Letters Patent—

The recess *w*, formed in the die B and communicating with a vessel containing water or other suitable fluid, substantially as and for the purpose herein set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

THOMAS WORSLEY.
GEO. W. DORSEY.

Witnesses:
PETER B. LEVERING,
THOMAS REIF.