(No Model.)

E. B. STIMPSON.

MEANS FOR OPERATING PUNCHES OR PRESSES.

No. 525,871. Patented Sept. 11, 1894.

FIG. 1.

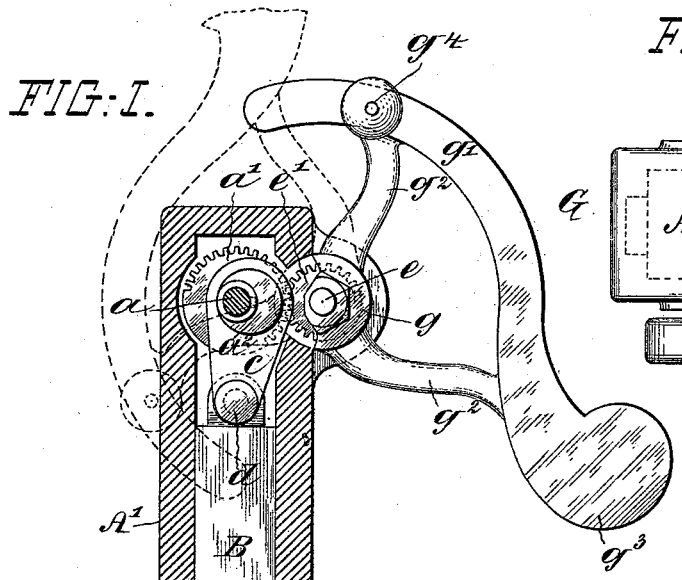


FIG. 3.

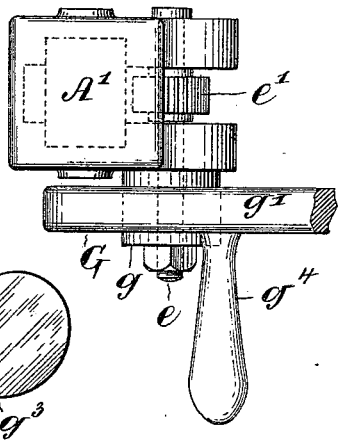
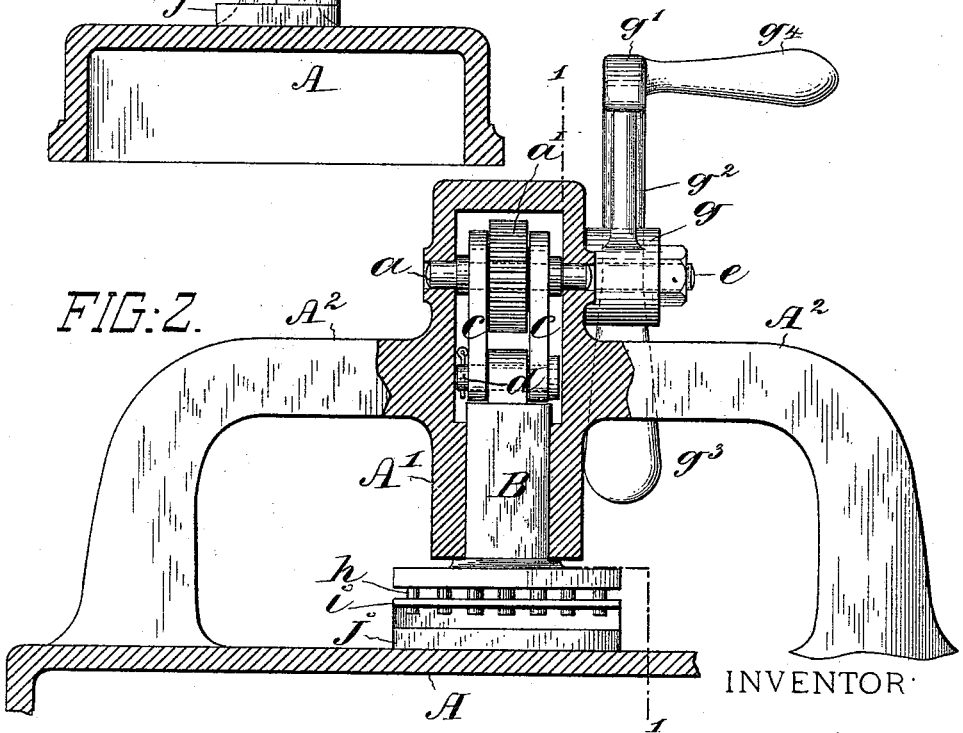


FIG. 2.



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MEANS FOR OPERATING PUNCHES OR PRESSES.

SPECIFICATION forming part of Letters Patent No. 525,871, dated September 11, 1894.

Application filed December 20, 1893. Serial No. 494,170. (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 Means for Operating Punches or Presses, of which the following is a specification.

My invention relates to the class of hand-operated punches and presses, and particularly to punches used in the ornamentation of leather for shoe uppers.

The object of the invention is to improve the mechanism for operating the plunger of the punch or press.

The invention will be fully described hereinafter and its novel features carefully defined in the claims.

In the accompanying drawings wherein an embodiment of the invention is illustrated—Figure 1 is a sectional, side elevation taken substantially in the plane indicated by line 1, 1, in Fig. 2; and Fig. 2 is a front view of the same with a part of the head broken away to show the plunger and its operating mechanism. Fig. 3 is a plan view of the head of the machine.

A represents the bed of a punching machine; A′, the head, and A^2, the arms supporting the head on the bed. These parts are not novel and they may be of any form desired.

In a guide-way in the head is mounted a vertically operating plunger, B, to which may be secured the punch-plate carrying the punches, or the punches, themselves, as desired. The plunger must be forced down for punching, and then retracted or withdrawn, and my invention relates particularly to the mechanism for thus operating the plunger.

In the hollow head A′, is rotatively mounted a transverse rock-shaft, *a*, on which is secured or fixed a gear-wheel *a*′, which has formed on its sides two like eccentrics, a^2. Two eccentric links, *c*, *c*, embrace the respective eccentrics a^2, at their upper ends, and at their lower ends these links are pivotally coupled to the upper end of the plunger B, by a pin, *d*, as clearly shown in Fig. 2. Back of the shaft *a*, is mounted in the head a counter-shaft, *e*, on which is secured a toothed wheel or pinion *e*′, which gears with the wheel *a*′; and on the outer end of the shaft *e*, is fixed the boss, *g*, of an operating lever, G. This lever, as herein shown, comprises a concentric rim, *g*′, arms, g^2, and a weight, g^3, and it is provided with a handle, g^4, which is secured to the rim and adapted to be grasped by the hand of the operator. As herein shown the eccentrics are so set that they rock or turn only through one-fourth of a complete rotation, and therefore the wheel *a*′, is only shown provided with teeth about half-way its circumference. The wheel or pinion *e*′, however, which is smaller than the wheel *a*′, may be toothed all of the way around like an ordinary gear-wheel.

Now in operating the device the attendant sits or stands in front—at the left in Fig. 1—and forces the punch. He grasps the handle g^4, with his right hand and pulls it over forward to force down the plunger, the gear-wheel *a*′, making a quarter rotation and the pinion *e*′, which drives it, rotating to a greater extent proportioned to the respective sizes of the gear-wheels. In Fig. 1 the full lines show the parts in their normal positions when the punches are elevated and the dotted lines show the position of the operating lever when the punches are depressed. When the operator lets go the handle g^4, the weight g^3, assists in retracting the parts. The concentric form of the lever-rim *g*′, serves to balance the parts in their movement and the employment of two eccentrics and links serves to equalize the pressure on the plunger and avoid side-draft.

The punches, *h*, stripper, *i*, and die-plate, *j*, are old devices and so far as the present invention is concerned they may be of any construction. The shaft *a*, might also be fixed in the head and the gear-wheel *a*′, be rotatively mounted on the same.

Having thus described my invention, I claim—

1. The combination with the head of a punch, and the plunger therein, of the shaft *a*, mounted rotatively in said head above the plunger, the gear-wheel *a*′, fixed on said shaft and having on each side an eccentric a^2, the eccentric links *c*, embracing the respective eccentrics at their upper ends and coupled at their lower ends to a pin in the plunger, a counter-shaft *e*, rotatively mounted in the

head back of the shaft a, a pinion e', on the shaft and gearing with the wheel a', and an operating lever of the pinion-shaft whereby the latter is rotated.

2. The combination with the head of a punch or press and the plunger mounted therein, of the gear-wheel a', and its shaft, the eccentrics carried by said wheel, the links which couple said eccentrics to the plunger, the pinion e', and its shaft, said pinion gearing with the wheel a', and the concentric lever G, fixed on the pinion-shaft and provided with a weight g^3 and horizontally projecting handle g^4, all arranged and adapted to operate substantially as set forth.

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

EDWIN B. STIMPSON.

Witnesses:
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