

UNITED STATES PATENT OFFICE.

LOUIS R. TULLOCH, OF ANGELS CAMP, CALIFORNIA.

ORE-FEEDER.

SPECIFICATION forming part of Letters Patent No. 744,264, dated November 17, 1903.

Application filed February 27, 1903. Serial No. 145,341. (No model.)

To all whom it may concern:

Be it known that I, LOUIS R. TULLOCH, a citizen of the United States, residing at Angels Camp, in the county of Calaveras and State of California, have invented certain new and useful Improvements in Ore-Feeders, of which the following is a specification.

My invention relates to ore-feeders for feeding ore to a stamp-mill, the object of my invention being to provide an ore-feeder which shall be simple and economical in construction and uniform and certain in operation.

My invention therefore resides in the novel construction, combination, and arrangement of parts for the above ends hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of an ore-feeder of my improved construction. Fig. 2 is a broken horizontal section taken immediately below the ore-feeding table. Fig. 3 is a vertical section through the ore-feeding table, the grip-carrier being shown in side elevation. Fig. 4 is a view similar to Fig. 2 of a modified form of spring-support. Fig. 5 is a side elevation showing said modification.

Referring to the drawings, 1 represents the hopper, supported in a suitable framework 2 and discharging the ore onto the feed-table 3. Said table is supported upon a shaft 4, revolving in a step-bearing 5, supported upon the frame 2. On the under side of said table is formed an annular friction-ring 6, having a V-shaped groove 7 in its inner surface. Within said friction-groove moves a grip-shoe 8, secured to a plate 9. On trunnions 10, having bearings in said grip-plate, is carried a nut 11, and into said nut is screwed the threaded end 12 of a stem 13, the inner end of said stem sliding radially in a socket in the end of an arm 14. Said arm is formed with a collar 15, which surrounds an eccentric 16, which rests upon the top of the bearing 5 and is formed integral with a plate 17. Said plate on one side is extended to form an arm 18, which is engaged by the forked lower end of a downwardly-extending arm 19 of a lever 20, pivotally mounted upon a cross-beam 21, carried upon the frame of the hopper, the other end of said lever being rocked vertically in the usual manner by means of

a pitman 22, operated from the stamp-stem. The movement of said pitman thus communicates a horizontal rocking movement to the plate, and so to a circular segment-gear 23, formed upon the plate on the opposite side to the arm. Said segment-gear meshes with a pinion 24, rotarily mounted upon the stem 13, and thus the rocking of said segment-gear communicates a rotary movement to said pinion. Said pinion has formed integral therewith a lug 25, which in the rotation of the pinion engages a lug 26, formed on said stem, and thus communicates rotation to said stem. Rotation of the stem in one direction by unscrewing its threaded end out of the nut 11 forces said nut outward and presses the grip-shoe into the V-shaped groove in the friction-ring. Rotation of the stem in the opposite direction withdraws said shoe from said groove. In addition the shoe is moved in toward or out from the groove by the movement of the eccentric 16 within the collar 15. A spring 28 is secured to said eccentric at one end and at the other end is secured to a block 29, which slides against a guide 30, formed upon the arm.

In the modification shown in Figs. 4 and 5 in place of the bent plate-spring there is used a coiled spring 31, attached at one end to an extension 32 from the arm and at the other end to an extension 33 from the fixed bearing 5.

The operation of the device is as follows: When the pitman ascends, the lower end of the vertical arm moves to the front, thereby also moving the arm 18 of the plate 17 to the front and the gear to the rear. This moves the eccentric within the collar 15 of the arm 14, so as to press said arm 14 outward, thereby tending to bring the shoe into contact with the friction-ring. Moreover, as the segment-gear moves to the rear it imparts a left-handed rotation to the pinion 24, and therefore also to the stem, which draws the threaded end thereof out of the nut, pressing the shoe very firmly against the friction-ring. As soon as the arm begins to return the eccentric turns back within the collar, thereby moving the arm inward and allowing said arm to move independently of the segment-plate. The spring acts to throw the arm back, and as the pinion moves over the teeth of the

segment-gear it screws up the threaded end of the stem of the nut, so that the shoe is no longer pressed against the friction-ring, but can move freely back.

5 I claim—

1. In an ore-feeder, the combination with a hopper, a revolving feed-table onto which the ore is fed having a friction-ring connected to revolve therewith, of a plate having a
10 segment-gear and rocking about the axis of the table, said plate having an eccentric, an arm having a collar about said eccentric, and a friction-shoe carried by said arm and arranged to engage said friction-ring by the
15 movement of said eccentric, substantially as described.

2. In an ore-feeder, the combination with a hopper a revolving feed-table onto which the ore is fed, and having a friction-ring connected to revolve therewith, a plate vibrating
20 about the shaft of said table and having a segment-gear, an arm independently vibrating about said shaft, a stem rotatable in said arm and having a threaded end, a nut into
25 which said threaded end is screwed, a plate to which said nut is secured, a shoe carried by said plate and engaging said friction-ring, and a pinion on said stem and imparting rotation thereto, said pinion meshing with said
30 segment-gear, substantially as described.

3. In an ore-feeder, the combination of a

revolving feed-table having a friction-ring connected to revolve therewith, of an arm rocking about the shaft of said table, a friction-shoe carried by said arm, and means operated with the movement of the arm in one direction, for pressing said friction-shoe out against the friction-ring, and by the movement of the arm in the opposite direction to withdraw said shoe, substantially as described. 35 40

4. In an ore-feeder, the combination with a hopper and a revolving feed-table onto which the material is discharged from the hopper, and having a friction-ring connected
45 to revolve therewith, of an arm rocking about the shaft of the feed-table, a plate independently vibrating about said shaft, means for rocking said plate, a friction-shoe carried by said arm and engaging said friction-ring, and
50 coengaging devices carried by said arm and plate for extending said shoe in one direction of movement of the plate and withdrawing the same in the opposite direction, substantially as described. 55

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LOUIS R. TULLOCH.

Witnesses:

FRANCIS M. WRIGHT,
BESSIE GORFINKEL.