Nov. 6, 1956 T. E. MEAD 2,769,255

SNOW THROWER

Filed July 2, 1953

Fig. 1

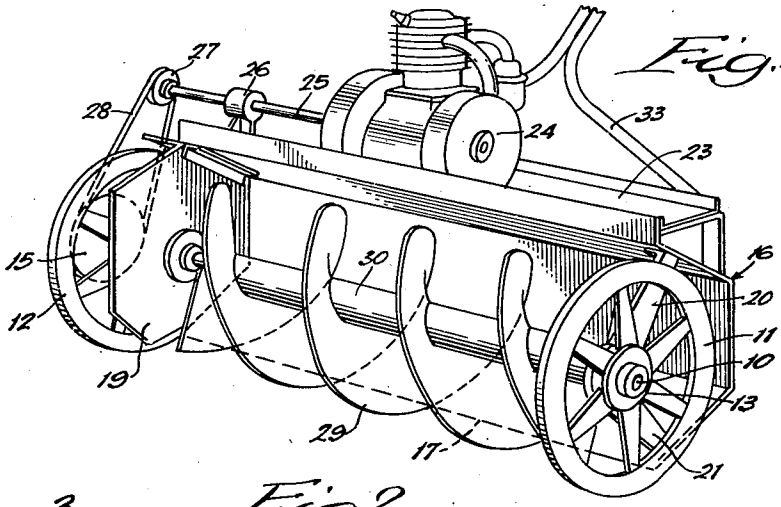


Fig. 2

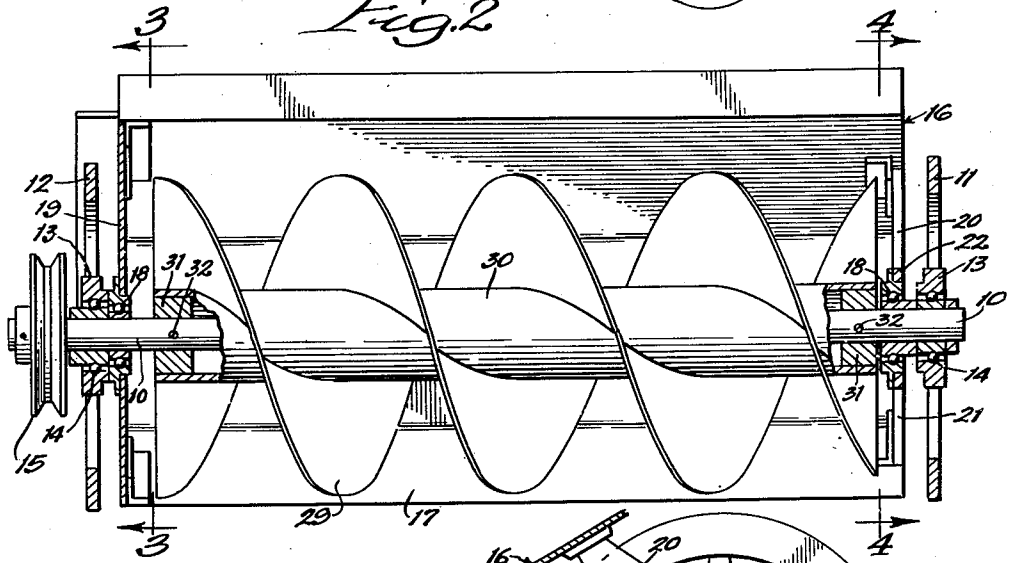


Fig. 3

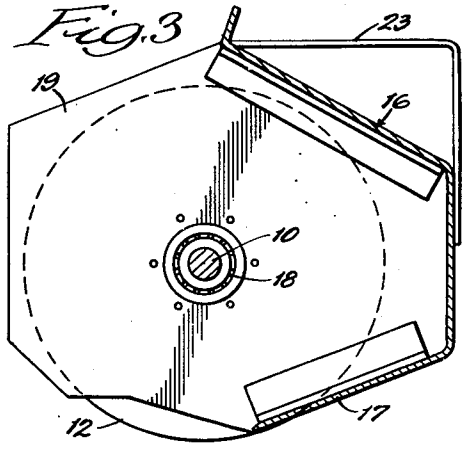
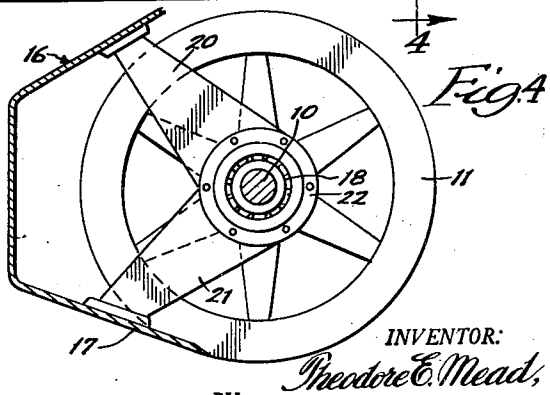


Fig. 4



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SNOW THROWER

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5 Claims. (Cl. 37—43)

This invention relates to a snow thrower and to apparatus for discharging particulate or powdered material.

An object of the invention is to provide apparatus which may be manipulated with ease and precision while discharging large volumes of snow, or the like, laterally of the path traversed by the vehicle. Other specific objects and advantages will appear as the specification proceeds.

The invention is shown, in an illustrative embodiment, by the accompanying drawing, in which—

Figure 1 is a broken perspective view of thrower apparatus embodying my invention; Fig. 2, a front view in elevation, a part of the apparatus being shown in vertical section; Fig. 3, a vertical sectional view, the section being taken as indicated at line 3—3 of Fig. 2; and Fig. 4, a sectional view, the section being taken as indicated at line 4—4 of Fig. 2.

In the illustration given, 10 designates a shaft which is mounted upon the spaced side wheels 11 and 12. I prefer to equip the hub 13 of the wheels with antifriction bearings 14, whereby the wheels may rotate upon the shaft 10 independently of the rotation of shaft 10. Mounted upon one end of the shaft 10 is a pulley 15.

I provide a shield 16 having a lower follower portion 17, the shield being suspended upon the shaft 10 and preferably upon the bearings 18 disposed inwardly of the antifriction bearings 14. The shield frame 16 may be of any suitable shape or construction. In the illustration given, it is substantially U-shaped, with the open part of the U facing the wheels 11 and 12. On one side of the frame 16 and adjacent wheel 12, the frame 16 is provided with a side wall or flange 19. The side wall 19, which closes one end of the trough-like shield structure 16, is apertured and is mounted upon the bearing 18, as shown more clearly in Fig. 2. The other end of the frame 16 is provided with inwardly-extending braces or arms 20 and 21 which are joined to a ring 22 mounted upon the bearing 18, as shown more clearly in Figs. 2 and 1. In this manner, the housing or shield structure 16 is suspended by the antifriction means upon the shaft 10 independently of the wheels 11 and 12.

Upon the rear portion of the shield 16 is mounted a motor bracket support 23, and a motor 24 rests thereon. The drive shaft 25 of the motor 24 is supported within a bearing 26 mounted upon the bracket 23 and the end of the shaft 25 carries a small pulley 27. A belt 28 connects pulley 27 with the pulley 15 of shaft 10.

Fixed upon shaft 10 is a worm 29, having relatively wide inclined surfaces for directing the snow laterally toward the front of the device and the wheel 11. The wide spiral blades give a blowing effect which is highly effective in removing snow and similar material. In the specific structure shown, the worm 29 is mounted upon a hollow tube 30 provided at its ends wtih plugs 31 welded to the tube 30. The plugs 31 may be secured to the shaft 10 by pins 32, or other suitable means.

The shield structure 16 may be supported upon the forward end of a propelling device or, if desired, handle

means 33 may be provided for manual operation of the thrower.

In the structure shown, it will be noted that the side wall 19 closes one end of the structure to prevent movement of snow, etc., in one direction while the snow moves freely in the opposite direction and may pass through the large openings in the side wheel 11 as well as forwardly of the wheel. Rapid rotation of the worm moves the snow in the path of the thrower entirely away from the path and laterally thereof so that the snow is deposited on one side of the sidewalk, driveway, or other area which is being cleared.

I have found that very effective operation is brought about by terminating the follower portion 17 of the shield 16 at a point rearwardly of a vertical line drawn through the center of shaft 10. By placing the forward edge of the follower 17 at a point to the rear of the shaft 10, as indicated more clearly in Figs. 3 and 4, I find that the worm edge is supported slightly above the surface and that it is highly effective in removing all of the snow from the surface. Irrespective of the rotation of the shield frame 16 upon the shaft 10, the leading edge of the follower 17 is behind the center of the worm and effective gathering action is produced thereby. Even though the shaft 10 is rotated rapidly, the independent antifriction bearings 13 enable wheels 11 and 12 to be operated independently thereof and the snow is driven laterally of the device and through the open spaces of wheel 11.

While, in the foregoing specification, I have shown a specific structure in considerable detail for the purpose of illustrating one phase of the invention, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A thrower device, comprising a pair of spaced wheels equipped with antifriction bearings, a shaft journaled in said bearings, a worm fixed upon said shaft, a shield suspended upon said shaft and having its forward lower edge at the rear of said shaft, and power means for rotating said shaft, said shield being pivotal about the longitudinal axis of said shaft.

2. Thrower apparatus, comprising a pair of spaced wheels equipped with antifriction bearings, a shaft mounted therein, a worm fixed upon said shaft, a shield housing equipped with antifriction bearings receiving said shaft and being suspended thereon for pivotal movement relative thereto, and power means for rotating said shaft.

3. A thrower device, comprising a pair of spaced wheels equipped with antifriction bearings, a shaft journaled in said bearings, a worm fixed upon said shaft and adapted to drive material laterally toward one of said wheels, said latter wheel having open spaces therein for the movement of material therethrough, a follower shield suspended upon said shaft, and power means for rotating said shaft.

4. A snow thrower device comprising a pair of spaced wheels equipped with antifriction bearings, a shaft journaled therein, a worm fixed upon said shaft, a shield housing equipped with spaced antifriction bearings receiving said shaft and suspended thereon for pivotal movement relative thereto, said housing having a lower follower portion with its leading edge terminating below said shaft, and power means carried by said housing for rotating said shaft, the wheel adjacent the discharge end of said worm having openings therethrough to permit the passage of snow outwardly therefrom.

5. A snow thrower device, comprising a shaft, a pair of spaced wheels equipped with antifriction bearings receiving opposite end portions of said shaft, a shield housing equipped with antifriction bearings receiving said shaft for suspending said housing upon said shaft, handle

means for tilting said housing upon said shaft, power means carried by said housing for rotating said shaft, and a worm mounted upon said shaft for directing snow toward one end thereof, said wheel at said end toward which said snow is directed being provided with open spaces for the flow of material therethrough.

References Cited in the file of this patent

UNITED STATES PATENTS

1,520,916	Townsend	Dec. 30, 1924
2,103,510	Brown	Dec. 28, 1937
2,566,724	Heil	Sept. 4, 1951
2,632,263	Cooper	Mar. 24, 1953