

No. 831,595.

PATENTED SEPT. 25, 1906.

F. H. BLANDING.

ORE FEEDER.

APPLICATION FILED MAY 16, 1905.

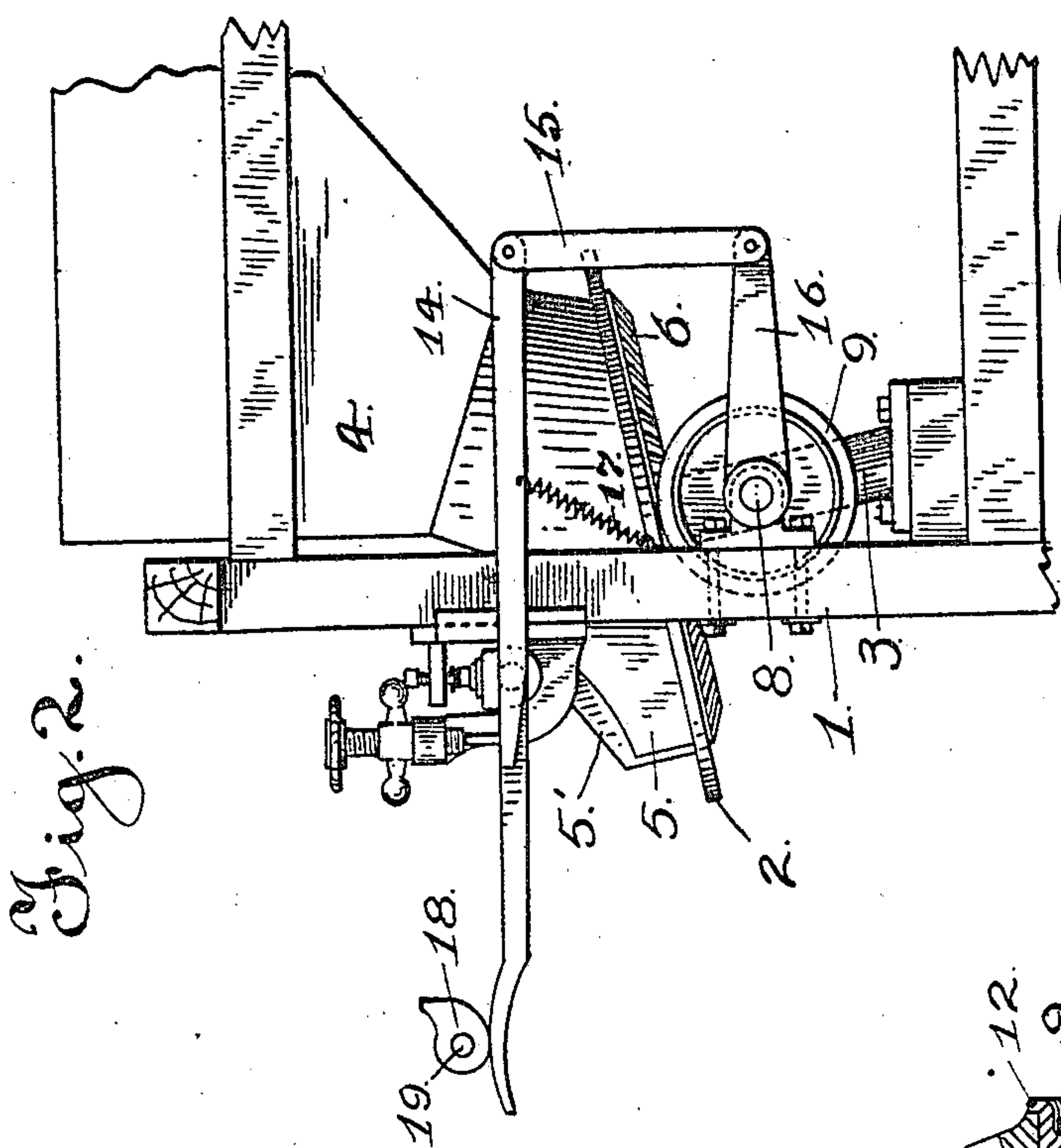


Fig. 2.

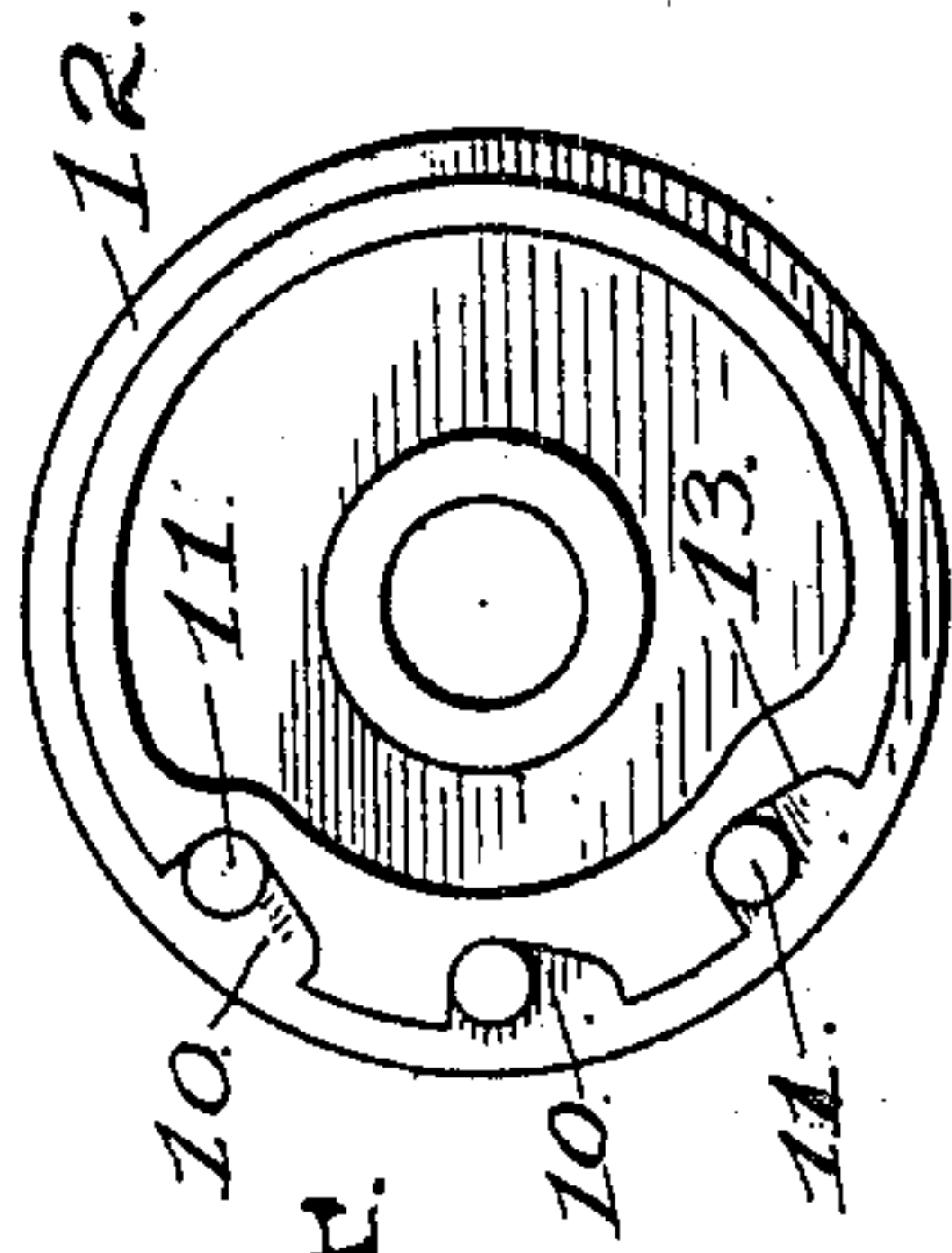


Fig. 4.

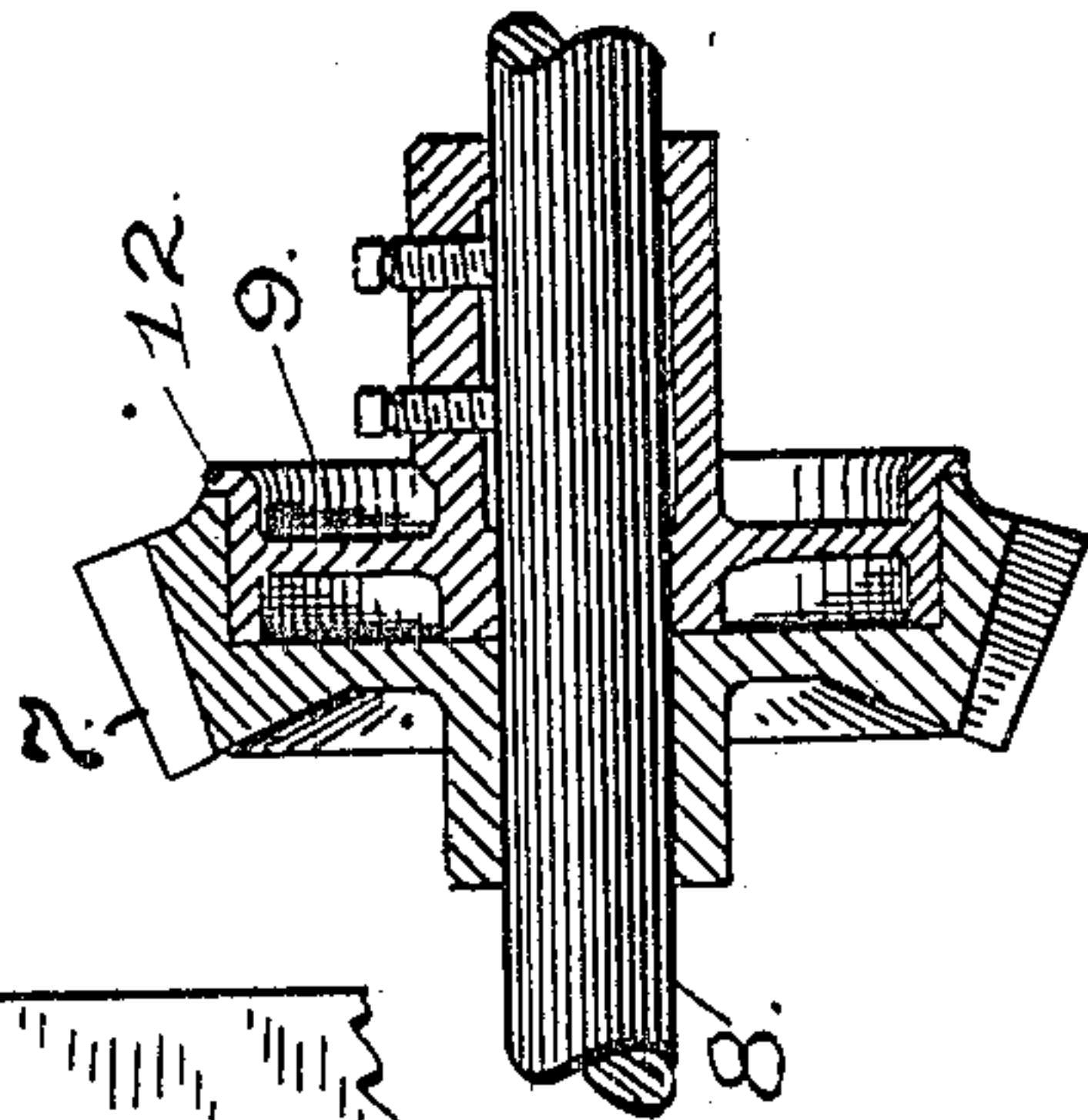
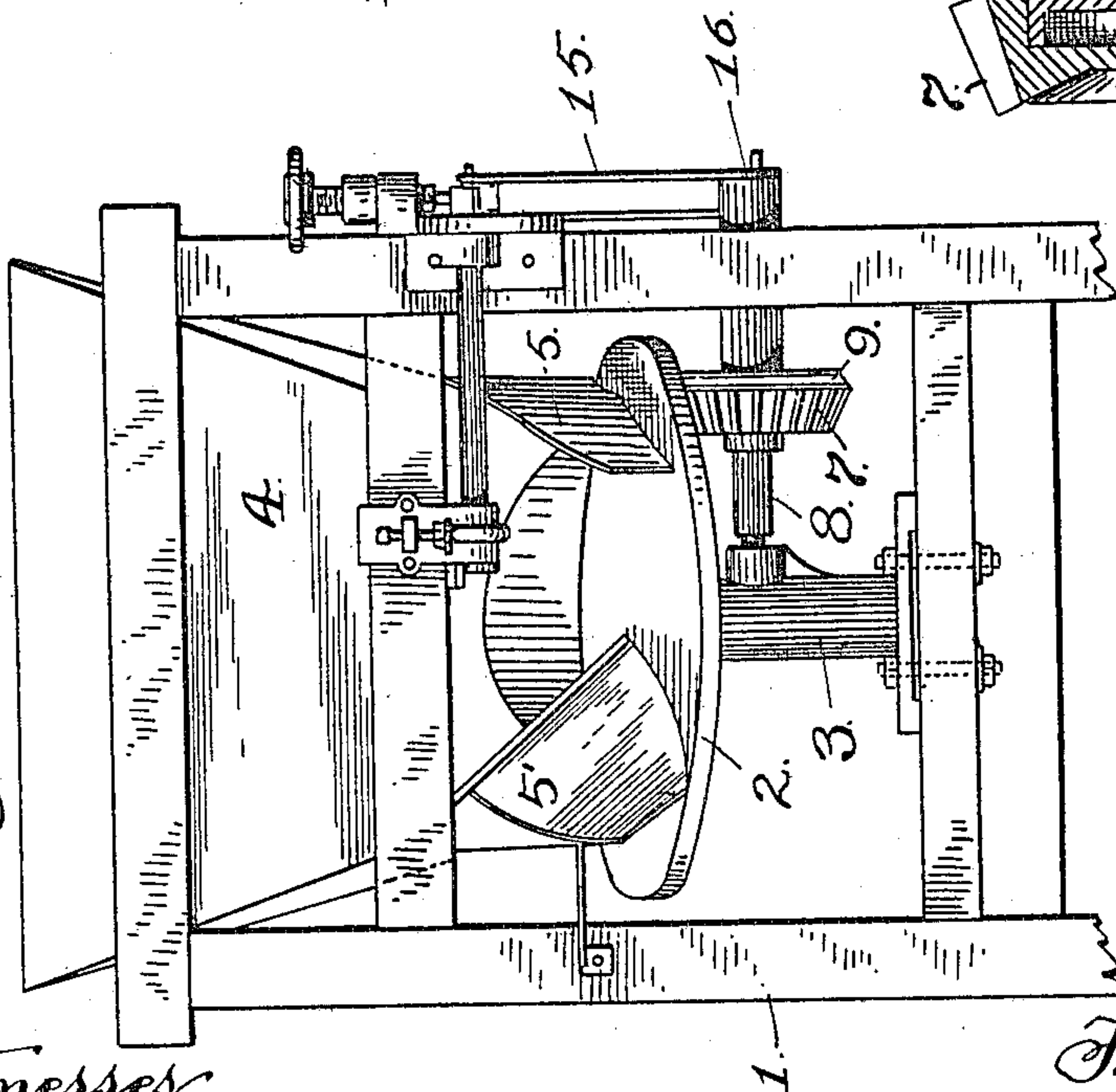


Fig. 3.

Fig. 1.



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UNITED STATES PATENT OFFICE.

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ORE-FEEDER.

No. 831,595.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed May 15, 1905. Serial No. 260,410.

To all whom it may concern:

Be it known that I, FORREST H. BLANDING, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Ore-Feeders; and I hereby declare the following to be a full, clear, and exact description of the same.

The present invention relates more particularly to the means for actuating or imparting a step rotation to the feed-table of the machine, the object of the invention being to materially simplify the construction of said means and to dispense with the expensive clutch-actuated mechanism generally employed to transmit a step rotation to the drive-shaft for operating the feed-table.

To successfully carry out the invention, a rock-shaft is substituted for the usual rotatable shaft, on which rock-shaft is loosely mounted a drive-gear for imparting a step rotation to the feed-table, which gear is intermittently operated through the medium of friction means carried by the rock-shaft, said friction means constituting a direct connection between the said rock-shaft and the drive-gear for the rotatable feed-table.

To comprehend the invention, reference should be had to the accompanying sheet of drawings, wherein—

Figure 1 is a front view in elevation of the ore-feeder. Fig. 2 is a side view in elevation of the apparatus with its feed-hopper partially removed. Fig. 3 is a broken detail view of the rock-shaft, the loose gear thereon and the cam secured to the shaft being in vertical section; and Fig. 4 is a detail view of the cam and gear, said view disclosing the preferred form of friction means for engaging with the gear to impart a step rotation to the feed-table.

In the drawings the numeral 1 is used to designate any suitable form of a supporting-frame, within which is located the rotatable feed-table 2. This horizontal table is mounted on the spindle 3, the said table having ore delivered thereto by any suitable means—as, for instance, any ordinary feed-hopper 4. The ore fed or delivered onto the table 2 is removed or guided therefrom during the rotary movement of the table by means of the guide blades or plates 5 5'. These parts are

of the usual construction and call for no specific description herein.

To the under face of the table 2 there is secured a gear-ring 6, which meshes with the gear 7. This gear 7 is loose on the rock-shaft 8, which shaft works in suitable bearings of the frame 1. To the said shaft 8 there is secured suitable frictional means for interlocking with the gear 7 when motion is imparted to the shaft 8 for the purpose of imparting a step rotation to the feed-table 2. In the present case the frictional lock means comprises a cam-wheel 9, which is secured to the rock-shaft 8. The said cam-wheel 9 is placed on the shaft 8, so that it is located within the sphere of the flange 9' of the gear 7. In the periphery of the cam-wheel one or more transverse seats 10 are formed, in each seat there being loosely fitted a roll 11. These rolls are held against lateral displacement by the web of the gear 7 and the circular flange 12 of the cam-wheel 9.

Each peripheral seat 10 is formed with an inclined surface 13, upon which the roll 11 works during the forward throw of the cam-wheel, due to the movement of the rock-shaft 8. As the roll or rolls ride on the inclined surface of the seat or seats 10 the same bear firmly against the under face of the flange 9' of the gear 7, the frictional engagement therewith being sufficient to lock the gear 7 to the cam-wheel 9, hence causing the said gear 7 to be rotated with the movement of the cam-wheel 9, which gear in turn transmits its motion to the feed-table 2 and imparts thereto a step rotation.

It will be understood that the diameter of the friction roll or rolls 11 is such as to bear lightly against the under face of the flange 9' at all times. Consequently the moment the cam-wheel 9 starts to rotate the roll or rolls 11 immediately commence to ride on its incline 13 and to bind against the said under face of the flange 9'. As a reverse movement is given to the rock-shaft 8 to restore the same to position the roll or rolls 11 move downward into the seat 10 of the cam-wheel or out of frictional contact with the flange of the gear 7. The feed-table 2 is thus left in its moved position, while the cam-wheel is thrown backward with the return movement of the rock-shaft 8. The rock-shaft 8 is oscillated by a lever 14, fulcrumed to the frame

of the machine, the inner end of the said lever being connected by a link 15 to a crank-arm 16, extending from the rock-shaft 8. The outer end of the said lever 14 is upheld
5 by the spring 17. The fulcrumed lever 14 is actuated by any suitable means—as, for instance, by the tappet-cam 18, which cam is secured to a rotating shaft 19.

Having thus described the invention, what
10 is claimed as new, and desired to be protected by Letters Patent, is—

1. In an ore-feeder, the combination of a rotatable feed-table, of a rock-shaft, of a gear loose on said shaft engaging the feed-
15 table, of means secured to the said shaft for frictionally engaging with the gear to actuate the same with the movement of the rock-shaft, and cam-actuated devices for imparting motion to the said rock-shaft.

20 2. In an ore-feeder, the combination of a rotatable feed-table, of a rock-shaft, a gear for operating the feed-table loose on said rock-shaft, of a cam-wheel secured to and carried by the rock-shaft, means carried by
25 the cam-wheel for frictionally engaging the gear on one stroke of the cam-wheel, and devices for actuating the rock-shaft.

3. In an ore-feeder, the combination with

the rotatable feed-table, of a rock-shaft, a gear for operating the feed-table loose on
30 said shaft, a cam secured to the rock-shaft, an inclined seat in the periphery of said cam, a roll loose in said seat, said roll on one movement of the cam frictionally engaging the gear and rotating the same to impart a step
35 rotation to the feed-table, and means for actuating the rock-shaft.

4. In an ore-feeder, the combination with a rotatable feed-table, of a rock-shaft, cam-
40 actuated means for imparting movement to the rock-shaft, a gear for operating the feed-table loose on said shaft, a cam secured to the rock-shaft having an inclined seat in the periphery thereof, a roll loose in said seat,
45 said roll in one movement of the cam frictionally engaging the gear and rotating the same to impart a step-by-step rotation to the feed-table.

In testimony whereof I have hereunto
affixed my signature in the presence of wit-
50 nesses.

FORREST H. BLANDING.

Witnesses:

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