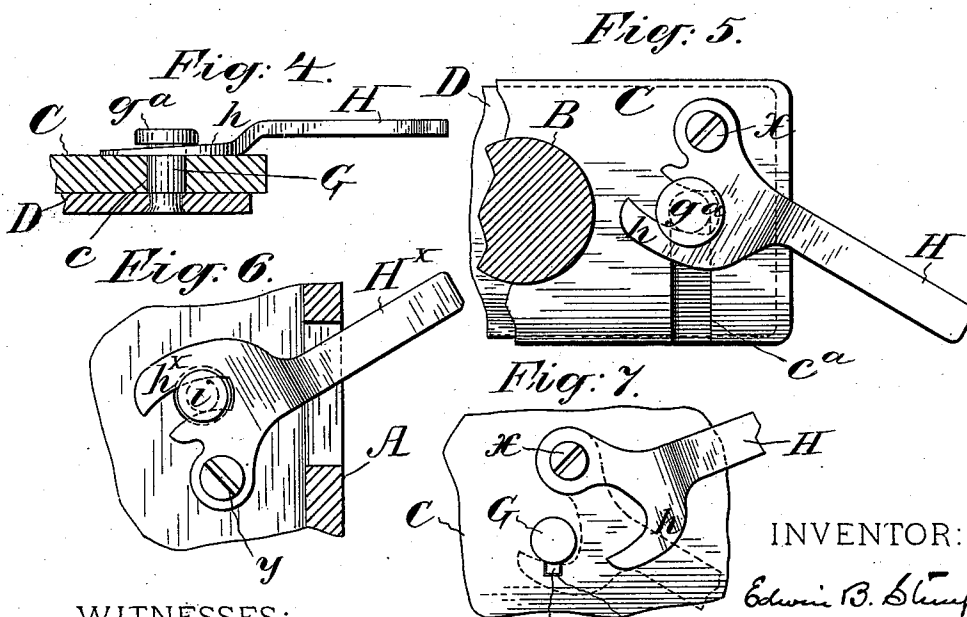
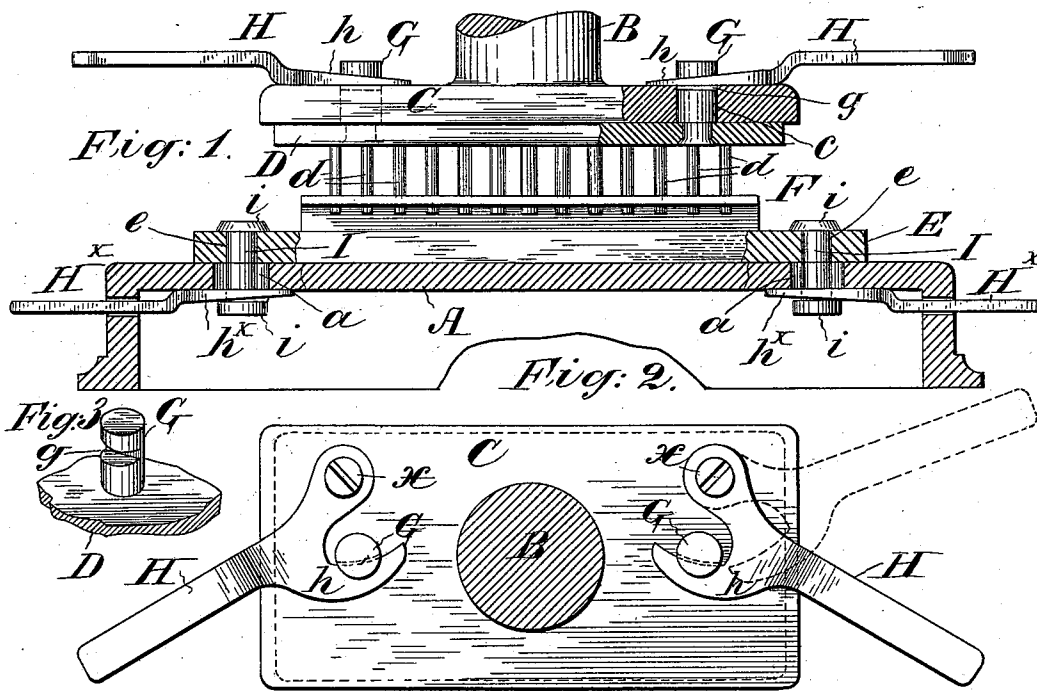


(No Model.)

E. B. STIMPSON.
PUNCHING MACHINE.

No. 549,694.

Patented Nov. 12, 1895.



WITNESSES:

J. W. Winman
Peter A. Ross

INVENTOR:

Edwin B. Stimpson
Henry Comstock

Attorney.

UNITED STATES PATENT OFFICE.

EDWIN B. STIMPSON, OF BROOKLYN, NEW YORK.

PUNCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 549,694, dated November 12, 1895.

Application filed March 16, 1894. Serial No. 503,840. (No model.)

To all whom it may concern:

Be it known that I, EDWIN B. STIMPSON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Punching - Machines, of which the following is a specification.

My invention relates most particularly to that class of punching-machines employed for ornamenting shoe-tips wherein a gang of punches, sometimes of different sizes and forms, are set in a punch-plate in a manner to form an ornamentally-perforated border on the tip. In this class of machines it is desirable that the punch-plate and die-plate shall be readily removable from the machine in order that they may be substituted by others. It is also desirable that the under side or lower face of the punch-plate shall be free from holes, slots, or recesses in order that it may be utilized to the best advantage for setting punches therein in patterns. Keeping in view these requirements, the object of my invention is to provide means for securing the punch-plate and die-plate firmly and quickly in place and in such a manner as to be readily removed for substitution by others. At the same time the device for securing the punch-plate to the plunger-head is so constructed that it does not interfere with the setting of punches in said plate at any point desired and to form any desired pattern.

In carrying out the invention the fastening or securing devices are so arranged as to prevent them from being lost or mislaid.

In the accompanying drawings I have illustrated an embodiment of my invention.

Figure 1 is a front view of a part of a punching-machine furnished with my improvements. Some of the parts are represented as broken away or in section, as will be hereinafter explained. Fig. 2 is a plan of the plunger-head, showing the locking-levers. Fig. 3 is a detached perspective view of one of the studs in the punch-plate. Fig. 4 is a sectional view, and Fig. 5 a plan view, of the plunger-head and punch-plate, illustrating a form of the fastening differing slightly from that shown in Figs. 1 and 2. Fig. 6 is a view of the fastening for the die-plate as seen from the under side of the machine-bed. Fig. 7

illustrates a slight modification of the fastening illustrated in Fig. 1.

Before describing the construction illustrated I may say that I have not deemed it necessary to show the entire punching-machine, as these machines are well known and they vary considerably in general construction and form.

The punching-machine to which my improvements, as herein illustrated, are intended to be applied comprises a suitable bed A, on which is mounted a head, (not shown,) and in this head is mounted a reciprocating plunger B, bearing a plunger-head C. Mechanism of any kind may be provided for depressing and retracting the plunger. Usually a cam and lever device is employed for this purpose. On the plunger-head is removably secured a punch-plate D, provided with a series of punches *d*, and on the bed is removably secured a die-plate E, provided with dies or holes which register with the respective punches. The die-plate is provided, ordinarily, with a stripper F, having holes in which the punches play.

All of the above features are, broadly considered, old and well known. My invention, which will now be described, relates to the means for securing the punch-plate D and die-plate E removably to the plunger-head and base, respectively.

Referring first to Figs. 1, 2, and 3, the punch-plate has secured in it and projecting from its upper face or back two locking-studs G, preferably situated near its respective ends, and the plunger-head has in it two holes *c*, which are so spaced as to register with these studs. In Fig. 1 the punch-plate and plunger are broken away at the right hand so as to show the stud at that end in place. In one side of the stud G at the point where it emerges from the hole in the plunger-head is formed a transverse slot *g*. (Seen best in Fig. 3.)

On the upper face of the plunger-head are pivotally mounted two like locking-levers H. Each lever is pivoted at *x* and is provided with a cam *h*, which is so placed as to engage the slot *g* in the locking-stud when the lever is in the position indicated in full lines in Figs. 1 and 2. The upper face of the cam *g* is beveled or inclined, as clearly seen in Fig. 1,

so that when the lever is drawn in such a manner as to put the cam *h* in engagement with the recess *g* in the locking-stud its beveled surface will take under the shoulder formed at the upper edge of said recess and draw the punch-plate D up firmly to the plunger-head. By throwing the levers H back to the position indicated by dotted lines at the right in Fig. 2 the punch-plate may be removed by withdrawing the locking - studs from the holes in the plunger-head.

By cutting a recess, as *g*, in the stud G a shoulder is formed for the cam to engage without any lateral projection on the stud which would prevent it from passing up through the hole in the plunger-head; but in Fig. 7 I have shown another way of providing such a shoulder. In this view the stud G is represented as provided with a laterally-projecting pin *g*^x, which forms the shoulder, and the hole *c* in the plunger-head has a groove *c*^x, like a key-way, to permit said pin to pass when the stud G is inserted.

Figs. 5 and 6 illustrate another construction, wherein a head *g*^a is formed on the stud G to provide the necessary shoulder. In this case an open slot *c*^a extends from the hole *c* (see Fig. 5) to the edge of the plunger-head to permit the stud G to be inserted by a lateral movement. This view, Fig. 5, also shows the cam *h* made in the form of a fork, so as to take under the head *g*^a of the stud at both sides. In all the several varieties of the construction the studs G are secured firmly in the plate, as they need not be removed, and the locking-lever is attached to the plunger-head, so that it will not be lost or displaced.

The die-plate E is secured removably to the base A in a manner somewhat similar to that described. The construction of the fastening is illustrated in Figs. 1 and 6. In Fig. 1 the bed and a part of the die-plate are represented in section to show the parts in place.

In the die-plate E are two holes *e*, preferably near the respective ends of the plate, and in these holes are locking-studs I. The shank of the stud I fits snugly but loosely in the hole in the die-plate, and said stud has a head *i* at each end so that it cannot escape from the hole *e*. In the bed A, and properly registering with the studs in the die-plate, are holes *a* of such size as to allow the heads *i* on the lower ends of the studs to pass. Pivotaly mounted at *y* on the under side of the bed are locking-levers H^x, substantially like the levers H before described, and provided each with a beveled cam *h*^x to engage the shoulder formed by the lower head *a* on the bolt I and draw the die-plate down firmly to the bed. Ordinarily the punch-plate and die-plate are connected when placed in the ma-

chine, the punches *d* being pushed down into the dies or holes in the die-plate. While thus connected, they are passed under the uplifted plunger-head, the studs G passed up through the holes *c* in the head C, and the locking then effected with the levers H. The studs I are then dropped through the holes in the bed and the plunger depressed, so as to seat the die-plate on the bed while the punches are in their holes. When the die-plate is seated, the locking is effected by the levers H^x.

The above mode is a convenient way of setting the die-plate and punch-plate in place; but they may be put in place as preferred by the operator.

So far as the means for securing the die-plate on the bed is concerned, this may be employed in connection either with the device for securing the punch-plate shown in Figs. 1 and 2 or with that shown in Figs. 4 and 5. This latter is the form of fastening device for the punch-plate which I believe to be new.

Having thus described my invention, I claim—

1. In a punching machine, the combination of a plunger-head having parallel open-ended slots, a punch-plate having shouldered lugs adapted to enter said slots and locking-levers mounted on the plunger-head in position to engage the shoulders on said lugs, whereby the attachment and removal of said punch-plate are greatly facilitated, substantially as set forth.

2. In a punching machine, the combination with the apertured bed and apertured die-plate, of the loose, double-headed locking-studs in the die-plate, and the locking-levers mounted on the bed and adapted to engage the shoulders formed by the lower heads on the respective locking-studs, substantially as set forth.

3. The combination in a punching machine of the apertured bed A, the slotted plunger-head C, the locking-levers H^x, mounted on said bed, and the locking-levers H, mounted on said plunger-head, of the punch-plate D, provided with shouldered studs G, adapted to enter the respective slots in the plunger-head, and the loose, double-headed studs I, mounted in the die-plate and adapted to pass down through the apertures in the base and be engaged by the locking-levers H^x, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EDWIN B. STIMPSON.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.