No. 677,795. Patented July 2, 1901.

A. C. PRATT.

FEEDER FOR STAMP MILLS.

(Application filed Aug. 10, 1900.)

(No Model.)

Fig. 2.

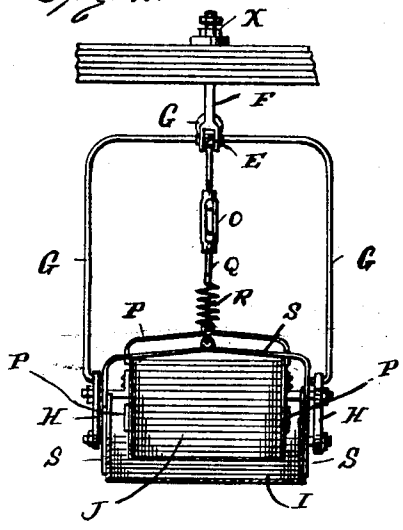


Fig. 4.

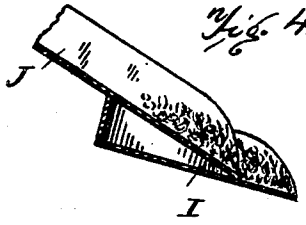


Fig. 5.

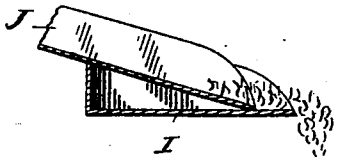


Fig. 1.

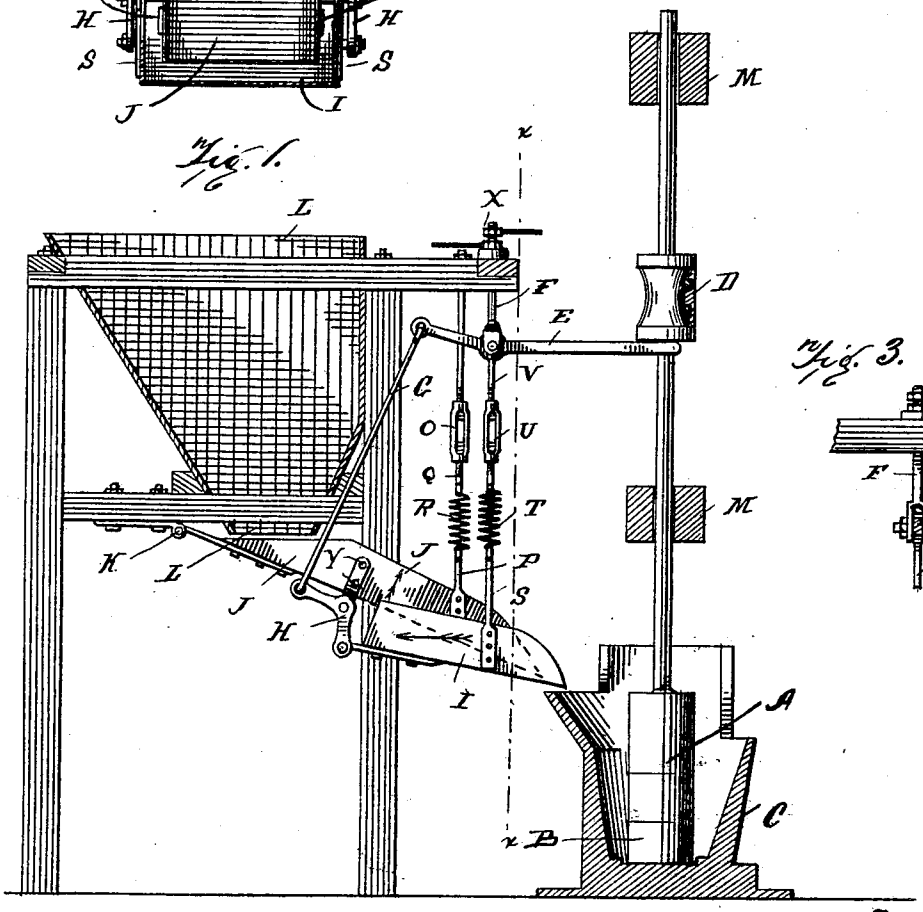


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

ALEXANDER C. PRATT, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO PRATT MINING MACHINERY CO., OF SAME PLACE.

FEEDER FOR STAMP-MILLS.

SPECIFICATION forming part of Letters Patent No. 677,795, dated July 2, 1901.

Application filed August 10, 1900. Serial No. 26,503. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER C. PRATT, a citizen of the United States, residing at San Francisco, in the State of California, have invented certain new and useful Improvements in Feeders for Stamp-Mills, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to feeders for stamp-mills and similar machines for crushing ore.

The object of the invention is to produce an ore-feeder in which coarse broken ore, gravel, and the like may be fed to the stamp in definitely-regulated quantities.

The invention consists in certain constructions and combinations of mechanisms, substantially as hereinafter described.

Figure 1 is a side elevation, partly in section, showing the general arrangement of the feeder and stamp. Fig. 2 is a vertical section of the spouts and support for the upper spout on a vertical plane just in front of said support, other parts being omitted. Fig. 3 is a broken detail section of the adjusting mechanism. Figs. 4 and 5 are diagrammatic details showing relative position of feed-spouts at different times.

The feeder is intended for use with any form of stamp-mill which has a reciprocating plunger—such, for instance, as a mill in which the stamp A operates with a rising-and-falling movement to crush ore on anvil B within mortar C, the plunger being guided in supports M and having an adjustable tappet D on the stem or rod D′ of the stamp, all these parts being well known.

The feed box or hopper L contains the mud, broken ore, or other material to be fed to the stamp. The bottom of this box opens into a feed-spout J, which spout has hinged connection (indicated at K) to the feed-box L and is supported at its free end by rod P, connected to the frame above, and having extension Q, provided with spring-section R. A turnbuckle O provides means for adjusting the lower end of spout J to any desirable height, so that the material may feed down by gravity in the spout, subject to the vibrations due to shaking action of the dropper-spout, as will be explained.

The dropper-spout I is below and outside of feed-spout J and is pivotally connected to the sides of spout J by crank-levers H, such levers being preferably arranged at each side of the spout, although one will serve the purpose. The fulcrum of lever H may be changed by moving the rivets in holes Y, so as to vary the normal position of the spout I relatively to the spout J and to hold spout I more or less inclined when at rest. The forward extension of spout I is just below and in front of spout J, and the front part of spout I is supported by a bail or loop S, which in turn is connected to a spring T, turnbuckle U, and link V, the latter being connected to a lever E.

The actuator-lever E has its fulcrum in a hanger F, which is held in the frame by lock-nuts X, so that the hanger may be raised or lowered. Lever E extends under the tappet D on the stamp-rod and will be rocked or jerked by the engagement of said tappet when the stamp falls. A link G connects the rear end of this lever E with the rear arm of crank-lever H. Thus the fall of the stamp lifts the rear end of lever E, which by link G rocks crank-lever H and swings the rear end of the spout I backward in the arc of the lower arm of crank-lever H, and the front end of dropper-spout I retires, with reference to spout J, from the position of Fig. 4 to that of Fig. 5, or nearly so, the upper spout I moving at the same time a little upward and forward. The material in the portion of spout I which is retired, having no support, drops into the mortar C. The weight of the parts restores spout I to the position of Fig. 4 when the tappet on the stamp lifts, and the vibration of the parts, assisted by the action of gravity, feeds the material forward in the double spout, the various adjustments described permitting such initial location of parts as will give a proper movement of the material, according to the constituent elements thereof.

It will be seen that one of the spouts acts as a cleaner or scraper for the other, and the feed can be made very certain and uniform by this construction. The jerking action of lever E on the lower spout serves to lift the free end of the upper spout while the lower one retires.

As will be understood, in the use of this device the broken rock, mud, and dirt pass

into the feed-spout by gravity. After reaching the dropper-spout, which at its end is a continuation of the feed-spout, the dropper-spout is jerked back from under the portion projecting from the feed-spout, dropping the same and at the same time jarring and slightly rocking the feed-spout. The end of the feed-spout acts as a scraper to clean or clear the dropper-spout every time the latter is retired. As a whole the feeder as normally adjusted operates very perfectly with the different kinds of material and can be quickly adjusted to suit unusual qualities of material.

What I claim is—

1. In an ore-feeder, the combination of a feed box or hopper, a feed-spout hinged thereto, and a dropper-spout connected to and underlapping the feed-spout, and means for reciprocating the dropper-spout in the direction of the length of the feed-spout, substantially as described.

2. In an ore-feeder, the feed-box, a feed-spout hinged thereto, a dropper-spout underlapping the feed-spout and connected thereto by a crank-lever, spring-supports for the outer or free ends of both spouts, and means for intermittingly rocking the crank-lever and thereby advancing and retracting the dropper-spout, substantially as described.

3. In an ore-feeder, the feed-box, a feed-spout hinged thereto and having its outer end vertically adjustable, a dropper-spout underlapping the feed-spout and connected thereto by a crank-lever, an actuator-lever connected by link to this crank-lever, and a tappet on a stamp-mill engaging said actuator-lever, all combined.

4. In an ore-feeder as described, the feed-spout hinged thereto and having its outer end vertically adjustable and spring-supported, the dropper-spout having a movable hinge connection at its rear end to said feed-spout, and its front end vertically adjustable and spring-supported independently of the feed-spout a lever connection from the stamp-rod to the movable hinge of the dropper-spout, and means for adjusting the hinged position of the dropper-spout, all combined substantially as described.

5. In an ore-feeder, the combination with a feed box or hopper, of two spouts below the same, the one spout inclosing the delivery end of the other and in close contact therewith, so that the inclosed spout acts as a scraper for the inclosing spout, and means for advancing and retiring both the spouts, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER C. PRATT.

Witnesses:
C. E. COOK,
N. FANCHER.