(No Model.)

W. C. JONES.

SPRING PUNCH.

No. 378,549. Patented Feb. 28, 1888.

Fig. 1.

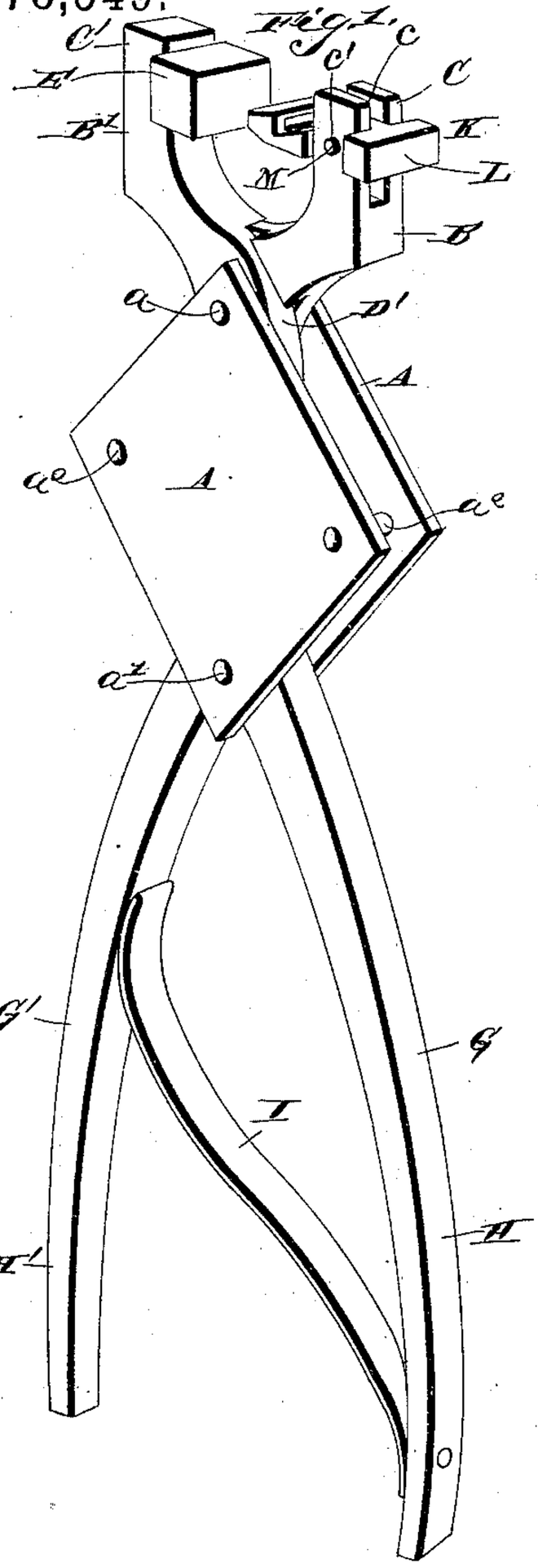


Fig. 2.

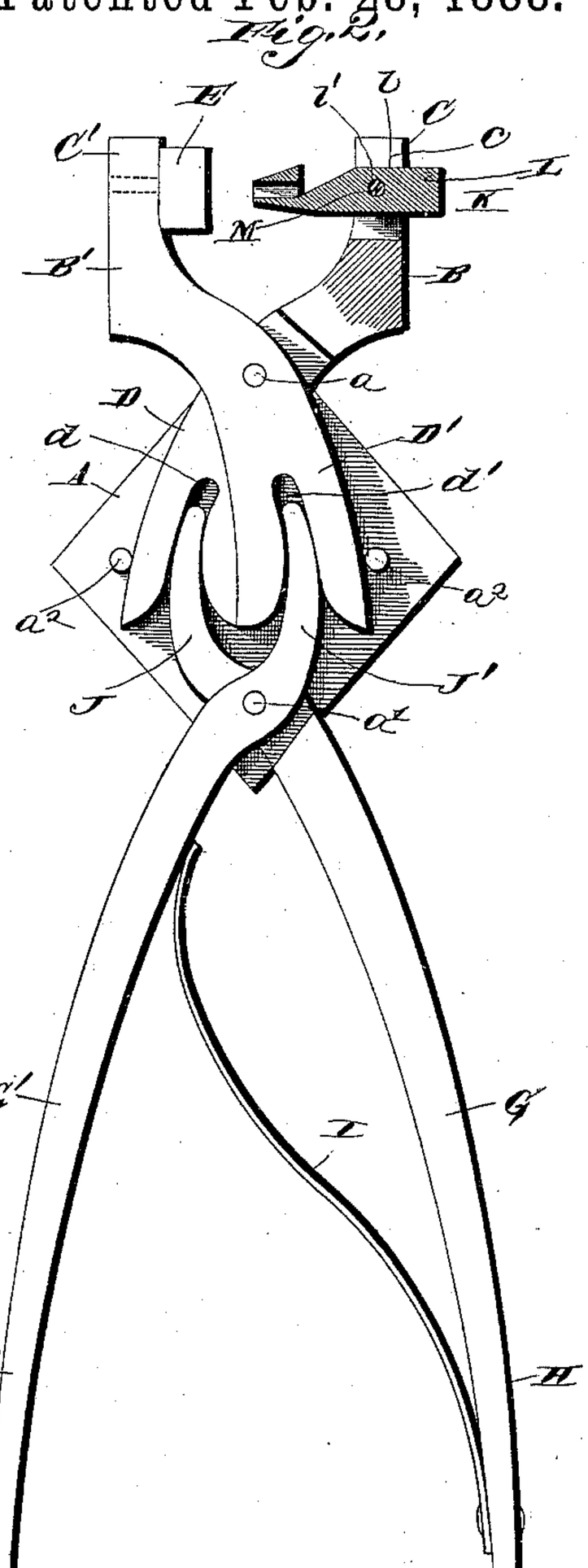
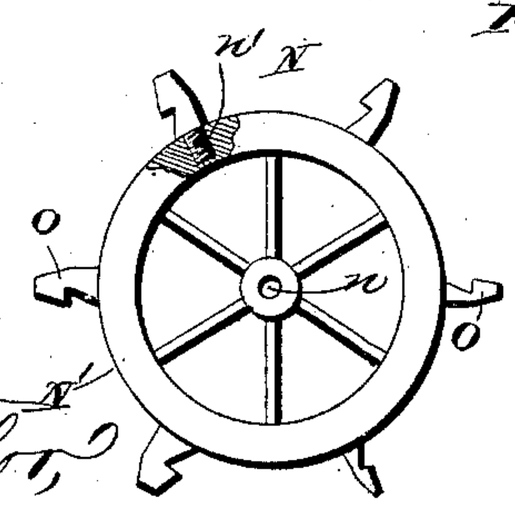
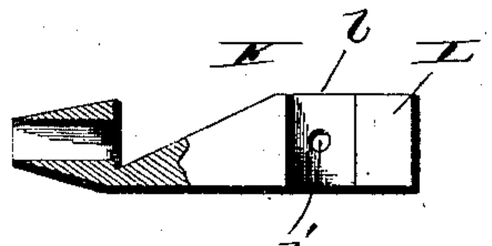


Fig. 3.





Witnesses

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UNITED STATES PATENT OFFICE.

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SPRING-PUNCH.

SPECIFICATION forming part of Letters Patent No. 378,549, dated February 28, 1888.

Application filed November 8, 1887. Serial No. 254,647. (No model.)

To all whom it may concern:

Be it known that I, WESLEY CORRY JONES, a citizen of the United States, residing at Waxahachie, in the county of Ellis and State of Texas, have invented a new and useful Improvement in Spring-Punches, of which the following is a specification.

My invention relates to improvements in punches; and it has for its object the provision of a device in which the power applied to the handles will be increased at the ends of the jaws, thereby making the punch easy to operate.

A further object of my invention is to provide a punch in which the dies may be easily changed and adjusted, thus enabling one punch to serve for various purposes.

My invention consists in constructing a punch with two or more sets of connected or geared levers, whereby the power of the jaws is greatly increased. It is not necessary, therefore, to apply as much power to the handles to produce the same result.

The invention consists, further, in providing one of the jaws with a slot in which a number of dies may be secured, and also in providing dies which are constructed to fit in the said slot.

The invention consists, further, in certain novel details of construction, more fully set forth hereinafter, and specifically pointed out in the claims.

In the accompanying drawings my improved punch is illustrated, wherein—

Figure 1 is a perspective view thereof. Fig. 2 is a side view with one side plate removed. Fig. 3 represents a detail view of the dies which are adapted to be used in connection with this punch.

Referring by letter to the drawings, A A designate the diamond-shaped side plates, which are held together by the end bolts or pins, *a a'*, and the side bolts or pins, a^2 a^2. The short levers B B' are pivoted on the bolt *a*, and they comprise the jaws C C' and the arms D D'. The jaw C is provided with a longitudinal slot, *c*, and the transverse aperture *c'* near the end, which intersects the slot *c* at right angles. The end of the jaw C' is provided with a block, E, preferably of brass or other soft metal, which is designed to receive the pressure of the dies which are secured to the other jaw. The rear ends of the arms D D' are provided with the curved slots *d d'*, respectively, for a purpose hereinafter described.

G G' represent the power-levers of the punch, which are pivoted on the bolt or pin *a'*, and they comprise the handles H H' and the arms or fingers J J'. The handles are very long in proportion to the said arms or fingers J J', and they are normally held separated by the leaf-spring I, which is secured to one of the handles and bears at the free end against the other. The arms or fingers are curved, and are so arranged as to operate, respectively, in the curved slots *d d'* in the rear ends of the arms D D'. The length of the arms D D' is greater than the length of the jaws, and consequently the power which is applied to the ends of the said arms will be increased at the ends of the jaws. It will now be clearly seen that when the handles are drawn toward each other the ends of the arms or fingers J J' will approach, the ends of the slotted arms D D' will be drawn together, and the ends of the jaws will be similarly operated. This double set of intermeshing levers will obviously increase the power which is applied to the handles very greatly, thereby rendering it possible, by the application of a comparatively slight pressure upon the handles, to draw the ends of the jaws together with tremendous force.

It will be seen that the bolts or pins *a a'* are utilized as pivots for the two sets of levers, and the bolts or pins a^2 a^2 serve as stops to limit the outward or lateral position of the rear ends of the arms D D'. The spring I forces the handles apart until stopped by the rear ends of the arms D D' striking against the said pins or bolts.

It will be understood that the slots in the rear ends of the arms D D' may be straight, and the arms J J', operating therein, may also be straight; but I prefer to curve them, as illustrated and described, for the reason that the engagement is more certain, and the punch is thus made more durable and strong.

K designates a die having a T-shaped arm, L, on the rear or outer end. The shank *l* of the said arm is provided with a transverse aperture, *l'*, and the arm is adapted to be passed

into the slot in the end of the jaw C until the said aperture l' registers with the aperture c' in the jaw. A bolt, M, is passed through the registering-apertures to hold the die in place. It will also be seen that the T-shaped head on the arm L bears on the outer side of the jaw, and the shoulders at the outer end of the body of the die bear against the inner side of the jaw, thus firmly bracing the die to prevent play while in operation.

N designates a rotary die-holder, which consists of a wheel having a central bearing, n, and the rim N', provided with a series of threaded apertures, n'. The dies O are screwed into the said threaded apertures, and thus extend out radially from the wheel, and it will be seen that if one of the dies is broken it may be very easily and quickly replaced. The said die-holder is adapted to be arranged in the slot c' and mounted on the bolt M. When the said bolt is tightened, the sides of the jaws are drawn together, and thus firmly bind the die-holder in place, with either of the dies in position to impinge against the block E when the jaws are drawn together.

By means of the rotary die-holder any desired die may be instantly adjusted for use, as it is simply necessary to loosen the bolt, turn the die-holder until the desired die is in position, and then tighten the bolt.

This punch is very simple in construction, the power applied by the jaws is very great in proportion to that applied to the handles, and the means provided for the adjustment of the various kinds of dies are very simple, easily operated, and effective.

Having thus described my invention, I claim—

1. The combination of the operating-levers, pivoted together and having the arms J J' on opposite sides of their pivot, and the jaws, similarly pivoted together and having the slotted arms D D', engaged by the arms J J' of the operating-levers, substantially as set forth.

2. The combination of the jaws pivoted together and having the arms D D', the operating-levers pivoted together and having the arms J J', engaging the arms D D', and the stop-pins a^2 a^2, substantially as set forth.

3. In a punch, the combination of the side plates, A A, the bolts or pins a a' between the plates, the levers G G', mounted on the bolt a' and comprising the handles H H' and the fingers J J', the spring I between the handles to normally hold them separated, the levers B B', mounted on the bolt or pin a and comprising the slotted arms D D', meshing with the fingers J J', and the jaws C C' and the bolts or pins a^2 a^2 between the side edges of the plates A, to limit the lateral motion of the arms D D', substantially as and for the purpose specified.

4. In a punch, the combination of the spring-actuated levers G G', comprising the handles H H' and the curved fingers J J', and the levers B B', comprising the jaws C C', and the arms D D', having curved slots d d' in their rear ends to receive the fingers J J', all constructed and arranged as specified.

5. In a punch, the combination of the pivoted handles H H', having the fingers J J' on their inner ends, the independent pivoted jaw C, having a slot, c, in the end to receive a die, and the independent pivoted jaw C', having a block, E, on the end to strike against the said die, the said jaws being provided, respectively, with the rearward-extending arms D D', which are connected to the fingers J J', substantially as specified.

6. In a punch, the combination of the pivoted handles H H', the jaw C, connected to the handle H and having a slot, c, in the end, provided with a transverse bolt, M, the jaw C', connected to the handle H', and having a block, E, on its outer end, and the die secured in the slot c and mounted on the bolt therein, substantially as and for the purpose specified.

7. In a punch, the combination of the pivoted jaw C', having the block E thereon, the jaw C, having the longitudinal slot c in the end, the transverse bolt M in the slot, the rotary die-holder N, mounted on the said bolt and having its rim provided with a series of tapped apertures, the dies O, secured in the said apertures, the said holder being adapted to be adjusted to cause either of the dies to strike against the block E, and the pivoted handles H H', geared to the said jaws, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WESLEY CORRY JONES.

Witnesses:
G. PHILLIPS,
H. M. RHODUS.