W. E. WAHLIN.

ORE FEEDER.

APPLICATION FILED DEC. 21, 1911.

1,032,256.

Patented July 9, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

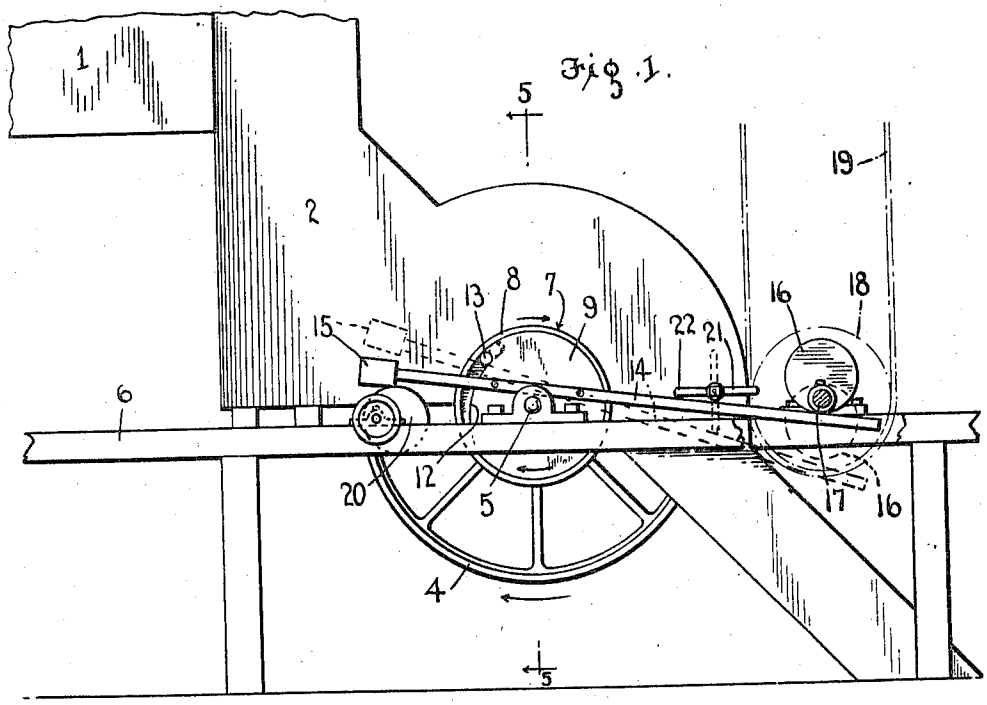


Fig. 2.

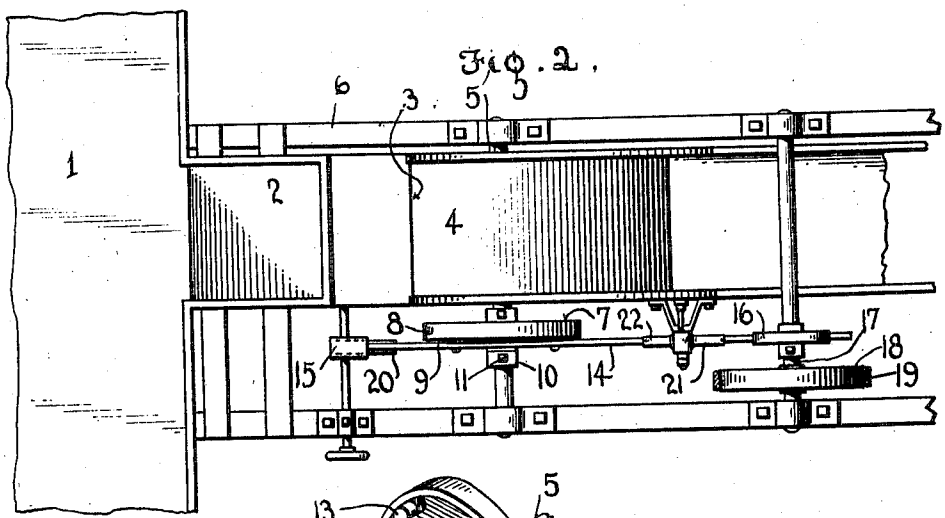
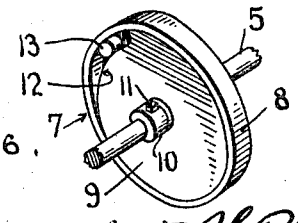


Fig. 6.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

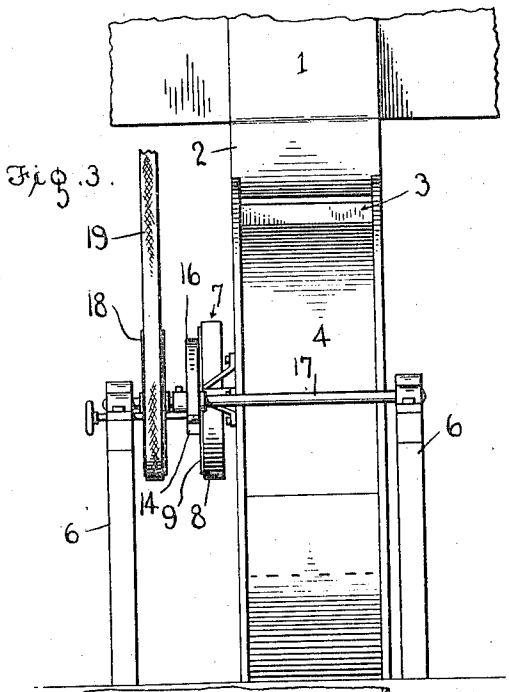


Fig. 5.

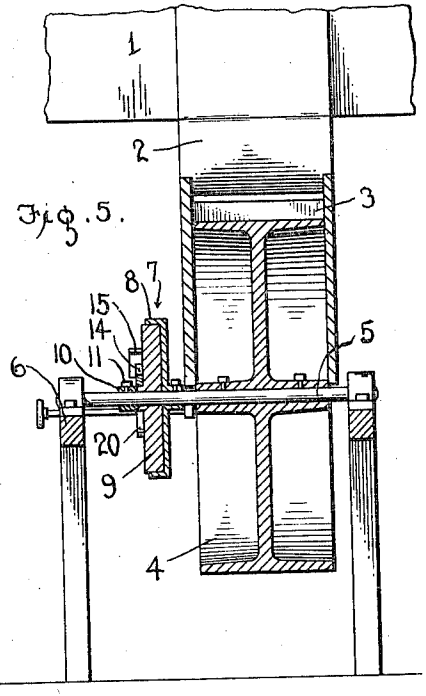
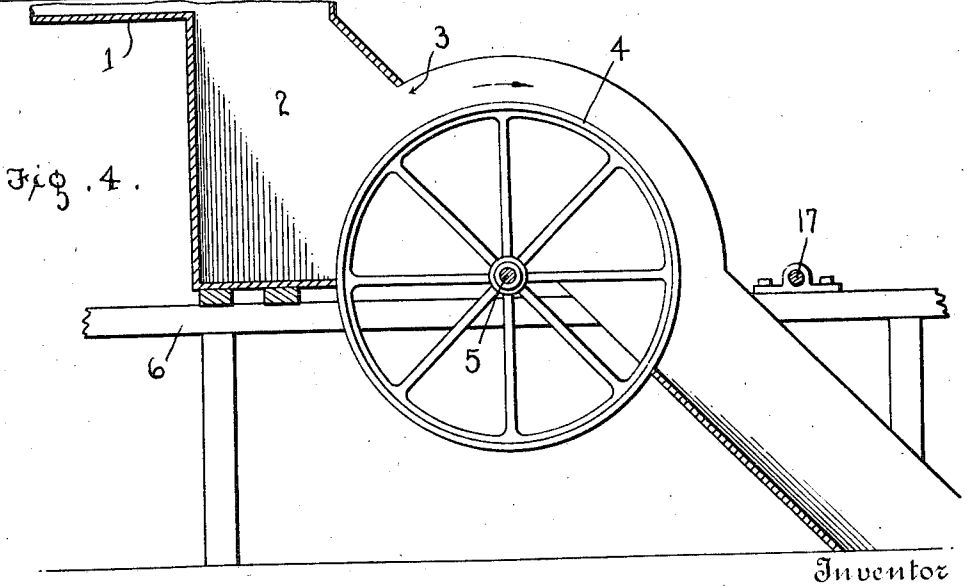


Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER E. WAHLIN, OF GARFIELD, UTAH.

ORE-FEEDER.

1,032,256. Specification of Letters Patent. Patented July 9, 1912.

Application filed December 21, 1911. Serial No. 667,240.

To all whom it may concern:

Be it known that I, WALTER E. WAHLIN, a citizen of the United States, residing at Garfield, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Ore-Feeders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in ore feeders.

One object of the invention is to provide an improved construction of operating mechanism for imparting a periodical movement to the feeding mechanism and having means whereby the stroke of the operating mechanism may be adjusted and the movement of the feeding mechanism thereby regulated to feed more or less ore at each operation.

Another object is to improve and simplify the construction of devices of this character and thereby render the same less expensive and more effective for the purpose intended.

With these and other objects in view the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 is a side view of my improved ore feeder, parts being broken away and in section; Fig. 2 is a top plan view thereof; Fig. 3 is a front end view; Fig. 4 is a central vertical longitudinal section; Fig. 5 is a vertical cross section on the line 5—5 of Fig. 1; Fig. 6 is an enlarged perspective view of the cam clutch connection between the operating and feeding mechanism.

Referring more particularly to the drawings, 1 denotes the ore bin with which is connected the hopper 2 having in its lower end a feed opening 3, in which rotates an ore feeding wheel or drum 4, said wheel being fixedly mounted on a supporting and operating shaft 5 by means of which the wheel is turned in the feed opening of the hopper in the proper direction to feed the ore from the hopper.

The shaft 5 is revolubly mounted in bearings on a suitable supporting frame 6, and fixed on the shaft adjacent to one side of the wheel 4 is an operating wheel 7 comprising a circular plate or disk having on its outer edge an annular radially projecting flange 8. Arranged in the flange 8 of the pulley and loosely mounted on the shaft 5 is a circular clutch plate or disk 9, said disk being held in position in the flange 8 by a collar 10 and set screw 11 as shown. The diameter of the plate or disk 9 is substantially the same as the inner diameter of the flange 8 and of the pulley 7 and in one edge of the plate 9 is formed a cam or eccentric notch 12 in which is arranged a locking roller 13. The diameter of the roller corresponds to the width of the widest part of the notch 12 in which the roller is located. By thus arranging the roller 13 the disk or plate 9 will be automatically locked to the pulley 7 as soon as the disk is turned in a forward direction, thus imparting the movement of the disk 9 to the pulley 7 and through the latter to the shaft 5 whereby the feed wheel 4 is driven. In this operation of the disk 9 it will be understood that when the latter is turned in a forward direction the roller 13 will be wedged between the edge of the notch 12 and the adjacent inner surface of the flange 8, thus locking the disk 9 to the pulley. When the disk is turned in an opposite direction the roller will be brought into engagement with the wider end of the notch 12 thus releasing the clutch connection between the disk and the pulley and permitting the disk to turn idly on the shaft until again moved in a forward direction, whereupon the clutch mechanism will again become effective for turning the pulley as will be readily understood.

In order to turn the disk 9 and pulley 7 for operating the shaft 5 and feed wheel, I provide a suitable operating mechanism comprising a lever 14 which is engaged with and firmly secured to the outer side of the disk 9 whereby when the lever is rocked or actuated the disk is turned forwardly and rearwardly on the shaft 5. The lever 14 projects beyond the opposite edges of the plate 9 and on the rearwardly projecting or extended end of the lever is secured a weight 15 while the forward end of the lever is engaged by an operating cam or eccentrically mounted operating disk 16 which is fixed on a drive shaft 17 revolubly mounted in suitable bearings on the frame 6 and having fixed thereon a drive pulley 18 which is connected by a belt 19 to any suitable power. The eccentric wheel 16 when thus arranged and driven will impart a rocking movement

to the lever 14 in a downward direction, said lever being swung upwardly by the weight 15 thus imparting an oscillating movement to the clutch disk 9, the movement of said disk being imparted to the pulley 7 and shaft 5 through the clutch roller 13 as hereinbefore described.

In order to regulate the stroke of the lever 14 I provide an adjustable stop in the form of an eccentrically mounted disk or roller 20 arranged in the frame 6 in the path of movement of the weighted end of the lever whereby the return stroke or movement of the lever is regulated thus controlling the forward movement of the disk by the lever on its working stroke. In order to stop the operation of the feeder, I provide means for holding the lever 14 down or in position where the same will not be engaged by the cam or eccentric wheel 16, said means comprising a stop bar 21 which is suitably mounted on the frame 6 and is provided with a handle 22 whereby the lower end of the bar may be swung downwardly into engagement with the lever and the latter thus held beyond reach of the cam wheel 16.

By arranging the operating mechanism for the feed pulley as herein shown and described it will be seen that a periodical or step by step movement is imparted to the feed wheel for feeding the ore from the hopper. It will also be seen that by means of the cam disk or roller the operating mechanism may be readily controlled to cause the feeding mechanism to discharge more or less ore from the hopper as desired.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is:

1. In an ore feeder, a hopper having therein a discharge opening, a revolubly mounted feed wheel shaft, a feed wheel fixedly mounted on said shaft and having an operative engagement with the discharge opening in the hopper whereby the ore is fed therefrom, a flanged pulley fixed on said feed wheel shaft, a clutch disk loosely mounted on the shaft within said pulley, said disk having in one edge a cam notch, a clutch roller arranged in said notch and adapted to lock said disk to the pulley when the disk is turned in one direction, an operating lever fixedly secured to said disk, a driving mechanism operatively engaged with said lever to rock the same in one direction thereby locking said disk to said pulley and imparting a forward movement to said shaft and feed wheel, a weight to rock said lever in the opposite direction, and an eccentrically mounted stop roller arranged in the path of movement of the weighted end of said lever and adjustable to regulate the stroke thereof.

2. In an ore feeder, a hopper having therein a discharge opening, a revolubly mounted feed wheel shaft, a feed wheel fixedly mounted on said shaft and having an operative engagement with the discharge opening in the hopper whereby the ore is fed therefrom, a flanged pulley fixed on said feed wheel shaft, a clutch disk loosely mounted on the shaft within said pulley, said disk having in one edge a cam notch, a clutch roller arranged in said notch and adapted to lock said disk to the pulley when the disk is turned in one direction, an operating lever fixedly secured intermediate of its ends to said disk, a revolubly mounted drive shaft, an eccentrically mounted wheel fixed thereon and adapted to engage said lever whereby the latter is rocked in one direction for imparting a forward movement to said feed wheel, means to rock the lever in the opposite direction, means to regulate the stroke of said lever and thereby control the movement of the feed wheel, and a pivoted stop bar arranged above said lever at the point between its fulcrum and its cam actuated end and adapted to be swung into engagement with said lever whereby the latter is held out of the path of movement of the eccentrically mounted operating wheel thereby stopping the operation of the feeder.

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

WALTER E. WAHLIN.

Witnesses:
F. P. Brockbark,
John Farr Le Cheminant.