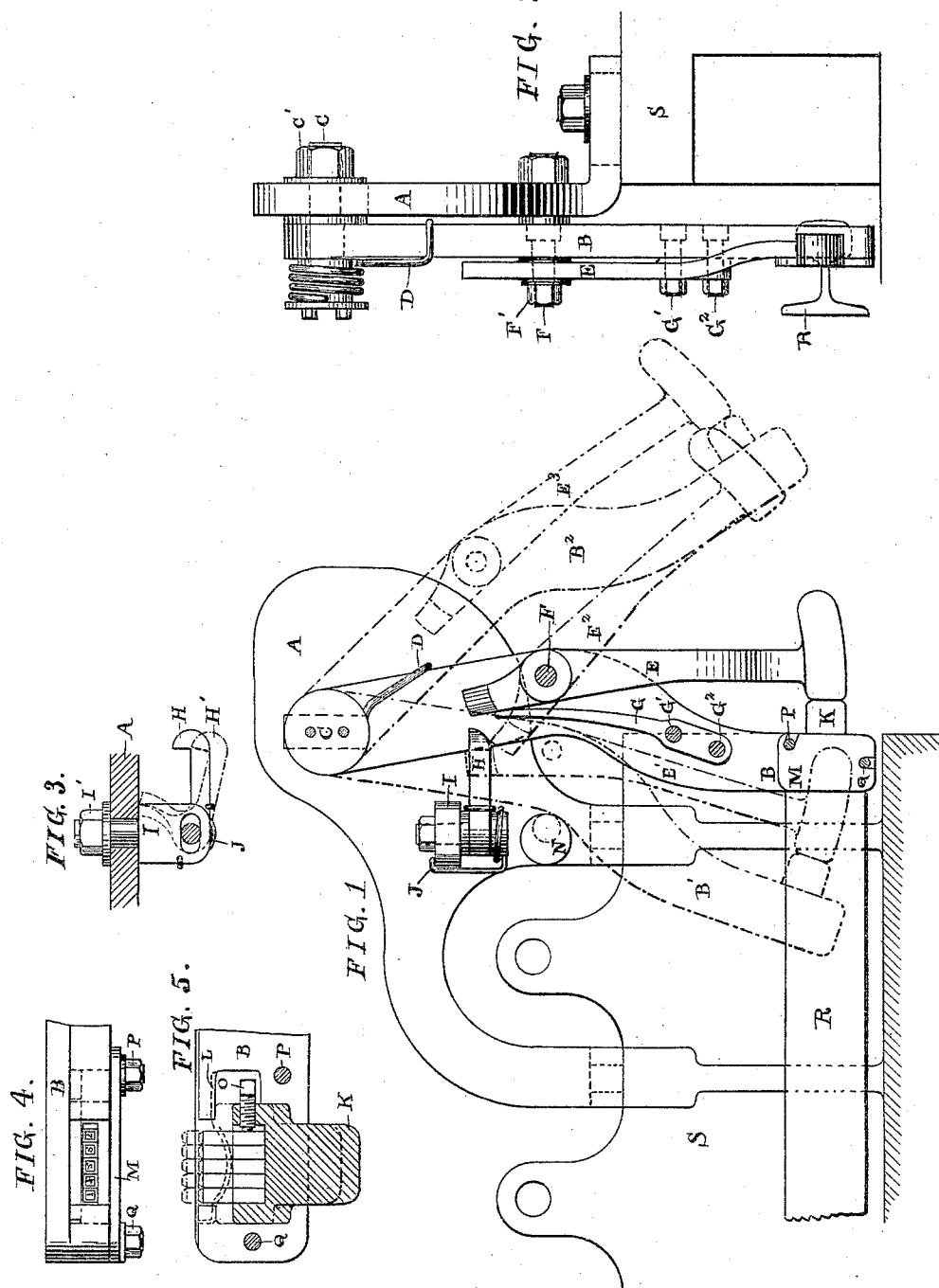


(No Model.)

E. E. SLICK.
APPARATUS FOR STAMPING METAL BARS.

No. 443,119.

Patented Dec. 23, 1890.



WITNESSES:
Cora P. Scoby.
H. H. Pomeroy

INVENTOR
Edwin E. Slick
BY
Lyness Eldred
His ATTORNEY.

UNITED STATES PATENT OFFICE.

EDWIN E. SLICK, OF BRADDOCK, PENNSYLVANIA.

APPARATUS FOR STAMPING METAL BARS.

SPECIFICATION forming part of Letters Patent No. 443,119, dated December 23, 1890.

Application filed October 21, 1890. Serial No. 368,813. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. SLICK, a citizen of the United States, residing at Braddock, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Stamping Metal Bars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the process of rolling blooms or rails of iron or steel it is necessary to stamp upon the finished pieces numbers or letters or some other distinguishing mark by which they may be afterward recognized, either for further manipulation or in order that they may be identified for testing or recording the results of their use. This work of stamping numbers on metal bars has hitherto been performed by hand while the pieces are still hot, and such a process is a difficult one to operate successfully, as the heat of the bar necessitates quick movements on the part of the stampers, with the result that the work is more or less imperfect and at the same time uncomfortable for the men engaged in it. One of the usual methods requires at least two men, one of whom holds a die against the surface to be marked, while the other strikes the same with a hammer or sledge; but it is found that in many cases the work done in this way is imperfect, and in consequence valueless, owing to the impossibility of always holding the die fairly against the surface and of striking it properly.

It is the object of my invention to provide a machine by the use of which rails or other metal bars may be stamped with some distinguishing number or mark in a rapid, convenient, and economical manner.

In order that the following description of my device may be simplified, it will be described in its application to marking rails, although I do not so limit its application, as it may be used in marking any kind of bars or blooms as well as rails, as will be readily understood by those skilled in the art.

My device consists of a frame of wrought or cast iron or steel, the cross-section of which is L-shaped, the horizontal leg of the angle having two slotted holes, through which bolts

pass for attaching the device to a rail-cambering machine or any suitable support adjacent to the line of passage of a hot rail after it issues from the rolls which give it its form. Near the upper part of this frame and firmly attached at right angles to it is a pin circular in section, one part of which serves as a bearing, about which swings a radial arm having at its lower end a recess, which latter contains a die head or holder, in which may be held one or more steel stamps or dies, as may be required. This die-holder has the form of a rectangular prism with a portion of its two narrow sides cut away for a portion of their length near one end, the other end having a recess for holding steel stamps, which are kept in place therein by a set-screw. This die-holder fits into a recess in the end of the radial arm referred to, and is kept in place by a plate bolted thereto, the bolt-holes being slotted to allow the quick removal of the plate and die-head, when required. The small end of this die-head when in place projects beyond the surface of the radial arm, while the other end of the holder is in the recess below the surface of the arm, and is kept in this position by a spring. When the arm is in place for operation, a blow from a hammer on the small end of the die-holder will cause it to be projected from within its recess, bringing the dies forcibly in contact with the bar to be stamped, after which the spring returns the die-holder to its usual position within the recess of the radial arm, where it is protected from injury as the stamped bar passes on. A coiled spring attached to the piece upon which the radial bar swings has one end which bears against the side of the radial arm with the effect of keeping that part of the arm which carries the die-holder in position against the end of a rail for a short time as the latter moves past the stamping-machine. At a point on the radial arm about midway between its ends is fixed a pin the axis of which is parallel with the axis of the pin upon which the radial arm swings. Attached to this pin is a hammer-arm having a bored hub which fits upon the pin about which it swings. This bar is curved and has at its lower end a hammer-head which may be brought against the die-holder. The upper end of the hammer-bar or that side of its

bearing-pin opposite the head is shorter than the lower. One end has bearing against it a curved steel spring attached to the radial arm in such a way that if the hammer-head be swung away from the die-holder and suddenly released the spring will forcibly and quickly bring the hammer-head in contact with the die-holder. The upper end of the hammer-bar is so formed and placed that when the machine is at rest this end is engaged by a spring-actuated latch, which holds one end stationary, or nearly so, in such a way that a partial revolution of the radial arm in the direction of the motion of a passing bar causes the hammer-head to move away from the die-holder, when a further motion of the same arm causes the latch to release the short end of the hammer-arm, which then by the action of its spring is brought in forcible contact with the die-holder with the effect of stamping the end of the rail in contact with the same. After the rail is stamped and has passed the machine the springs cause the various parts to assume positions in which they are ready for another operation. The only power needed to do the work of stamping is obtained from the motion of the bar to be stamped as its end enters and passes the stamping-machine.

Having given this general description of my machine, I will now, to make my invention more clear, refer to the annexed sheet of drawings, which form part of this specification, and in which like letters refer to like parts.

Figure 1 is a side elevation showing the position of the radial arm and hammer in full lines when they are in the position occupied at the time the blow is struck, the dotted lines representing their position before and after striking. Fig. 2 is an end elevation showing my device attached to the frame of a cambering-machine. Fig. 3 is a cross-section of part of the frame of the machine taken at right angles to the planes of elevations and showing the latch in plan. Fig. 4 is an end elevation of the lower part of radial arm, showing the face of stamping-dies in position in their die-holder. Fig. 5 is a cross-section of lower end of radial arm, showing die-holder in full lines in its usual position, in dotted lines in the position it assumes when struck, and the spring which returns the die-holder to within its recess is also shown in dotted lines.

Referring now to Figs. 1 and 2, A represents the plate or frame by which the stamping apparatus is attached to the frame S of a cambering-machine or other machine through which the material to be stamped would pass, and on which frame A the parts of the stamping apparatus are fastened. B represents a radial arm, which swings on the pin C, which latter is fastened to frame A by the nut C'. D represents a spring, which swings the arm B in place. E represents a hammer, which swings on pin F, and is kept in place by the nut F'. G represents the spring that gives force to the hammer E, and is kept in position on the arm

B by the bolts G' and G². II represents a latch which swings the hammer E back to its striking position. I represents a post, which fastens the latch II to the plate A, and is kept in place by the nut I', Fig. 3. J represents a spring, which holds the latch II in place.

Referring to Figs. 4 and 5, K represents the die-holder, in which the figures or letters are fastened by means of the set-screw O. L represents a spring, which protects the figures or letters from rubbing on the rail, bloom, or other shape while in the act of pushing the arm B to position for receiving the blow of the hammer E. M represents a plate, which keeps the holder K in place. P and Q represent bolts, which fasten the plate M to arm B. Plate M is slotted so that it can be removed without taking the nuts off.

Referring to Fig. 1, N represents an eccentric-bolt, the office of which is to prevent the arm B from swinging too far. R represents a rail in its passage from the cambering-machine.

The manner of operating my invention is as follows: When the apparatus is idle, the lever B stands in the position shown in dotted lines B'. The rail, bloom, or other shape to be stamped in passing this point will strike the lever B and swing it back on the pin C to its position B, and in the meantime the upper end of the hammer-bar E is caught at the dotted lines E' by the latch II with the effect of swinging the hammer E to the position shown by the dotted lines E². At this point the hammer-bar in position at E² pulls out of latch II and the spring G swings the hammer E around until it strikes the holder K, which knocks the figures or letters out against the rail, bloom, or other shape, marking it, when the spring L pushes the holder K back within the recess in the bar B, so that the figures or letters do not rub on the rail or other shape that has been stamped while the arm B is moving back to dotted lines B² as the stamped rail advances. The rail or bar that has been stamped passes out, and as soon as it is past the stamping-machine the spring D swings the arm B² back to its idle position B', and the end of the hammer E passes into the latch II, thereby raising the latch II to its position shown in dotted lines II' in Fig. 3, when the spring J throws it back to position II and engages the upper end of the hammer-bar E, after which the machine is again in position to repeat the operation. When different shapes are to be stamped, the plate A may have oblong holes at the pin C and at the post I to adjust the stamping apparatus and an oblong hole in post I so as to adjust the stroke of the hammer E properly.

Having now described my apparatus and its mode of operation, what I claim as of my invention, and desire to secure by Letters Patent, is—

1. In an apparatus for stamping bars, blooms, or other shapes of metal, the combination, with the bed-plate of a cambering-ma-

chine or other suitable support, of a frame of wrought or cast iron or steel fastened thereto by bolts passing through slotted holes for the purpose of adjusting the position of said frame, a radial arm pivoted to the frame, a stamp or die or set of the same supported by one end of said arm, and a hammer for striking the dies against the end of the bar to be stamped as it passes the apparatus, substantially as set forth.

2. In an apparatus for stamping bars, blooms, or other shapes of metal, the combination, with the frame, of a radial arm pivoted thereto, a spring fastened to said frame or pivot with one end bearing against said radial arm, a die or set of the same contained in one end of the radial arm, and a hammer for striking the dies against the bar to be stamped, substantially as set forth.

3. In an apparatus for stamping bars, blooms, or other shapes of metal, the combination, with the frame, of a radial arm pivoted to said frame, a spring attached to said frame or pivot having one end bearing against said radial arm, a recess in the end of said arm, a die or set of same contained in a holder within said recess, a spring for keeping the die-holder in position, and a hammer for striking the dies against the end of the bar to be stamped, substantially as set forth.

4. In an apparatus for stamping metal bars, the combination, with a frame, of a radial arm

pivoted thereto, a spring attached to said frame or pivot having one end bearing against said radial arm, a die or set of same contained in one end of the radial arm, a hammer pivoted near one end to said arm, a spring attached to said arm with one end bearing against the short arm of the hammer-bar, and a spring-actuated latch which engages and releases the short arm of the hammer-bar, substantially as set forth.

5. In an apparatus for stamping metal bars, the combination, with the frame, of a radial bar pivoted thereto, a spring attached to said frame or pivot having one end bearing against said arm for the purpose of keeping it in proper position, a recess at the end of said arm opposite its pivot, a die-holder contained in said recess, a spring bearing against said die-holder and radial arm for the purpose of keeping said holder in proper position while allowing it to move, a die or set of same contained in said holder, a spring-actuated hammer pivoted to the before-mentioned radial arm, and a spring-actuated latch which engages and releases the short arm of the hammer, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN E. SLICK.

Witnesses:

GEO. H. CLEMENTSON,
WM. BENNETT.