

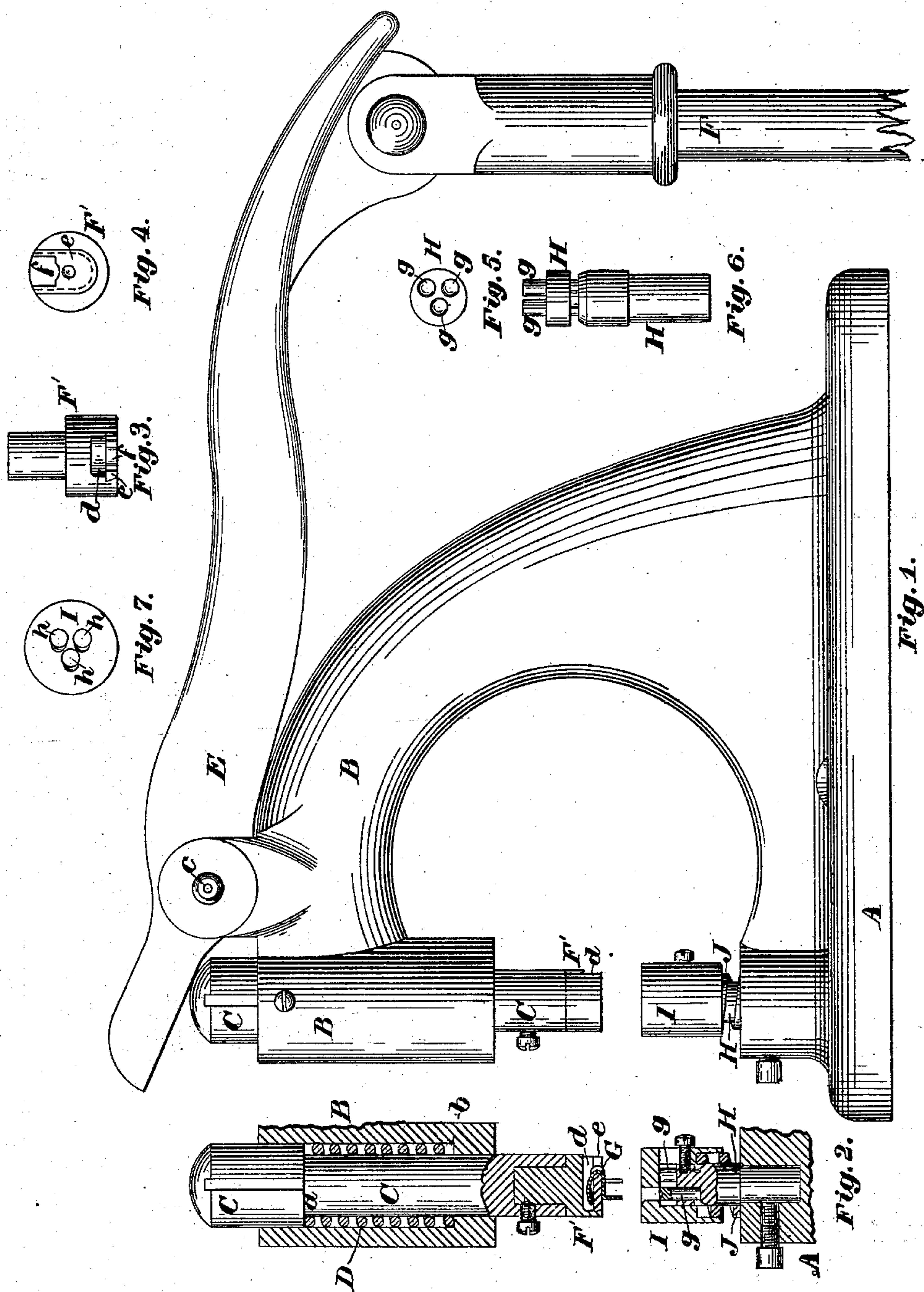
(No Model.)

M. BRAY.

Machine for Setting Lacing Hooks.

No. 238,335.

Patented March 1, 1881.



Witnesses:

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UNITED STATES PATENT OFFICE.

MELLEN BRAY, OF NEWTON, MASSACHUSETTS.

MACHINE FOR SETTING LACING-HOOKS.

SPECIFICATION forming part of Letters Patent No. 238,335, dated March 1, 1881.

Application filed December 18, 1880. (No model.)

To all whom it may concern:

Be it known that I, MELLEN BRAY, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Machines for Setting Lacing-Hooks, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a machine for setting lacing-hooks in leather or other material, and is especially adapted to setting that class of lacing-hooks which are provided with pointed prongs as a means of attachment to the material; and it consists in the use of a slotted carrier adapted to receive the head of the lacing-hook and hold it in suspension with the points of the fastening prongs downward, said carrier being attached to and moving up and down with the reciprocating setting-plunger, in combination with a fixed anvil provided with one or more upwardly-projecting clinching-pins, the upper end of each of which is made concave or in the form of a segment of a hollow sphere, and a spring-supported sheath or sleeve inclosing or covering said anvil and clinching-pins, and adapted to support the leather or other material till the fastening-prongs are forced through the same, and the base of the hook is brought to bear upon the material, and then to be forced downward with the material and the hook till the concaved upper ends of the clinching-pins have turned the points of the fastening-prongs under the material and firmly clinched them thereto.

Figure 1 of the drawings is a side elevation of a machine embodying my invention. Fig. 2 is a partial vertical longitudinal section of the same. Figs. 3 and 4 are, respectively, a rear elevation and an inverted plan of the hook carrier or pocket. Figs. 5 and 6 are, respectively, a plan and an elevation of the anvil and clinching-pins; and Fig. 7 is a plan of the yielding sleeve or casing.

A is the base of the machine, from which rises the goose-neck B, in the front end of which is mounted, in a vertical position, the setting-plunger C, provided with the shoulder *a*, which rests upon the upper end of the spring D, the lower end of which rests upon the shoulder *b* in the goose-neck B, as shown in Fig. 2.

E is the lever for operating the plunger C,

pivoted at *c* and operated by means of the connecting-rod F, the lower end of which is connected to a treadle-lever. (Not shown.)

In the lower end of the plunger C is secured the hook-carrier F', having formed in its rear side the pocket *d*, adapted to receive the head of the lacing-hook G, as shown in Fig. 2, said pocket being partially covered on its under side by the dovetailed steel plate *e*, the rear end of which is provided with the slot *f*, to receive the neck of the lace-hook and accurately register it in the proper position.

H is the anvil, set in the base A of the machine in a fixed position, and having secured in its upper end the three clinching pins or dies *g g g*, of tempered steel, the upper end of each of which is made concave or in the form of a segment of a hollow sphere, as shown in Fig. 2. These clinching-dies are so arranged that each one of them shall be directly beneath one of the fastening-prongs of the hook G when properly placed in the pocket *d*, but with their center lines a little distance in the rear of said prongs, or so that said prongs, as the setting-plunger descends, shall strike upon said clinching-dies near their front sides, so that by virtue of the inclined surfaces of said dies the points of all of said prongs shall be turned in the same direction and toward the neck of the hook in the act of clinching.

I is a yielding casing surrounding said anvil, and provided with three holes, *h h h*, through which the clinching-dies *g g g* play as said casing is depressed, said casing being maintained in the position shown in Fig. 2, with its upper surface some distance above the upper ends of the clinching-dies, by means of the coiled spring J, which is made of sufficient stiffness to resist the necessary pressure required to force the prongs of the hook through the material, but adapted to permit a downward movement of said casing and the material resting thereon when the prongs have been driven through the material and the base of the hook G is brought to bear thereon, so that the prongs of the hook will be brought in contact with the front inclined portions of the concavities in the upper ends of the clinching-dies, and be thereby turned backward and upward and firmly clinched into the under surface of the material.

The operation of my invention is as follows:

The several parts of the machine being in the positions shown in Fig. 1, the lace-hook G is placed in position in the pocket *d*, as shown in Fig. 2. The material in which the hook is to be set is then placed upon the upper surface of the casing I in the desired position beneath the prongs of said hook, when the operator, by placing his foot upon the treadle, moves the plunger C downward, during the first part of which downward movement the prongs of the hook are forced through the material till the under side of the base of the hook rests thereon, the spring J being sufficiently stiff to resist the amount of pressure required for that purpose and prevent any downward movement of the casing I while said prongs are being forced through the material. When this has been done and the base of the hook G rests upon the material and the two fill the space between the casing I and the under side of the carrier F', a continuation of the downward movement of the plunger C depresses the casing I against the resistance of the spring J, and the points of the fastening-prongs of the hook G come in contact with the inclined front portions of the concaved upper ends of the clinching pins or dies *g g*, and are turned backward and upward and clinched, as before described. The operator then removes his foot from the treadle, when the reaction of the spring D causes the parts to assume the positions shown in Fig. 1, when the hook-head is removed from the pocket *d* by a slight movement of the material toward the rear of the machine, when, another hook being placed in the pocket *d*, the operation may be repeated.

The number of clinching pins or dies *g g* set in the anvil H and the number and location of the holes *h h* in the casing I must correspond to the number and relative location of the fastening-prongs of the lace-hook which is to be set—i. e., if two prongs only are used, only two clinching-dies *g* and two holes *h* would be required; but if four fastening-prongs were used on the hook, then four dies *g* and four holes *h* would be required.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a machine for setting lace-hooks provided with pointed fastening-prongs, the combination, with a reciprocating setting-plunger provided with the pocket *d*, of the anvil H, provided with one or more concaved clinching dies or pins, *g*, the casing I, provided with one or more holes, *h*, and the coiled spring J, all arranged and adapted to operate substantially as and for the purposes described.

2. The combination of the vertically-reciprocating plunger C, the hook-carrier F', provided with the pocket *d*, the anvil H, provided with one or more concaved clinching dies or pins, *g*, and the spring-supported yielding casing I, provided with one or more holes, *h*, all arranged and adapted to operate substantially as and for the purposes described.

Executed at Boston, Massachusetts, this 14th day of December, A. D. 1880.

MELLEN BRAY.

Witnesses:

W. E. LOMBARD,
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