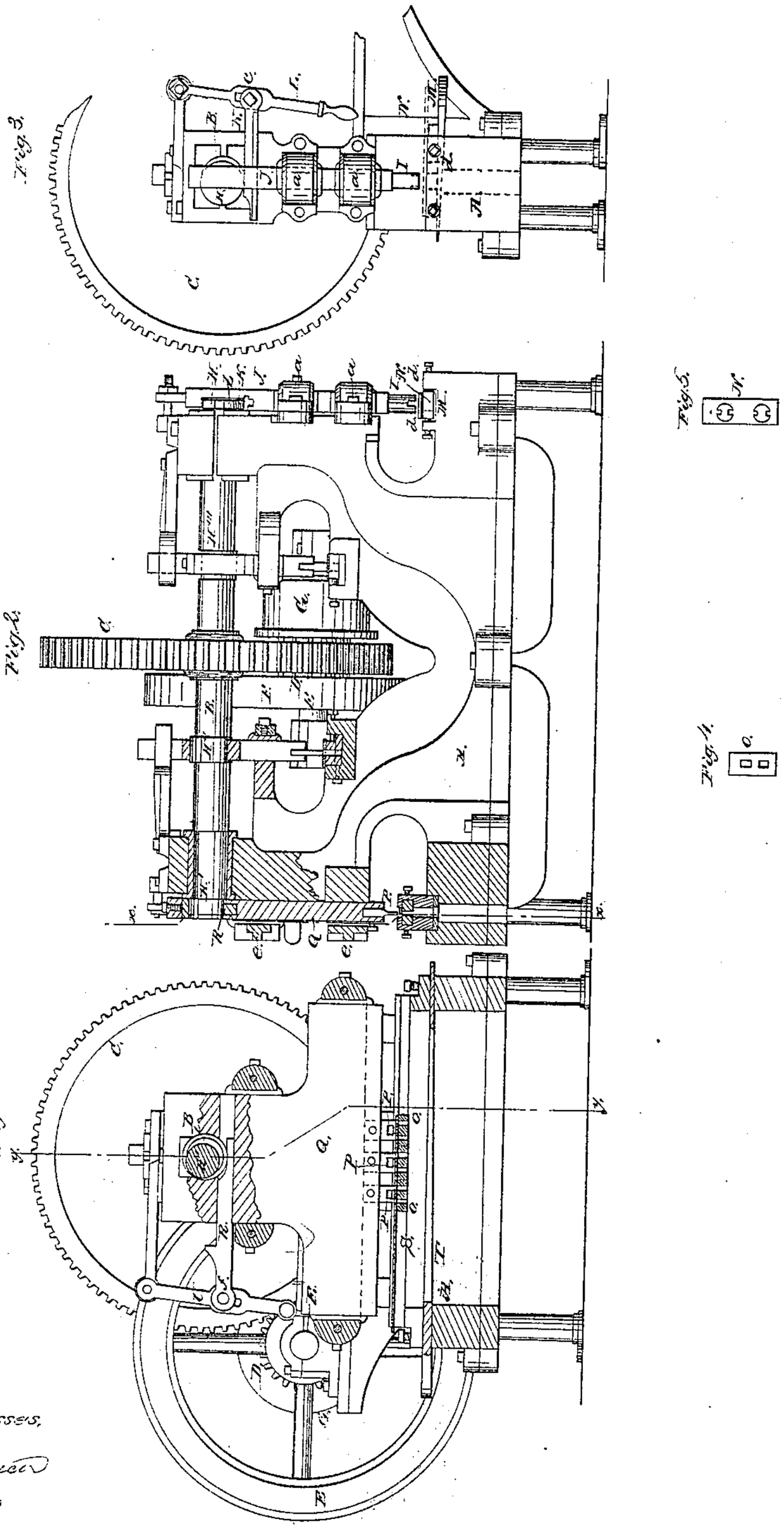
C. Hughes,

Cutting Hoop-Locks,

No. 29,343. Patented July 24, 1860.



Witnesses,
R. S. Spencer
H. Orwig

Inventor:
Chas Hughes
per Munn & Co
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES HUGHES, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO HIMSELF AND HENRY FASSMAN, OF SAME PLACE.

IMPROVED PUNCHING-MACHINE.

Specification forming part of Letters Patent No. **29,343**, dated July 24, 1860.

To all whom it may concern:

Be it known that I, CHARLES HUGHES, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and Improved Punching-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an end sectiontal view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a side sectional view of the same, taken in the line *y y*, Fig. 1; Fig. 3, an end view of the same; Figs. 4 and 5, face views of dies.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain improvements in machines for punching metal plates, and is more especially designed for making hoop-locks for connecting or fastening the ends of metal bale-hoops. The invention, however, may be applied to all punching-machines and will be useful in all cases where metal is operated upon by punches.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a frame, which may be of cast-iron and of any proper form to support the working parts of the device. On the upper part of the frame A there is a shaft B, which has a toothed wheel C placed on it, and the wheel C gears into a pinion D on a driving-shaft E, which is provided with a fly-wheel F and a working or driving pulley G. (See Figs. 1 and 2.) The shaft B is provided with a number of eccentrics H H′, any number being used, according to the number of punches to be used. The eccentric H at one end of the shaft B operates a punch I, the rod or arbor J of which is fitted in suitable guides *a*, and is allowed to work freely up and down therein, the upper part of said rod or arbor having a recess *b* made in its inner side to receive the eccentric, as shown clearly in Fig. 2.

In the upper part of the rod or arbor J, at the lower edge of the recess *b*, there is made a groove to receive a slide K, which is fitted below the eccentric H and has one end at its upper side hollowed out or made concave, as shown clearly in Fig. 3. The opposite end of the slide K is attached to a pendent lever L, secured to the upper part of the frame A by a fulcrum-pin *c*, as shown clearly in Fig. 3.

The lower part of the frame at the lower part of the rod or arbor J is formed with a recess, as shown clearly in Fig. 2, and two guides *d d* are placed on the bottom of this recess, between which guides a wedge M is placed and allowed to slide in and out. To the upper surface of this wedge M a die N is attached, which of course corresponds with the form of the punch I. The bottom of the recess between the guides *d d* is inclined, corresponding with the taper of the wedge M, as clearly shown by the dotted lines in Fig. 3.

From the above description it will be seen that the die N may be raised or lowered by drawing the wedge M in or out on the bed of the recess between the guides *d d*, and all wear of the die may be readily compensated for. The die N may be adjusted on the wedge M at any particular point and secured temporarily thereon by any proper means. The recess *b* at the upper part of the rod or arbor J is made sufficiently larger than the eccentric H to admit of the slide K being introduced beneath the eccentric and contract said recess, so that the eccentric may operate the rod or arbor, the eccentric remaining inoperative, although rotating when the slide K is withdrawn. This will be fully understood by referring to Figs. 2 and 3. At any time, therefore, when it is not required to operate the punch I the lever L is actuated and the slide K drawn out from the recess *b* until the concave end of the slide is beneath the eccentric and the eccentric H rendered inoperative. This is an important feature of the invention, for it admits of the punch I being stopped to adjust the work beneath it without stopping the driving-shaft of the machine.

This machine, as previously alluded to, is more especially designed for making hoop-locks, and the punch I and die N cut out the buttons, which are of circular form with a recess at two opposite points of their peripheries. The form of the buttons is shown clearly by the die N in Fig. 5. The buttons thus cut out require to be used with hoops having perforated ends, and these hoops are perforated or punched with rectangular holes corresponding to the die O. (Shown in Fig. 4.)

The punches P, which, in connection with a

series of dies O, punch the holes in the hoops, are secured in the lower end of a plate Q, which may be termed a "punch-stock." This stock is fitted in suitable guides *e*, attached to the frame A, and the stock is allowed to work freely up and down in its guides *e*. In the upper part of the stock Q an eccentric H′ on the shaft B works, and beneath this eccentric a slide R is fitted and allowed to move freely back and forth. This slide R, like the slide K, serves to render the eccentric H′ inoperative when drawn out from beneath it or drawn out until its concave end is brought underneath the eccentric. The dies O are placed in an oblong box S, which is fitted in the frame A and has a wedge T placed beneath it. This wedge T is for the same purpose as the wedge M, previously described, the wedge T resting on an inclined surface corresponding to its taper. The slide R is attached to a pendent lever U, which is secured to the frame A by a fulcrum-pin *f*. Other eccentrics H″ H‴ are on the shaft B, and these may be used for operating punches for other purposes. It will be seen that in consequence of the facility of rendering the eccentrics inoperative one punching device will not affect the operation of the others.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The arrangement and combination, with the shaft B, in the manner and for the purpose herein shown and described, of the adjustable wedge K, lever L, wedge R, lever U, eccentrics H H′, arbor J, wedge M, dies N O, punches P, plate Q, box S, and wedge T, all as set forth.

CHARLES HUGHES.

Witnesses:

GEORGE PATTERSON,

C. GREEN.