

No. 687,748.

Patented Dec. 3, 1901.

P. B. HÄRJE.

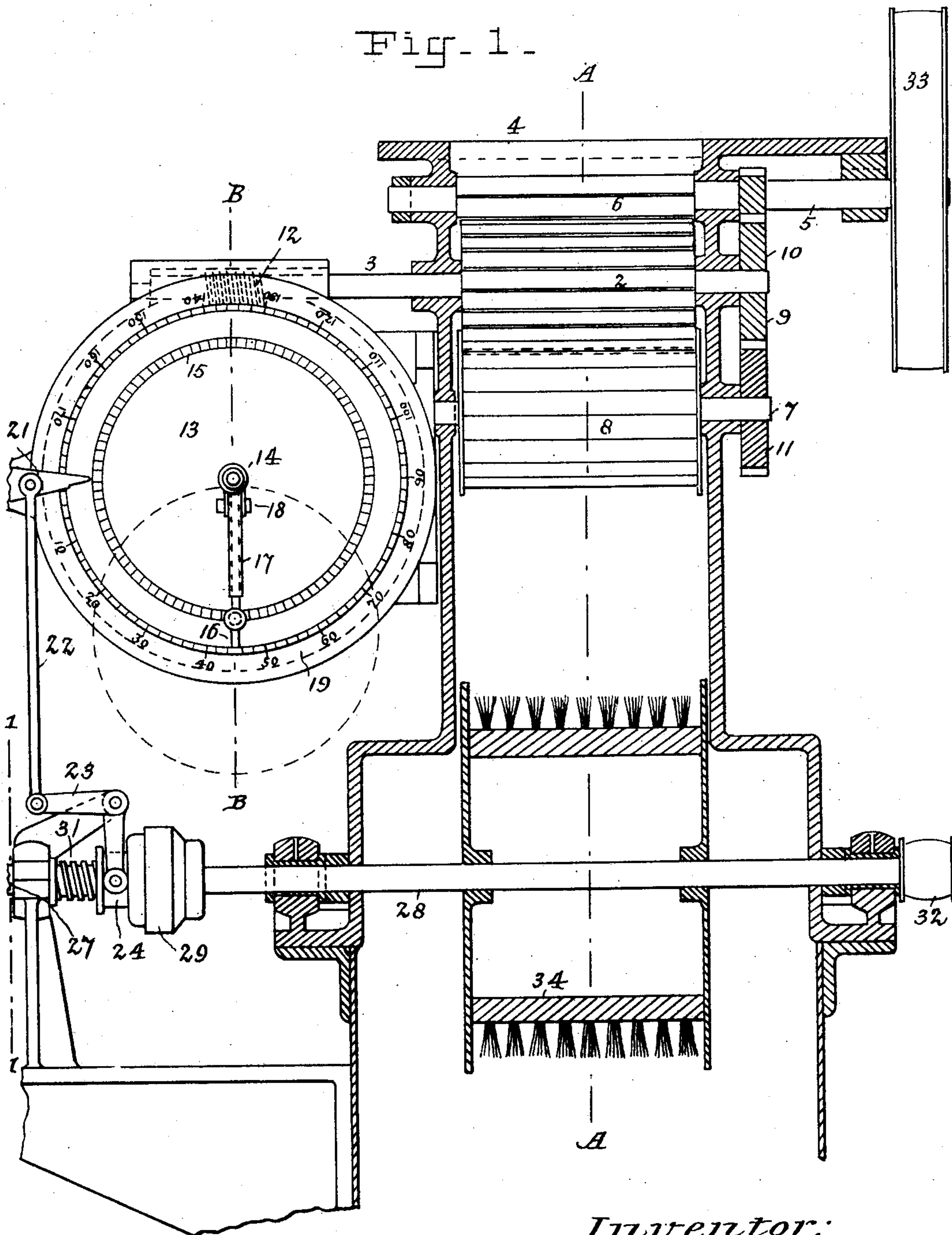
AUTOMATIC DISTRIBUTER FOR POWDERS.

(Application filed Mar. 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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2 Sheets—Sheet 2.

Fig. 2.

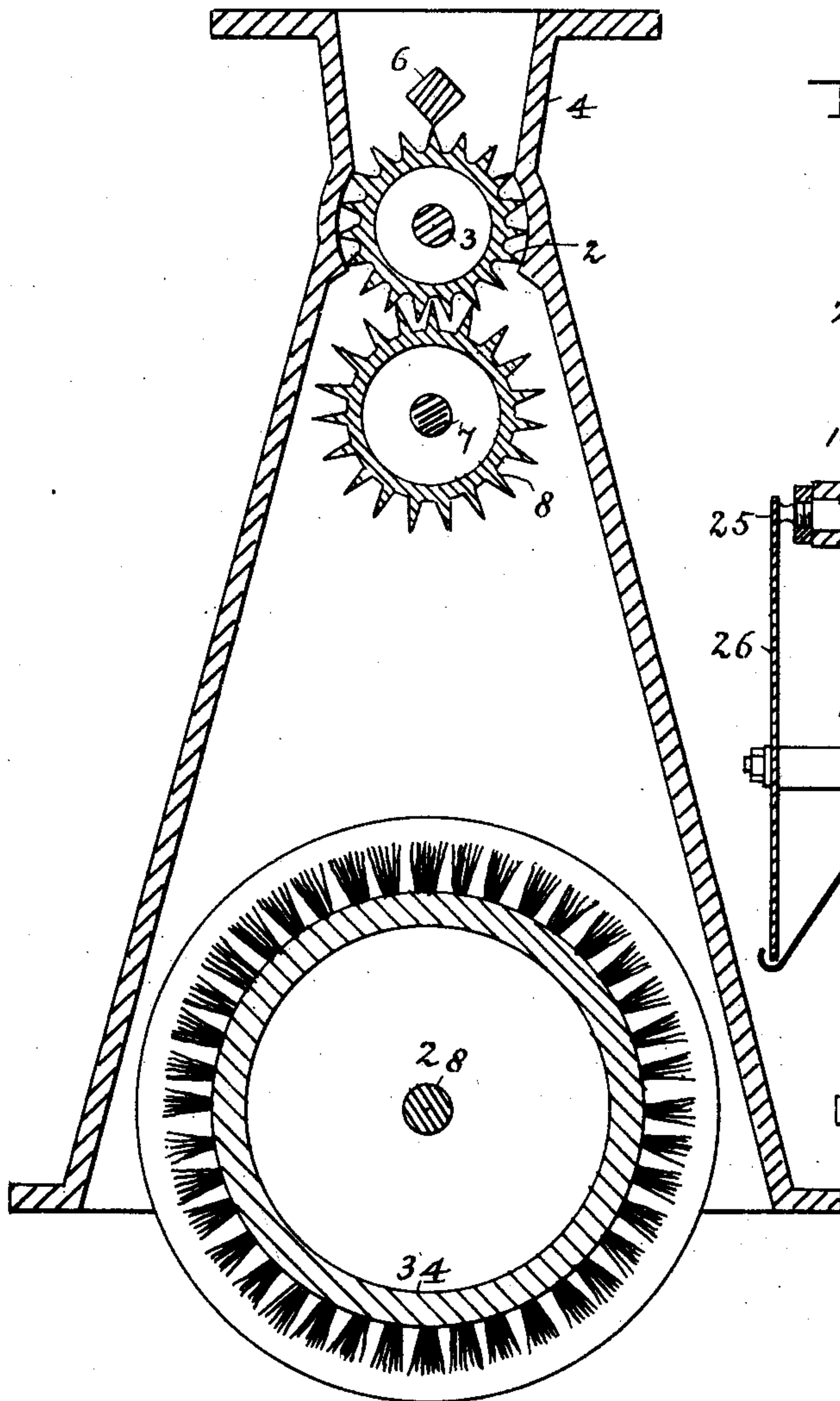
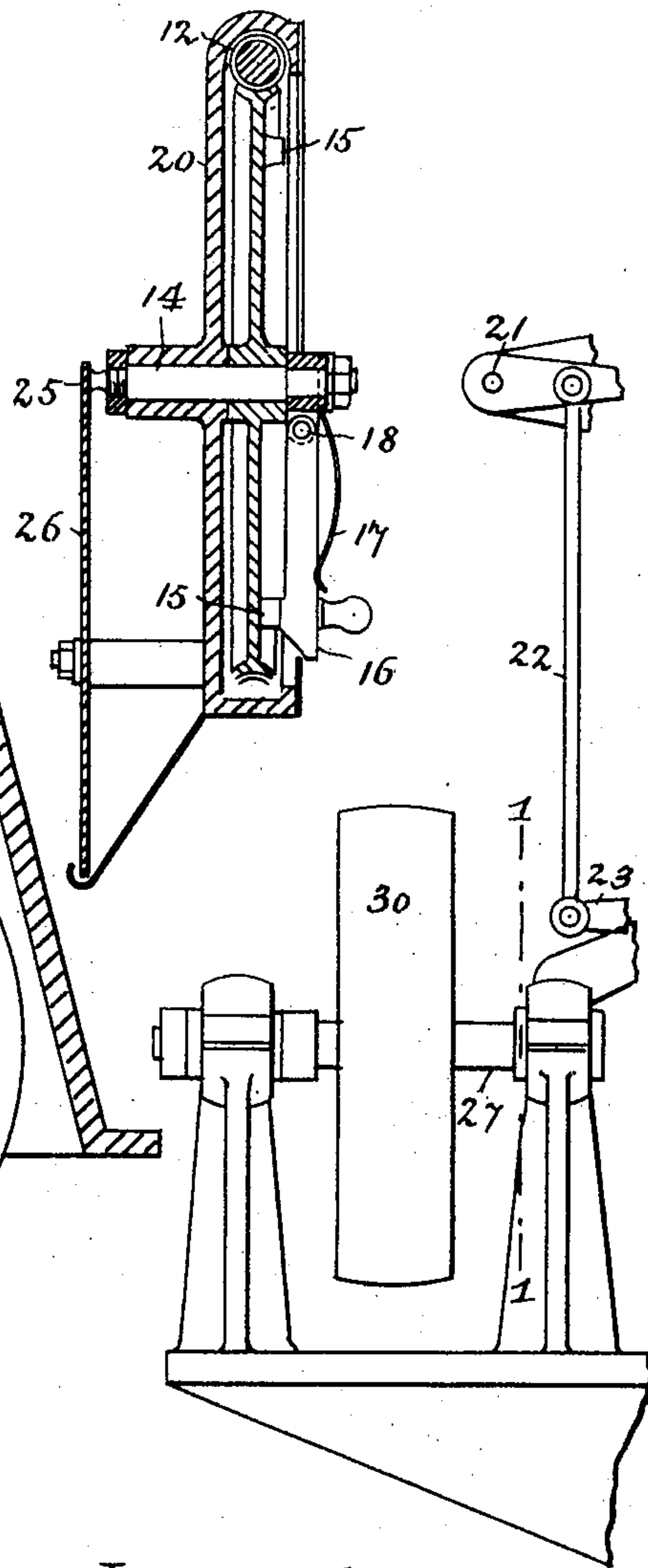


Fig. 3.



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UNITED STATES PATENT OFFICE.

PER BENGTSSON HÄRJE, OF KARPALUND, SWEDEN.

AUTOMATIC DISTRIBUTER FOR POWDERS.

SPECIFICATION forming part of Letters Patent No. 687,748, dated December 3, 1901.

Application filed March 18, 1901. Serial No. 51,724. (No model.)

To all whom it may concern:

Be it known that I, PER BENGTSSON HÄRJE, engineer, a subject of the King of Sweden and Norway, and a resident of Karpalund, in the Kingdom of Sweden, have invented certain new and useful improvements in automatic distributors for powder and the like and feeding in granulated, powdered, or liquid matters, particularly for feeding in lime-powder in solution of molasses, (for which I have filed application for patent in Sweden the 24th day of August, 1900, under No. 1,415/00,) of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an apparatus for automatically distributing and feeding in granulated, powdered, or liquid matters, the apparatus being particularly adapted for feeding in lime-powder in solution of molasses and for similar purposes.

My invention more particularly consists in the combination in apparatus of this general kind, with a distributor for the matter, of means connecting the distributor with a rotatable axle to which a disk or wheel is secured, said wheel being caused to rotate during the working of the distributor, an arm movable about the axle of the wheel and adapted to be connected with the wheel in any desired position, a fixed graduated scale indicating the position to be given to the arm with relation to the wheel for feeding in a desired quantity of the matter, and a clutch for automatically connecting the driving-shaft of the distributor when the arm is moved from the zero-point of the scale, the arm partaking in the movement of the wheel and acting when arriving at the zero-point of the scale to disconnect the driving-shaft from the distributor.

The invention further consists in the construction and combination of parts herein-after set forth, and shown in the drawings.

Figure 1 is a side elevation and vertical section of an apparatus constructed according to this invention. Fig. 2 is a vertical section on line A A of Fig. 1; and Fig. 3 is a detail showing the wheel and its operating parts in section, taken on line B B of Fig. 1.

In the form of carrying out my invention shown in the drawings a registering device

and a coupling mechanism are actuated by a roller 2, provided with longitudinal grooves or channels. Said roller 2, attached to an axle 3, Figs. 1 and 2, forms the bottom of a funnel-shaped receptacle 4 for the matter to be fed into the apparatus. Journaled above the roller 2 is an axle 5, to which is attached an agitator or stirring device 6, and located beneath the said roller is an axle 7, carrying a wheel 8, provided with shovels for cleansing the grooves or channels in the roller 2. The axles 3, 5, and 7 are connected by gear-wheels 9 10 11. The intermediate axle 3 is extended and forms an endless screw 12 in gear with a screw-wheel 13, Figs. 1 and 3, attached to the axle 14. The screw-wheel 13 is at one side provided with a cog-ring 15. Loosely mounted upon the axle 14 of the screw-wheel is an arm 16, provided at its inner side with a tooth or projection catching in the teeth or cogs of the cog-ring 15, a spring 17 serving to keep the arm in engagement with the wheel. As shown in the drawings, the arm 16 is provided with a knee or joint 18, the outer part of the arm thus forming a link, which can be lifted out of engagement with the cog-ring of the screw-wheel, whereupon the arm can be turned and brought into engagement with the wheel at any point of the cog-ring. The ring 19, forming the anterior part of a casing 20, inclosing the screw-wheel, (see Fig. 3,) is provided with a scale indicating the position to be given to the arm for feeding in the desired quantity of the matter. Pivoted onto the frame is a lever or arm 21, whose free end reaches within the range of the arm 16, Fig. 1, at or near the zero-point of the graduated scale. The lever 21 is connected by means of a rod 22 and an angle-lever 23 with the cone 24 of a friction-clutch. Secured to the rear end of the axle 14 is a pinion 25 in gear with a cog-wheel 26, Fig. 3. The latter is provided at one side with a scale indicating the number of revolutions of the axle 3.

The clutch connecting the driving-shaft 27 with the axle 28 consists of a socket 29, secured to the axle or shaft 28, and a friction-cone 24, mounted to slide on the driving-shaft, the latter receiving motion by means of a belt-pulley 30. The cone 24 partakes in the rotation of the shaft 27 and is pressed by means of a coiled spring 31 against the socket 29 of

the shaft 28. Fixed to the end of the shaft 28 is a pulley 32, connected by a belt with a pulley 33, attached to the axle 5. The shaft 28 further carries a cylindrical brush 34, serving to evenly distribute the powder or the like fed into the apparatus.

The working of the apparatus is as follows: The matter to be fed into the apparatus is poured into the funnel-shaped receptacle 4, and the arm 16 is brought out of engagement with the cog-ring 15 of the screw-wheel and turned from the zero-point of the scale to the point of said scale indicating the quantity of the matter which is desired to be fed into the apparatus. Before the arm 16 is moved the lever 21 is held by said arm in such a position that the cone 24 is kept disengaged from the socket 29; but as soon as the arm 16 is moved the lever 21 is made free and the cone is pressed by the spring 31 into the socket, thus forcing the shaft 28 to rotate with the driving-shaft 27. From the shaft 28 motion is imparted to the axle 5 and from said axle by means of the wheels 9, 10, and 11 to the axles 3 and 7. The axle 3 by means of the endless screw 12 turns the screw-wheel 13, so that the arm 16 is moved from the position given to it toward the zero-point of the scale. The arm 16 having arrived at the zero-point of the scale lifts the lever 21, so that the cone 24 is again disengaged from the socket 29 and the apparatus is stopped.

During the working of the apparatus the shovels of the cleansing-wheel 8 move into the grooves of the roller 2, whereby said grooves are completely emptied.

Of course various modifications may be made in the forms and details of construction of the parts that enter into my apparatus. I therefore do not desire to limit myself to exact details of construction, except as the same may be specified in the claims.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In apparatus for distributing and feeding in a desired quantity of a granulated,

powdered, or liquid matter, particularly for feeding in lime-powder in a solution of molasses, the combination with a distributor for the matter, of a wheel secured to a rotatable axle, means connecting the distributor with said axle to rotate the wheel during the working of the distributor, an arm movable about the axle of the wheel and adapted to be connected with the wheel in a desired position, a fixed graduated scale indicating the position to be given to the arm with relation to the wheel for feeding in the desired quantity of the matter, and a clutch for automatically connecting the driving-shaft with the distributor when the arm is moved from the zero-point of the scale, the arm partaking in the movement of the wheel and acting, when arriving at the zero-point of the scale, to disconnect the driving-shaft from the distributor, substantially as described.

2. In apparatus for distributing and feeding in granulated, powdered, or liquid matters, the combination with a distributor for the matter of a rotatable wheel, provided at one side with a ring of cogs, an arm movable about the axle of the wheel and normally engaging the cog-ring but arranged to be brought out of engagement with the cogs and moved along the wheel, a fixed graduated scale, indicating the position to be given to the arm with relation to the wheel for feeding in the desired quantity of the matter, and a clutch for automatically connecting the driving-shaft with the distributor when the arm is moved from the zero-point of the scale, the arm partaking in the movement of the wheel and acting, when arriving at the zero-point of the scale, to disconnect the driving-shaft from the distributor, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

PER BENGTSSON HÄRJJE.

Witnesses:

ERNST SVANQVIST,
AUG. SÖRENSEN.