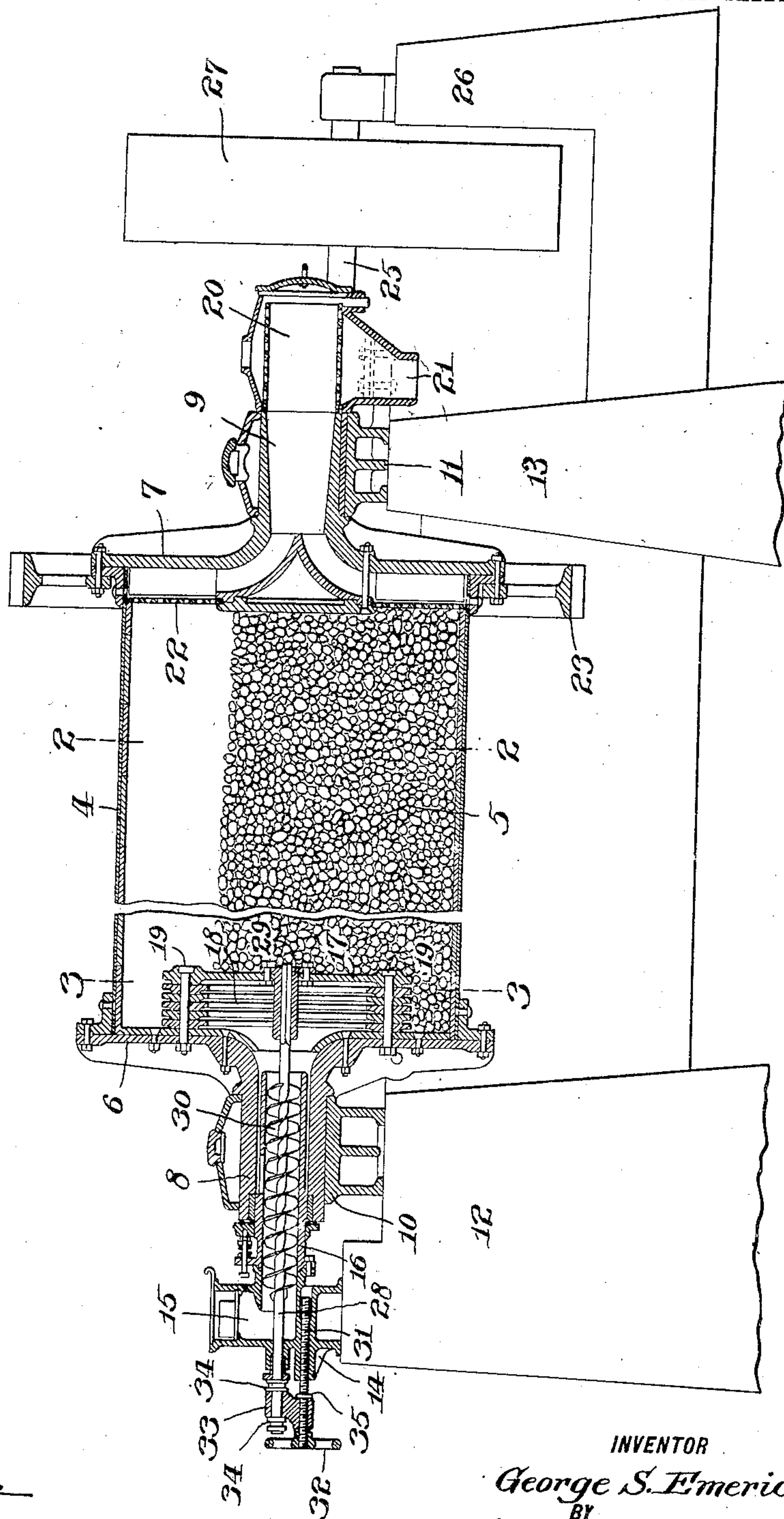


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G. S. EMERICK.
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APPLICATION FILED OCT. 18, 1907.

Patented Aug. 17, 1909.
2 SHEETS—SHEET 1.

Fig. 1.



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Fig. 2.

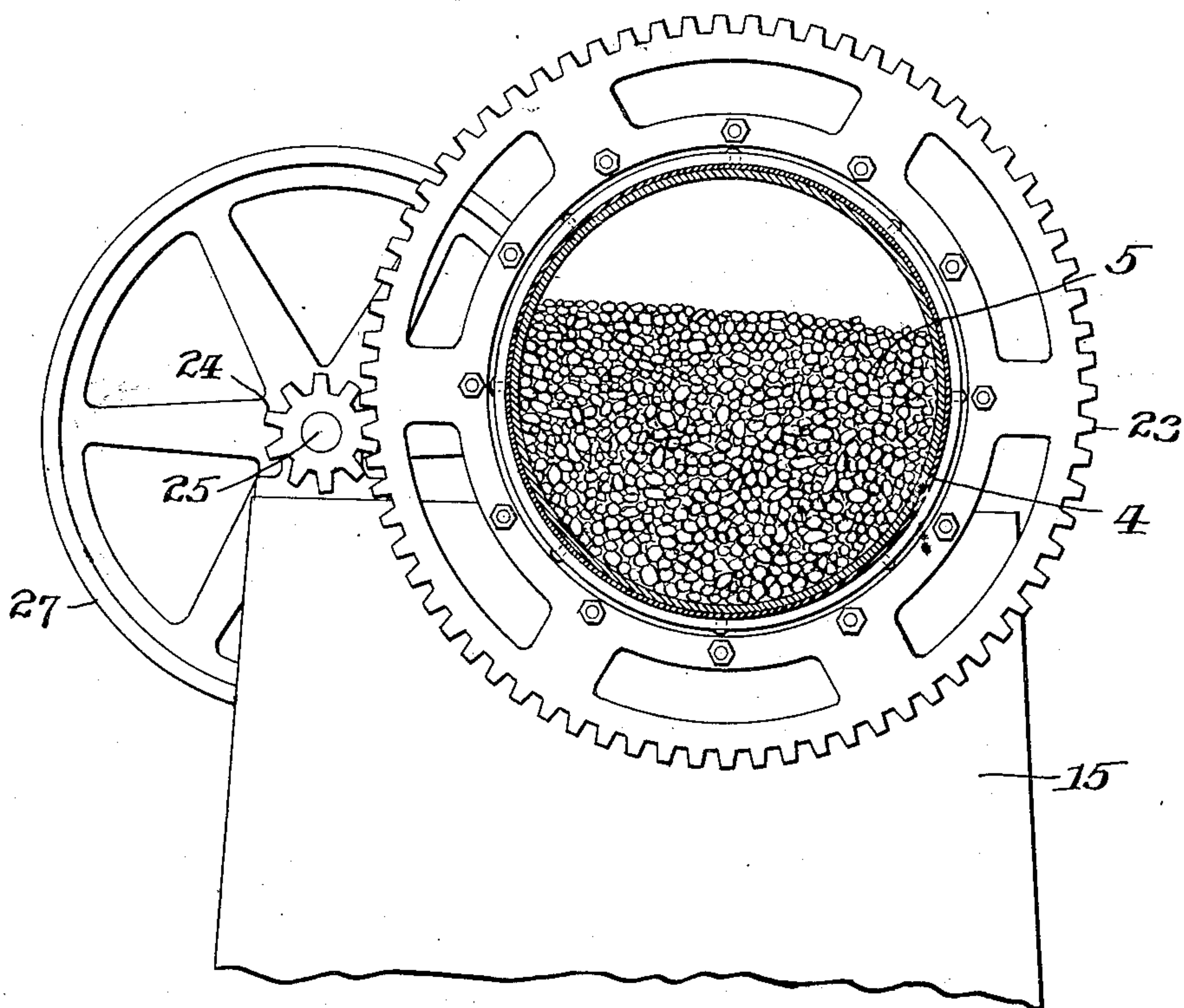
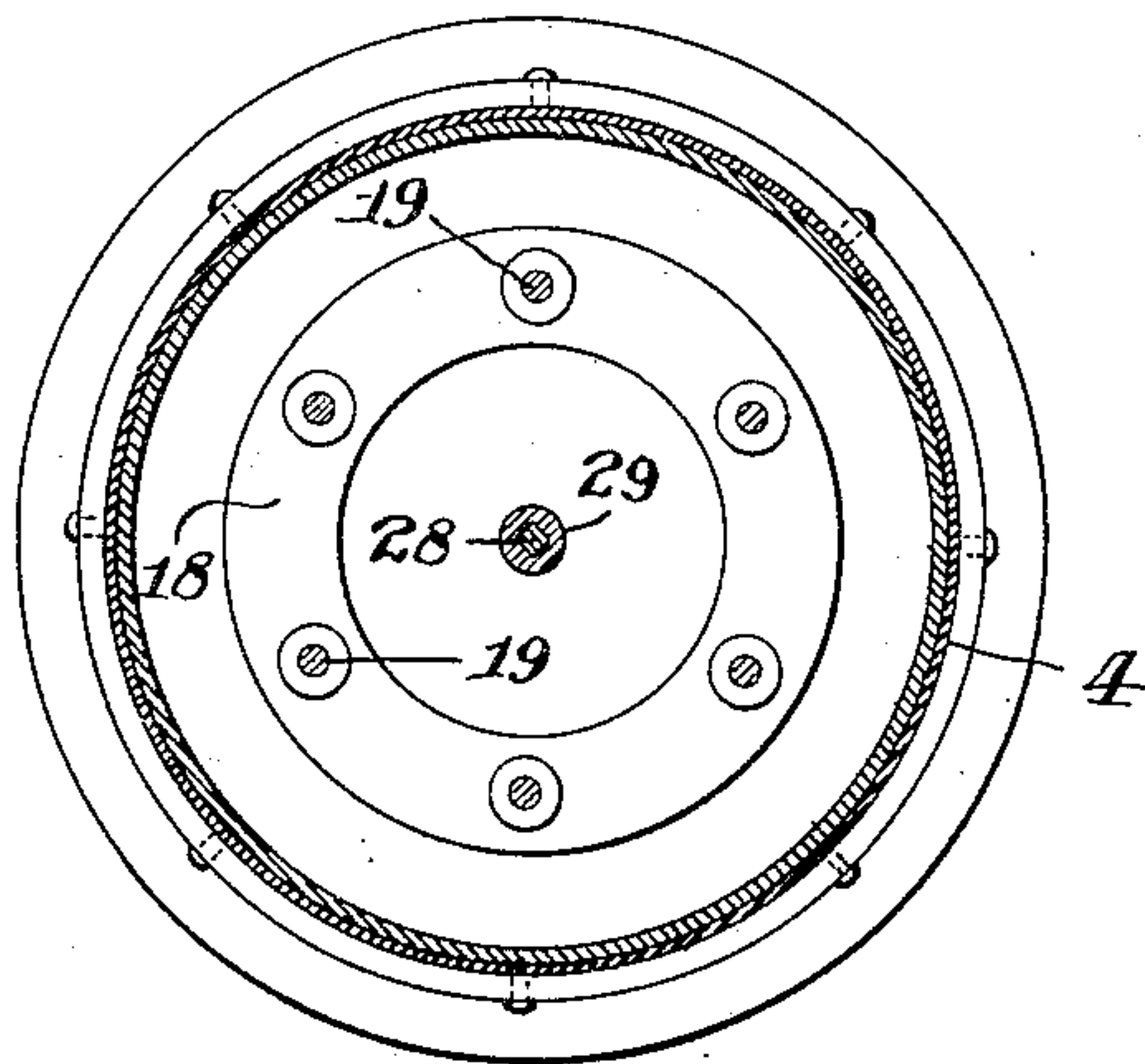


Fig. 3.



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GEORGE STOCKHAM EMERICK, OF NAZARETH, PENNSYLVANIA.

GRINDING-MILL.

No. 981,045.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed October 13, 1907. Serial No. 338,043.

To all whom it may concern:

Be it known that I, GEORGE S. EMERICK, citizen of the United States, residing at Nazareth, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Grinding-Mills, of which the following is a specification.

This invention relates to grinding mills wherein two grinding members are employed which are movable with relation to each other, and wherein one of said members is rotated to effect the grinding operation.

The object of the invention is to provide a grinding mill of this class with a simple and efficient feed mechanism for the material to be ground, such mechanism having provision whereby it may be adjusted to vary the quantity of material fed to the grinding members without disturbing the relation of the grinding members to each other.

Having this object in view, the invention consists in the novel construction and combination of parts hereinafter fully described and particularly pointed out in the claims.

Figure 1 is a longitudinal section view of a grinding mill provided with a feed mechanism embodying my invention. Fig. 2 is a transverse sectional view thereof, as on the line 2—2, of Fig. 1. Fig. 3 is a sectional view as on the line 3—3, of Fig. 1.

4 designates one of the grinding members, and 5, the other member. The member 4, in the present instance, is a horizontally arranged, rotatable casing or drum, and the member 5 is a quantity of pebbles loosely contained within the drum 4 and movable with relation thereto; whereby material, upon being introduced to the drum, will be ground between the pebbles, and the pebbles and the drum during the rotation of the latter. The drum 4 is provided with two end heads 6 and 7, from which project hollow hubs 8 and 9, which are rotatably mounted in bearings 10 and 11 on suitable supports 12 and 13 respectively.

Mounted on the support 12 is a frame 14, which supports a casing comprising a feed chamber or hopper, 15, and a tubular portion 16, extending into the hollow hub 8; the inner end of the tubular portion 16 being open, whereby material may pass from the hopper 15 through the tubular por-

tion 16, the hollow hub 8, and into the drum 4.

Within the cylinder 4, adjacent the opening in the hub 8, is a circular plate 17, between which and the end head 6 is interposed a series of flat rings 18, the rings of the series being held in spaced relation to each other at suitable intervals by pads or bosses through which bolts 19 extend, as a means for securing the plate 17 and rings 18 to each other and to the end head 6.

The material to be ground passes through the hub 8 and through the spaces between the rings 18 into the drum 4, the rings serving as a means to prevent the pebbles from entering the hollow hub 8 or tubular portion 16 of the casing.

The material, upon being ground, passes through the hollow hub 9 into a chamber 20, from which it is discharged through an opening 21 into any suitable receptacle. A perforated plate 22 is provided to prevent pebbles from entering the hollow hub 9.

The mechanism for rotating the drum 4 to effect the grinding operation comprises a gear wheel 23 secured to the drum 4, a pinion 24 in mesh with said gear wheel, and a shaft 25 carrying said pinion and mounted in a bearing on the support 15, and a bearing on a support 26; the shaft 25 being provided with a pulley 27 by means of which power may be applied to the shaft 25 from any suitable source.

Extending through the lower portion of the hopper 15, and centrally through the tubular extension 16 thereof, is a shaft 28. The inner end of the shaft 28 is made square and is slidingly fitted within a squared opening in a hub 29 extending from the plate 17, and the outer end of the shaft 28 extends outwardly through a bearing in the wall of the feed hopper 15. The shaft 28 is provided with a feed screw 30, arranged within the tubular portion 16 of the casing, and having its outer end extending to the feed hopper 15.

During the grinding operation, the rotation of the drum 4 and therewith the plate 17, causes the hub 29 to rotate the shaft 28 and screw 30 in a manner to feed material from the hopper 15 to the drum. The squared end of the shaft 28 engaging the hub 29, permits longitudinal adjustment of the shaft 28 independently of the grinding members. By adjusting the shaft 28 longitudinally, to

bring the screw 30 into the hopper 15, the quantity of material fed to the drum 4 may be increased; and by adjusting the shaft 28 longitudinally to move the screw 30 in the opposite direction, the quantity of material fed to the drum 4 may be decreased; or by adjusting the shaft 28 to bring the screw 30 a sufficient distance away from the feed hopper 15, the feeding of material to the drum 4 will cease altogether.

As a convenient means for adjusting the shaft 28, and screw 30, I provide a screw 31 which is screwed into the frame 14, the outer end of which is provided with a hand wheel 32. The outer end of the screw 31 and the outer end of the shaft 28 extend through and are rotatably engaged with a block 33, collars 34 being provided upon the shaft 28 to prevent longitudinal movement thereof with relation to the block 33, and a collar 35 being provided upon the screw 31, which collar, with the hub of the wheel 32, prevents longitudinal movement of the screw 31 with relation to the block 33. Thus it will be seen that by turning the screw 31, the shaft 28 and screw 30 may be longitudinally adjusted. Further, it will be seen that the feed screw 30 may be adjusted during the grinding operation, and without disturbing the grinding members.

My invention is designed for use in connection with any form of grinding mill wherein two grinding members are movable with relation to each other, the essential of the invention being the adjustment of the feed screw independently of the grinding members.

I claim:—

1. The combination of a frame, two grinding members movable with relation to each other, a feed casing having an opening therein through which material may be introduced to said members, a feed screw within said casing, rotating means for one of said members and said screw, and means for adjusting said screw with respect to said opening

and independently of its rotating means and said members.

2. The combination of a frame, a grinding member, a second grinding member movable with relation to the first named grinding member, means for rotating said second grinding member, a feed-casing having an opening therein through which material may be introduced to said members, a feed-screw within said casing, said screw being engaged with said second grinding member to be rotated thereby and said screw being longitudinally adjustable with relation to said second grinding member and said opening, and means for adjusting said screw.

3. The combination of a frame, two grinding members movable with relation to each other, a feed casing having an opening therein through which material may be introduced to said members, a feed screw within said casing, rotating means for one of said members and said screw, said screw being adjustable with respect to said opening and independently of its rotating means and an adjusting screw engaged with said frame and connected to said feed screw.

4. The combination of a frame, a grinding member, a second grinding member movable with relation to the first named grinding member, means for rotating said second grinding member, a feed-casing having an opening therein through which material may be introduced to said members, a feed-screw within said casing, said screw being engaged with said second grinding member to be rotated thereby and said screw being longitudinally adjustable with relation to said second grinding member and said opening, and an adjusting screw engaged with said frame and connected to said feed-screw.

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

GEORGE STOCKHAM EMERICK.

Witnesses:

A. V. GROUPE,
E. M. WARE.