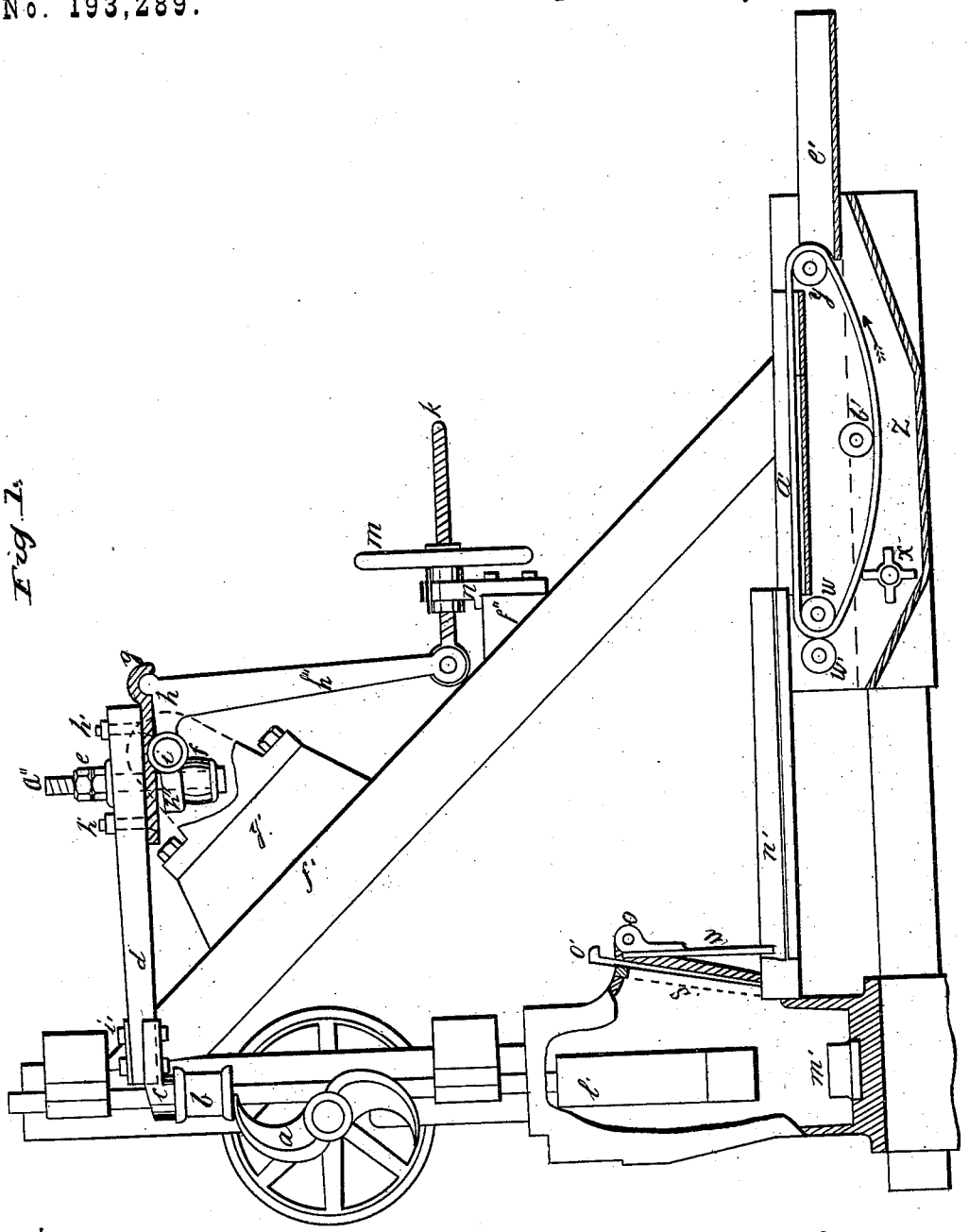
2 Sheets—Sheet 1.

H. H. SCOVILLE, Jr.

STAMP-MILL.

No. 193,289. Patented July 17, 1877.

Fig. 1.



Witnesses

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2 Sheets—Sheet 2.

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STAMP-MILL.

No. 193,289. Patented July 17, 1877.

Fig. 2

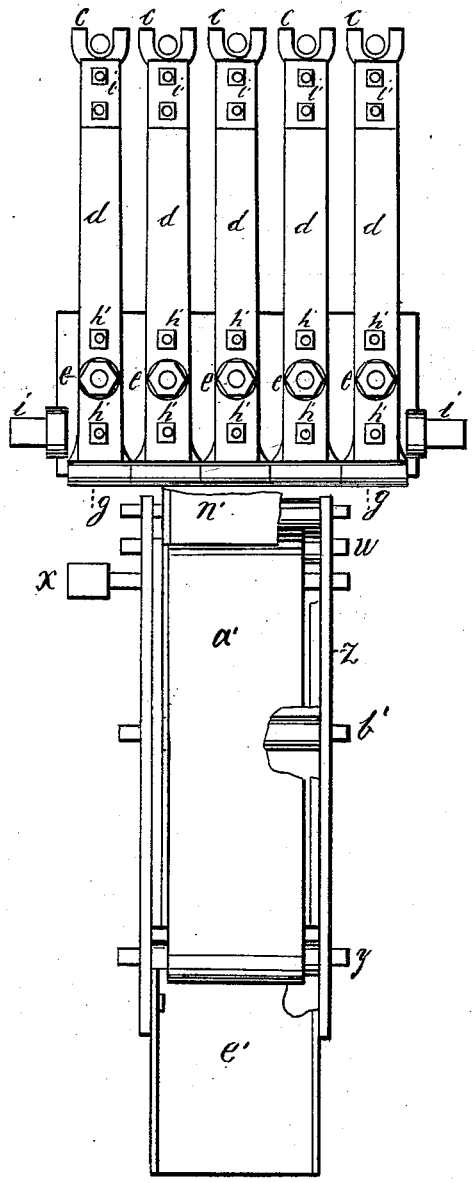
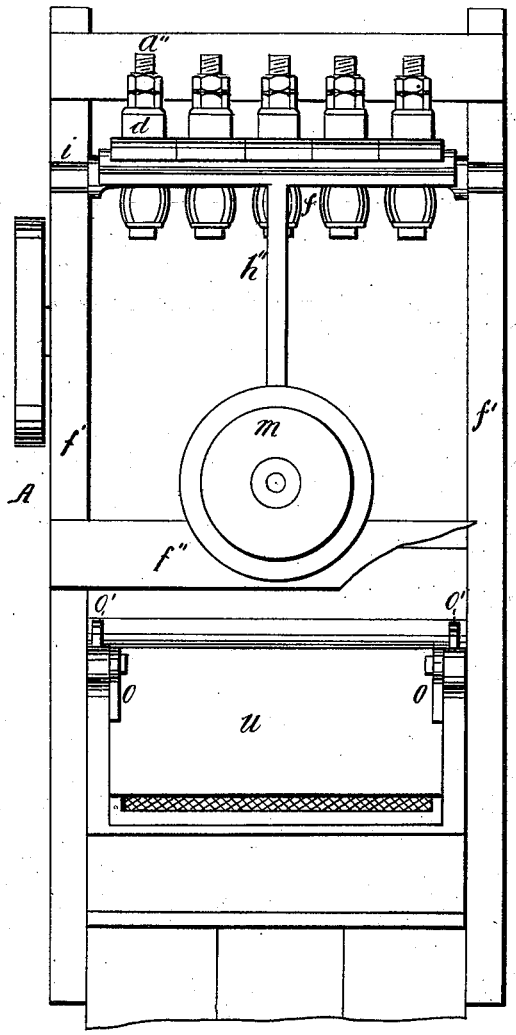


Fig. 3.



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UNITED STATES PATENT OFFICE.

HIRAM H. SCOVILLE, JR., OF CHICAGO, ILLINOIS.

IMPROVEMENT IN STAMP-MILLS.

Specification forming part of Letters Patent No. **193,289**, dated July 17, 1877; application filed February 26, 1877.

To all whom it may concern:

Be it known that I, HIRAM H. SCOVILLE, Jr., of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stamp-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings forming a part hereof, and in which—

Figure 1, Sheet 1, is a side elevation of a stamp-mill embodying my invention. Fig. 2, Sheet 2, is a top view of parts thereof; and Fig. 3, Sheet 2, an end view of the mill.

Like letters of reference indicate like parts.

My invention has for its object to provide the mill with improved means for increasing the force and rapidity of the blows of the stamps after being lifted and released by the cams. I also aim to furnish means for regulating the said force and rapidity of the blows, and, furthermore, to add to the efficacy of the amalgamating-plates.

In the drawing, A represents the frame of the mill. *b b* are the tappets. *f' f'* are braces, and *f''* is a cross-bar. *g g* are journal-boxes on the braces *f' f'*, and *h* is a flattened bar or rocker, having bearings in the supports *g' g'*. *h'' h''* are arms or pendants depending from the part *h*. *k* is a threaded pin or tension-rod jointed to the lower end of the pendant *h''*. *m* is a nut or hand-wheel run upon the rod *k*. This wheel has a grooved hub, *m'*, into the groove of which the forked plate or yoke *n* projects, the said yoke being rigidly attached to the cross-piece *f''*.

By this means a rocking movement may be imparted to the rocker *h* by turning the nut or wheel *m* in either direction, according to the direction in which it may be desired to tilt or rock the part *h*. In other words, the rocker referred to may be said to be similar, in its construction and operation, to a bell-crank, one arm of which has a pivoted bearing, and the other of which is pivoted to an adjustable rod. *d d* are yielding arms, provided with shoes *c c* resting on the tappets *b b*. *g'' g''* are shoes rigidly attached to the opposite ends of the arms *d d*. The outer ends of the shoes *g'' g''* are arched or grooved, as shown, to receive a corresponding rib on the part *h*. *f f* are springs, consisting, preferably, of rubber blocks, arranged below the rocker *h*. *a'' a''* are screw-bolts, passing freely through the arms *d d*, the shoes *g'' g''*, the rocker *h*, and the springs *f f*, the latter being supported by the heads of the bolts, or by nuts performing the same function. *e e* are nuts run upon the upper ends of the bolts *a'' a''*.

By this means the arms *d d* may be clamped more or less tightly upon the rocker *h*. Their forward ends, however, will have a vertically-yielding movement, it being understood that the openings, through which the bolts *a'' a''* pass, are large enough to admit of this result, or of the forward ends of the arms being moved upward and downward, as if their rear ends were hinged to the rocker *h*, the rib on the latter serving as a pintle. It will be perceived, from the foregoing description, that the pressure exerted by the shoes *c c* upon the tappets may be regulated either by adjusting the nuts upon the bolts *a'' a''* or by turning the wheel *m*. I prefer the latter method, for the reason that the pressure of all the springs may thus be regulated by the same act or operation. By changing the pressure of the springs in either of these ways, the force and rapidity of action of the stamps, after the cams leave the tappets, may be regulated, and made greater or less, as may be desirable, according to the nature of the work to be performed, or the springs may be rendered wholly inoperative.

I deem it preferable not to have the shoes *c c* rest upon the tappets constantly, but to allow them to be in contact therewith only during the latter part of the up movement of the stamps; and therefore I have made provision, by means of the rest *h''*, (which is that part of the rocker *h* which extends forward of the fulcrum of the rocker, and serves to support the arms *d d* at a height corresponding to that to which the said part is tilted,) for having the said shoes held above the tappets during the latter part of the down-movement of the stamps, and also for varying their height above the tappets, and for holding them away from the tappets entirely, as may be desired. By this means the resistance of the

springs is exerted only during the latter part of the up movement of the stamps, or not at all, as may be preferred, and the stamps receive a down thrust, which increases their force and rapidity of action from the time the cams leave the tappets. The stamps are left free until they are again raised by the cams, and no resistance to their being raised, except their weight, is offered until the tappets again reach the shoes. Much of the jar or concussion upon the rest of the machine is thus avoided, and the cams, however rapidly they may be moved, will not be liable to strike the tappets before the stamps have entirely completed their descent.

The arms *d d* may be rendered yielding by being made of spring metal, preferably arched or half-elliptic in form, or of any flexible material sufficiently strong and durable for the purpose for which they are intended, viz., to increase the force and rapidity of the blows of the stamps, after the cams leave the tappets, thus causing the latter to act with great effect.

The remaining parts of the machine may be made in the usual manner, or in any suitable way, and my improvements may be applied to any ordinary mill.

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

1. The combination, substantially as specified, in a stamp-mill, of the horizontal yielding arms, the crushers, the support *h''* for holding the said arms out of action with the crushers during the latter part of the down movement of the crushers, and the springs arranged for downward action on the said arms at points near the fulcrums of the said arms, for the purposes specified.

2. The combination, substantially as described, in a stamp-mill, of the vibrating arms, the adjustable rocker *h*, the springs *f f*, and the bolts for clamping the arms and springs to the rocker, for the purposes set forth.

3. The combination, substantially as described, in a stamp-mill, of the vibrating arms *d d*, rocker *h h''*, springs *f f*, clamping-bolts *a'' a''* and their nuts, and the tension device *m k n*, for the purposes set forth.

4. The combination, substantially as described, in a stamp-mill, of the horizontal yielding arms *d d*, the stamps or crushers *a*, continuous and adjustable support *h* for holding the arms *d d* out of action with the crushers during the latter part of the down movement of the crushers, the springs *f f*, arranged for action on the arms *d d* at points near the fulcrum of the latter, and means, substantially as described, for adjusting the said seat or support for the arms *d d*, and thereby adjusting all the arms *d d* simultaneously.

HIRAM H. SCOVILLE, JR.

Witnesses:

F. F. WARNER,

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