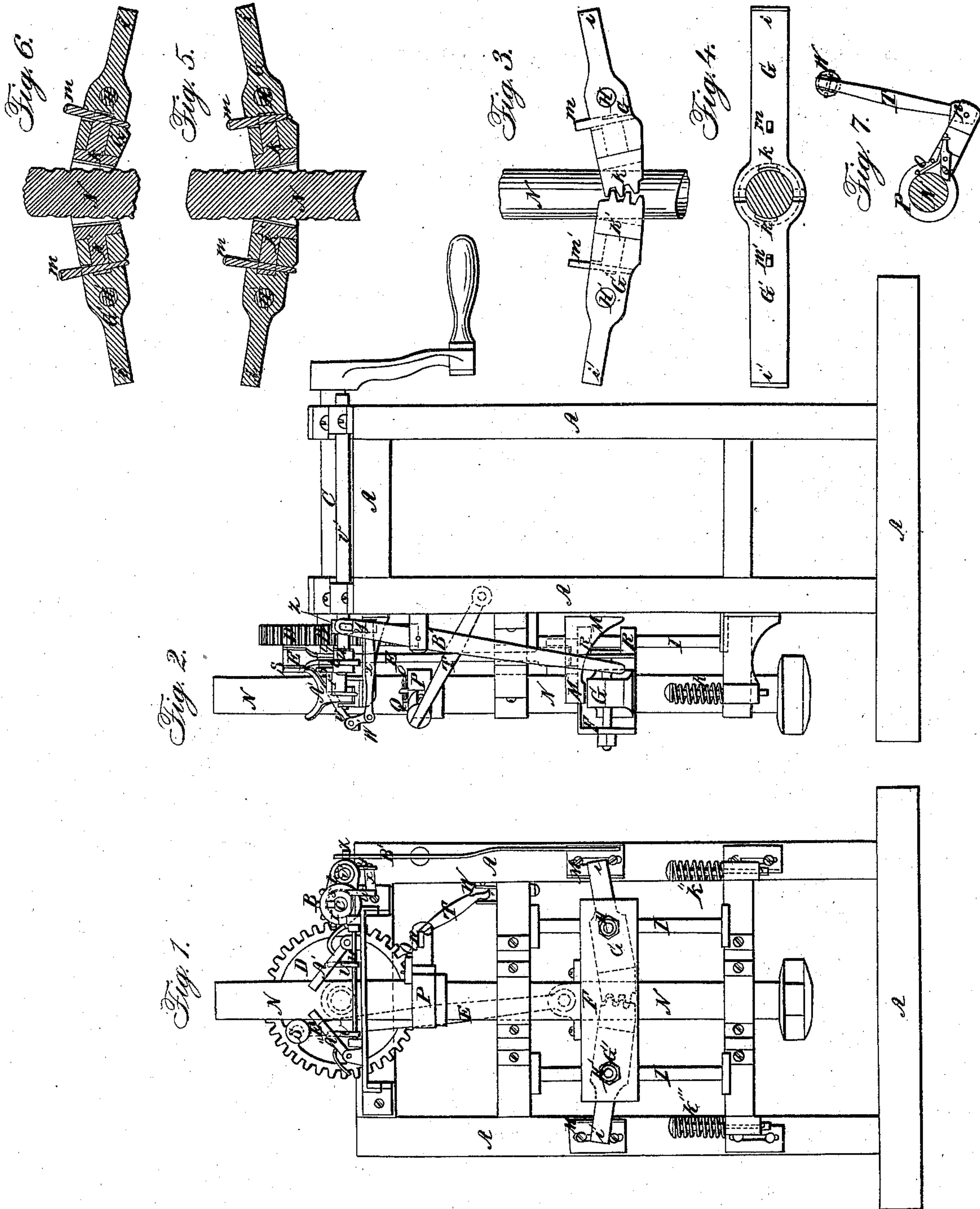


J. W. FOWLE.

Ore Stamp.

No. 39,768.

Patented Sept. 1, 1863.



Witnesses:

W. H. Cyood
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UNITED STATES PATENT OFFICE.

JOSEPH W. FOWLE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO WILLIAM H. OSGOOD, OF SAME PLACE.

IMPROVED MACHINE FOR STAMPING AND DRILLING.

Specification forming part of Letters Patent No. **39,768**, dated September, 1, 1863; antedated July 15, 1863.

To all whom it may concern:

Be it known that I, JOSEPH W. FOWLE, of Boston, in the county of Suffolk, the State of Massachusetts, have invented a new and useful Improvement on Stamps and Drills for Ores, &c.; and I do hereby declare that the following is a full and exact description thereof.

The nature of my invention consists in the construction of a clamp or grip, which takes hold of the stamp or drill rod, and, lifting it to a certain height, releases its hold and lets the stamp drop; in the mode of turning the stamp-rod, and of stopping and starting the working of the stamp and parts pertaining to it.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, with reference to the annexed drawings.

The same letters refer to the same parts.

Figure 1 represents a front elevation of a stamping-machine. Fig. 2 is a side elevation of it. Fig. 3 is an elevation of clamp or grip, and Fig. 4 is a plan thereof. Fig. 5 is a vertical section of the clamp in contact with a grooved rod. Fig. 6 is the vertical section of the clamp out of contact with a grooved rod. Fig. 7 is a plan of the parts for turning the stamp-rod.

A A A A, &c., Figs. 1 and 2, is the frame of the stamping-machine, crank-shaft C being mounted on its top with the clutch pinion B, the latter transmitting motion to gear-wheel D. One end of connecting-rod E is attached to pin S of gear D. The other holds the clamp-box F, giving it a vertical reciprocating motion. The clamp is formed of the two clamp-levers G G', (see Figs. 1, 3, 4, 5, and 6,) each of which is composed of three parts, the fork *k* or *k'*, body G or G', and the wedge *m* or *m'*. The fork, Fig. 3, is provided with cogs which fit in corresponding recesses of the other lever, G'. The two forks *k k'* of the two levers G G' form a hollow cone, the smaller diameter being rather less than that of the stamp-rod, the larger diameter being considerably greater, so as not to come in contact with the rod when turned in elevated position. The cylindrical part of *k k'* is fitted into a socket of G G', and held and tightened against the stamp-rod N by wedge *m m'*. The bolts H H' serve as fulcrum to these levers G G', and the ends *i i'* project

beyond the clamp-box F. (See Fig. 1.) The clamp-box F is secured by ears R R to the guide-rods I I.

k'' k''' are spring-pins which press against *i i'*, before clamp-box F has reached its lowest position.

M M' are stops projecting far enough from the frame A A to have *i i'* strike against them near the end of the ascending motion of the clamp-box F, thereby turning the lever G G' upward, and releasing the stamp-rod N from their grasp. The collar P, sitting loose on stamp-rod N, (see Figs. 1 and 2,) friction pawl Q, with spring O, connecting-rod T, attached to a cylindrical part, *n*, which turns in a socket of P, with one end and turning the swivel-pin W on frame A with the other, imparts rotary motion to stamp-rod N.

A' A' are two clasps, held in their elevated position by levers U U' on spindle V, which is worked by crank *w*, pitman *x*, stud *y*, pin *z*, and hand-lever B'. The stud *y*, with pin *z*, sits also on slide-rod *v'*, collar *u* being firmly attached to one end of it, and by fork *t*, also connected with the collar of clutch *s*, which moves on spline *r*, and connects and disconnects clutch-pinion B from the motion of crank-shaft C. In Figs. 3 and 6 the stamp-rod N is represented with annular grooves to insure a better grip of the clamp-levers G G'.

The operation of the machine is as follows: The machine being set in motion, the clamp-box F moves to its lowest position, the clamp-levers G G' incline downward on account of the fork ends being heavier than *i i'*; but as soon as *i i'* strike on the spring-pins *k'' k'''*, the fork ends are still more forced against the stamp-rod N. At the ascending motion of clamp-box F, the stamp-rod N is carried with it, and the weight of rod N tends to increase the grip, by forcing the upper edges of the fork ends of levers G G' downward until the ends *i i'* run against the stops M M', when the fork ends of G G' are turned upward, and the stamp-rod N, instantaneously released, drops down upon the ore. The collar P, Figs. 1, 2, and 7, is pressed by friction-pawl Q and spring O just enough against stamp-rod N to ascend with it, and by its connection with swivel-pin W, by connecting-rod T, the end *n* is drawn toward the frame A A and turns the collar P

with it. In descending the friction-pawl *Q* grips the rod *N* and turns it in the opposite direction. If stamp-rod *N* is to be stopped at any desired height during its ascending motion, push lever *B'* toward frame *A*. This drives slide-rod *v'* in opposite direction, and with it stud *y*, pitman *x*, crank *w*. Levers *U U'* are moved downward, and the grasps *A' A''* close upon the shaft, at the same time the clutch disconnects the clutch-pinion *B* from crank-shaft *C*, and all operation is stopped at once.

The advantages gained by these improvements are independent motion of stamps from one another, the same head of stamp-rod at different thicknesses of ore, the easy and instantaneous stopping of the stamp at any desired height, and, by means of the turning of the stamp, a faster and more complete crushing of the ore.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. To construct a clamp, consisting of the

two-clamp levers *G G'*, which interlock each other, the fork *k k'*, fitted into *G G'*, the wedges *m m'*, for adjustment, as above explained and exemplified by Figs. 3, 4, 5, and 6.

2. To use stamp or drill rod *N*, in combination with the clamp-levers *G G'*, smooth or cut with annular or spiral grooves.

3. To give a turning motion to the stamp or drill rod, in combination of collar *P*, friction-pawl *Q*, spring *O*, connecting-rod *T*, and swivel-pin *W*.

4. To stop and start the working of the stamp or drill rod and parts connected with it by means of clasps *A' A''*, levers *U U'*, spindle *V*, crank *w*, pitman *x*, stud *y*, pin *z*, and hand-lever *B'*, as specified above.

In witness whereof I have hereunto subscribed my name the 2d day of June, 1862.

JOSEPH W. FOWLE.

Witnesses:

M. S. G. WILDE,
W. H. OSGOOD.