(No Model.)

E. KEMPSHALL.

MOLD FOR MAKING LACING HOOKS.

No. 599,905. Patented Mar. 1, 1898.

Fig. 1.

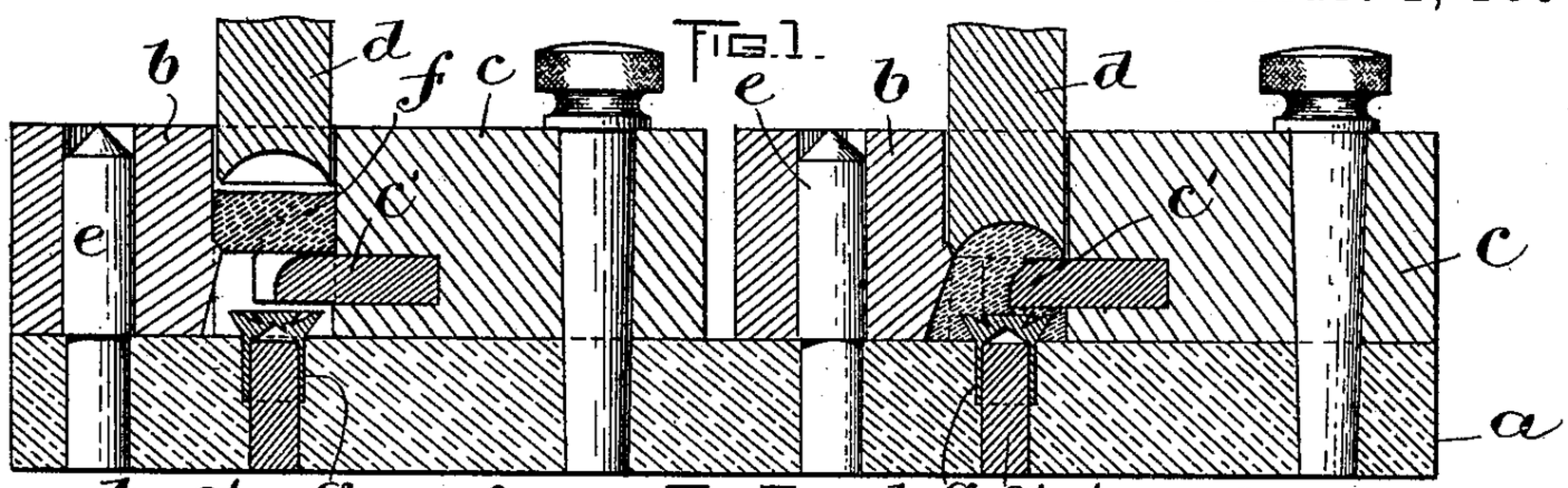


Fig. 2.

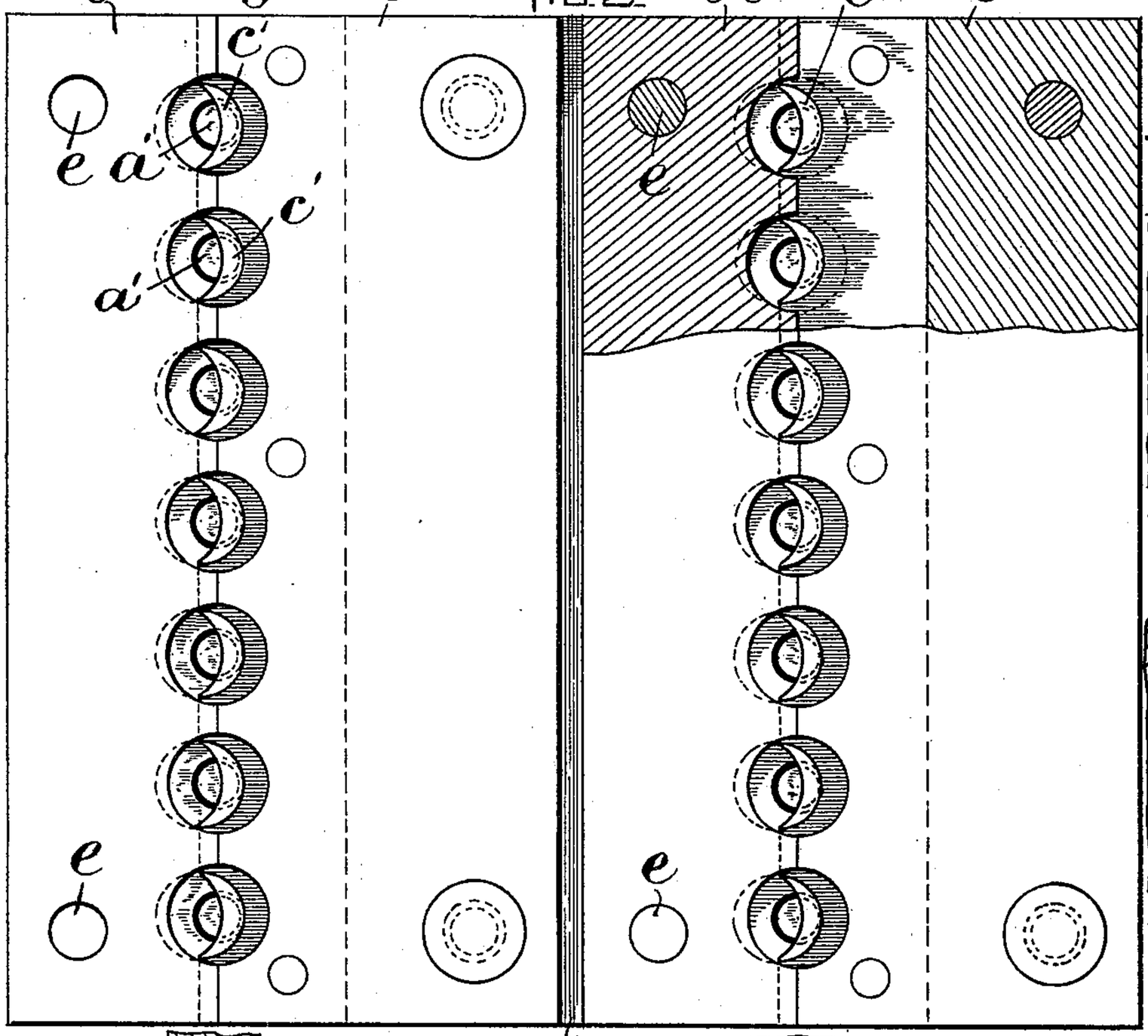


Fig. 4.

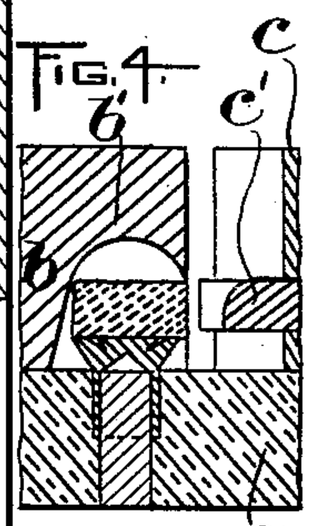


Fig. 5.

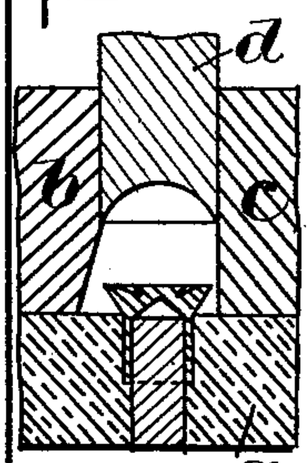


Fig. 6.

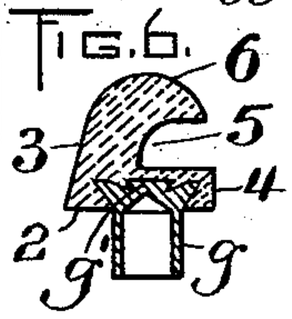
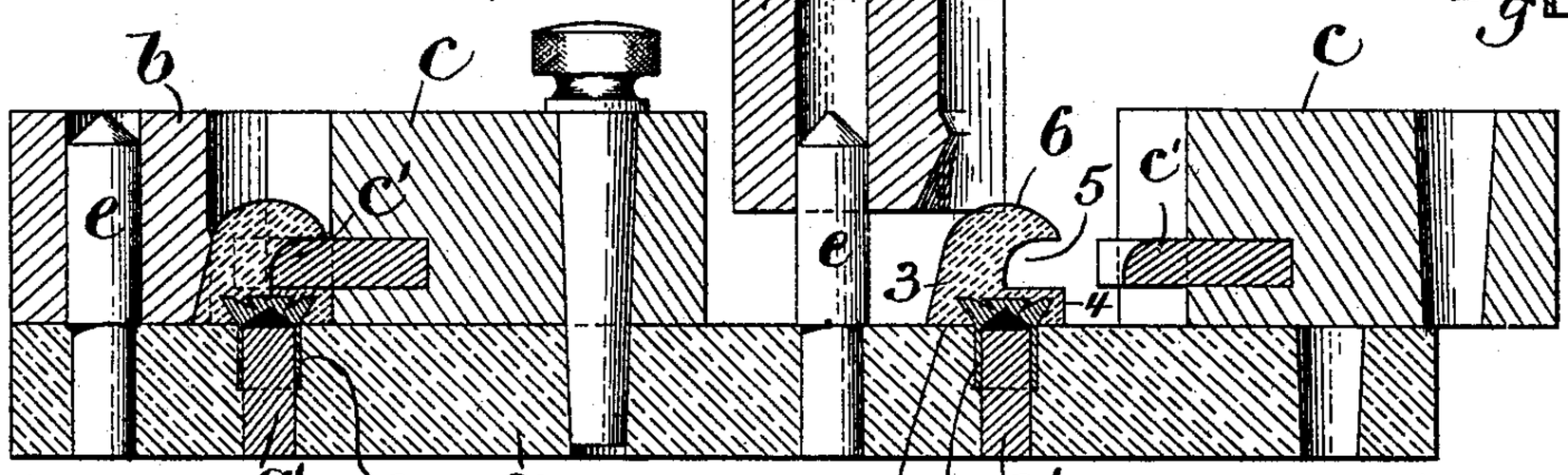


Fig. 3.



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MOLD FOR MAKING LACING-HOOKS.

SPECIFICATION forming part of Letters Patent No. 599,905, dated March 1, 1898.

Application filed July 1, 1897. Serial No. 643,118. (No model.)

To all whom it may concern:

Be it known that I, ELEAZER KEMPSHALL, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Molds for Making Lacing-Hooks, of which the following is a specification.

This invention relates to molds for forming lacing-hooks from plastic material; and it consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a sectional view of a hook-molding apparatus embodying my invention. Fig. 2 represents a top plan view of the same. Fig. 3 represents a view similar to Fig. 1, illustrating different stages of the operation. Figs. 4 and 5 represent modifications hereinafter referred to. Fig. 6 represents a sectional view of a completed hook.

The same letters and numerals of reference indicate the same parts in all the figures.

In the drawings, *a* represents a plate or bed having a flat upper surface formed to mold the base or seat 2 of a lacing-hook.

b represents a mold-section which is located above the bed-section *a* and is formed to mold the sides 3 of the hook, excepting at the front portion of the same, and *c* represents a laterally-movable top section which is formed to mold the front side portion 4 of the hook and has a projection *c'*, formed to mold the mouth 5 of the hook, the section *c* being movable horizontally or parallel with the acting face of the bed-section *a*. *d* represents another top section which is formed to mold the crown 6 of the hook and is preferably movable vertically or toward and from the bed-section *a*.

The top section *b* is preferably stationary during the molding operation and is here shown as secured to the base-section by means of dowel-pins *e*, affixed to the base-section and entering vertical sockets in the section *b*.

The preferred mode of operation in molding a lacing-hook by means of the described mold is as follows: The crown-forming top section *d* being raised, as shown at the left in Fig. 1, a blank *f*, of celluloid or other material in a plastic condition, (the desired plasticity being secured by heat when celluloid or an equivalent material or composition is used,) is placed in the cavity under the section *d* and above the projection *c'* of the section *c*, the latter being adjusted so that the projection *c'* enters the mold-cavity. The section *d* is then depressed, as shown at the right in Fig. 1, and forces the plastic material downwardly, causing it to fill all parts of the mold-cavity.

The bed-section *a* is preferably provided with means for holding a metallic shank or anchoring device which is to form a part of the completed hook and constitutes the means for securing the same to a boot or shoe or other article. In the present case the said shank is made in the form of a tube or rivet *g*, having an enlarged head *g'*, the sides of which are preferably beveled. A cavity is formed in the bed-section *a* for the reception of the eyelet *g*, a pin *a'* being placed in said cavity and formed at its upper end to fit the interior of the eyelet. The head *g'* projects above the base-section *a* into the mold-cavity, so that when the section *d* is depressed a portion of the plastic material is forced under the beveled edge of the head *g'*, as shown, the head being thus firmly interlocked with the shank or attaching device. After the head has been thus molded the top sections are separated to release the molded hook, as shown at the right in Fig. 3.

The mold-sections are preferably constructed to form a plurality of molds, as shown in Fig. 2. Any suitable means may be employed for moving or adjusting the movable top sections. The section *d* is preferably provided with power mechanism for applying a sufficient compressive pressure through it to the plastic material. I do not limit myself, however, to the form and arrangement of the top sections shown in Figs. 1, 2, and 3. In Fig. 4 I show the section *b* provided with a crown-forming extension *b'*, all being made in one piece. In this case the plastic material is compressed and caused to fill the mold-cavity by the section *c* and its projection *c'*.

The hook may be molded without the mouth 5, as shown in Fig. 5, and in this case the

mouth may be subsequently formed by a suitable cutting-tool.

I claim—

1. A mold for making lacing-hooks, comprising a bed-section formed to mold the base or seat of the hook and provided with means for holding a metallic shank, and top sections forming with the bed-section a head-molding matrix, and having provisions for exerting pressure on a blank of plastic material placed in said matrix, to cause said material to fill the matrix and interlock with the head of the shank.

2. A mold for making lacing-hooks, comprising a bed-section formed to mold the base or seat of the hook, and top sections forming, with the bed-section, head-molding and mouth-molding matrices.

3. A mold for making lacing-hooks, comprising a bed-section formed to mold the base or seat of the hook, top sections formed to mold the sides of the hook, one of said sections being movable parallel with the molding-face of the bed and formed to mold the mouth of the hook, and another top section formed to mold the crown of the hook, the last-mentioned section being movable toward and from the bed-section.

4. A mold for making lacing-hooks, comprising a bed-section formed to mold the base or seat of the hook, a top section formed to mold portions of the sides of the hook, a laterally-movable top section formed to mold the remaining side portion of the hook and having a projection formed to mold the mouth of the hook, and a vertically-movable top section formed to mold the crown of the hook.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 25th day of June, A. D. 1897.

ELEAZER KEMPSHALL.

Witnesses:
C. F. BROWN,
A. D. HARRISON.