

J. F. J. GUNNING.
Molds for Forming Articles of Rubber and other
Materials.

No. 149,218.

Patented March 31, 1874.

Fig: 1.

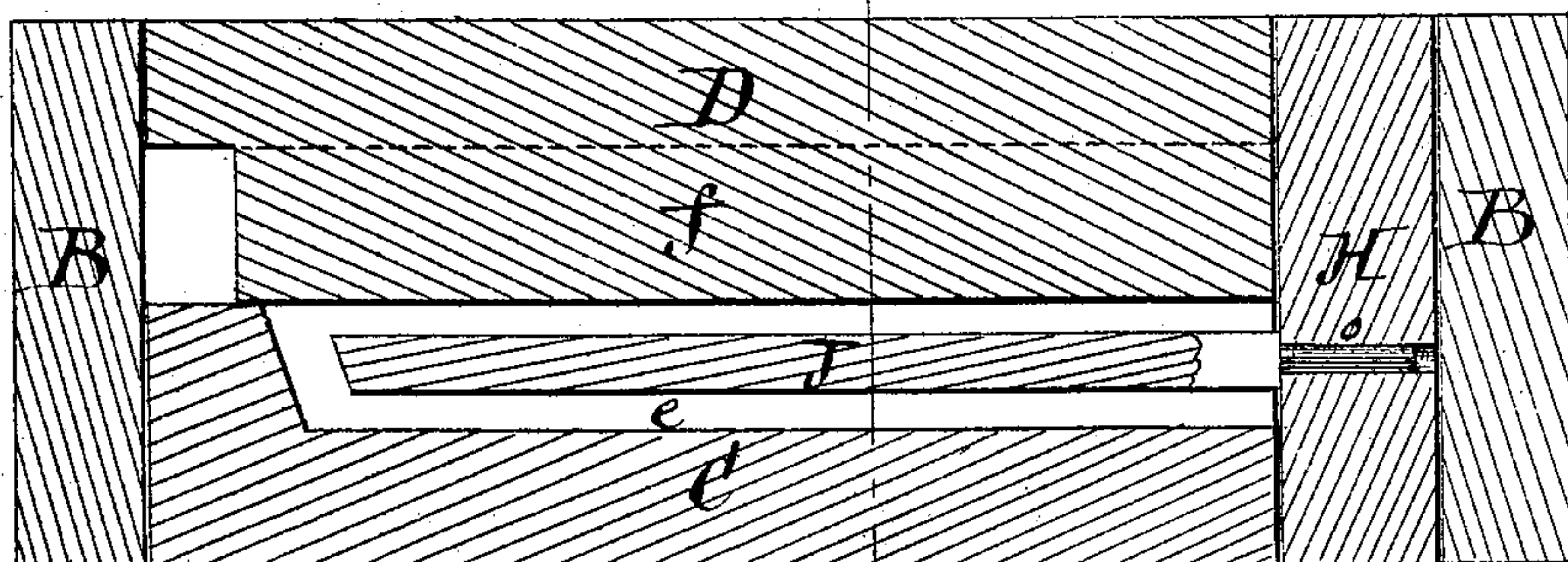


Fig: 4.

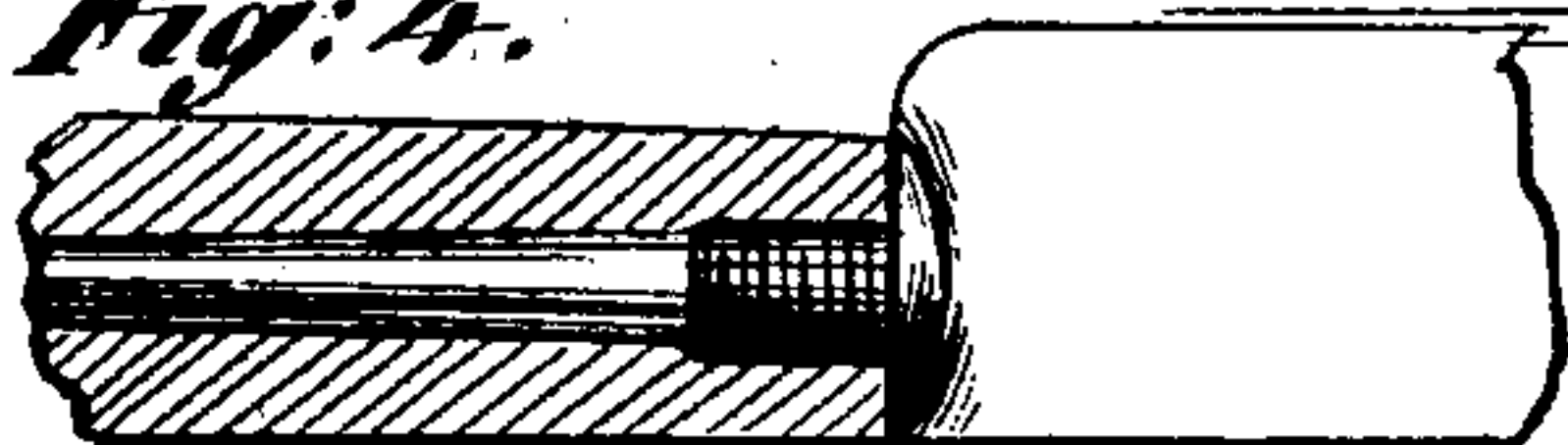


Fig: 2.

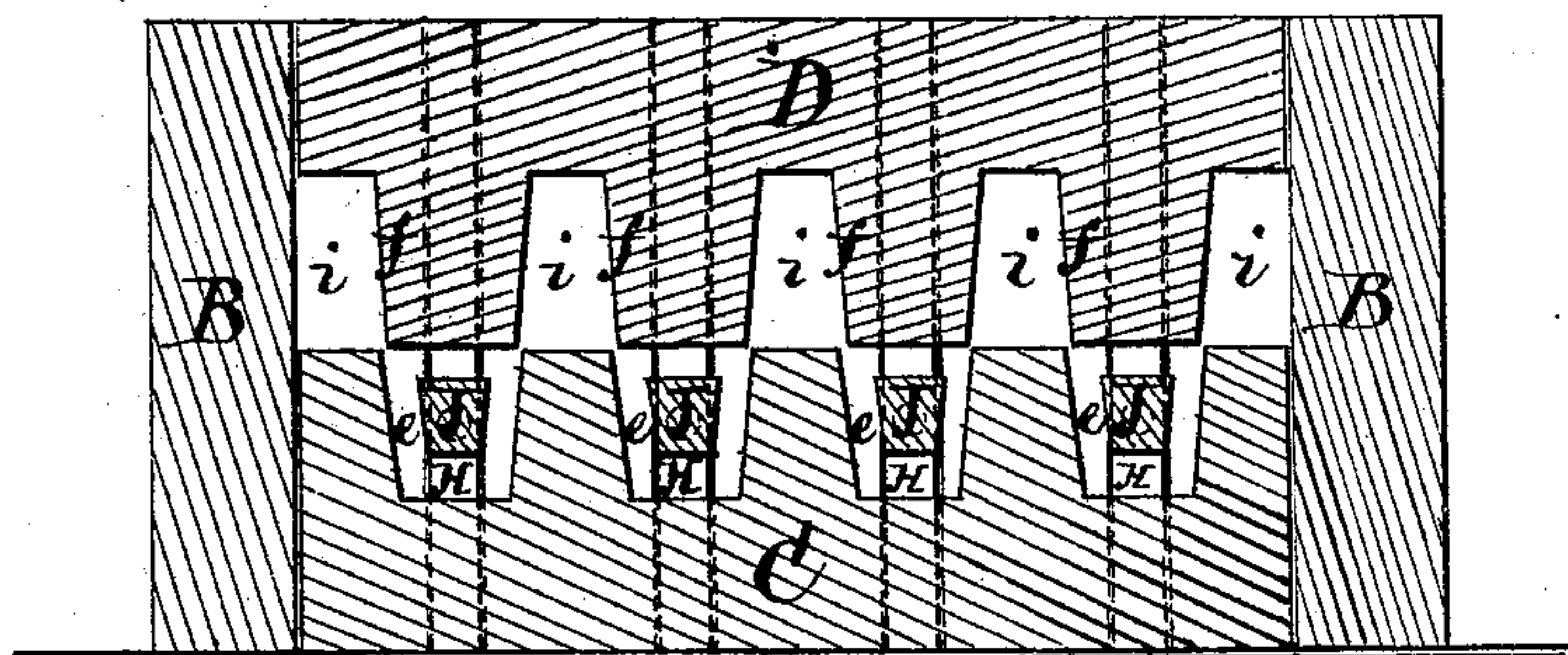
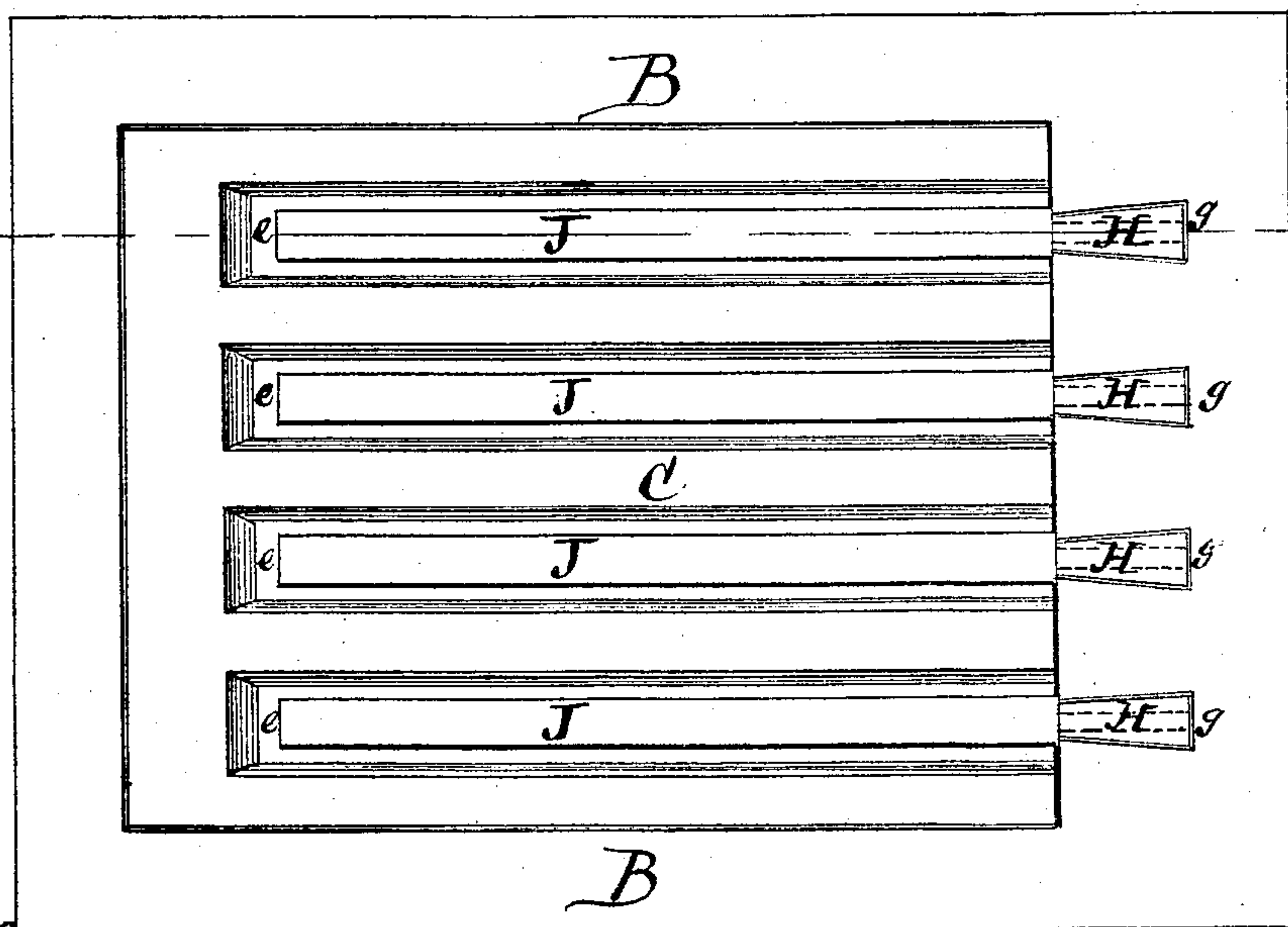


Fig: 3.



Witnesses
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MOLDS FOR FORMING ARTICLES OF RUBBER AND OTHER MATERIAL.

Specification forming part of Letters Patent No. **149,218**, dated March 31, 1874; application filed March 10, 1874.

To all whom it may concern:

Be it known that I, JAMES F. J. GUNNING, of New York, in the county and State of New York, have invented an Improved Mold for Piano-Keys, Knife-Handles, and similar articles, of which the following is a specification:

My invention relates to certain improvements in molds for making articles of compositions, such as rubber or similar substances or substitutes therefor. My invention consists in combining with the die and follower of a mold for forming the keys of pianos and other articles, said die and followers having the usual depressions and ribs of keys having transverse openings for receiving the ends of the cores whereby the cores can, with certainty, be located or adjusted within their seats with certainty and dispatch, said keys be fitted in grooves within the die of the band or box, the formation of the keys and grooves being such that the keys are prevented from all lateral movement.

In the accompanying drawing, Figure 1 is a longitudinal section of my improved mold. Fig. 2 is a transverse section. Fig. 3 is a top view with the follower removed. Fig. 4 is a detail view, hereinafter particularly referred to.

The box or band B is made of any suitable form, preferably square or rectangular. The die C and follower D are made to fit snugly in the band. The die C is formed with any desired number of depressions, *e*, corresponding in form with the keys or other articles to be molded. The follower D is formed with ribs *f* on its under side, corresponding in number and position with the depressions *e* in the die. These ribs are slightly tapering, and their lower sides are slightly narrower than the tops of the depressions. At one end of box or band B, on the inner side, is a series of vertical grooves, *g*, of dovetail or other suitable form, the bottom of the groove being wider than the top. Keys H are arranged to fit snugly in these grooves, so that they may slide longitudinally, but cannot be displaced laterally. In the outer side of these keys are holes in which are inserted the ends of the cores J, which may correspond in form with

the sides and bottoms of the depressions *e*, or may be of any other suitable form. The die C is laid in a horizontal position, and the box or band arranged so as to surround it. The composition is placed in the depressions in about half the quantity necessary to form the key or other article. The ends of the cores are inserted in openings *o* in the keys H, which are then placed in the grooves, and pushed down until the cores are in position to engage with the composition. A further supply of the composition is then placed in the depressions, over the cores, in sufficient quantity to complete the formation of the key or other article. The follower D is then placed in the box or band, so that the ribs *f* will press upon the composition contained in the depressions, and is pressed down until its lower side is flush with the upper edges of the box or band, in which position the lower sides of the ribs *f* are in line with the tops of the depressions *e*. Any surplus composition which may be contained in the depressions is forced out through the slight intervals which exist between the ribs and the die, and enters the air-spaces *i* on each side of and between the ribs. When the composition has become sufficiently dry and hard the box or band is removed, the follower is lifted off, and the keys H are removed from the cores, which may then be readily withdrawn.

When this apparatus is used in a modified form for molding knife-handles, the core is formed with a screw-thread near its outer end, and is removed from the finished knife-handle by unscrewing it. This leaves the knife-handle in proper form to receive a screw-threaded tang formed on a knife-blade, as shown in Fig. 4. The grooves *g* for holding the keys H may be formed in the end of the die C, instead of the band B, and said band may be uniform in the shape of its four inner surfaces.

I do not claim the formation or manufacture of articles from rubber or other compounds by molding, for such is well known, and not my invention, which, as hereinbefore stated, consists solely in a peculiar construction and arrangement of parts to form a mold.

What I claim as new, and desire to secure by Letters Patent, is—

In combination with the die and follower of a mold for forming piano-keys and other articles having the usual depressions *e* and ribs *f*, the keys *H*, having the openings *o* to receive the ends of the cores *J* for adjusting

them in position, said keys being fitted in the grooves *g* in the die or band *B*, to operate substantially as and for the purpose specified.

JAS. F. J. GUNNING.

Witnesses:

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