

(No Model.)

3 Sheets—Sheet 1.

F. C. CHRISTY.
SOAP MOLD.

No. 339,376.

Patented Apr. 6, 1886.

Fig. 2

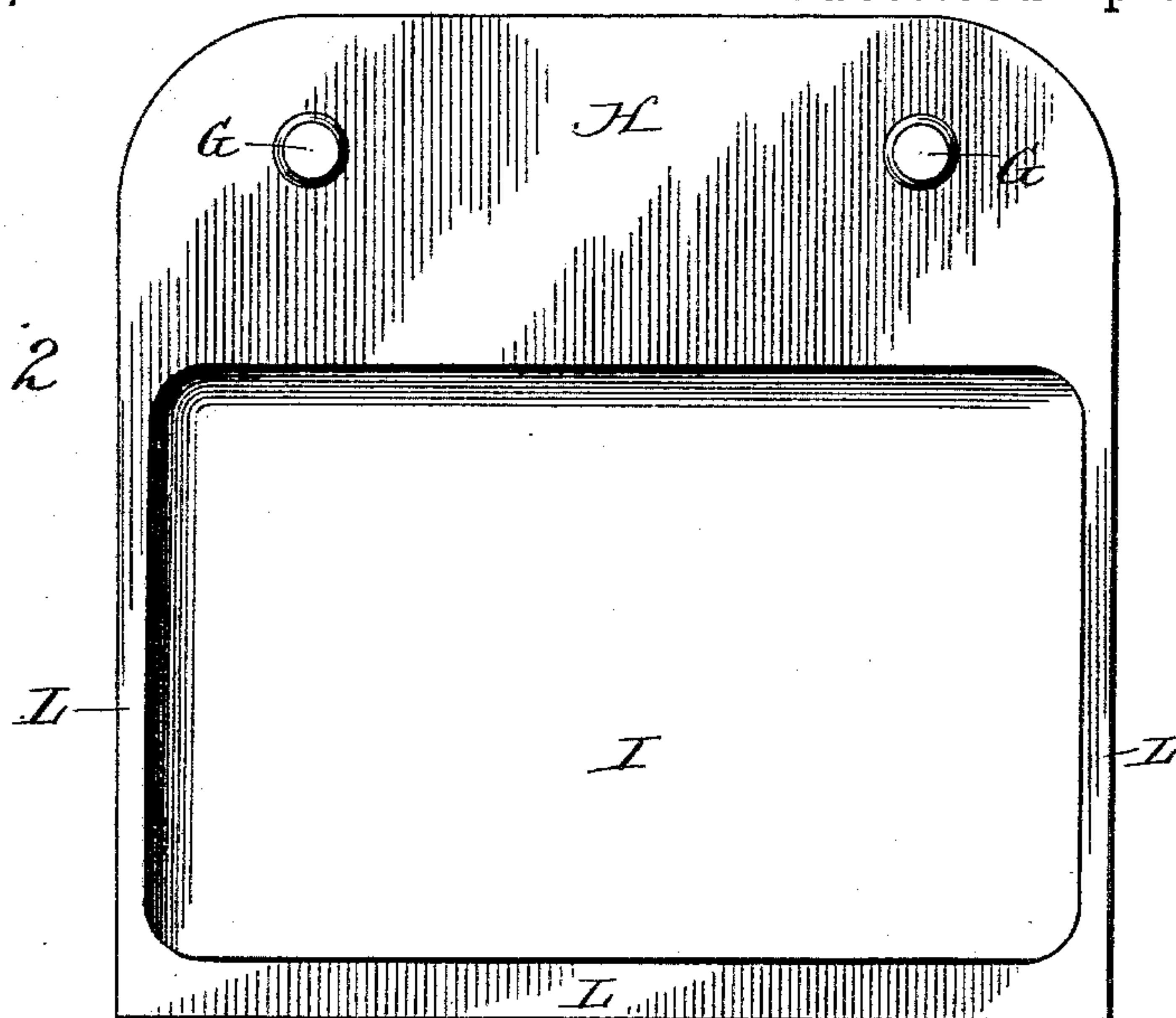
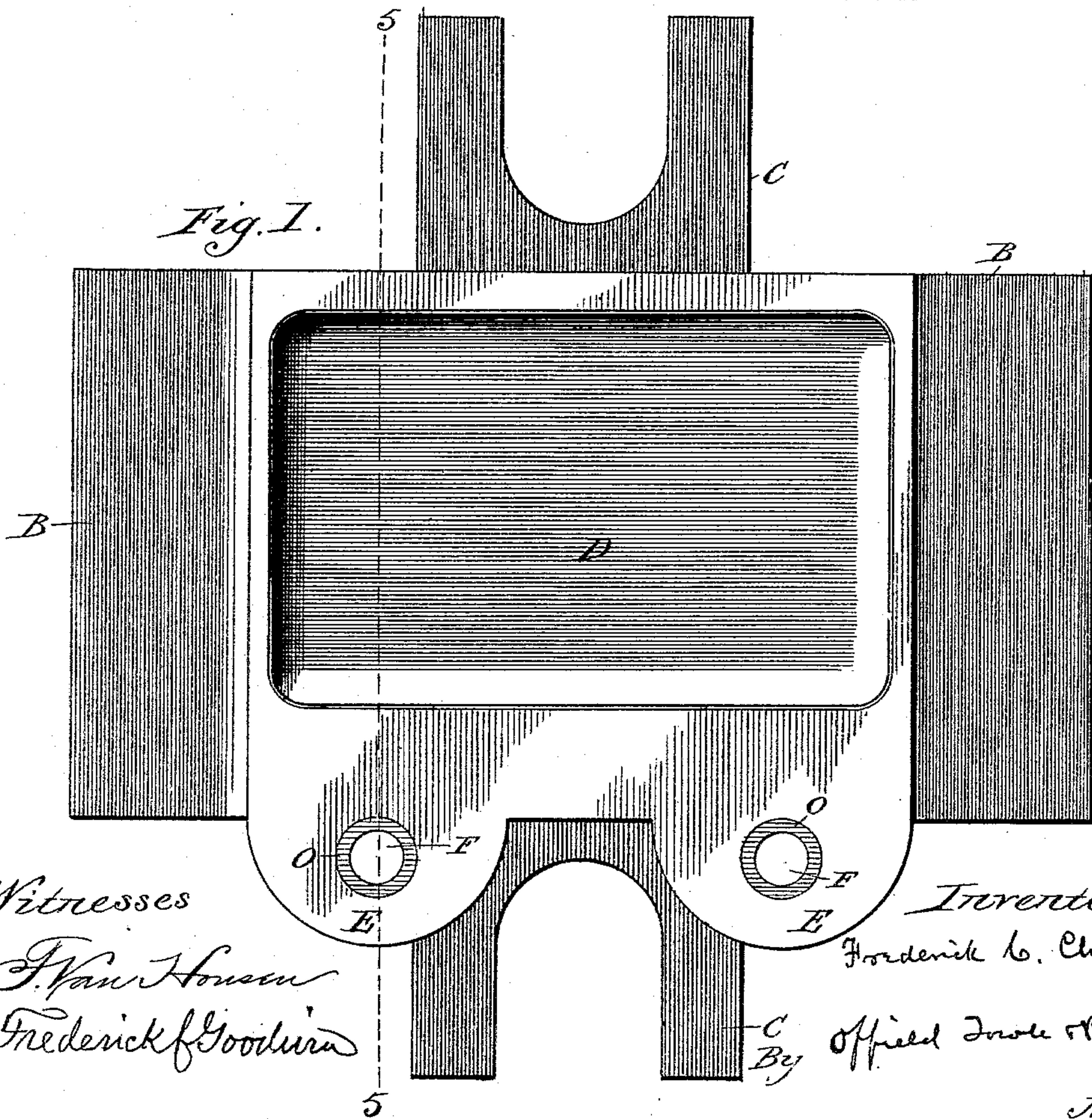


Fig. 1.



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Fig. 4.

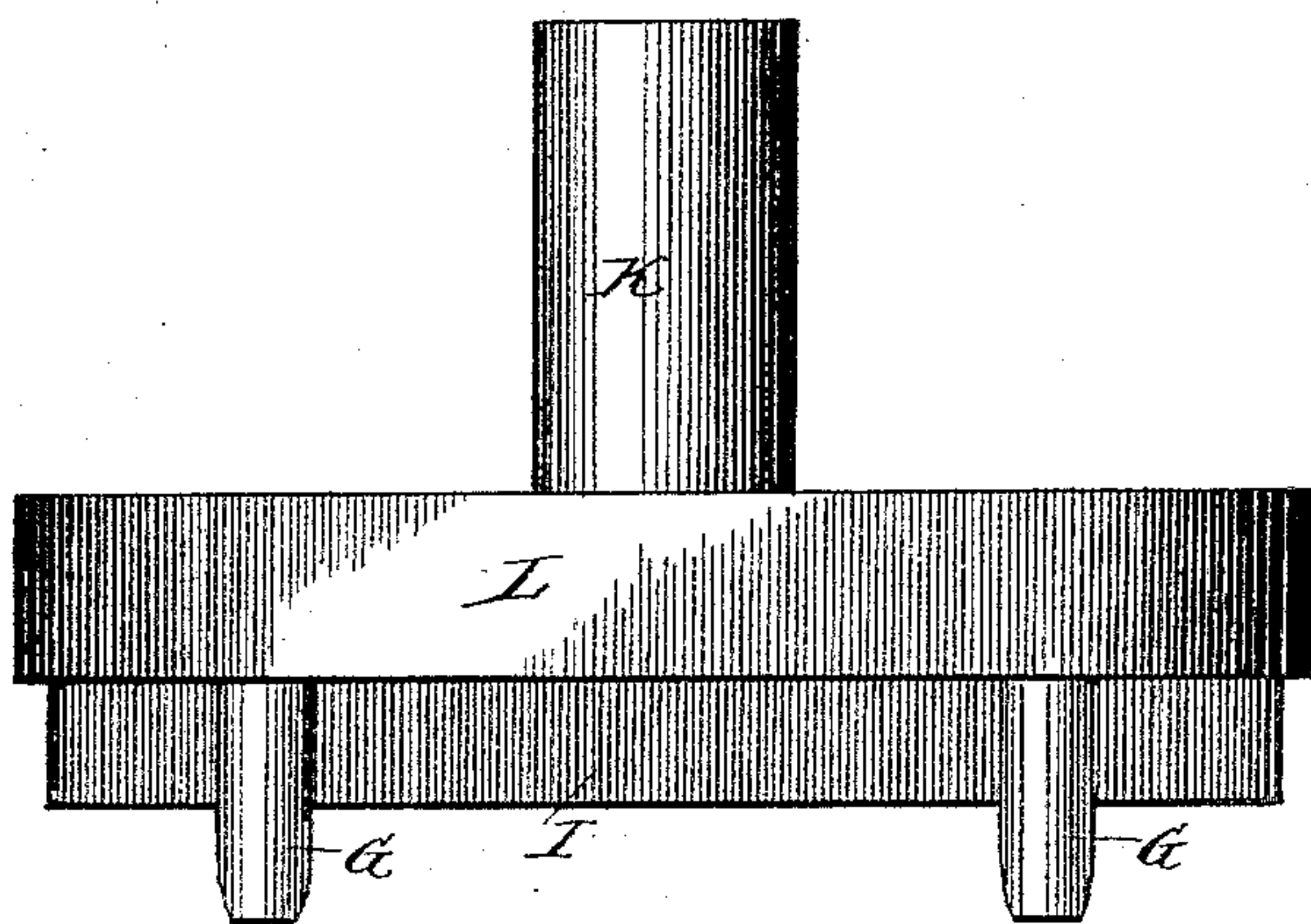
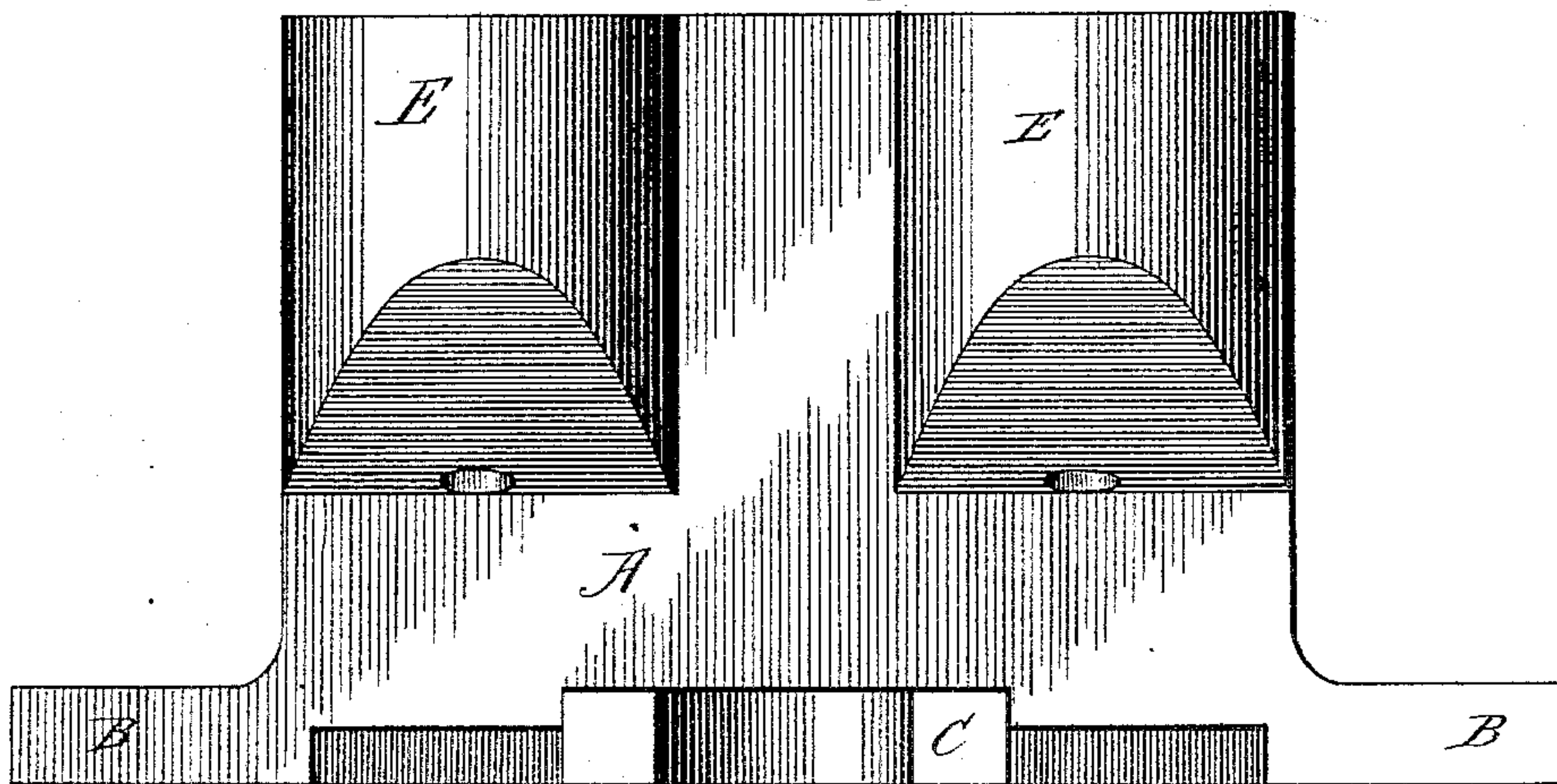


Fig. 3.



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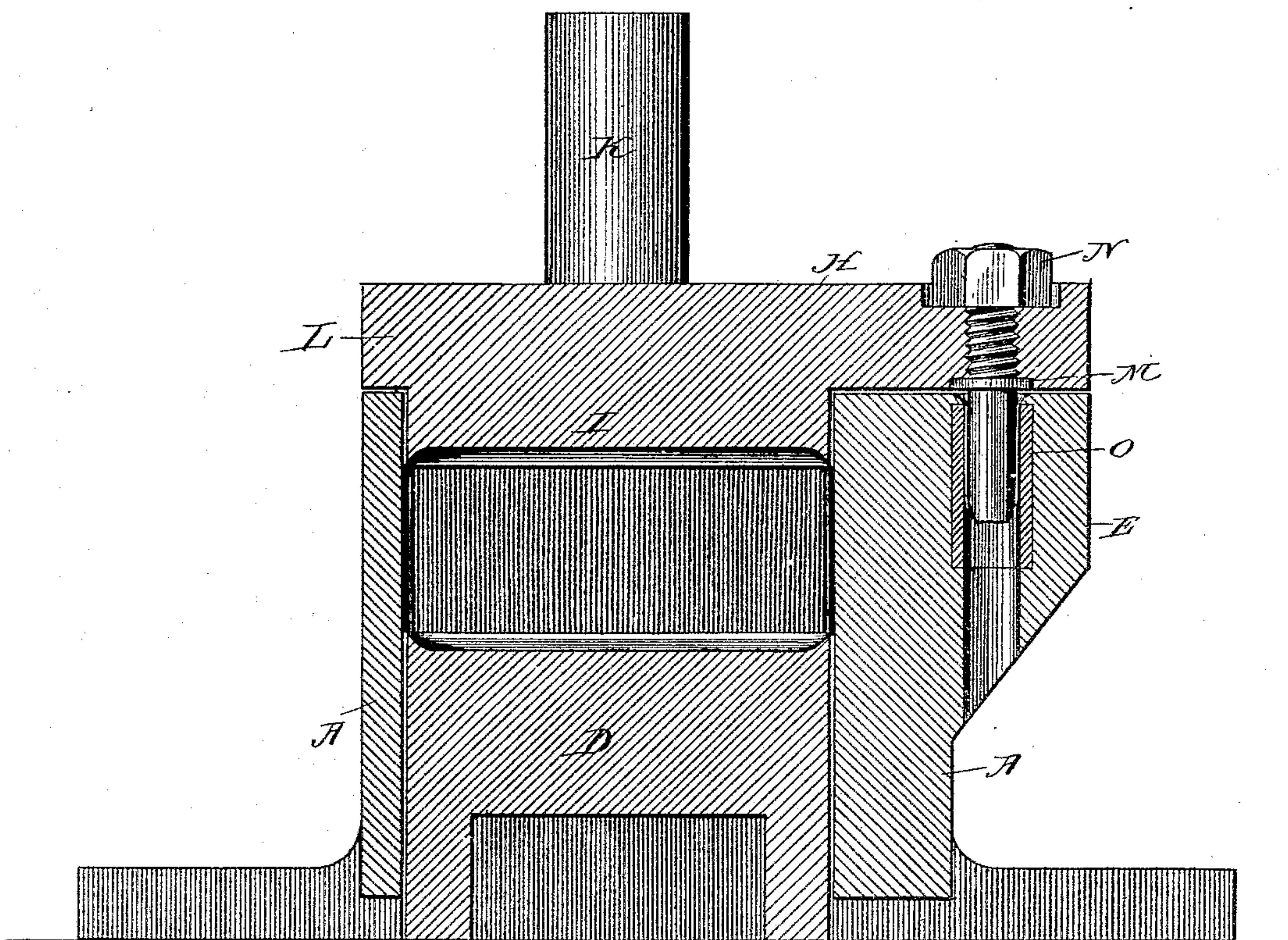
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Fig. 5.



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UNITED STATES PATENT OFFICE.

FREDERICK C. CHRISTY, OF CHICAGO, ILLINOIS.

SOAP-MOLD.

SPECIFICATION forming part of Letters Patent No. 339,376, dated April 6, 1886.

Application filed January 8, 1886. Serial No. 188,024. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. CHRISTY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Soap-Molds, for which I desire to secure Letters Patent of the United States, and of which the following is a specification.

My invention consists in certain features of construction and combinations of parts, hereinafter fully described, and pointed out in the claims.

In the drawings which form part of this specification, Figure 1 represents a plan view of my improved soap-mold, the lower or bed die being shown in position, and the upper or operating die being removed. Fig. 2 represents a bottom view of the upper or operating die detached from the box of the mold. Fig. 3 shows a side perspective of the box of my improved mold, the operating-die and the plate to which it is attached being separated from it, and shown in Fig. 4 as it appears when about to descend. Fig. 5 represents a vertical cross-section of the box on line 5 5, Fig. 1, showing the operating-die in position in the box as it appears when arrested by the engagement of its flanges L with the tops of the box-sides.

The box A is provided at its bottom with flanges or projections B C, to furnish extended bearings and proper means of attachment, as are usually provided for all kinds of die-boxes. The lower die, D, is movable within the box, in order that it may be adjusted by means of plates placed under it to the size of the cake of soap which it is proposed to make.

Upon one side of the box A are formed two semicircular projections, E, extending from the top half-way down the side of the box and beveled, as shown in Fig. 5. Each of these projections is provided with a central hole or guideway, F, to receive guide-pins G, attached to the plate H, carrying the upper or operating die, I. The plate H is provided with a shaft, K, for attachment to the stamping machinery used, and has also projecting parts or flanges L, which extend out from the contour of the die, and afford shoulders or rests, which, when they come in contact with the upper

edges of the sides of the box, receive the force of the blow.

In the ordinary use of the mold the flanges L will perform no function, since the entire force of the blow will be borne by the cake of soap, the operating-die being normally arrested by the cake after it has entered the box to the distance of a quarter of an inch, or a little more in cases where the quantity of soap placed in the mold to be stamped is below average, and before the plates H and flanges L have come in contact with the tops of the sides of the box. It sometimes happens, however, that the block of soap which ought to be in the box when the die descends has by accident fallen out, or that the operator has failed entirely to put it in, in which case, of course, the die descends into an empty box. Now, on such an occasion, if the rests or flanges L on the various sides of the operating-die had been omitted, the entire brunt of the blow would fall upon the plate H, carrying the guide-pins, tending to bend it at the point where it projects from the body of the die, and upon the shaft K, tending to wrench it off from the die. With my construction, however, the force of the blow is distributed between the plate H and the several flanges or rests L, and no injury to the operating-die or its attachments results.

The form of the shoulders or rests used is immaterial, it being only requisite that there should be such projections from the body of the die as to engage with and rest upon the top of the box at the proper point.

The guide-pins G are preferably of steel, are screw-threaded into or otherwise attached to the plate H, and have a steel flange, M, let into the lower side of the plate, and affording a bearing against which it is firmly screwed, and then secured by means of lock-nut N on the upper side of the plate. The semicircular projections E are provided with steel bushings O about the holes or guideways F, in which the pins play. The particular form and number of these guide-pins or guide-pieces is quite immaterial, it only being necessary that there should be some sort of guide-connection between the plate carrying the operating-die and the box. Any other desired number of pins might be used, or plates or

pieces of metal of other forms might be substituted for them. The projecting parts might be attached to the box and the holes or slots for receiving them provided in the plate carrying the upper die. Any construction of this sort would be the equivalent of mine, and is within my contemplation.

The defect in soap-molds heretofore constructed which I propose to remedy by the use of mutual guide-pieces between the operating-die and the box will now be set forth. Two kinds of soap-molds are now in common use—one in which the operating-die does not enter the box, but rests, when in stamping position, upon the top thereof, as in patent to Collier, No. 305,293. This form of mold has the advantage of forcing out and separating from the cake any excess of material which there may be in the block of soap placed in it to be stamped. While this feature is of some importance in stamping the finer grades of soap, the material of which is relatively costly, it is found that for ordinary use it is more convenient, and in the long run more economical, to avoid the hinderance and clogging caused by the overflow of soap upon the mold and to stamp the entire block of soap placed in it into the cake. It is therefore common, especially in the manufacture of the coarser grades, to use a die which enters the box, and from which escape of soap is therefore impossible. In using molds of this construction, however, it has been found that the sharp edges of the upper die are likely to come into contact more or less with the upper edges of the box, and become thereby rapidly blunted and distorted, so as to require frequent refitting. As a consequence the upper die as a rule will last but a small fraction of the time required to wear out the lower die. It is to prevent this wear and necessity of frequent repair of the operating-die that I propose to use a guide or guides in connection with molds operating in this way between the operating-die and the box.

It will be observed that the holes F pass entirely through the projections E. This is a feature of importance, since otherwise they would in time inevitably come clogged with soap and dirt when in use, and the entrance of the guide-pins would be thus impeded. The projections E, extending only part way down the box, have an advantage over molds in which the die-pins enter holes in the box itself and pass clear through it, my construction providing a readier discharge through the holes of any accumulations which may occur therein. It will also be noticed that the guide-pins are made relatively short, so that they will be raised entirely out of the holes when the upper die is elevated. This is a matter of importance, it being necessary that when the operating-die is up there should be

nothing between it and the box, and nothing around the box, to prevent the ready removal of the stamped cake and the ready introduction of material into the box. In order to insure the entrance of the pins into the holes when the two parts are brought together, the ends of the pins may be slightly rounded or beveled, or the upper parts of the holes may be slightly reamed out, or both these precautions may be taken, as shown in Fig. 5.

Any material thought to be suitable may be used for the various parts of my improved mold. In practice I prefer gun-metal for the box and dies, with steel pins and bushings, as shown and described herein.

I claim—

1. In a soap-mold, the combination of a box, provided with a lower die, and an operating-die of a size to enter and accurately fit the interior of the said box, and provided with projections adapted to engage with the top edges of the said box and arrest the motion of the operating-die at a predetermined point, substantially as described and shown.

2. In a mold, the combination of a box, provided with a lower die, with an operating-die of a size to enter and accurately fit the interior of the said box, and guide-projections and guideways arranged to control the relative motion of the operating-die with reference to the box, substantially as described and shown.

3. In a mold, the combination of a box with a lower die placed therein, said box being provided on one side with guideways, and an operating-die of a size to enter and fit accurately the interior of the said box, said operating-die being provided with guide-projections adapted to enter the said guideways of the box, and being also provided with projecting rests or shoulders for engaging with other sides of the box, substantially as described and shown.

4. In a mold, the combination of a box provided with a lower die and an operating-die, said box being also provided with a guideway, and said operating-die being provided with a guide-extension beveled or rounded at its point, substantially as described and shown.

5. In a soap-mold, the combination of a box provided with metallic projections formed on the side thereof and extending half-way down, or thereabout, from the top to the bottom of the box, said projections being provided with passage-ways extending entirely through them, and an operating-die, said die being provided with guide-projections adapted to enter said passage-ways, substantially as described and shown.

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Witnesses:

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E. L. HUBER.