

Oct. 26, 1937.

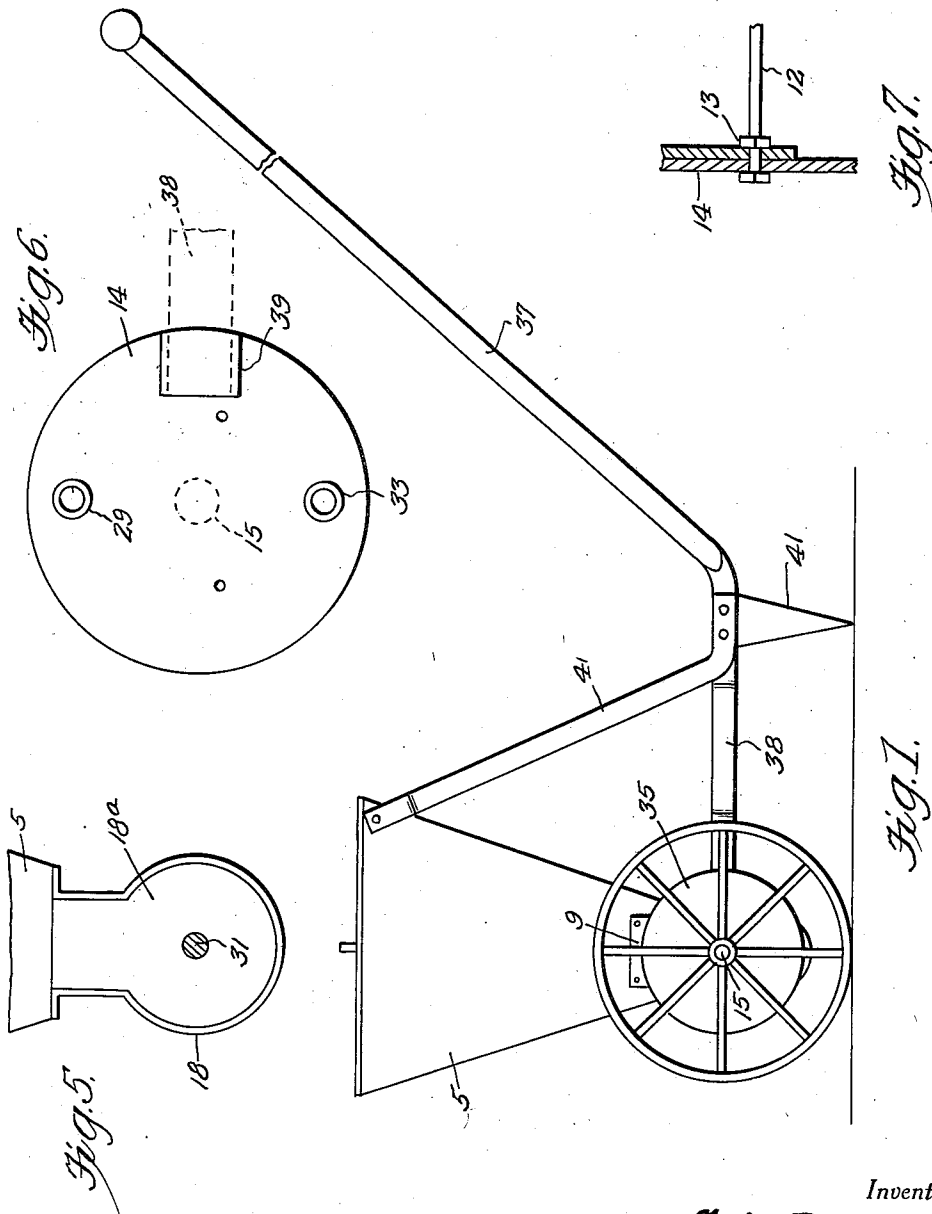
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2,097,102

LIME DISTRIBUTING MACHINE

Filed Feb. 15, 1937

4 Sheets-Sheet 1



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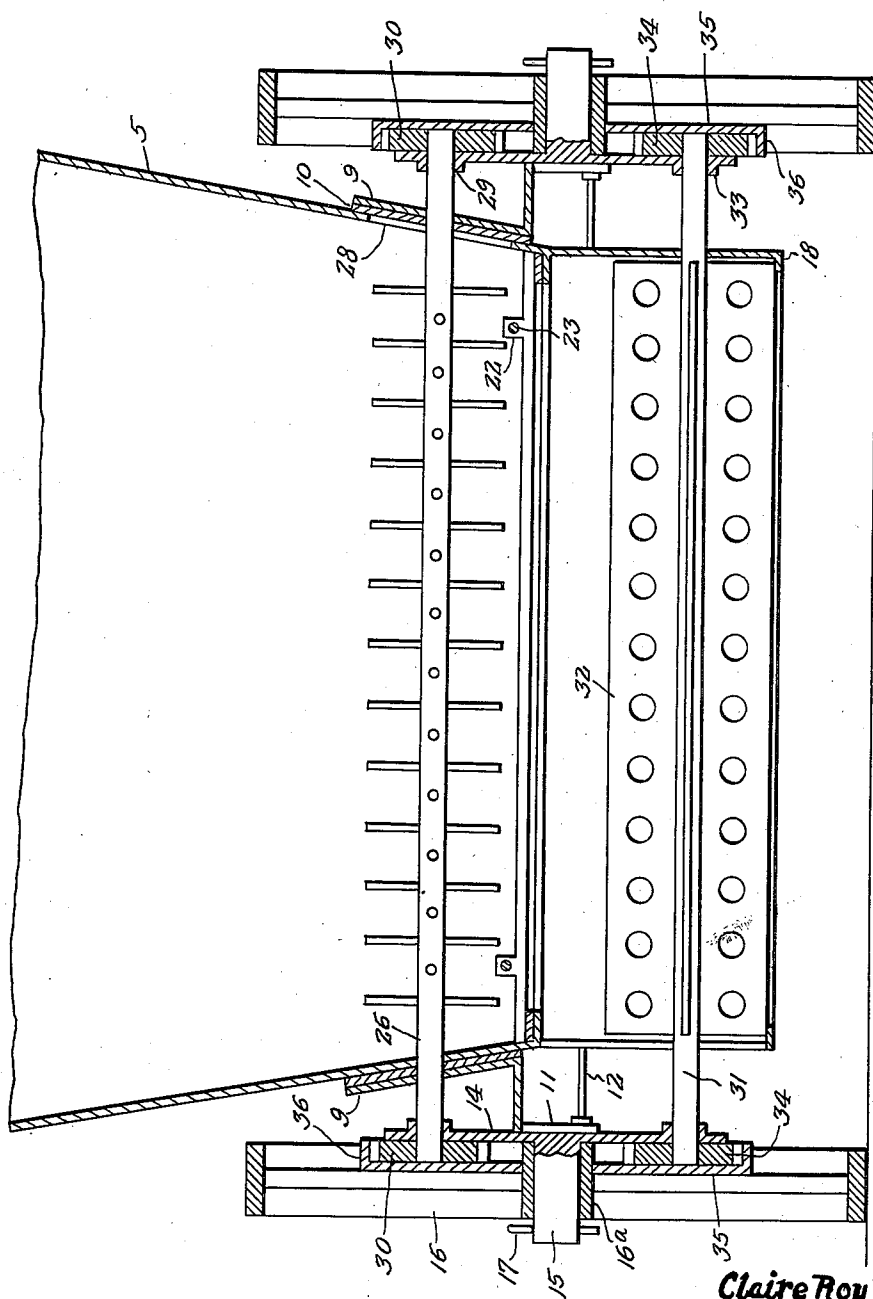


Fig. 2.

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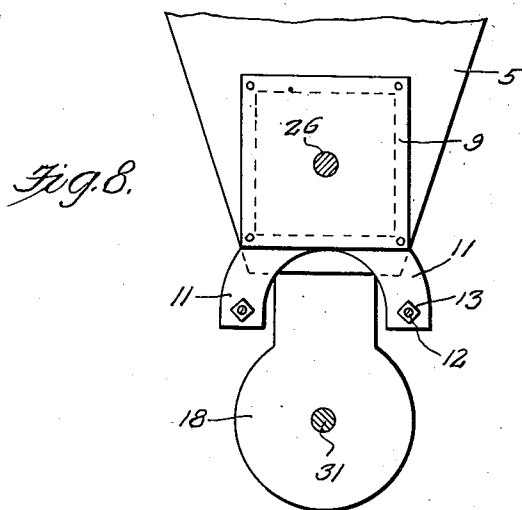
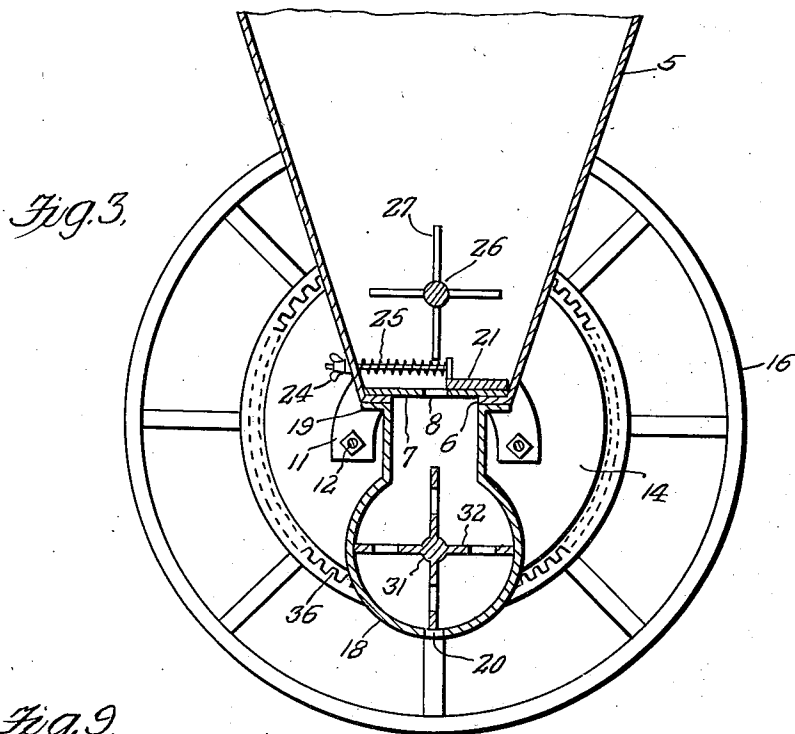
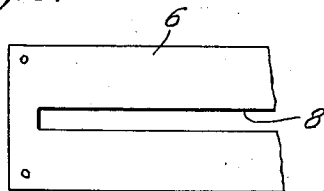


Fig. 9.



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4 Sheets-Sheet 4

Fig. 10.

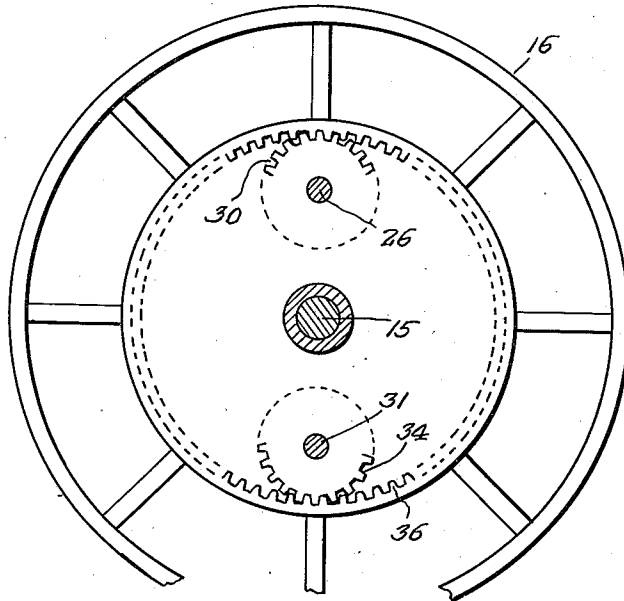
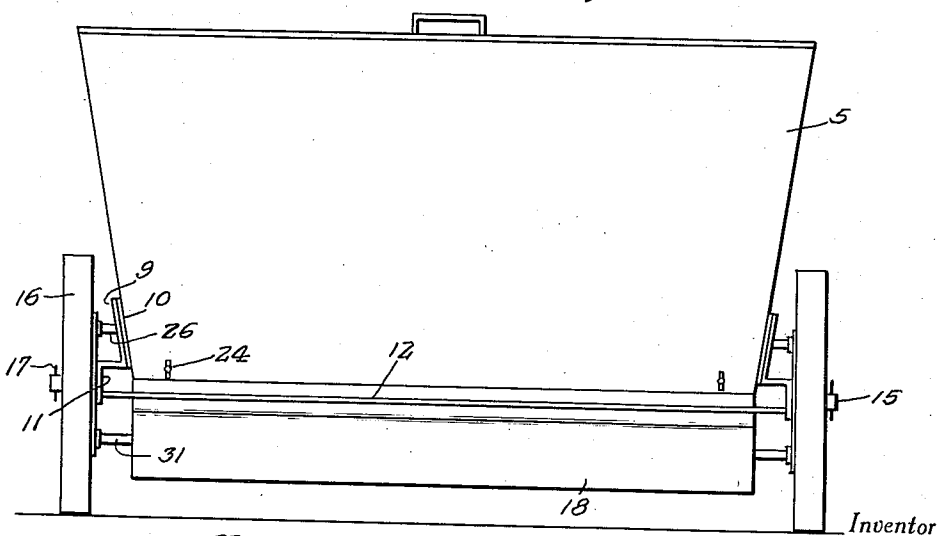


Fig. 4.

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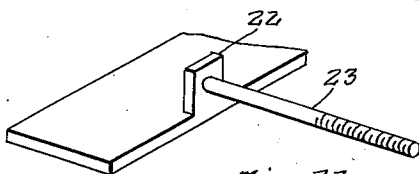


Fig. 11.

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UNITED STATES PATENT OFFICE

2,097,102

LIME DISTRIBUTING MACHINE

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Application February 15, 1937, Serial No. 125,908

5 Claims. (Cl. 275-2)

This invention relates to distributors or spreaders, and an object of the invention is to provide a hand wheeled distributor for use in distributing evenly over the floor surface of a barn or the like lime or analogous cleansing and deodorizing powder.

The invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view of the improved lime distributor.

Figure 2 is an enlarged vertical sectional view through the distributor.

Figure 3 is a vertical transverse sectional view through the distributor.

Figure 4 is a rear elevational view of the distributor.

Figure 5 is a fragmentary end elevational view of a hopper and associated trough.

Figure 6 is a side elevational view of a plate hereinafter more fully referred to.

Figure 7 is a fragmentary detail sectional view illustrating certain details hereinafter more fully referred to.

Figure 8 is a fragmentary detail sectional view showing in end elevation the hopper and trough and illustrating certain details hereinafter more fully described.

Figure 9 is a fragmentary plan view of a bottom plate.

Figure 10 is a view mostly in elevation viewing a wheel and a gear assembly from the in-board side of the wheel and

Figure 11 is a fragmentary perspective view of a slide member.

Referring to the drawings by reference numerals it will be seen that in the preferred embodiment thereof my improved lime distributing machine comprises a hopper 5 provided at its bottom with an inturned flange 6 on which is supported and to which is secured by rivets or other suitable means a bottom plate 7 provided with an elongated slot or outlet opening 8.

To relatively opposite ends of the hopper 5 adjacent the bottom of the hopper there are secured metallic plates 9 and leather sheets 10, the sheets 10 being interposed between the plates 9 and the adjacent end walls of the hopper 5.

The plates 9 at their lower ends are provided with angular extensions 11 to which are secured through the medium of tie-rods 12 and pairs of nuts 13 threaded on the respective opposite ends of the respective tie-rods, plates 14.

The plates 14 are provided with stub axles 15

on which are journaled traction wheels 16, cotter pins 17 being provided to retain the hubs 16a of the wheels on the stub axles 15.

Disposed beneath the hopper 5 is a trough 18 the lower portion of which is substantially cylindrical and the upper portion of which is substantially rectangular as will be clear from a study of Figure 3, and the upper portion of the trough 18 has the opposite sides thereof provided with outstanding flanges 19 bolted or otherwise secured to the flanges 6 at the bottom of the hopper 5.

The trough 18 is adapted to receive the material from the hopper 5 and is provided at its bottom with an elongated opening or slot 20 through which the material passes from the trough on to the floor or surface upon which the material is to be spread.

For controlling the passage of the material from the hopper 5 to the trough 18 through the opening 8 in the bottom plate 7 of the hopper there is provided an elongated slide or valve member 21 that is provided adjacent one longitudinal edge thereof with lugs 22 into which are threaded one end of rods 23.

The rods 23 have a sliding fit through openings provided in the rear wall of the hopper 5 and on their outer ends are equipped with wing nuts 24.

Disposed about the rods 23 are coil springs 25 that bear against the lugs 22 and one wall of the hopper 5 and which serve to normally position the plate 21 at one side of the opening 8. Obviously by threading the thumb nuts 24 home on the rods 23 slide 21 against the action of springs 25 may be slid into a position closing the opening 8 to prevent passage of the contents of hopper 5 through the opening 8 and into the trough 18. Arranged in the lower portion of the hopper 5 is an agitator which consists of a shaft 26 from which extends a plurality of agitating fingers 27, the agitator fingers being staggered as clearly suggested in Figure 2.

The agitator is inserted into the hopper 5 through an opening 28 provided therefor in one wall of the hopper and which opening is closed by one of the plates 9 and leather piece 10 as also shown in Figure 2.

The respective opposite ends of the shaft 26 of the agitator are journaled in bearings 29 provided therefor in the upper portions of plates 14 and suitably secured on said ends of the agitator shaft 26 are pinion gears 30.

The trough 18 has a removable end piece 18a which permits insertion and removal from the trough 18 of a feeder, which latter consists of a

shaft 31 provided with elongated perforated blades 32 of metal or other suitable material.

At its respective opposite ends shaft 31 is journaled in bearings 33 provided therefor in the lower portions of the plates 14 and on said ends of the shaft are secured in any suitable matter pinion gears 34.

Provided at the inboard sides of the wheels 16 and secured in any suitable manner to the spokes of the wheels are circular plates or discs 35 which at their marginal edges are formed to provide internal ring gears 36 with which the pinions 30 and 34 are in constant mesh so that as the distributor machine is wheeled over the floor of the barn or other surface drive from these wheels is transmitted to the shaft 26 of the agitator and the shaft 31 of the feeder for revolving the agitator and feeder.

For the distributing machine there is also provided a handle 37 which at one end is forked and has the legs 38 of the fork at their respective free ends inserted into and suitably secured within sockets 39 provided therefor on the plates 14 as clearly suggested in Figure 6.

The legs of the handle fork 38 are also braced with respect to the hopper through the medium of suitable brace members 40 which at one end are suitably secured to the legs 38 of the fork and at their upper ends are suitably secured to the upper portions of the end walls of hopper 5.

Also suitably associated with the handle 37 at the junction of the handle and the legs 38 of the fork part of the handle is a supporting foot 41 as shown in Figure 1.

From the foregoing it will be apparent that as the apparatus is wheeled along the agitator in the bottom of the hopper 5 revolves to reduce to powder any lumps of lime or other material in the hopper 5 so that the lime in powdered form will sift through the opening 8 into the trough 18.

Also rotating simultaneously with the agitator is the feeder arranged in the trough, the blades 32 of which serve further to maintain in powdered form the lime and at the same time move the lime to and through the opening 20 in the bottom of the trough so that the lime is evenly distributed upon the floor.

While I have herein shown and illustrated a preferred embodiment of the invention it is to be understood that various changes and modifications may be made therein without departing from the spirit and scope of my invention as defined by the appended claims.

Having thus described the invention, what is claimed as new is:—

1. A distributor comprising in combination a hopper having angular members extending from relatively opposite ends thereof, perpendicular plates secured to said angular members and provided with centrally located outwardly extending stub axles, wheels journaled on said axles, internal ring gears mounted on the inboard sides of said wheels, an agitator arranged in the bottom of the hopper and including a shaft having ends journaled in bearings provided therefor in said plates and pinion gears on the ends of said shaft meshing with the ring gears whereby drive is transmitted from the wheels to the agitator shaft for revolving the agitator.

2. A distributor comprising in combination a hopper having angular members extending from relatively opposite ends thereof, perpendicular plates secured to said angular members and provided with centrally located outwardly extending stub axles, wheels journaled on said axles, in-

ternal ring gears mounted on the inboard sides of said wheels, an agitator arranged in the bottom of the hopper and including a shaft having ends journaled in bearings provided therefor in said plates and pinion gears on the ends of said shaft meshing with the ring gears whereby drive is transmitted from the wheels to the agitator shaft for revolving the agitator; a trough secured to and depending from the bottom of said hopper for receiving the material dispensing through said opening, said trough being also provided in the bottom thereof with an opening through which the material passes from the trough on to the surface upon which the material is to be spread, a feeder rotatably mounted in said trough and including a shaft having its respective opposite ends journaled in said plates, and pinion gears on the respective opposite ends of the feeder shaft and meshing with said ring gears whereby said feeder is caused to revolve in unison with said agitator.

3. In a distributor of the character described, a hopper, a trough secured to and depending from the bottom of said hopper, plates secured to relatively opposite end walls of said hopper and having angular projections, perpendicular plates secured to said angular projections and provided with centrally located stub shafts, tread wheels journaled on said stub shafts, internal ring gears mounted on said wheels at the inboard sides of the latter, and a feeder rotatably mounted in said trough and including a shaft, said shaft having the respective opposite ends thereof journaled in bearings provided therefor in said perpendicular plates, and pinion gears on the respective opposite ends of said shaft meshing with said ring gears whereby drive is transmitted from the tread wheels to the feeder for revolving the latter.

4. A distributor comprising in combination a hopper having angular members extending from relatively opposite ends thereof, perpendicular plates secured to said angular members and provided with centrally located outwardly extending stub axles, wheels journaled on said axles, internal ring gears mounted on the inboard sides of said wheels, an agitator arranged in the bottom of the hopper and including a shaft having ends journaled in bearings provided therefor in said plates and pinion gears on the ends of said shaft meshing with the ring gears whereby drive is transmitted from the wheels to the agitator shaft for revolving the agitator, a trough secured to and depending from the bottom of said hopper for receiving the material dispensing through said opening, said trough being also provided in the bottom thereof with an opening through which the material passes from the trough on to the surface upon which the material is to be spread, a feeder rotatably mounted in said trough and including a shaft having its respective opposite ends journaled in said plates, and pinion gears on the respective opposite ends of the feeder shaft and meshing with said ring gears whereby said feeder is caused to revolve in unison with said agitator, a slide member mounted in the bottom of said hopper for controlling the passage of the contents of the hopper to said trough, and means connected with said slide member for securing the latter at the desired position of adjustment relative to the opening in the bottom of said hopper.

5. A distributor comprising in combination a hopper having angular members extending from relatively opposite ends thereof, perpendicular plates secured to said angular members and provided with centrally located outwardly extending stub axles, wheels journaled on said axles, inter-

nal ring gears mounted on the inboard sides of
said wheels, an agitator arranged in the bottom of
the hopper and including a shaft having ends
journaled in bearings provided therefor in said
5 plates, and pinion gears on the ends of said shaft
meshing with the ring gears whereby drive is
transmitted from the wheels to the agitator shaft
for revolving the agitator, a trough secured to and
depending from the bottom of said hopper for
10 receiving the material dispensing through said
opening, said trough being also provided in the
bottom thereof with an opening through which
the material passes from the trough on to the
surface upon which the material is to be spread,

a feeder rotatably mounted in said trough and
including a shaft having its respective opposite
ends journaled in said plates, and pinion gears on
the respective opposite ends of the feeder shaft
5 and meshing with said ring gears whereby said
feeder is caused to revolve in unison with said
agitator; said perpendicular plates on one side
thereof being provided with sockets and a draft
handle provided at one end with a fork the legs
10 of which have their free ends secured within said
sockets and braces secured at one end to the legs
of the fork and at a relatively opposite end to the
hopper.

CLAIRE ROY MOORE.