

(No Model)

J. OLDFIELD.

SAND DEPOSITING APPARATUS FOR CARS.

No. 571,136.

Patented Nov. 10, 1896.

Fig. 1.

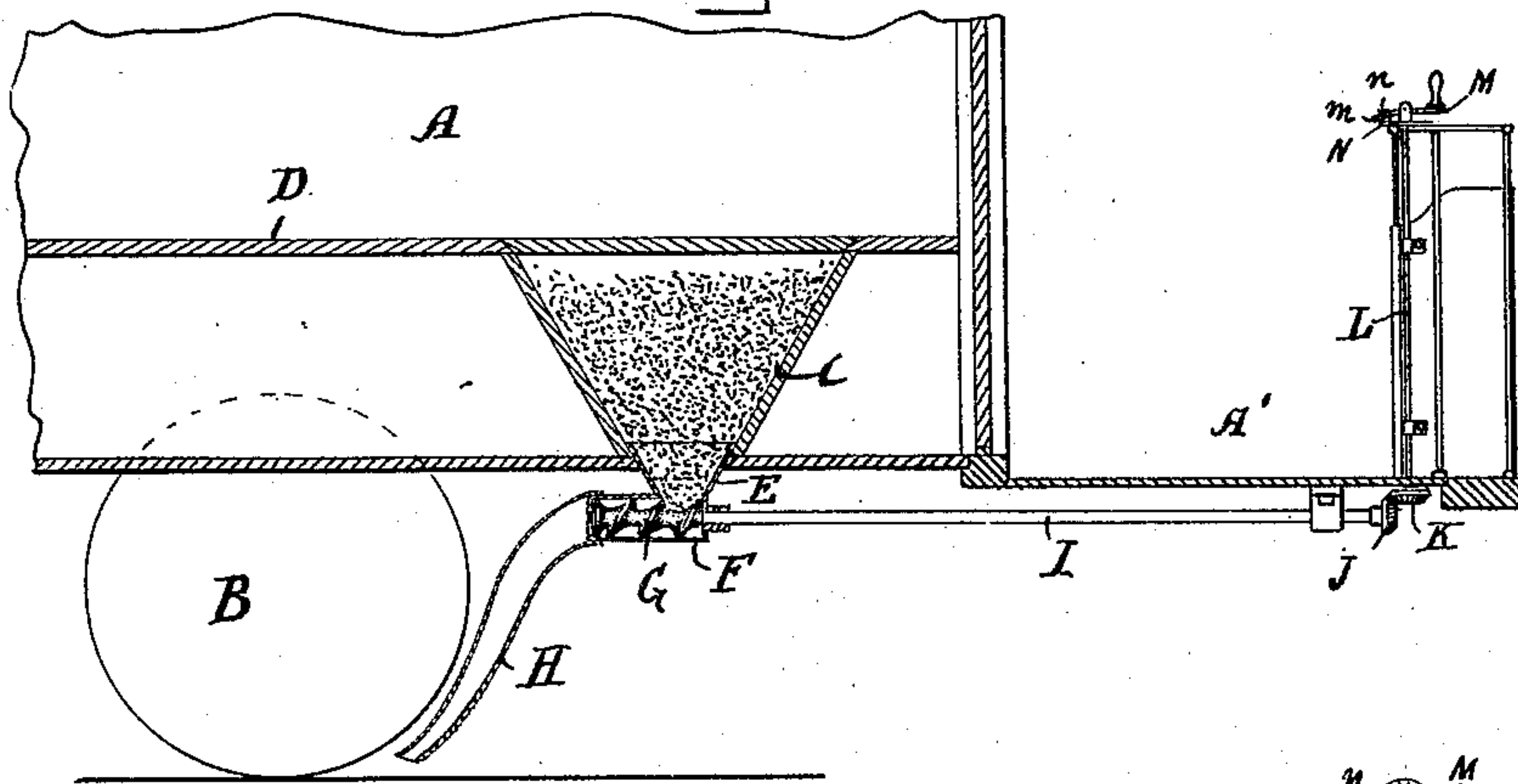


Fig. 2.

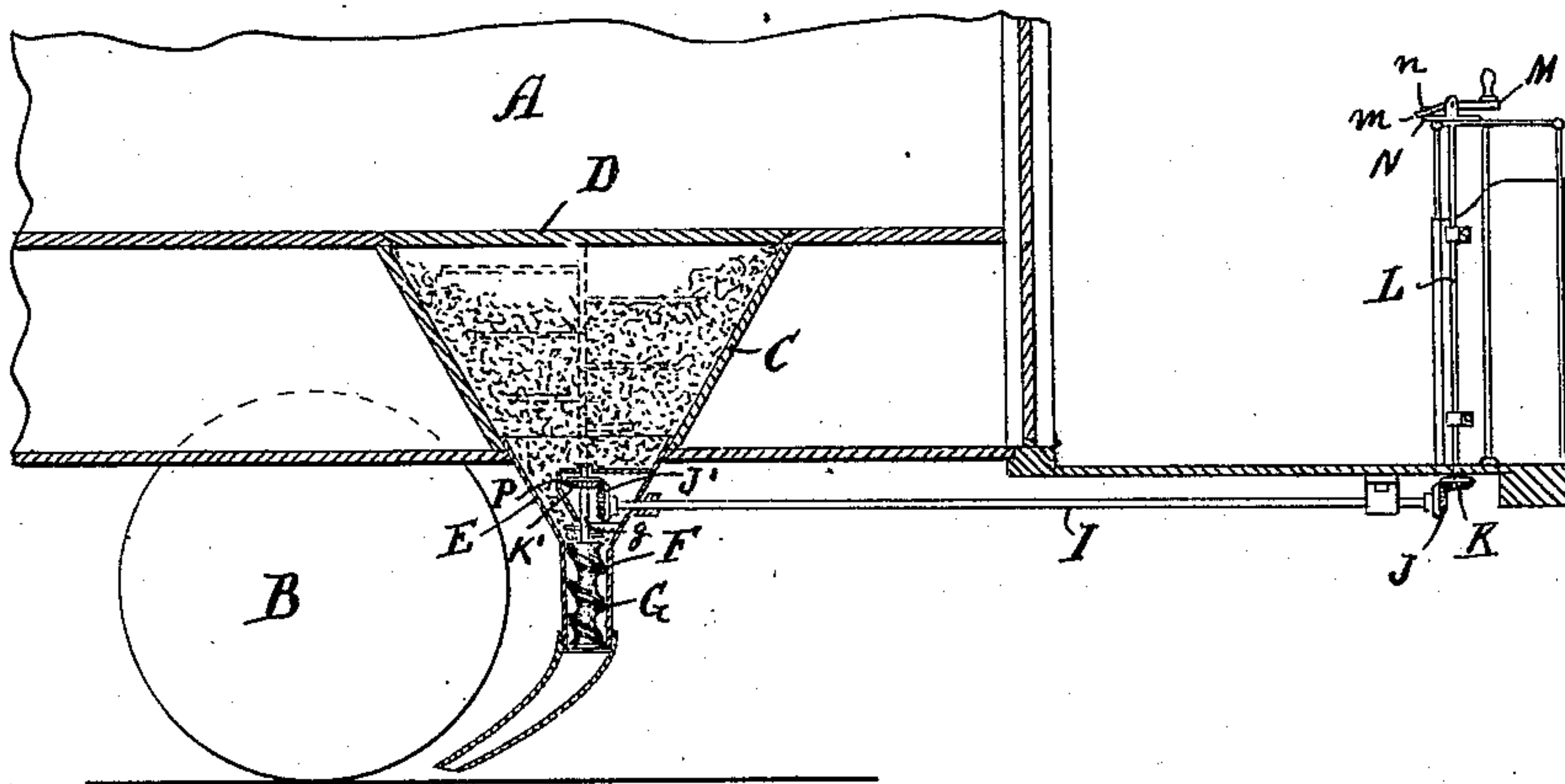


Fig. 4.

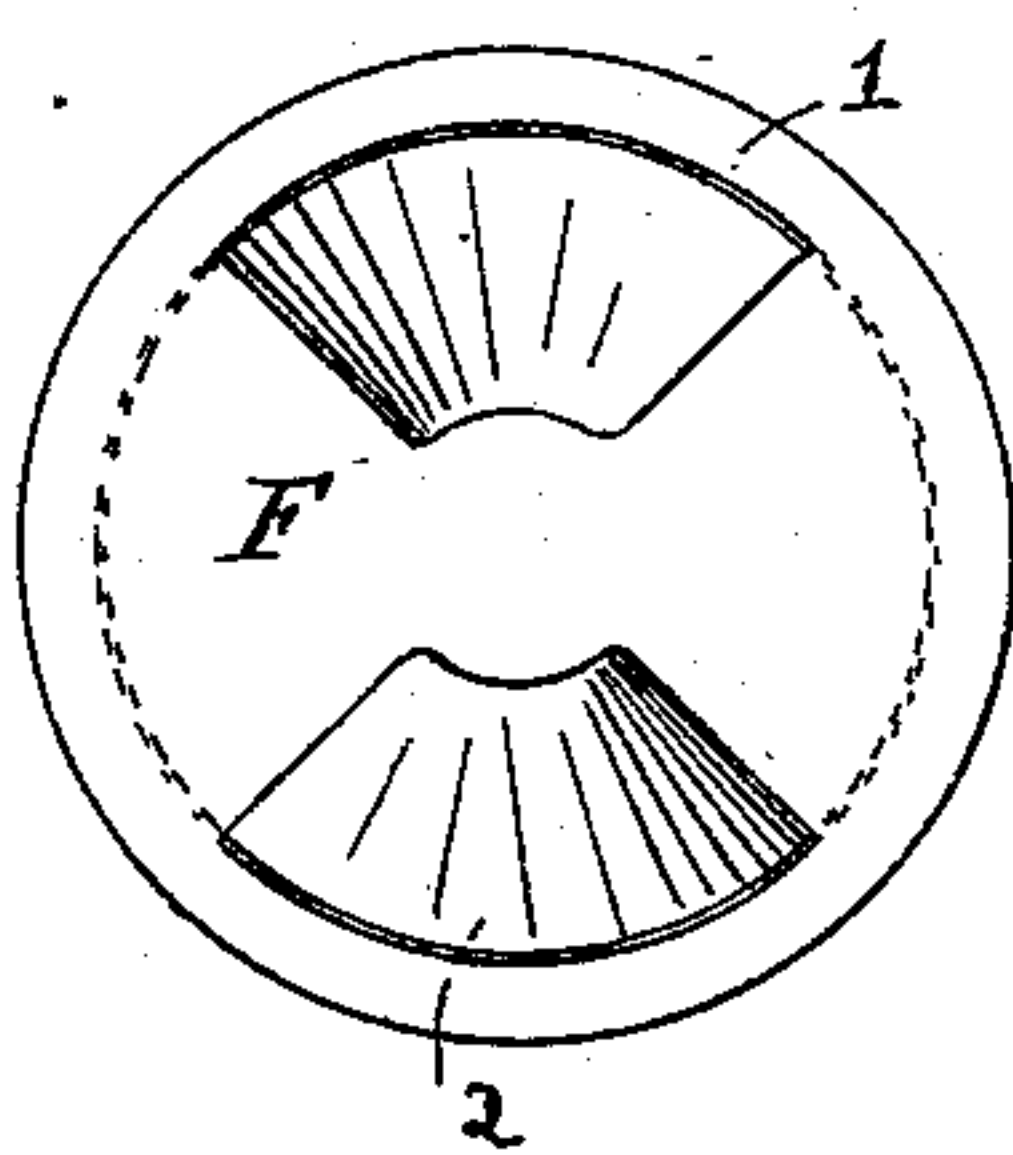


Fig. 3.

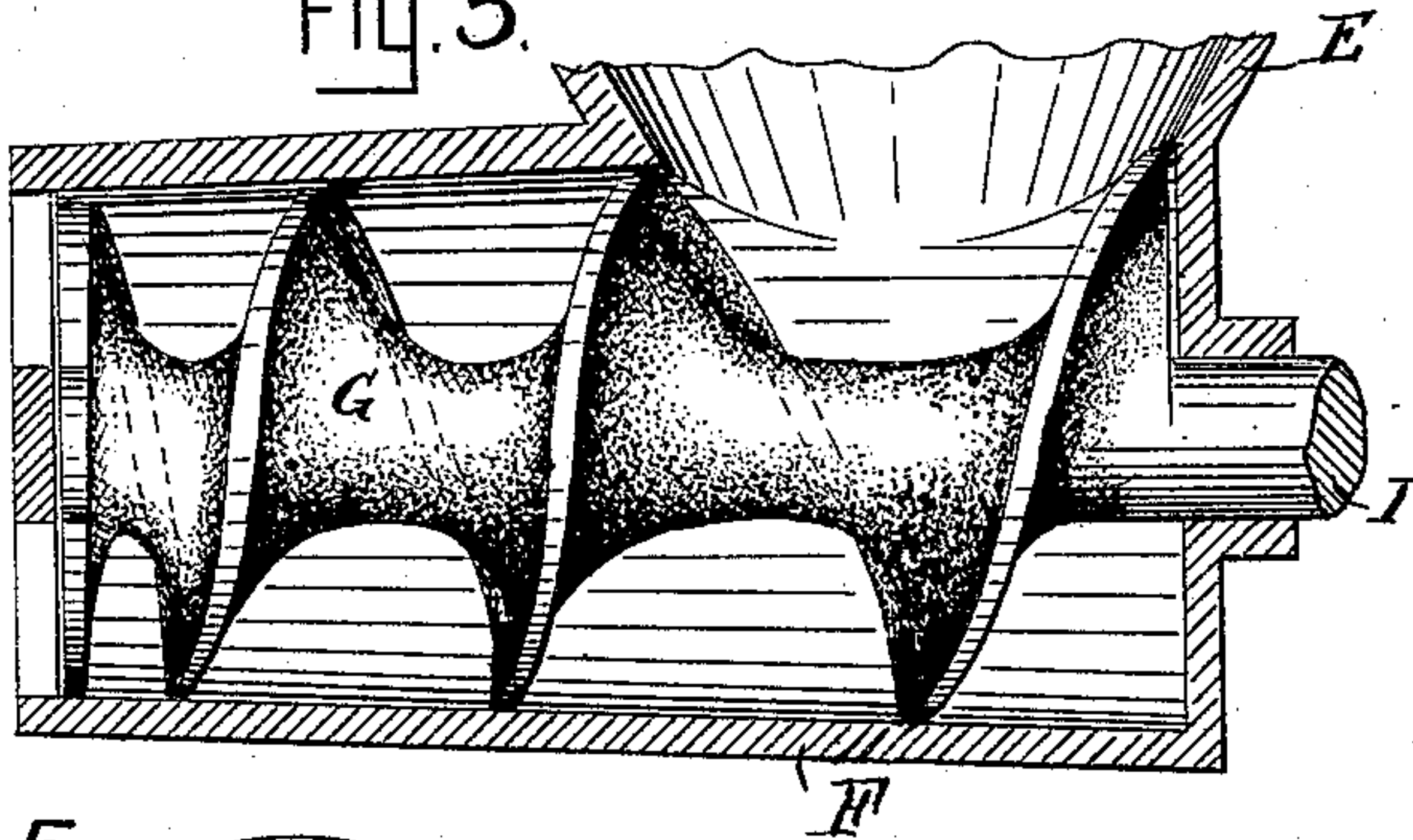
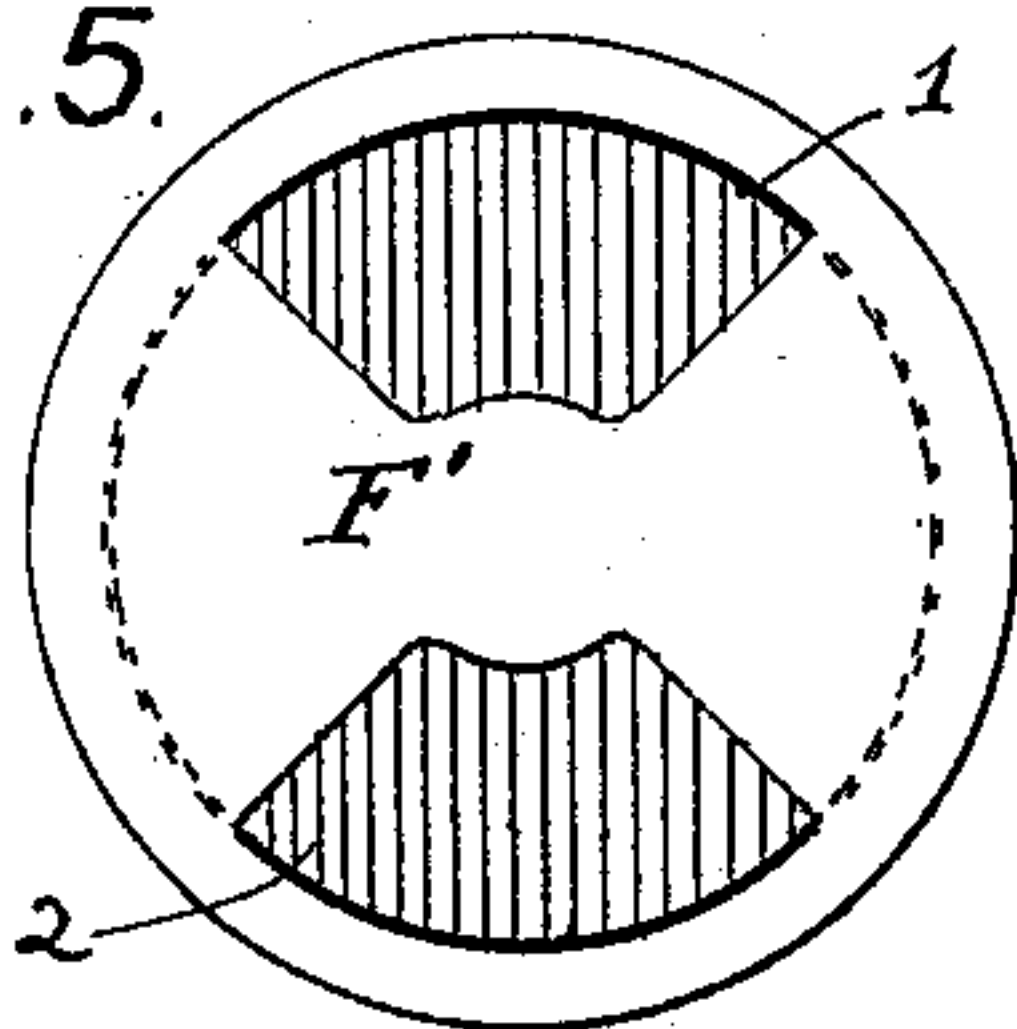


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN OLDFIELD, OF MEDFORD, MASSACHUSETTS.

SAND-DEPOSITING APPARATUS FOR CARS.

SPECIFICATION forming part of Letters Patent No. 571,136, dated November 10, 1896.

Application filed March 18, 1896. Serial No. 583,713. (No model.)

To all whom it may concern:

Be it known that I, JOHN OLDFIELD, a citizen of the United States, and a resident of Medford, in the county of Middlesex and State

5 of Massachusetts, have invented certain new and useful Improvements in Sand-Depositing Apparatus for Cars, of which the following, taken in connection with the accompanying drawings, is a specification.
10 The object of my invention is to produce an apparatus to be used in connection with street or other cars whereby sand, either dry or wet, can be deposited upon the rails in front of one of the fore wheels, whereby said
15 wheel will be caused to have a greater grip upon said rail, and thus assist the car in ascending steep inclines or when the rails are rendered slippery by frost or snow and also to retard the progress when the brakes are
20 applied, thus assisting to avoid collisions.

The invention consists of a screw having its delivery end so formed that it is divided into four sections, the outer surfaces of two opposite sections being on a plane and the other
25 two opposite sections being open to deliver the sand, said screw being inclosed within a casing having a head at its delivery end consisting of a plate that is divided into four sections, two of which are closed, the other two
30 being open, whereby the sand may be delivered or cut off as may be required, and in means for operating said screw, delivering the sand, and depositing it upon the rail, as hereinafter fully described, and pointed out
35 in the claims.

Referring to the accompanying drawings, Figure 1 represents a vertical section of a street-car fitted with a sand-feeding device, set horizontally, embodying my invention.
40 Fig. 2 is a similar view with the feeding device set vertically. Fig. 3 is a view of the feeding-screw and casing. Fig. 4 is an end view of the same with the screw in the position to deliver sand. Fig. 5 is a similar view
45 with the screw in the position to close the openings in the head, so that sand cannot pass out.

A represents a portion of a street-car, B one of the wheels thereof, and C a sand-box arranged under the seat D. To the lower end of the sand-box C is attached a hopper E, connected with a casing F, in which the screw G

works for feeding the sand. The delivery end of the said casing F is fitted with a pipe or tube H for conducting the sand to the rail in
55 front of the wheel B.

The screw G is of taper form, that is to say, its diameter at the receiving end is of slightly-larger diameter than its delivery end, and the screw is also preferably of a varying pitch, 60 the pitch at its receiving end being much greater than at its delivery end, each turn of the screw being made on a proportionate pitch, and the delivery end of said screw is formed with two flat surfaces of a quarter of 65 a circle and diametrically opposite each other. The casing F is at its delivery end also formed with two quadrantal flat surfaces and two quadrantal openings 1 2, so that when the flat surfaces of the end of the screw are opposite the openings in the end of the casing 70 the sand cannot escape, the end of the screw fully covering said openings, but as the screw is turned one-quarter of a revolution the openings are gradually unclosed and sand forced 75 out, and as the screw is turned another quarter the sand is still forced out, but is gradually cut off until the flat portion of the end of the screw again covers the openings 1 2. The sand that is forced through said openings 80 1 2 falls into a pipe or tube H and is conducted and delivered onto the rail in front of the wheel B.

When the screw is set longitudinally, as shown in Fig. 1, it is formed in one with a 85 shaft I, that extends to the front end of the platform, and on the end of this shaft is secured a bevel-wheel J, in gear with a bevel-wheel K on the end of a rod L, that extends up to the top of the dasher, the upper end of 90 said rod being formed with a fork, in which is mounted a handle-lever M, having a rear extension or tail *m*. Secured to the top of the rail of the dasher, just under the lever M, is a plate N, having on one side a small projecting piece *n*, beveled off to a level with 95 the plate N. The object of this projecting piece *n* is to form a stop for the tail *m* of the lever M, so as to indicate when the openings in the casing F are closed by the flat portion 100 of the end of screw G.

When the screw G is set in a vertical position, as shown in Fig. 2, the lower end of the screw rests upon the end of the casing

F, and the upper end of the screw is formed with a short shaft *g*, upon which is mounted a bevel-wheel *K'*, in gear with a bevel-wheel *J'* on the inner end of the shaft *I*. The bevel-wheels *K' J'* are inclosed within a casing *P* to protect them from the sand, said casing being formed in its upper portion with a bearing to receive the upper end of the shaft *g*. The shaft *I* is operated as before described.

It will be seen that when the openings 1 2 in the end of casing *F* are closed by the flat portion of the end of the screw the sand cannot escape. Now if the driver presses on the handle, so as to tilt the lever *M*, the tail *m* will be raised clear of the stop *n*, so that the handle-lever can be turned one revolution before the tail *m* again comes into contact with the stops *n*, thus causing the openings 1 2 in the head of the casing *F* to be opened twice and sand forced through same, the stops forming also an indicator, so that the driver will know when the sand supply is cut off or open.

When the screw is set vertically, as shown in Fig. 2, the shaft *g* may be formed with small arms, as shown, to stir up the sand; or, if desired, the said shaft may extend to near the top of the sand-box and have a series of arms to work in the sand-box, as indicated in dotted lines; or, if desired, the sand-box might be arranged on the platform and the shaft *g* extend up through the same and be fitted with a handle, in which case the shaft *I* and gears would not be required.

What I claim is—

1. In combination with a street or other car a sand-box, a sand-feeding device consisting

of a screw having its end formed with two quadrantal flat surfaces and a casing inclosing said screw the delivery end of said casing being formed with two quadrantal openings, means for operating said screw and a pipe or tube for conducting the sand to the rail, substantially as set forth.

2. In a sand-depositing apparatus for street or other cars a screw having its delivery end formed with two quadrantal flat surfaces and a casing having two quadrantal openings substantially as set forth.

3. In a sand-depositing apparatus for street or other cars a screw tapering from the receiving end to its delivery end, said delivery end being formed with two quadrantal flat surfaces in combination with a casing substantially as set forth.

4. In a sand-depositing apparatus for street or other cars a screw having a varying pitch, the pitch at its receiving end being greater than at its delivery end, each turn of said screw being on a proportionate pitch, the delivery end having two quadrantal flat surfaces and a casing inclosing said screw, the end of said casing having two quadrantal openings through which the sand is delivered substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 14th day of March, A. D. 1896.

JOHN OLDFIELD.

Witnesses:

CALEB H. SWAN,
EDWIN PLANTA.