

(No Model.)

2 Sheets—Sheet 1.

J. M. BIBLE.
ORE FEEDER.

No. 567,448.

Patented Sept. 8, 1896.

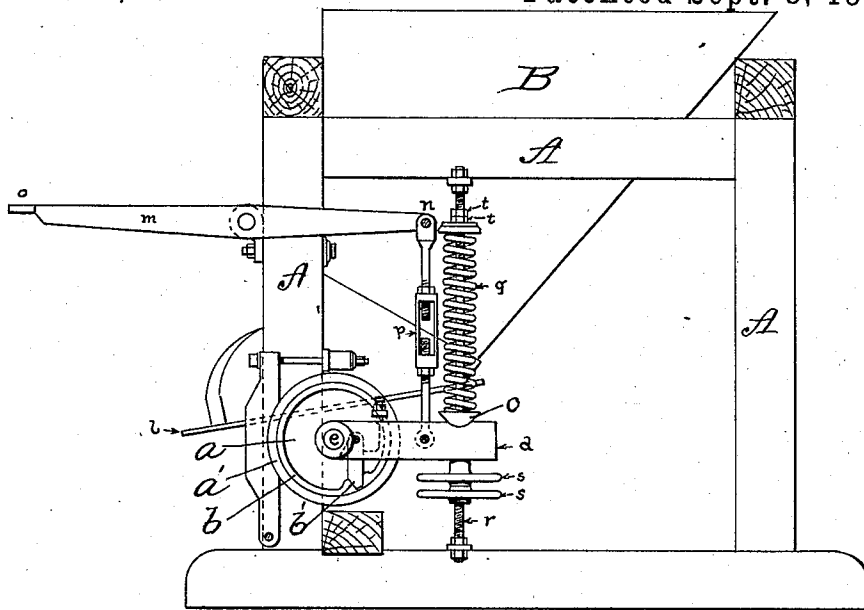


Fig. 1.



Fig. 7.



Fig. 6.

Witnesses
M. L. McDonald
J. L. Middleton

James M. Bible
Inventor

By

Attorney

Wm. Spru

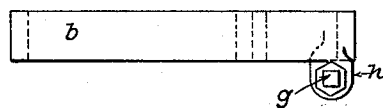
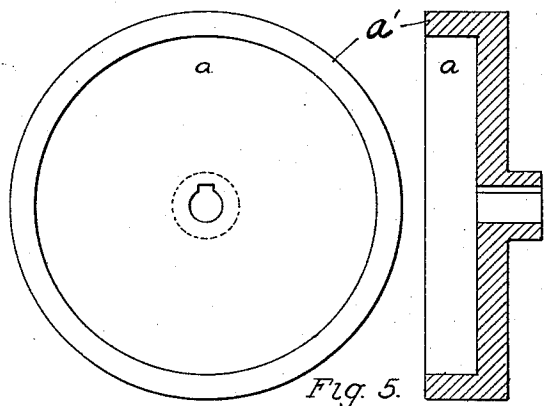
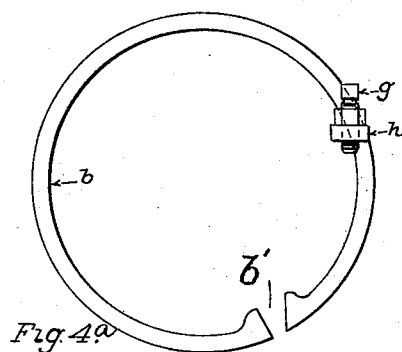
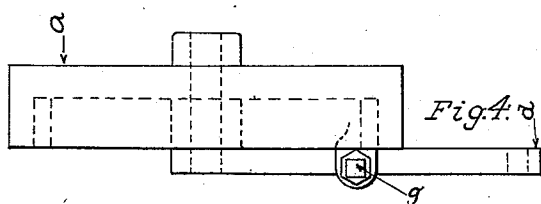
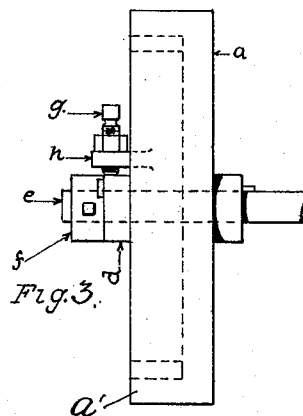
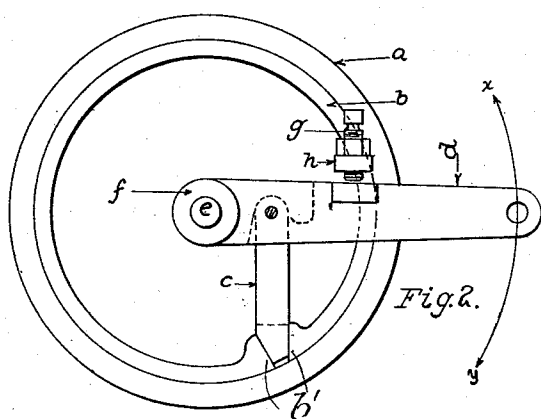
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2 Sheets—Sheet 2.

J. M. BIBLE.
ORE FEEDER.

No. 567,448.

Patented Sept. 8, 1896.



Witnesses
M. McDonald
J. L. Middleton

James M. Bible
Inventor

By

Attorney

Wm. Spar

UNITED STATES PATENT OFFICE.

JAMES MAURICE BIBLE, OF DENVER, COLORADO, ASSIGNOR TO THE
COLORADO IRON WORKS COMPANY, OF SAME PLACE.

ORE-FEEDER.

SPECIFICATION forming part of Letters Patent No. 567,448, dated September 8, 1896.

Application filed March 20, 1896. Serial No. 584,087. (No model.)

To all whom it may concern:

Be it known that I, JAMES MAURICE BIBLE, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Ore-Feeders, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to ore-feeding devices of that class in which the feeding of the ore is effected by the operation of the stamps. In this class of devices as heretofore constructed there is a material defect arising from the shock of the stamp communicated to the mechanism through which power is transmitted to the feeding-plate.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 shows the feeding devices, in connection with the hopper, in side elevation. Fig. 2 shows a side elevation of the clutch mechanism and operating-lever detached. Fig. 3 shows an edge view of the same. Fig. 4 shows a top view of the same. Fig. 4^a is a detail view of the clutch-ring. Fig. 5 shows a side and sectional view of the wheel. Fig. 6 shows a detail view of the wedge which spreads the ring; Fig. 7, a like view of the lever for moving the wheel.

In the drawings is shown a main frame A, supporting the hopper B, containing the ore to be fed to the stamps, which are not shown. At the bottom of the hopper is the circular revolving plate *l*, the movement of which carries forward the ore. This plate has ordinary connections (preferably bevel-gears) with the shaft *e*, by means of which it is turned. On the outer end of the shaft is fixed the wheel *a*, having lateral flange *a'* on the outer side. Within this flange is an elastic clutch-ring *b*, arranged when in normal position to be of slightly less diameter than the inner diameter of the flange *a'*, but when spread to bear firmly against the flange. This ring is split and the ends are beveled, as shown at *b'*, Fig. 2. In a stud *h* on the edge of the ring is an adjustable stop *g*, threaded in the stud and provided with a jam-nut, the stud being arranged to bear upon a lever *d*, this stud allowing the rela-

tion of the ring *b* to the rod *c* to be accurately adjusted, the inner end of which is pivoted upon the shaft *e*. Near the pivoted end of this lever is pivoted the upper end of a bar *c*, the lower end of which is wedge-shaped and fits between the inclines of the split ring, the adjustment being such that when the lever is at its upper limit the ring is in normal position and when the lever is pressed down the ring is spread, causing it to fit tightly in the wheel. The bar *c* then acts as a thrust-bar between the lever *d* and the wheel-flange *a'*. Its foot or wedge end is prevented from slipping by the split ring. The effect then is to lock the lever to the wheel during its further downward movement, thus forcing the wheel to move with the lever.

The lever *d* is connected by an adjustable rod *p* to a lever *m*, the free end of which is in range with one of the stamps, so that as the stamp falls it lifts the lever *d*, which, bearing against the stop *g*, returns the ring, loosened by the withdrawal of the bar *c*. The free end of the lever *d* bears against a clip *o*, on which bears a coiled spring *q*. This spring is coiled about a rod *r*, extending vertically between the upper and lower parts of the frame. It bears against a collar on the upper part of the rod, held adjustably by nuts *t t*, whereby the scope and pressure of the spring are regulated. On the under side the movement of the lever *d* is regulated by nuts *s*, having hand-wheels which form an adjustable stop on the rod *r*.

From the description above given it will be observed that when the stamp falls it raises the arm *d*. This releases the grip of the ring, and as the lever rises against the stop *g* it moves the ring one step freely into position for another hold upon the wheel. At the same time the spring *q* is compressed and its immediate reaction forces down the lever *d*. The first effect of this is to give the very slight movement necessary to cause the wedge end of the bar *c* to spread the ring, and its further movement gives a partial rotation to the ring and to the wheel, and thereby the movement of one step is imparted to the plate *l*.

The force of the blow upon the lever *m* is taken up by the spring *q*, and no part of it is

thrown upon the gearing, and the same spring returns the lever *m* to its proper position. The wheel is provided with a suitable brake and the parts are all adjusted to give the proper amount of movement required, which can be accurately determined and which is directly effected by the invariable action of the spring.

I do not wish to limit myself to the precise form of clutch, nor, in fact, to the precise means of imparting movement to the feed-table.

By my arrangement of the spring for turning the table I avoid the violent shock which is communicated to the driving-gear when the power is taken directly from the falling stamp.

The shock in my invention is taken by the spring, and the power thus stored is given to the driving-gear in a smooth and even manner when the stamp is raised, and the spring when thus released expands and operates the arm *d*.

I claim—

1. In combination with the feed-table, the shaft *e* for operating the same, and the clutch mechanism for giving said shaft intermittent

movement operated through the tappet, said clutch mechanism comprising a flanged wheel fixed to said shaft, a lever pivoted on said shaft, a split ring fitted to the interior periphery of said flange, and a rod pivoted directly to said lever and depending therefrom, said rod being adapted to spread said ring to grip said flange and to move said wheel partly around on each downward movement of said lever, substantially as described.

2. In combination with the feed-table, the shaft *e* and the clutch mechanism, comprising a flanged wheel a split ring carried thereby, a lever pivoted on said shaft, a rod depending therefrom for spreading said ring and moving said wheel on the downward movement of said shaft, and a stop carried by said ring adapted to be engaged by the lever on the upward movement thereof to readjust said ring, substantially as described.

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

JAMES MAURICE BIBLE.

Witnesses:

E. E. GOODALE,
WARREN C. BOGUE.