(No Model.)

A. CAMPBELL.

PUNCHING AND SHEARING MACHINE.

No. 265,016. Patented Sept. 26, 1882.

FIG. 1.

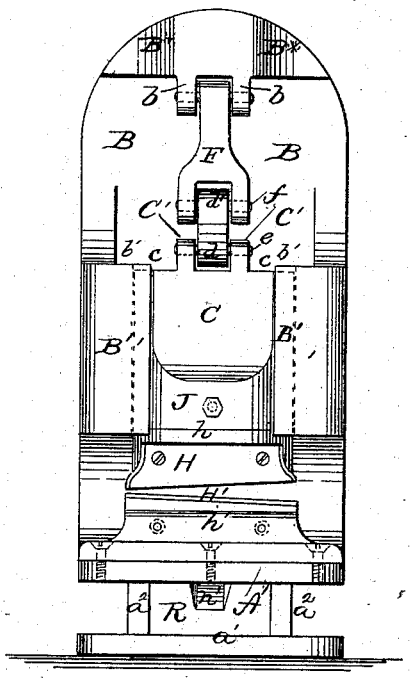


FIG. 2.

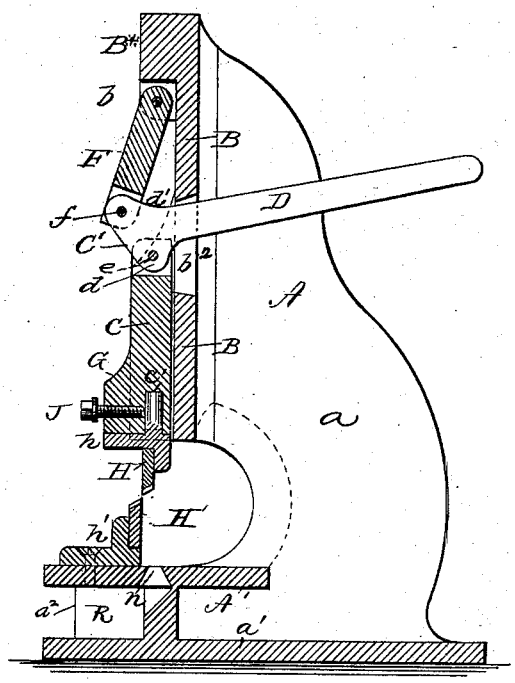


FIG. 3.

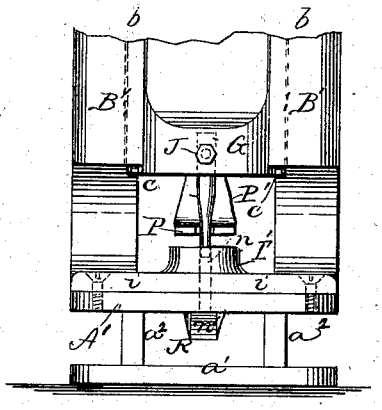
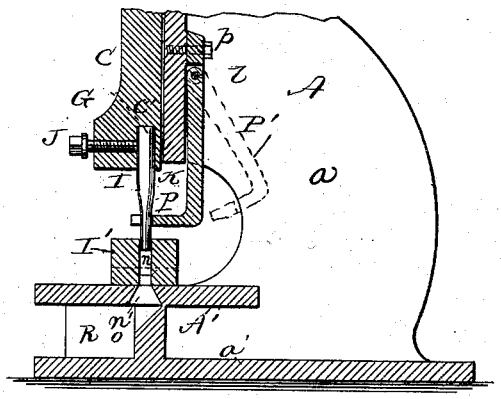


FIG. 4.



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PUNCHING AND SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 265,016, dated September 26, 1882.

Application filed June 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER CAMPBELL, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Punching and Shearing Machines, of which the following is a specification.

My invention relates to improvements in convertible punching and shearing machines; and it has for its object the production of a device which may be used at will either as a shear or punch for metals or other materials, and which, while being exceedingly powerful, is simple in construction and convenient and effective in use.

In carrying out my invention I employ a substantial main framing composed of two side standards connected at their lower ends by a foundation-plate and at their front by means of a face-plate, which is provided with guides for the follower, which carries the upper punch or shear, and also with bearings for the supporting-link and operating-lever. The follower is formed on either side with inclined guides, which slide in correspondingly-formed ways formed in extensions from the face-plate. On the upper side the follower is provided with lugs or projections, which form bearings for a bolt or pin, by means of which the follower is connected to the shorter arm of a T-lever, which passes through a hole in the center of the face-plate. To the longer arm of the T-lever is connected, by means of a pin-joint, the forked end of a lever, the opposite end of which is pivoted to lugs carried by a projection extending from the upper end of the face-plate. The follower, on its under side, is formed with a socket, which is adapted to receive the shank of the upper shear-block or the shank of the punch. To the rear of the face-plate is bolted the holding-plate of a stripper-lever, which at its upper end is pivoted to the said plate, while at its lower end it is formed with a forked extension. This stripper-lever and its extension may be swung backward out of the way when not in use. The side standards of the main framing are extended forward at their lower front faces, so as to form a foundation for the bed-plate, and at the same time a receiver for the blanks or punched or cut away portions of iron or other material. The blanks or cut-away portions are conducted to the receiver by means of a hole or passage formed in the center of the bed-plate, which terminates in an incline or chute. Upon the bed-plate is affixed by bolts a bracket, to which is attached by bolts the stationary jaw of the shears or the bearing-piece holding the block in which is formed the female die of the punch. The cutting-edges of the jaws of the shears are inclined laterally and horizontally the one to the other.

The accompanying drawings form part of this specification, and illustrate what I consider the best means of carrying out my invention.

Figure 1 is a front elevation, showing the parts in position for use for shearing purposes. Fig. 2 is a vertical cross-section thereof. Fig. 3 is a front elevation, showing the parts in position for use in punching. Fig. 4 is a vertical cross-section of the same.

In each of the views similar letters of reference are employed to indicate corresponding parts wherever they occur.

A represents the main framing, which is composed of two side standards, *a a*, connected at their lower ends by a foundation-plate, *a'*, and at their front by a face-plate, B, which is provided with guides B' B' for the follower C, (which carries the upper punch, I, or the holder *h* for the upper shear-blade, H,) and also with the bearings *b b* for the supporting-link F, which is pivoted to the operating-lever D.

The follower C is formed on each side with inclined guides *c*, which slide in correspondingly-formed ways *b'* in the extensions B' from the face-plate B.

On the upper side the follower C is provided with lugs or projections C', which form bearings for a bolt or pin, *e*, by means of which the follower C is connected to the shorter arm, *d*, of the T-lever D, which passes through a hole, b^2, in the face-plate B.

To the longer arm, *d'*, of the lever D is connected, by means of the pin *f*, the forked end of the link F, the upper end of which is pivoted to lugs *b b*, carried by projections B*, extending from the upper end of the face-plate B.

The follower C, on its under side, is formed with a socket, *c'*, which is adapted to receive the shank of the upper shear block or holder, *h*, or the shank of the punch I, the shank in either case being secured in position by means of the binding-screw J.

To the rear of the face-plate B is bolted the holding-plate *p* of the stripper-lever P′, which at its upper end is pivoted, at *l*, to the plate *p*, while at its lower end it is formed with a forked extension or stripper, P. The stripper P P′ may be swung backward out of the way when not in use, as shown by dotted lines in Fig. 4. The stripper P P′ is retained in either position by screws, catches, or other suitable means. The side standards, *a a*, of the main framing A are extended forward at a^2 a^2, so as to form a foundation for the bed-plate A′, and at the same time a receiver, R, for the blanks or cut or punched away portions of iron or other material. The blanks or cut-away portions are conducted to the receiver R by means of a hole or passage, *n*, formed in the center of the bed-plate A′, which terminates in an incline or chute, *n′*, opening into the receiver R.

Upon the bed-plate A′ is affixed by bolts a bracket, *h′*, to which is attached by bolts the stationary jaw H′ of the shears or the bearing-piece *i*, holding the block I′, in which is formed the female die of the punch. The jaws H and H′ are both formed removable, as shown, and the cutting-edges of both are inclined in opposite directions, both laterally and horizontally, so as to present a continuous, instead of an instantaneous, cutting-surface over the surface of the metal or material.

The operation of the device will be so readily understood by aid of the accompanying drawings that it will be unnecessary to further explain the same.

I claim as my invention—

The combination composed of the main frame, sliding follower, and its actuating devices, constructed and operating, substantially as shown and described, jointly with interchangeable shear *h* H′ and punch I and the hinged stripper P, as set forth.

ALEXANDER CAMPBELL.

Witnesses:
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