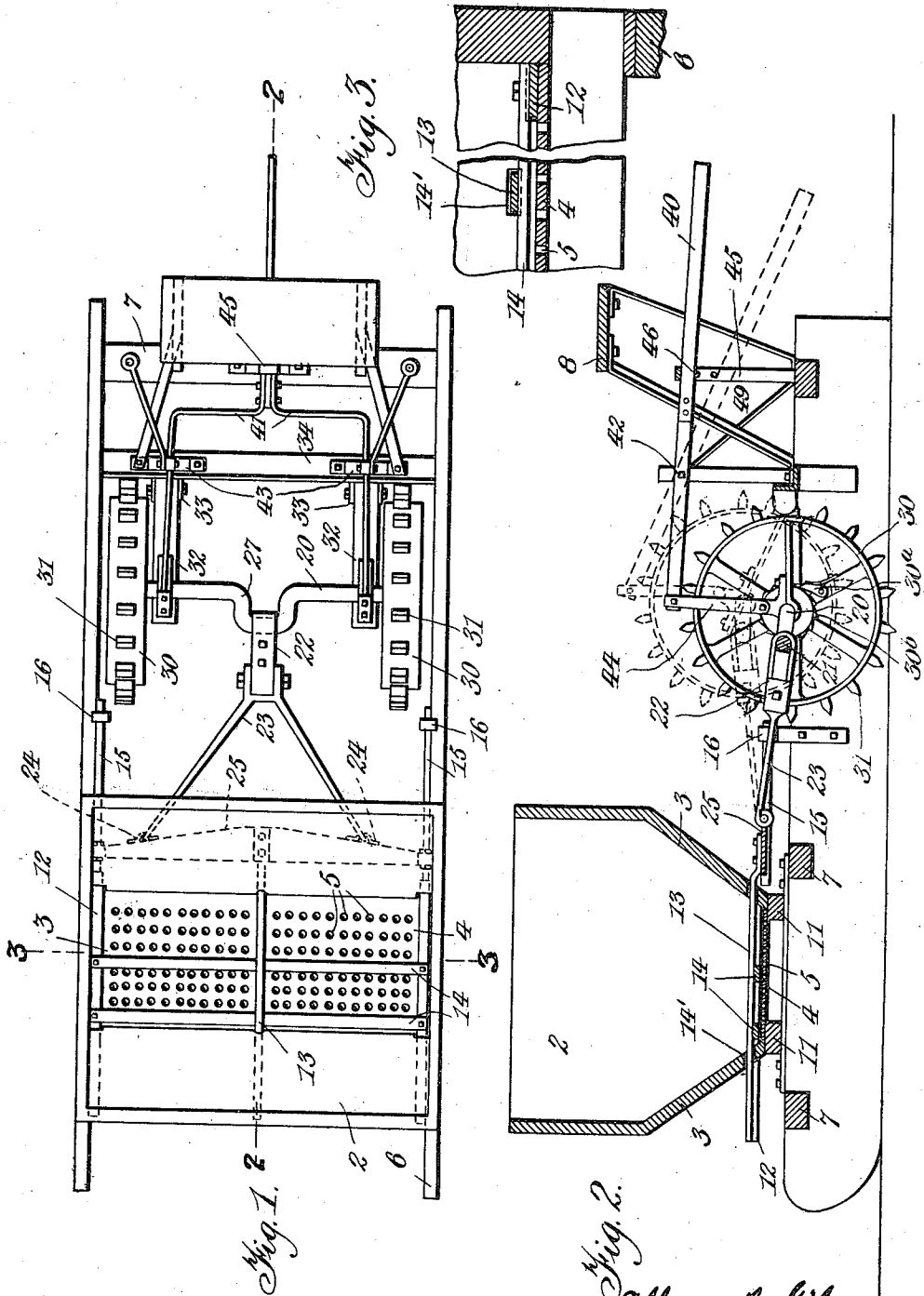


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DEVICE FOR SPREADING MATERIAL.
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1,013,546.

Patented Jan. 2, 1912



Witnesses
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Fig. 2.
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UNITED STATES PATENT OFFICE.

ALBANI BENJAMIN GIBEAU AND HENRY HADLEY, JR., OF VERDUN, QUEBEC, CANADA, ASSIGNORS OF ONE-THIRD TO CHARLES ALFRED LAMOTHE, OF VERDUN, CANADA.

DEVICE FOR SPREADING MATERIAL.

1,013,546.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed February 27, 1911. Serial No. 611,124.

To all whom it may concern:

Be it known that we, ALBANI BENJAMIN GIBEAU and HENRY HADLEY, Jr., both of Verdun, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Devices for Spreading Materials; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates more particularly to a device adapted for use in spreading cinders, sand or similar material upon snow or ice covered surfaces of walks or pavements, particularly the sidewalks of cities or towns where a rapid spreading of such material is desirable, the object of the invention being to provide a device of this kind which will be simple in construction, and which will act to spread the material uniformly upon such surfaces, and whereby such spreading may be accomplished rapidly and at a minimum cost.

The invention comprises briefly a hopper or receptacle mounted upon a carrying device adapted to be drawn or propelled along the surface upon which the material is to be spread and provided with means adapted to be automatically actuated by such movement of the carrier whereby the discharge of the material from the hopper upon such surface is effected.

For full comprehension, however of our invention reference must be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate the same parts and wherein—

Figure 1 is a plan view of our device; Fig. 2 is a longitudinal sectional view thereof taken on line 2—2 Fig. 1; and Fig. 3 is an enlarged detail sectional view taken on line 3—3 Fig. 1.

Our improved device comprises a hopper 2 in which the material to be spread is placed, such hopper having the lower portion of two of its walls converging downwardly as shown at 3, the bottom of the hopper being constituted by a plate 4 having perforations 5 through which the material is discharged from the hopper. This hopper is mounted upon a suitable carrier adapted to be drawn or propelled by suitable means over the surface upon which the material is spread. This carrier as here shown is in the form of an open top sled having runners

6 connected by cross-braces 7 and having a seat 8 for the operator, such sled being adapted to be provided with a suitable draft attachment, not necessary here to be shown, whereby it may be drawn over the surface upon which the material is to be spread, the hopper being supported near the front end of the sled upon cross bars 11 resting at opposite ends upon the runners 6.

In order to insure a constant and even discharge of the material through the perforations 5 a horizontally arranged grille-like frame or member, which may be termed a shaker, is located above the bottom 4 and adapted to be reciprocated thereacross, such frame or member being composed of the side and center longitudinal bars 12 and 13 respectively, connected by cross-pieces 14, which latter as they are moved to and fro across the bottom plate 4 effect an agitation or shaking of the material necessary to cause it to discharge through the perforations in the plate; the longitudinal bars, which serve as supports for the cross-bars being supported in suitable slots or openings indicated at 14' in the inclined portions of the hopper walls, the side bars 12 having rearward extensions 15 passing freely through eyes 16 secured to the runners 6 and serving to guide the frame in its reciprocation. This frame or shaker is reciprocated from a drive shaft 20 cranked as at 21, to which crank is suitably connected, as by the strap 22, one end of a Y-shaped connecting rod 3, the opposite or branched end of the rod 23 being connected as at 24 to a cross-head 25 extending between and connected to the rearward extensions 15.

Shaft 20 is adapted to be rotated when the sled is in motion by a pair of drive wheels 30 preferably loose on said shaft and each carrying a pawl 30^a engaging a ratchet wheel 30^b rigid upon the shaft, this arrangement permitting variation in the rotation of the wheels when the device is moving around a corner or otherwise following an irregular course, these wheels each having its periphery formed with teeth or spikes 31 which engage the surface over which the sled is traveling. In order that the toothed drive wheels may be moved when desired into or out of engagement with such surface, we prefer to mount the shaft 20 upon the free ends of a pair of swinging arms 32 hinged at their opposite ends to the sled, being here

shown as connected to hinge eyes 33 formed on an angle bar 34 forming a cross-brace between the runners 6.

The above described construction and arrangement of parts provides a simple and easily manipulated means for reciprocating the shaker whereby the movement of the sled may be caused to automatically operate the said shaker to effect the discharge of the material from the hopper upon the surface over which the sled is passing.

The means for swinging the arms 32 to move the wheels 30 into or out of operative position as here shown comprises an operator's lever 40 branched as at 41, such branches being fulcrumed as at 42 to standards 43 upon the angle bar 34 while the ends of the branches 41 are connected by links 44 to the arms 32, the lever being retained with the drive wheels 30 in operative position, as shown in full lines in Fig. 2, between the top of a U-bracket 45 carried by one of the cross brackets 7, and a removable pin 46 supported in such bracket. To raise the drive wheels out of operative position the lever 40 is swung to the position indicated in dotted lines and the pin 46 inserted through the opening 49 in such bracket. The lever is thus adapted to suspend the drive shaft when desired in position with the toothed wheels clear of the surface upon which the sled rests or along which it may be moving.

In operation the parts are in the position shown in full lines in Fig. 2 with the spikes in the wheel projecting below the bottom of the sled runners and into engagement with the surface on which the sled rests, and as the sled moves over the surface the engagement of the teeth or spikes 31 therewith causes the wheel 30 to rotate, thus reciprocating by means of cranked shaft 20 and connecting rod 23 the grille-like frame or shaker located above the perforated bottom 4, the moving of this frame across such bottom causing a regular discharge of material therethrough and upon the surface over which the device passes.

What we claim is as follows:—

1. A device for spreading cinders upon a snow or ice covered surface, comprising a carrier adapted to be moved along the said surface and to be supported at opposite sides thereon, a hopper for containing the cinders mounted upon the carrier and having its bottom extending between the opposite sides of the carrier and formed throughout its width with vertically extending perforations, a reciprocatory shaker carried by the hopper and adapted to reciprocate in a direction parallel to the direction of travel of the carrier and having a bar extending transversely to its direction of reciprocation within the hopper adjacent its bottom and from side to side thereof and adapted to act

upon the cinders in the hopper to cause them to be discharged through the said perforations, a bodily movable cranked shaft mounted upon the carrier, a connecting rod connecting such shaft to the shaker, a toothed drive wheel mounted upon the shaft, and means whereby such drive wheel may be either locked in position engaging the said surface or suspended thereabove.

2. A device for spreading cinders upon a snow or ice covered surface, comprising a carrier adapted to be moved along the said surface and to be supported at opposite sides thereon, a hopper for containing the cinders mounted upon the carrier and having its bottom extending between the opposite sides of the carrier and formed throughout its width with vertically extending perforations, a reciprocatory shaker carried by the hopper and having a bar extending transversely to its direction of reciprocation within the hopper adjacent its bottom and from side to side thereof and adapted to act upon the cinders in the hopper to cause them to be discharged through the said perforations, a bodily movable drive shaft extending between opposite sides of the carrier and having its central portion cranked, a pair of toothed drive wheels mounted one on each end of the said cranked shaft, and a branched connecting rod operatively connecting the cranked shaft and shaker, the branches of the connecting rod diverging laterally and connecting at their separated ends to the shaker to cause operating power to be applied thereto near opposite sides thereof, and means for positively retaining the said shaft in position with the drive wheels in or out of engagement with the said surface.

3. A device for spreading cinders upon a snow or ice covered surface, comprising a sled having a pair of runners spaced laterally from one another and connected by cross braces, a hopper supported upon the sled and extending between the runners, such hopper having an oblong perforated bottom with its greatest dimension transverse to the sled and equal to the space between the runners, the said bottom being formed to present perforations disposed throughout the transverse length thereof, a reciprocatory shaker carried by the hopper within the latter above and adjacent the said bottom and having bars extending longitudinally and transversely to its direction of reciprocation, the said transverse bars extending from side to side of the hopper, guiding rods projecting from the shaker longitudinally of the sled on opposite sides thereof, guiding members carried by the runners and encircling the said rods, a drive shaft extending between opposite sides of the sled and having the central portion thereof cranked, a connecting rod connected

at one end to the said crank the opposite end
being forked with laterally extending
branches connecting to the said shaker;
means supporting such shaft whereby it may
5 be raised or lowered, a pair of toothed drive
wheels mounted one on each end of the shaft
and adapted when the shaft is lowered to
engage with the said surface, ratchet and
pawl connections between the shafts and
10 wheels whereby operative engagement will
be effected between such shaft and wheels

upon rotation of the wheels in one direction
only, and means for positively retaining the
said shaft in raised or lowered position.

In testimony whereof, we have signed 15
our names to this specification, in the pres-
ence of two subscribing witnesses.

ALBANI BENJAMIN GIBEAU.

HENRY HADLEY, JR.

Witnesses:

FRED. J. SEAU,

JOHN N. O'KEEFE.