

(No Model.)

2 Sheets—Sheet 1.

W. C. BRAY.

MACHINE FOR SETTING LACING STUDS OR HOOKS.

No. 244,738.

Patented July 26, 1881.

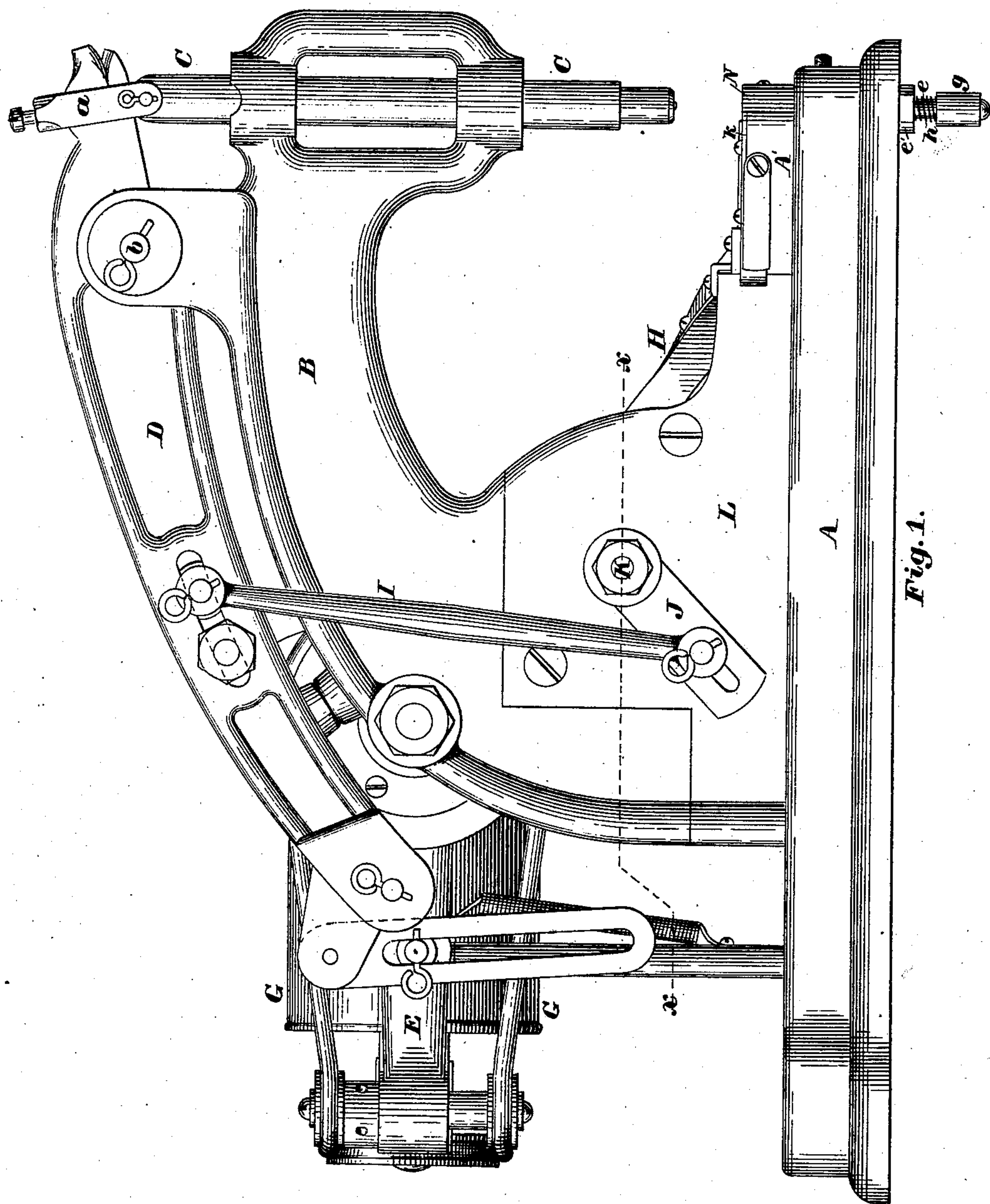


Fig. 1.

Witnesses:

*E. A. Hemmenway*  
*Walter E. Lombard*

Inventor:

*Wm. Claxton Bray*  
by *W. E. Lombard*  
Attorney.

(No Model.)

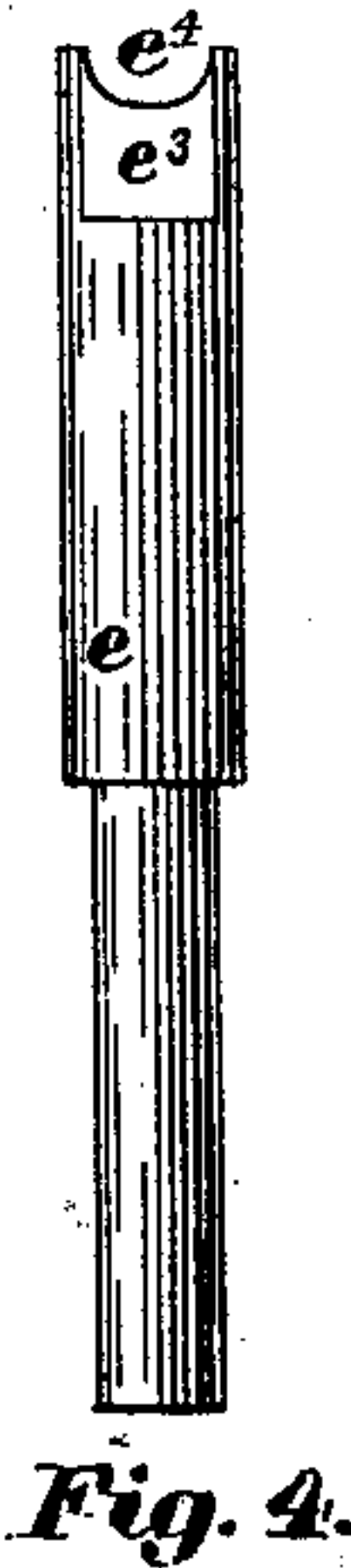
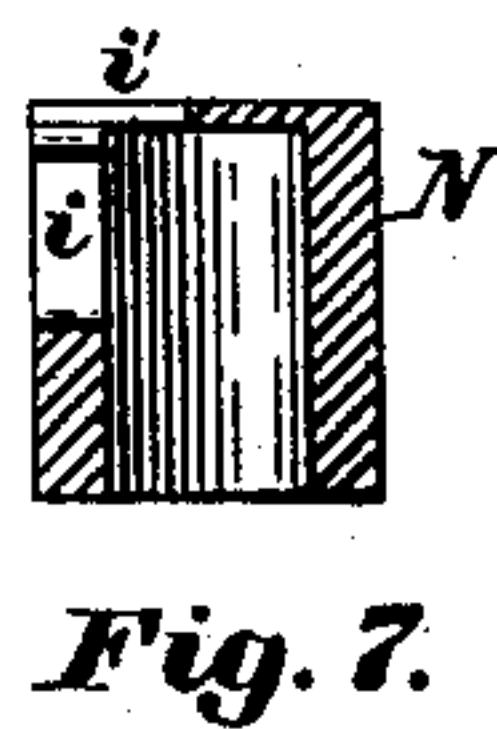
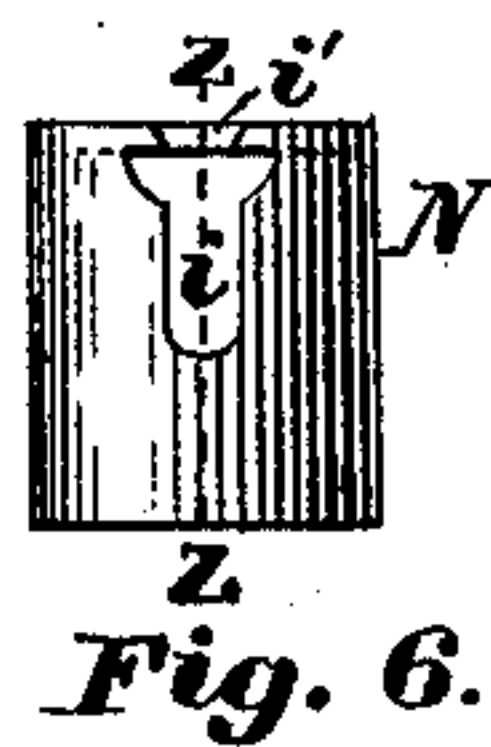
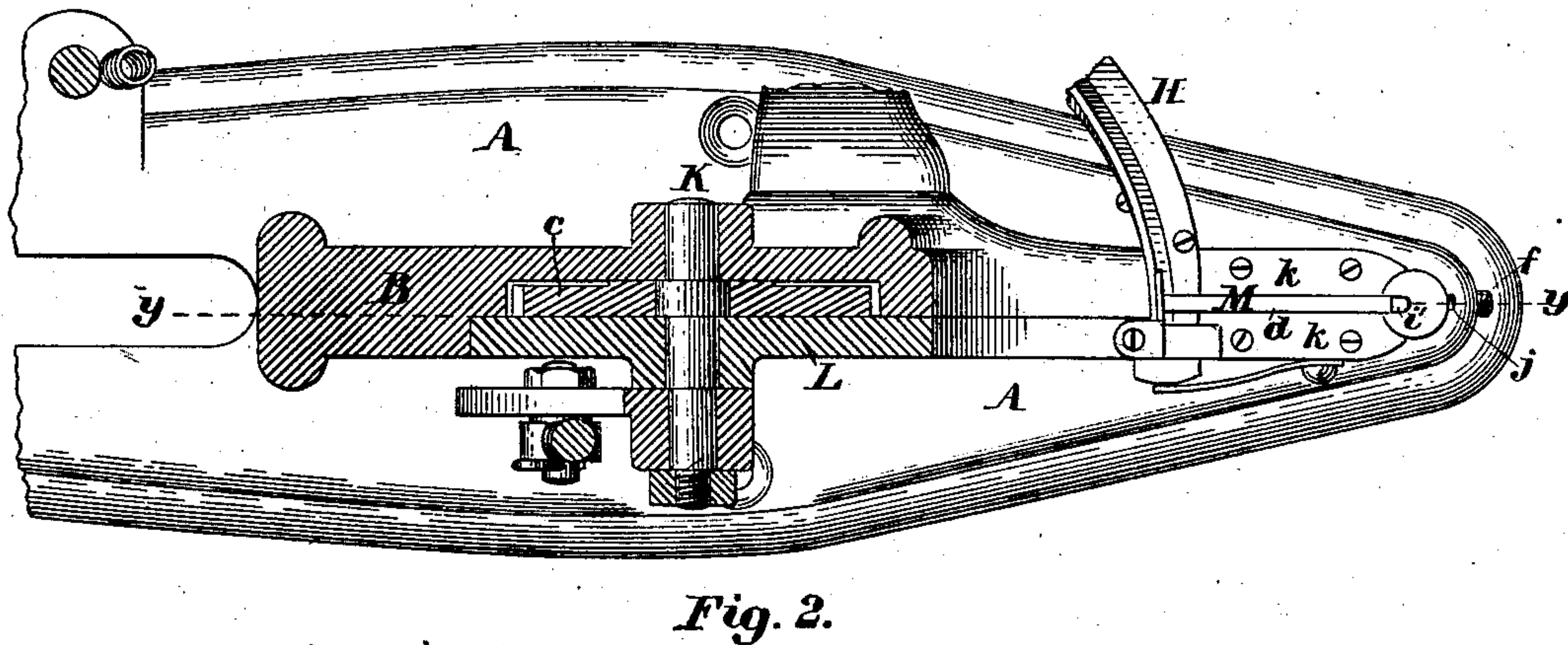
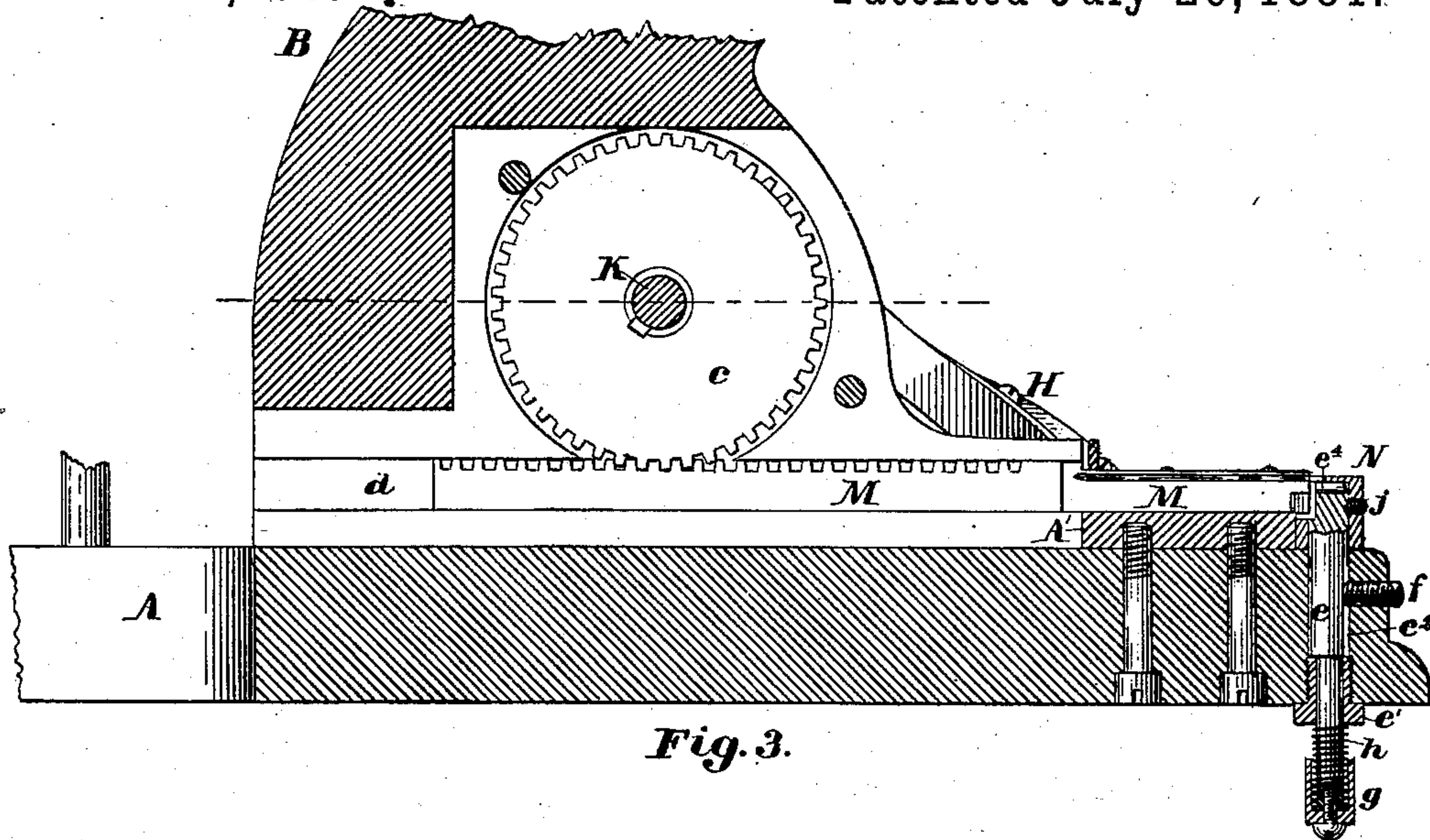
2 Sheets—Sheet 2.

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Patented July 26, 1881.



Witnesses:

E. A. Hemmenway  
Walter S. Lombard

Inventor:

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# UNITED STATES PATENT OFFICE.

WILLIAM CLAXTON BRAY, OF NEWTON, MASSACHUSETTS.

## MACHINE FOR SETTING LACING STUDS OR HOOKS.

SPECIFICATION forming part of Letters Patent No. 244,738, dated July 26, 1881.

Application filed June 11, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM CLAXTON BRAY, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Machines for Setting Lacing Studs and 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 or studs in boots, shoes, or other articles of wearing-apparel, and especially to the construction and arrangement of the setting-anvil, and is an improvement upon the machine patented to Mellen Bray, February 11, 1879, No. 212,134.

My invention consists, first, in a cylindrical anvil provided in its rear side and upper end with a suitable pocket and slot to receive the head and neck of the stud or hook to be set, the sides of said slot forming a continuation of the horizontal guideway along which the stud or hook is fed to the setting-tools, said anvil being provided with a shoulder to support it, and a shank which projects below the bed of the machine in which it is set, and a spring for holding said anvil to its seat, but that will permit the anvil to be raised after the hook or stud is set, for the purpose of releasing the head of the stud therefrom.

My invention further consists in certain details of construction of the setting-anvil, and in the manner of mounting it, which will be best understood by reference to the description of the drawings and the claims to be hereinafter given.

Figure 1 of the drawings is a side elevation of a machine embodying my invention. Fig. 2 is a partial horizontal section on the line  $xx$  on Fig. 1. Fig. 3 is a partial vertical section on line  $yy$  on Fig. 2. Figs. 4 and 5 are respectively an elevation and an inverted plan of the central spindle of the anvil; and Figs. 6 and 7 are respectively a rear elevation and a vertical section of the anvil proper, the cutting-plane of the section being on line  $zz$  on Fig. 6.

A is the bed of the machine, from the rear portion of which rises the goose-neck B, extending forward over the bed A, and having mounted in its front end the setting-plunger C, connected by the link  $a$  to the forward end of the lever D,

and adapted to be moved vertically thereby for the purpose of clinching a stud in the material in a well-known manner, said bed being adapted to be secured upon a column or bench of suitable height. The lever D is pivoted at  $b$  to the upper side of the goose-neck B, and its long arm extends toward the rear of the machine, and is forked to receive the upper end of a connecting-rod, (not shown,) the lower end of which connects with the rear end of a treadle-lever, (also not shown,) by means of which the setting-plunger is made to move endwise in its bearings in a well-known manner.

E is a pivoted forked frame, on which is mounted the shaft which carries the hopper G, and H is the inclined chute or roadway, all constructed and arranged as described in the patent to Mellen Bray before cited.

I is a connecting-rod, adjustably connected at its upper end to the lever D, and by its other end to the lever J, made fast upon the short shaft K, mounted in bearings in the goose-neck B and the detachable plate L. The shaft K has secured thereon the gear-wheel  $c$ , the teeth of which engage with corresponding teeth formed on the upper side of the feed-plunger M, as shown in Fig. 3. The feed-plunger M is fitted to and reciprocates in a groove or channel,  $d$ , formed in the goose-neck B and the block A', secured to the front end of the bed A, and extending past the foot of the inclined chute H, and at right angles, or nearly so, thereto, all constructed and arranged as described in the before-cited Letters Patent.

So far the machine is constructed and operates substantially like the machine described in the before-cited patent, and forms no part of my present invention, and therefore need not be described more in detail in this specification; but I will now describe that portion of the machine which I consider new and of my invention.

Immediately in front of the channel  $d$ , and directly beneath the plunger C, and in axial line therewith, a hole is drilled through the bed A, in which is set the anvil-spindle  $e$ , in such a manner that it may be moved vertically in its bearing, but cannot be rotated or moved about its axis. Its lower portion is made somewhat smaller in diameter than its upper portion, and passes through the screw-thimble  $e'$ ,



which is screwed into the under side of the bed A, as shown. A portion of the front side of the spindle *e* is made flat, as at *e*<sup>2</sup>, to co-operate with the flat inner end of the screw *f*, to prevent said spindle from being rotated or moved about its axis, said screw *f* being so adjusted as to effect this end without interfering with the free vertical movement of said spindle.

To the lower end of the spindle *e* is secured the cup-shaped collar *g*, between which and the screw-thimble *e'* is the light spiral spring *h*, which surrounds the spindle *e* and tends to force it downward and hold it in its lowest position until power is applied thereto to overcome the tension of said spring and raise the spindle. The rear side of the extreme upper portion of said spindle is also made flat, as at *e*<sup>3</sup>, to reduce its thickness and permit the feed-plunger M to move the hook or stud to its proper position in axial line with the setting-plunger and the anvil. A groove or recess, *e*<sup>4</sup>, is formed across the top end of the spindle *e* from front to rear, to allow of the passage of the outer head of the stud or hook.

N is the anvil proper, made in the form of an inverted cup or capped tube, and has cut through its rear side the slot *i* and through its top the slot *i'*, the latter being of just sufficient width and length to permit the passage between its sides of the neck of the stud or hook, and allow said hook or stud to be moved into the desired central position between the anvil and the setting-plunger, and the former being made of such size and shape as to permit the free passage of the feed-plunger and the outer or button head of the hook or stud. This anvil is secured to the spindle *e* by the set-screw *j*, so as to move with it as though the two were made in one piece, which they might be, only that they can be made cheaper in two pieces than in one. The inner edges of the slot *i'* coincide with the inner edges of the slot or channel *d*, along which the stud or hook is fed to the setting-tools, and the upper surface of the anvil N coincides with the upper surface of the plates *k k*, the inner edges of which form the sides of the slot or channel *d*, so that there is a continuous guide for the neck of the stud or hook till it reaches the desired position beneath the setting-plunger.

The operation of my invention is as follows: The stud or hook being fed by the plunger M to its proper position beneath the setting-plunger, with its tubular shank upward, with its inner collar resting on the anvil, the leather or other material in which the hook or stud is to be set is then placed upon the end of the shank in the proper position, and the setting-plunger is brought down by placing the foot upon

the treadle and depressing it. When the stud or hook is clinched firmly to the material and the operator removes his foot from the treadle the setting-plunger rises, and to remove the hook-head from the anvil the operator lifts upward the material with sufficient force to compress the spring *h* and raise the anvil N above the surface of the plates *k k* sufficiently to permit the head of the hook or stud to pass over said plates, when a slight pressure backward will withdraw the hook or stud from the anvil, and the anvil will immediately assume its normal position again, impelled thereto by the force of gravity and the tension of the spring *h*, and the machine is ready for a repetition of the operation.

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

1. In a machine for setting lacing hooks or studs, the combination of a guideway, along which said studs or hooks are fed to the setting-tools, and an anvil provided with a pocket to receive the head of the stud or hook and a slot to receive the neck thereof, the sides of which slot coincide with the sides of said guideway, when said anvil is arranged and adapted to be moved upward to allow the removal of the set hook or stud, substantially as described.

2. The combination, in a machine for setting lacing hooks or studs, of a guideway and feed-plunger for feeding the stud or hook to the setting-tools, an anvil provided with a pocket and slot to receive the head and neck of said stud or hook, and a shank to support and guide it in its movements, and a spring to hold said anvil in its lowest position, substantially as described.

3. The spindle *e*, provided with the flattened surface *e*<sup>2</sup> and groove or recess *e*<sup>4</sup>, in combination with the anvil N, provided with the slots *i* and *i'*, the set-screw *j*, the stop-screw *f*, collar *g*, the spring *h*, and the bed A, all arranged and adapted to operate substantially as described, for the purposes specified.

4. In a machine for setting lacing hooks or studs, a clinching-anvil provided with a shank having one flat side, and mounted in a circular bearing so as to be movable vertically, in combination with a stop-screw co-operating with said flat side to prevent rotation of said anvil, and a spring to hold it to its seat, substantially as and for the purposes described.

Executed at Boston, Massachusetts, this 9th day of June, A. D. 1881.

W. CLAXTON BRAY.

Witnesses:

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WALTER E. LOMBARD.