May 3, 1932. T. WILKES 1,856,981

COAL DISTRIBUTOR

Filed Jan. 8, 1932

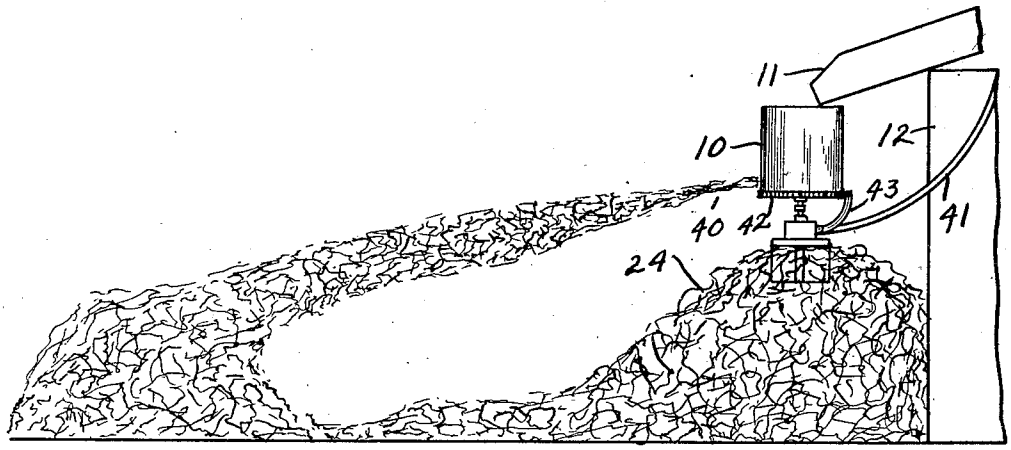

Fig. 1.

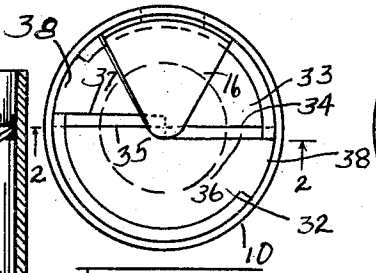

Fig. 3.

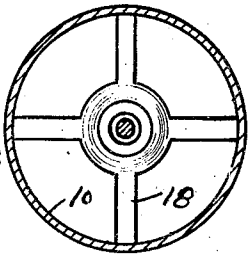

Fig. 4.

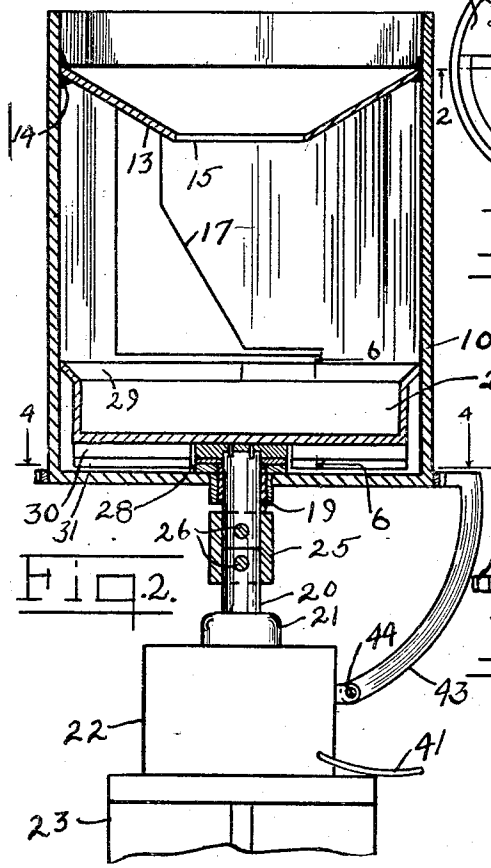

Fig. 2.

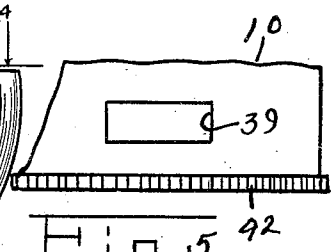

Fig. 5.

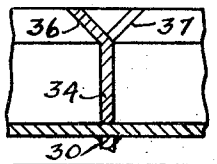

Fig. 6.

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UNITED STATES PATENT OFFICE

TRAUB WILKES, OF NEW YORK, N. Y.

COAL DISTRIBUTOR

Application filed January 8, 1932. Serial No. 585,566.

This invention relates to an improved centrifugal coal distributor and has for an object to provide an improved coal distribution device which will cooperate with a coal chute for uniformly distributing the coal over a given area.

A further object of this invention is to provide an improved coal distributor which is useful both in coal yards or bins, having a large area as well as in holes of ships or in coal cars.

Yet a further object of this invention is to provide a centrifugal coal distributor which may be operated to distribute the coal in the desired directions which is easily portable and may be placed on the top of a coal pile beneath a coal discharging chute to distribute the coal at a distance therefrom.

With the foregoing and other objects in view, as will hereinafter become apparent, this invention comprises the constructions, combinations and arrangement of parts hereinafter set forth, disclosed and shown on the accompanying drawings. In the drawings,

Figure 1 is an elevational view showing this invention in operation.

Figure 2 is a sectional view through the distributor mechanism per se.

Figure 3 is a top plan view of this invention.

Figure 4 is a sectional view on line 4—4 of Figure 2.

Figure 5 is an enlarged detail view of the side of the hopper, and

Figure 6 is a section on line 6—6 of Figure 2.

There is shown at 10 the receiving cylinder or hopper for receiving the coal from a coal chute 11, the coal chute 11 resting on one side 12 of the coal bin. An inner-conical rim 13 is provided in the cylinder 10, being affixed thereto by any suitable means as by welding 14, the rim 13 having an orifice 15 centrally thereof. Supported below the orifice 15 is a coal receiving plate 16, a web 17 rising therefrom at one side thereof assisting in supporting both the plate 16 and the rim 13, the plate 16 being affixed to the inside of the hopper in any suitable manner.

The bottom of the hopper 10 is formed in a webb as at 18 and is supported on a bearing 19 on the shaft 20 of an electric motor 21, the motor 21 being enclosed in a housing 22 and fixed on a webbed support or legs 23. The legs 23 may be placed either on the bottom of a coal bin or embedded in a coal pile 24 when in operation, as shown in Figure 1. The shaft 20 is preferably separable, the two sections thereof being joined by a coupling 25 and pins 26. The top of the shaft 20 projects through the bottom of the cylinder and rotatably supports a hopper 27 within the cylinder 10, a suitable bearing 28 being formed between the bottoms of hopper 27 and of cylinder 10. The rotatable hopper 27 has flaring sides 29, which flare outwardly so as to prevent any substantial amount of coal escaping between the edges of hopper 27 and the inside of cylinder 10, it being observed that the webbed bottom of cylinder 10 will allow such minor amounts that do escape therebetween to fall below. To assure that no such escape coal should should remain on the webbed bottom 18, wiping blades 30, the bottom edge being flared as at 31, are secured to the bottom of hopper 27 so as to wipe any coal off the webs 18.

The hopper 27 is divided into a plurality of compartments 32 and 33, any suitable number being provided although only two have been shown in the present form. The compartments 32 and 33 are divided by a wall 34 and 35, the tops of the walls 34 and 35 each being bent as at 36 and 37, the bend being in the direction that the cylinder is to rotate. Adjacent each wall 34 and 35 an opening 38 is formed for each compartment provided in the hopper 27. At a level corresponding to the openings 38, an opening 39 is formed in the side of the cylinder 10.

In operation, the coal from the chute 11 drops onto rim 13 of the cylinder 10 and passes through the orifice 15 onto plate 16. The coal then piles up on blade 16 against the web 17 and then falls off from the side opposite the web into a hopper 27. The hopper 27 is rotated by the motor 21 in a clockwise direction as observed in Figure 3 so that as the coal falls off the plate 16 it falls in one or the other of the compartments of the hopper 27, the bent edges 36 and 37 of walls 34 and 35 never being in a position to become jammed by coal getting between the same and the bottom of plate 16 due to the fact that the coal is discharged from the plate 16 into the hopper 27 on one side only, the web 17 preventing any coal from discharging on the opposite side. The rim 13, web 17 and plate 16 also serve to prevent any great shock as the coal drops into the hopper 27.

As the hopper 27 rotates centrifugal force operates to move the coal outwardly from the sides thereof tending to cause the coal to pass out of openings 38 in the sides of hopper 27. Each time the opening 38 is in alignment with opening 39 in the side of cylinder 10, coal in that compartment will pass through the opening 39 in a stream as at 40, centrifugal force carrying this stream over to the opposite side of the hopper, the distance that it is carried depending on the speed at which the motor is operated, the operation of the motor being controlled by an appropriate switch connected with a power supply conduit 41. A ratch 42 is formed about the bottom of cylinder 10 and a spring secured arm 43 affixed to housing 22 is adapted to mesh therewith, the arm 43 being hinged to the housing 22 as by a spring hinge 44. Ordinarily the arm 43 is retained in the position shown, thereby holding its end in mesh with the ratch 42 preventing the cylinder 10 from rotating. When it is desired to change the direction that the coal is being distributed, the arm 43 is rotated about its hinge 44 against the action of the spring thereon, allowing its end to disengage from the ratch 42 whereby the cylinder 10 may be rotated to face the opening 39 in proper position and the arm 43 is again placed in mesh with ratch 42.

The novel features and the operation of this device will be apparent from the foregoing description. While the device has been shown and the structure described in detail, it is obvious that this is not to be considered limited to the exact form disclosed and that changes may be made therein within the scope of what is claimed without departing from the spirit of the invention.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. A centrifugal coal distributor for coal bins or the like comprising a receiving cylinder, an orificed rim secured therein, a plate secured to said cylinder below the orifice of said rim, a web projecting upwardly on one side of said plate, a rotatable hopper within said cylinder below said plate, walls dividing said hopper into a plurality of compartments, the top edges of said walls being bent in the direction said hopper is rotated, each compartment having an opening in the side thereof adjacent said dividing wall, said cylinder having an opening in the same plane with said openings in said hopper compartments, and means for rotating and supporting said hopper within said cylinder.

2. A centrifugal coal distributor for coal bins or the like comprising a receiving cylinder, an orificed rim secured therein, a plate secured to said cylinder below the orifice of said rim, a web projecting upwardly on one side of said plate, a rotatable hopper within said cylinder below said plate, walls dividing said hopper into a plurality of compartments, the top edges of said walls being bent in the direction said hopper is rotated, each compartment having an opening in the side thereof adjacent said dividing wall, said cylinder having an opening in the same plane with said openings in said hopper compartments, means for rotating and supporting said hopper within said cylinder, a ratch formed on said cylinder, and an arm adapted to mesh with said ratch to releasably hold said cylinder against rotation, said arm being secured on said supporting means.

3. A centrifugal coal distributor for coal bins or the like comprising a receiving cylinder, an orificed rim secured therein, a plate secured to said cylinder below the orifice of said rim, a web projecting upwardly on one side of said plate, a rotatable hopper within said cylinder below said plate, walls dividing said hopper into a plurality of compartments, the top edges of said walls being bent in the direction said hopper is rotated, each compartment having an opening in the side thereof adjacent said dividing wall, said cylinder having an opening in the same plane with said openings in said hopper compartments, a webbed bottom for said cylinder, and wiping blades secured to the bottom of said rotating hopper, whereby the rotation of said hopper will keep the bottom of said cylinder free of coal.

4. A centrifugal coal distributor for coal bins or the like comprising a receiving cylinder, an orificed rim secured therein, a plate secured to said cylinder below the orifice of said rim, a web projecting upwardly on one side of said plate, a rotatable hopper within said cylinder below said plate, walls dividing said hopper into a plurality of compartments, the top edges of said walls being bent in the direction said hopper is rotated, each compartment having an opening in the side thereof adjacent said dividing wall, said cylinder having an opening in the same plane with said openings in said hopper compart-

ments, a webbed bottom for said cylinder, wiping blades secured to the bottom of said rotating hopper, whereby the rotation of said hopper will keep the bottom of said cylinder free of coal, said supporting and rotating means comprising a web support, a motor secured thereon, and a shaft projecting upwardly from said motor through the bottom of said cylinder and secured to said hopper, said shaft being separable.

In testimony whereof I affix my signature.

TRAUB WILKES.