

March 11, 1941.

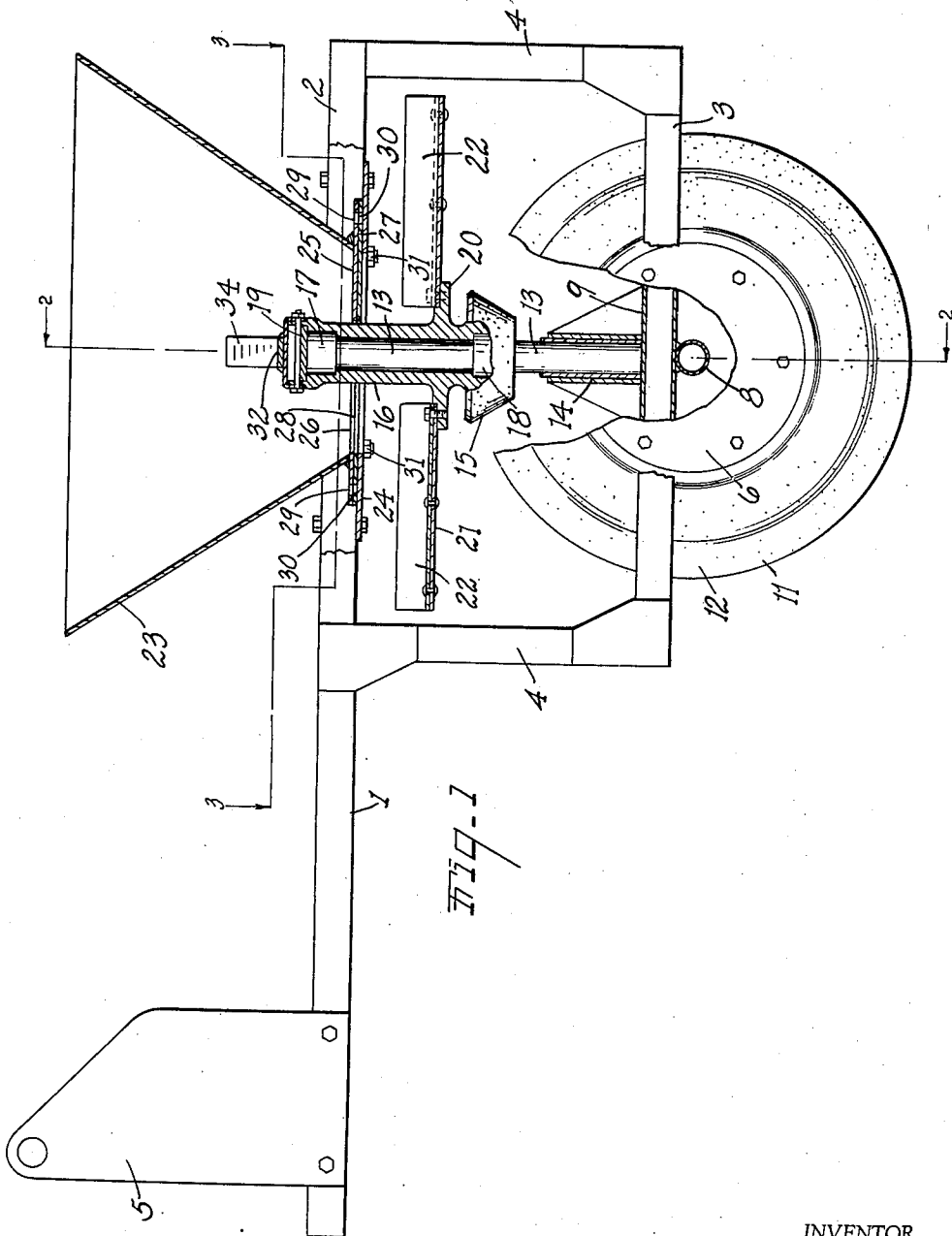
G. R. HARRINGTON

2,234,343

DISTRIBUTING MACHINE

Filed Aug. 8, 1938

2 Sheets-Sheet 1



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March 11, 1941.

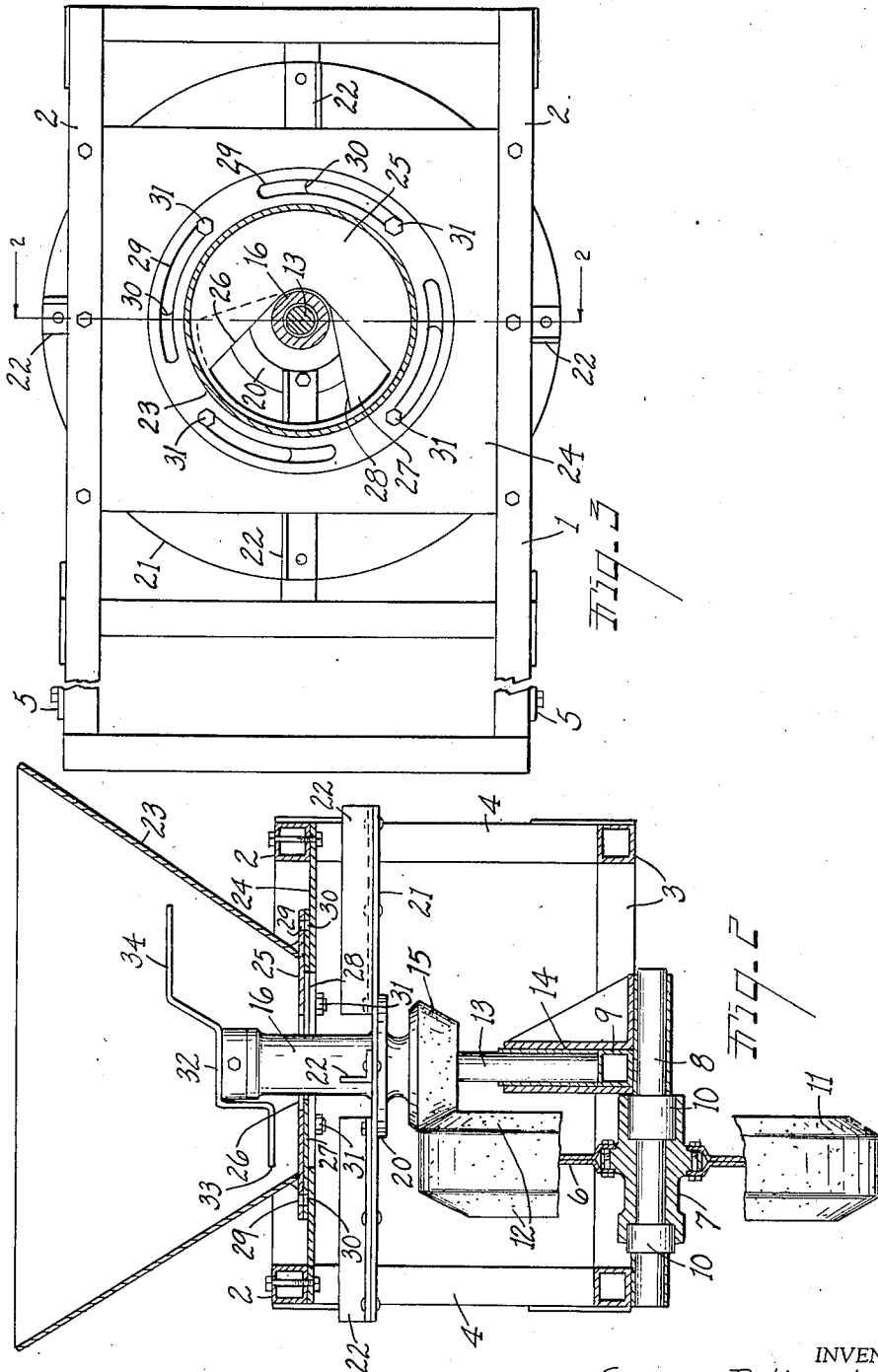
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DISTRIBUTING MACHINE

Filed Aug. 8, 1938

2 Sheets-Sheet 2



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2,234,343

DISTRIBUTING MACHINE

George R. Harrington, Kalamazoo, Mich., assignor
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Mich.

Application August 8, 1938, Serial No. 223,670

3 Claims. (Cl. 275—15)

The main objects of this invention are:

First, to provide a distributing machine which is well adapted for the distributing of road materials to highways and streets, such for example as sand, gravel, materials for laying dust, or other surfacing materials.

Second, to provide such a machine which is very simple and economical in structure and at the same time is highly efficient.

Third, to provide a distributing machine of the class described which is capable of ready adjustment to determine the amount of material discharged and also the area covered thereby.

Further objects pertaining to details and economies of my invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of my invention is clearly illustrated in the accompanying drawings in which:

Fig. 1 is a fragmentary side elevation of my improved distributing machine partially in central longitudinal section with parts broken away to facilitate illustration, certain of the parts being shown conventionally for convenience in illustration.

Fig. 2 is a fragmentary view partially in transverse section on line 2—2 of Figs. 1 and 3.

Fig. 3 is a fragmentary horizontal section on the broken line 3—3 of Fig. 1.

In the embodiment of my invention illustrated I provide a main or carriage frame designated generally by the numeral 1 and comprising rectangular top and bottom frame members 2 and 3, respectively, connected by the uprights 4 disposed at the corners of the bottom frame member. In the embodiment illustrated these parts are formed of structural steel. I have not illustrated the method of securing the parts entering into the frame together as this may be by spotwelding, riveting or other means to secure a strong and rigid structure, one object in view being lightness as well as rigidity.

The frame member 2 projects forwardly beyond the frame member 3 and is provided with the combined hangers and draft members 5 which project upwardly from the front corners of the frame member 2 and are designed to be coupled to the rear end of a truck for carrying the material to be distributed and for propelling the distributing machine. It will be noted that the machine is provided with a single carrying wheel 6, the hub 7 of which is mounted on the axle 8. The axle is carried by one of

the side members of the bottom frame 3 and the longitudinal bar 9 mounted thereon, see Fig. 2. Bearings 10 of the roller type are conventionally illustrated. The wheel is provided with a resilient tire 11 also conventionally illustrated except that it is shown as provided with beveled side faces 12.

A spindle 13 is mounted in a suitable bracket 14 carried by the bar 9 and positioned to support the spindle 13 in a central upright position relative to the bottom member 3. It will be observed that the spindle is supported in the vertical plane of the axle 8. The beveled friction gear 15 is carried by the tubular shaft or hub 16 rotatably mounted on the spindle, suitable bearings 17 and 18 being provided therefor, and also an end thrust supporting bearing or plate 19. This shaft 16 is provided with an annular flange 20 to which the disk-like impeller 21 is secured, the impeller being provided with radial blades 22 on its upper surface. The material is discharged from the hopper 23 upon the impeller.

In the embodiment illustrated the hopper is mounted on a supporting plate 24 mounted on the top frame member 2 and extending from side to side thereof as shown in Figs. 2 and 3. This supporting plate is provided with an opening through which the sleeve-like hub or tubular shaft 16 projects so that the upper end of the hub is within the hopper. The hopper is preferably downwardly tapered as illustrated and is provided with a bottom 25 having a segmental discharge opening 26 therein.

Between the hopper bottom and the supporting plate is a valve plate 27 having a segmental opening 28 therein adapted to be brought into register with the opening 26 in the hopper bottom. The hopper bottom has segmental slots 29 while the valve plate has corresponding segmental slots 30 adapted to receive the securing bolts 31 so that by rotatively adjusting the valve plate and the hopper relative to each other the size of the discharge opening may be varied. Also, by this rotative adjustment the point of discharge of the material to be distributed upon the impeller may be regulated.

The agitator 32 has blades 33 and 34 vertically offset relative to each other, the blade 33 rotating in a plane adjacent the bottom of the hopper while the blade 34 rotates in a plane elevated substantially above the plane of the blade 33.

In distributing road surfacing materials such as sand, gravel or crushed stone, they are com-

monly mixed with calcium chloride for the purpose of preventing freezing and rendering them available for use in winter. Also, the calcium chloride or calcium chloride charged materials are frequently used as dust laying agents or as ice thawing agents. Such materials tend to bank within the hopper and I have found that my agitator is highly effective in preventing the banking action. It is intended that the machine shall be hitched to a truck and commonly the truck is loaded with the material to be distributed which is shoveled into the hopper. By the rotative adjustment of the discharge of the hopper the point of discharge upon the roadway may be quite effectively controlled as it will be understood that the material is discharged from the impeller in relation to the point at which it is discharged to the impeller. Of course, the element of speed, the character of the material, whether it is moist or dry, and other conditions are factors but the apparatus can be adjusted to meet all of these conditions. The direct drive from the carrying wheel minimizes the moving parts and bearings, which is a highly desirable feature both in the matter of economy of manufacture and upkeep. The importance will be obvious when the character of the work done by the machine is taken into consideration.

30 I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe certain modifications or adaptations which I contemplate as it is believed this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a distributing machine, the combination of a frame, a vertical driven shaft on the frame, a disk-like impeller mounted on said shaft, a hopper supporting plate mounted on said frame and having an opening therein through which said shaft projects, a hopper rotatably adjustable on said plate and provided with a bottom having a discharge opening therein, and a valve plate disposed between the bottom of the hopper and said hopper supporting plate having an opening therein adapted to be brought into register with said opening in said hopper bottom.

2. In a distributing machine, the combination of a frame, a vertical driven shaft rotatably mounted on the frame, a disk-like impeller mounted on said shaft, a hopper on the frame provided with a bottom having a discharge opening therein, a valve plate on the frame having an opening therein adapted to be brought into register with said opening in said hopper bottom, and means for effecting rotative adjustment of the valve plate and hopper for varying the discharge opening of the hopper and the position of discharge to the impeller.

3. In a distributing machine of the type described, a frame, a hopper rotatably mounted on the frame, and a valve plate rotatably mounted on the frame, said hopper and valve plate having openings therein adjustable relative to the frame and to one another by rotation of the hopper and valve plate to control the amount and positioning of the discharge from the hopper.

GEORGE R. HARRINGTON.