(No Model.) 2 Sheets—Sheet 1.

M. BRAY.

Machine for Setting Lacing Studs or Hooks.

No. 238,336. Patented March 1, 1881.

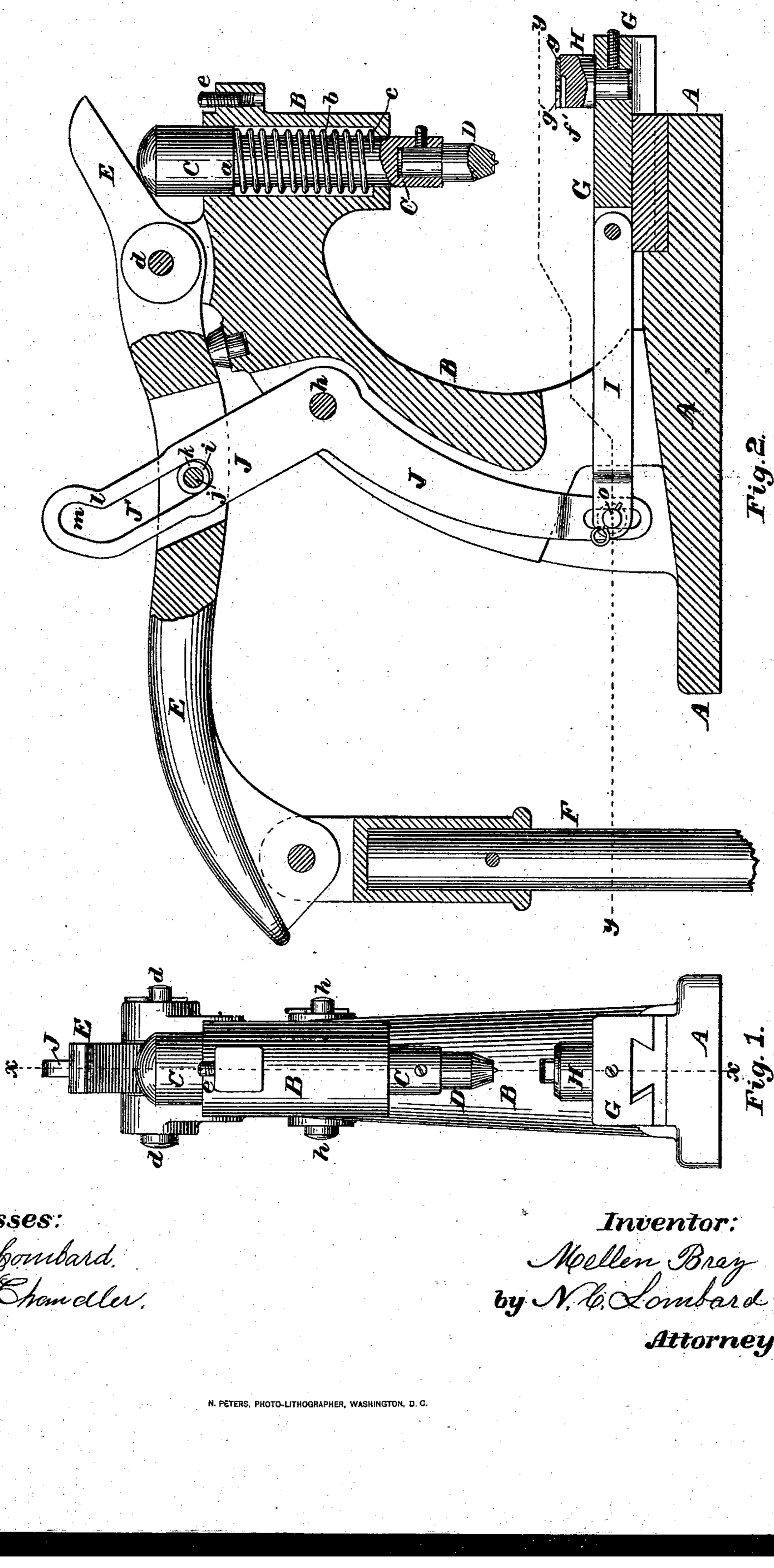

Fig. 2.

Fig. 1.

Witnesses:
W. C. Lombard.
C. E. Chandler.

Inventor:
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by N. C. Lombard
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(No Model.) 2 Sheets—Sheet 2.

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Machine for Setting Lacing Studs or Hooks.

No. 238,336. **Patented March 1, 1881.**

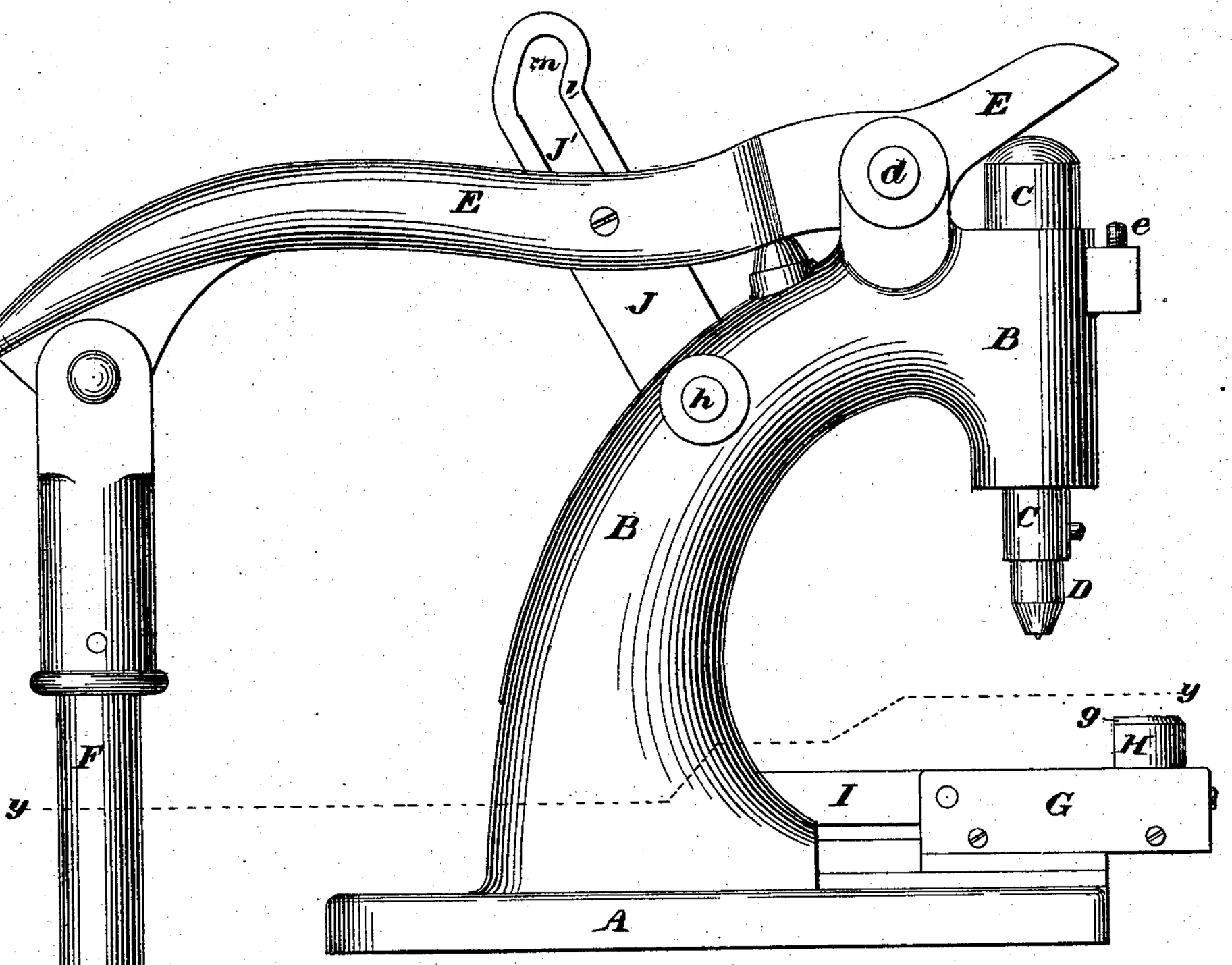

Fig. 3.

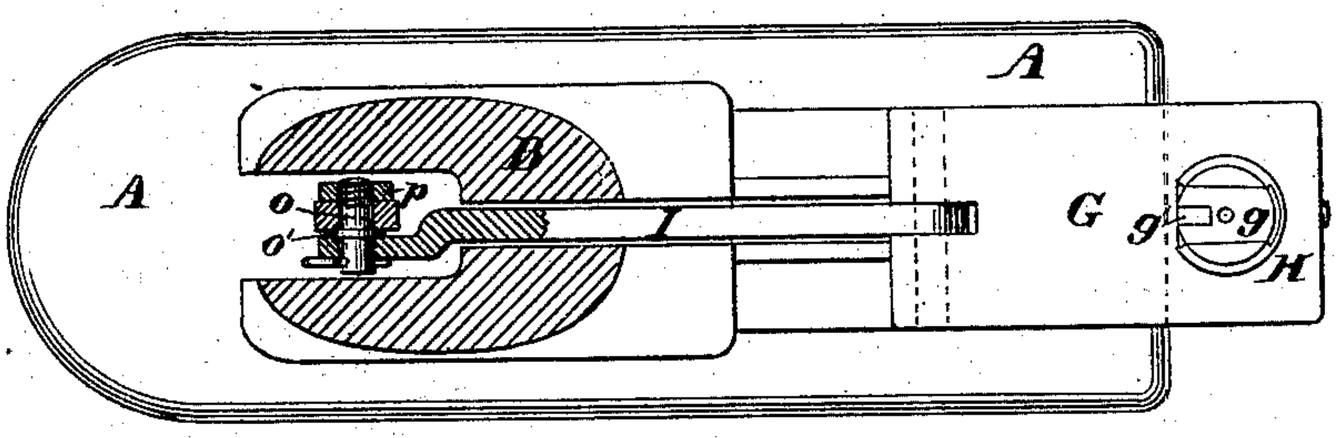

Fig. 4.

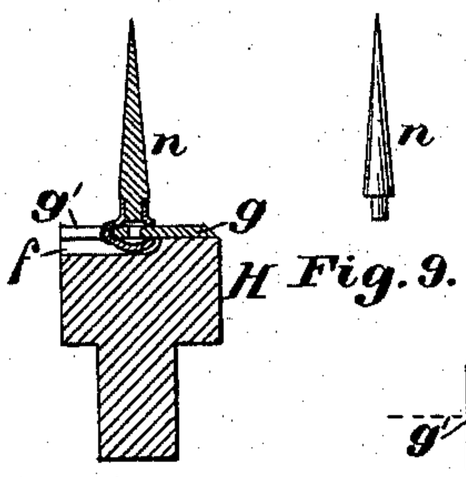

Fig. 8.

Fig. 9.

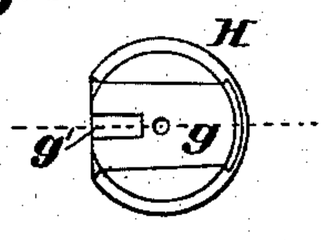

Fig. 5.

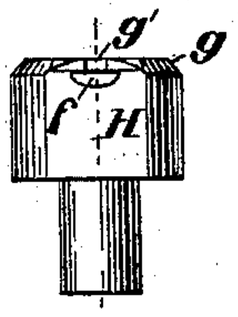

Fig. 6.

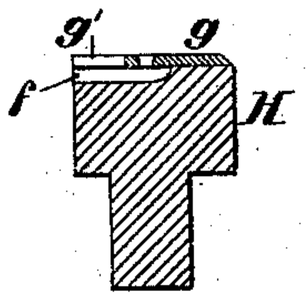

Fig. 7.

Witnesses:

W. E. Lombard.

E. E. Chandler.

Inventor:

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by N. E. Lombard

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UNITED STATES PATENT OFFICE.

MELLEN BRAY, OF NEWTON, MASSACHUSETTS.

MACHINE FOR SETTING LACING STUDS OR HOOKS.

SPECIFICATION forming part of Letters Patent No. 238,336, dated March 1, 1881.

Application filed November 22, 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 Studs or Hooks in Gloves or other Articles, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a machine for setting lacing-studs in the article to be laced, and is especially adapted to setting such studs in gloves, or other similar articles, where it is not desirable, on account of the elasticity of the material, to cut out a piece of the material to insert the shank of the stud or hook; and the object of my invention is to so construct a machine that the material may be pierced and the shank of the stud or hook be inserted in the hole so formed at one operation; and it consists in setting the clinching-anvil in a movable bed mounted upon a horizontal slide, and connecting said bed, by a link and lever or other suitable means, to the operating-lever, which moves the setting-plunger in such a manner that when the setting-plunger is in its uppermost position the anvil shall be in a position some distance in front of the center line of the setting-plunger, and as the plunger is moved downward to set the stud the anvil carrying the stud is moved into a position directly under and in line with said plunger, which position it reaches before the plunger has descended to the point where it comes in contact with the stud, and said anvil is held in such position till the plunger has completed its downward motion and the setting of the stud.

Figure 1 of the drawings is a front elevation of a hand-fed machine embodying my invention. Fig. 2 is a vertical sectional elevation of the same, the cutting-plane being on line *x x* on Fig. 1. Fig. 3 is a side elevation. Fig. 4 is a horizontal section on line *y y* on Figs. 2 and 3, and showing the parts below said line in plan. Figs. 5, 6, and 7 are, respectively, a plan, rear elevation, and vertical section of the anvil drawn full size. Fig. 8 is a vertical section of the anvil, with a stud or hook and the hole-piercing bodkin in position thereon; and Fig. 9 is an elevation of the bodkin.

A is the bed of the machine, from which rises the goose-neck B, in the front end of which is mounted the setting-plunger C, provided at its upper end with the shoulder *a*, which rests upon the coiled spring *b*, inclosed in the casting B, and resting at its lower end upon the shoulder *c* of said casting, said plunger having inserted in its lower end the clinching-tool D. The plunger C and tool D are moved downward by means of the lever E, pivoted to the upper side of the goose-neck B at *d*, and the connecting-rod F, pivoted at its upper end to the rear end of the lever E, and connected at its lower end to a treadle, (not shown,) the spring *b* moving said plunger upward again when the rear end of the lever E is depressed, and the downward movement of said plunger being limited by the front end of the lever E coming in contact with the adjustable stop-screw *e*.

Upon the front end of the stationary bed A of the machine is formed a horizontal dove-tailed guideway, upon which is fitted, so as to be movable longitudinally thereof, the sliding bed G, in the upper side of which is set the anvil H, provided with the slot or recess *f*, to receive the outer head of the stud or hook, and the steel plate *g*, in the rear edge of which is formed a slot, *g'*, to receive the neck of the stud, while its inner or second head rests upon said plate *g*, with the open end of its tubular shank upward, as shown in Fig. 8. The longitudinally-sliding bed G is connected at its rear end to one end of the link I, the opposite end of which is adjustably connected to the lower end of the lever J, which is pivoted at *h* to the goose-neck B, and provided at its upper end with the cam-slot J', within which the anti-friction roll *i*, mounted upon the pin *j*, set in the lever E, works. The cam-slot J' is so formed that as the rear end of the lever E is moved upward the roll *i*, in traveling from *k* to *l*, will move the longitudinally-sliding bed G to the rear sufficiently far to bring the anvil H directly beneath and in axial line with the setting-tool D, when the motion of the anvil and its bed ceases; the roll *i*, during the remainder of the upward movement of the lever E, moving along the upper part *m* of the slot J', which is then concentric with the axis of motion of the lever E, and the anvil H is thus

held in its proper position while the setting-tool is acting upon the tubular shank of the stud to turn it over onto the material and firmly clinch it thereto.

The operation of my invention is as follows: The anvil H being in the position shown in the drawings, a stud-hook is placed in position thereon, and the bodkin *n* is set in the tubular shank of the stud, as shown in Fig. 8, when the material in which the stud is set is placed upon the point of the bodkin and pressed downward upon the collar of the stud, the bodkin piercing and then stretching the kid or other material, and by its shape guiding it onto the shank of the stud without obstruction. When this is done the operator removes the bodkin, and placing his foot upon the treadle presses it downward, the result of which is to move the anvil to a position beneath the plunger and clinching-tool before said tool has descended to a level with the upper end of the shank of the stud, and then hold it in such position till the clinching-tool has completed its downward motion and has again moved upward a short distance, when the anvil is again moved from beneath the setting-tool into the position shown in the drawings. The set stud is now removed from the anvil by pushing it backward out of the slots *f* and *g'*, and a new stud is placed in position and the bodkin is inserted in its shank, and the operation is repeated.

The anvil may be accurately adjusted to position in line with the setting-tool D by raising or lowering the rear end of the link I by means of the pin *o*, provided with the collar *o'* and the binding-nut *p*.

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

1. In a stud-setting machine, the combination of a vertically-reciprocating clinching-tool, mechanism for imparting such reciprocation to said tool, an anvil mounted upon a longitudinally-sliding bed, and mechanism for moving said anvil to and from a position directly beneath and in line with the setting-tool, substantially as described.

2. The combination of the plunger C and tool D, the lever E, provided with the roll *i*, the bed G, carrying the anvil H, the link I, and the pivoted lever J, provided with the cam-slot J', all arranged and adapted to operate substantially as described.

Executed at Boston this 20th day of November, A. D. 1880.

MELLEN BRAY.

Witnesses:
WALTER E. LOMBARD,
E. E. CHANDLER.