

(No Model.)

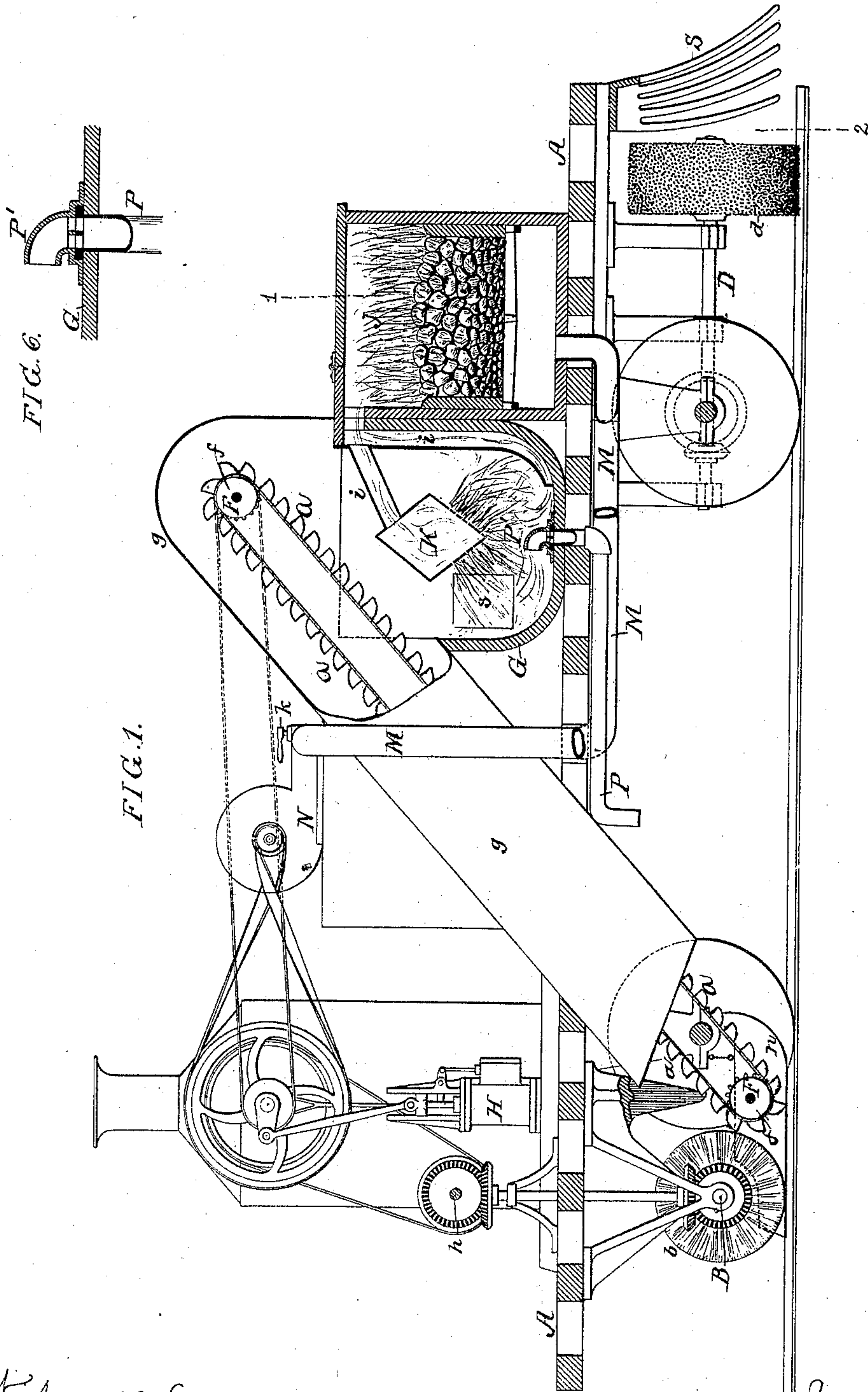
2 Sheets—Sheet 1.

W. BRISCOE & C. GALLAGHER.

APPARATUS FOR REMOVING SNOW FROM RAILWAY TRACKS.

No. 314,790.

Patented Mar. 31, 1885.



Witnesses:
John M. Clayton
Harry Drury

Inventors:
William Briscoe
and
C. Gallagher
by their Attys.
Hawson & Son

(No Model.)

2 Sheets—Sheet 2.

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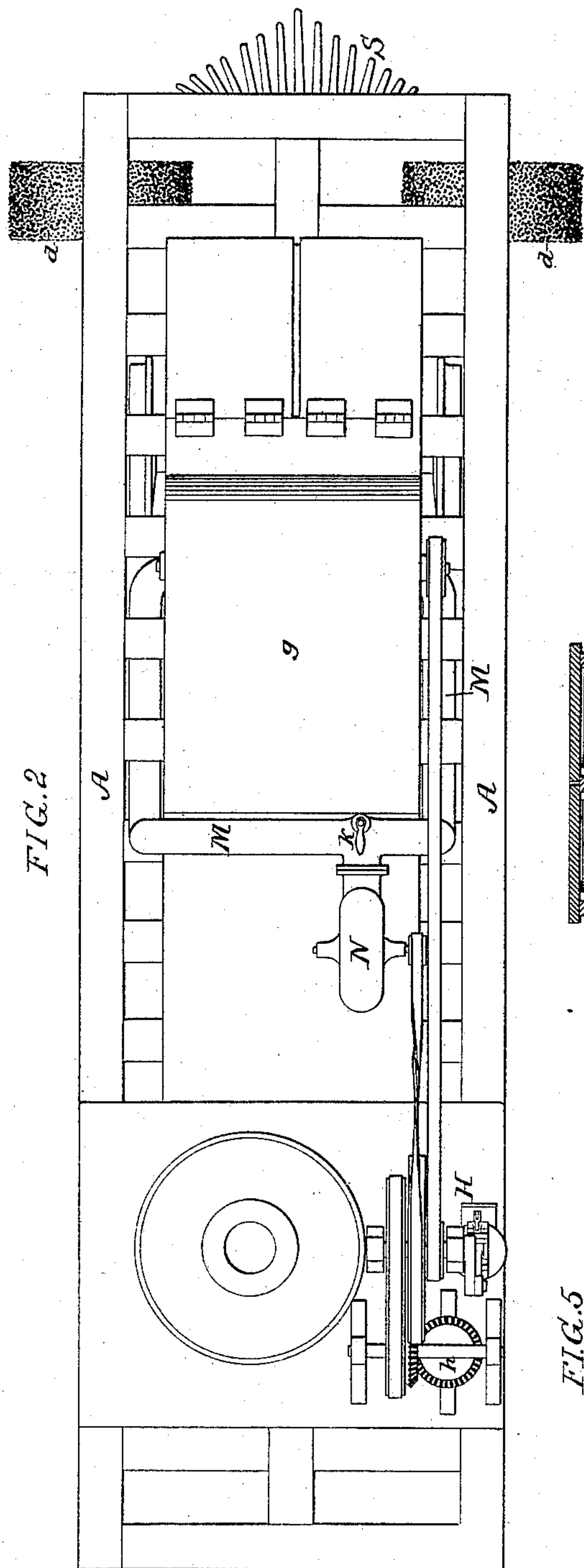


FIG. 2.

FIG. 4.

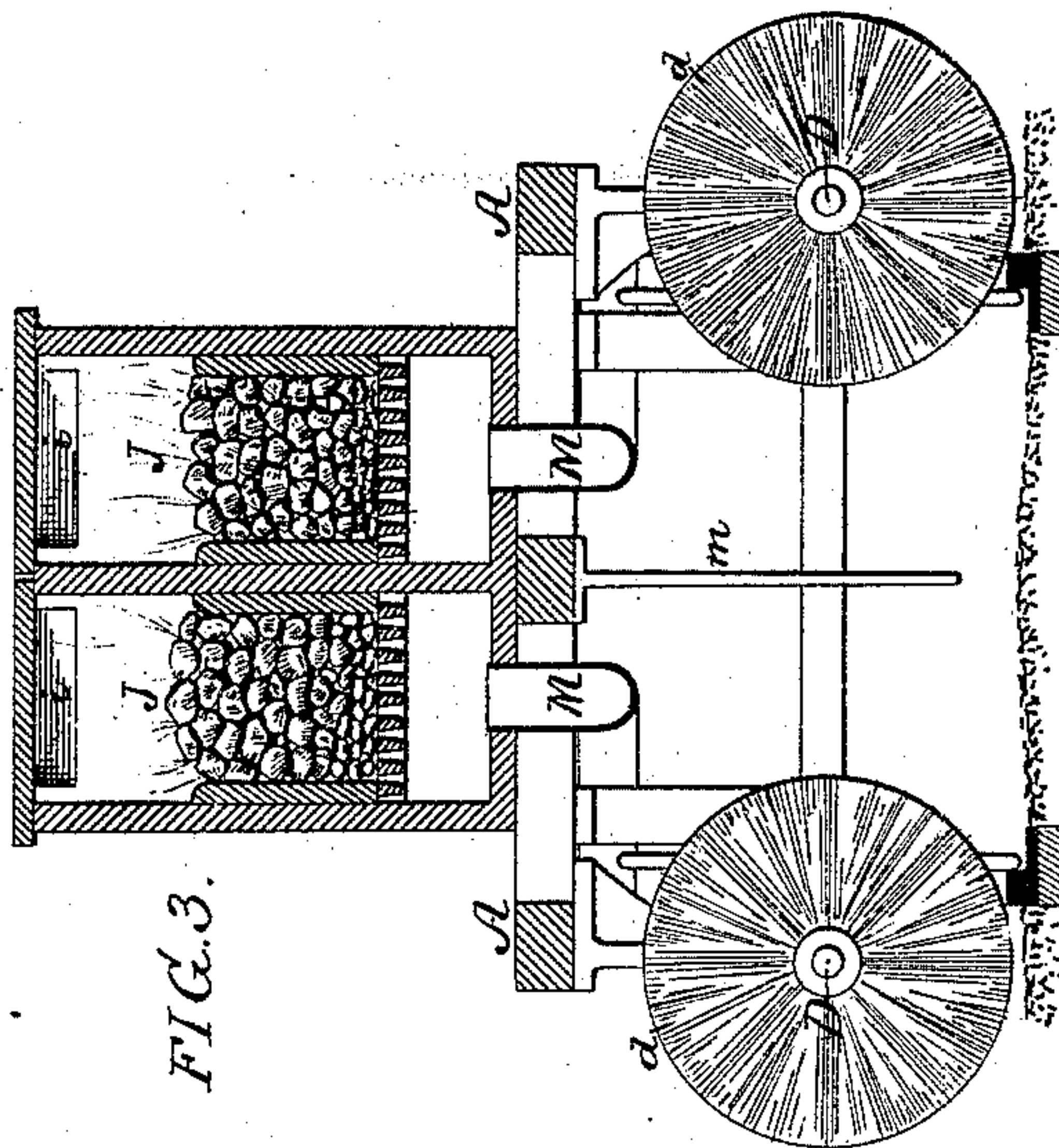
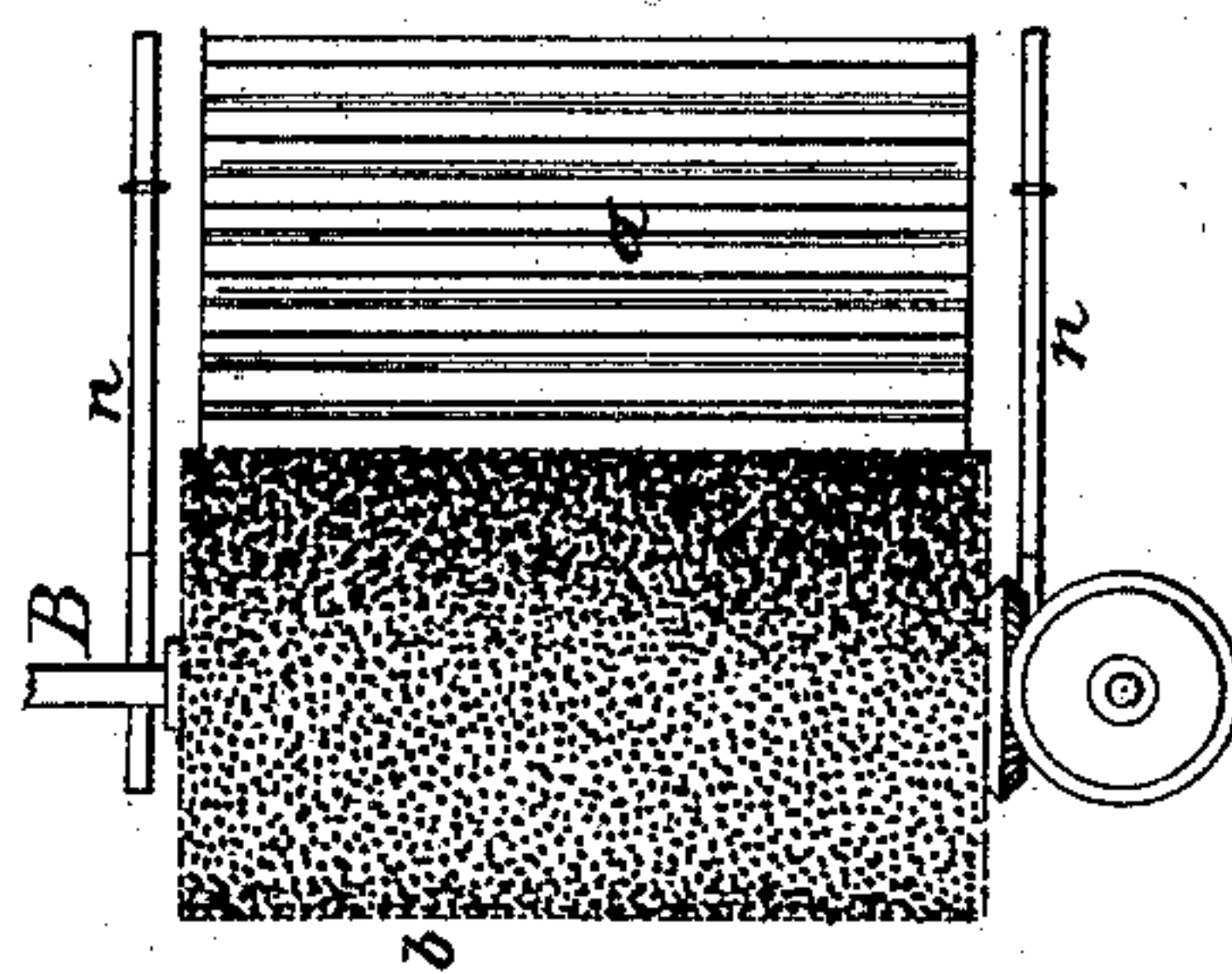


FIG. 3.

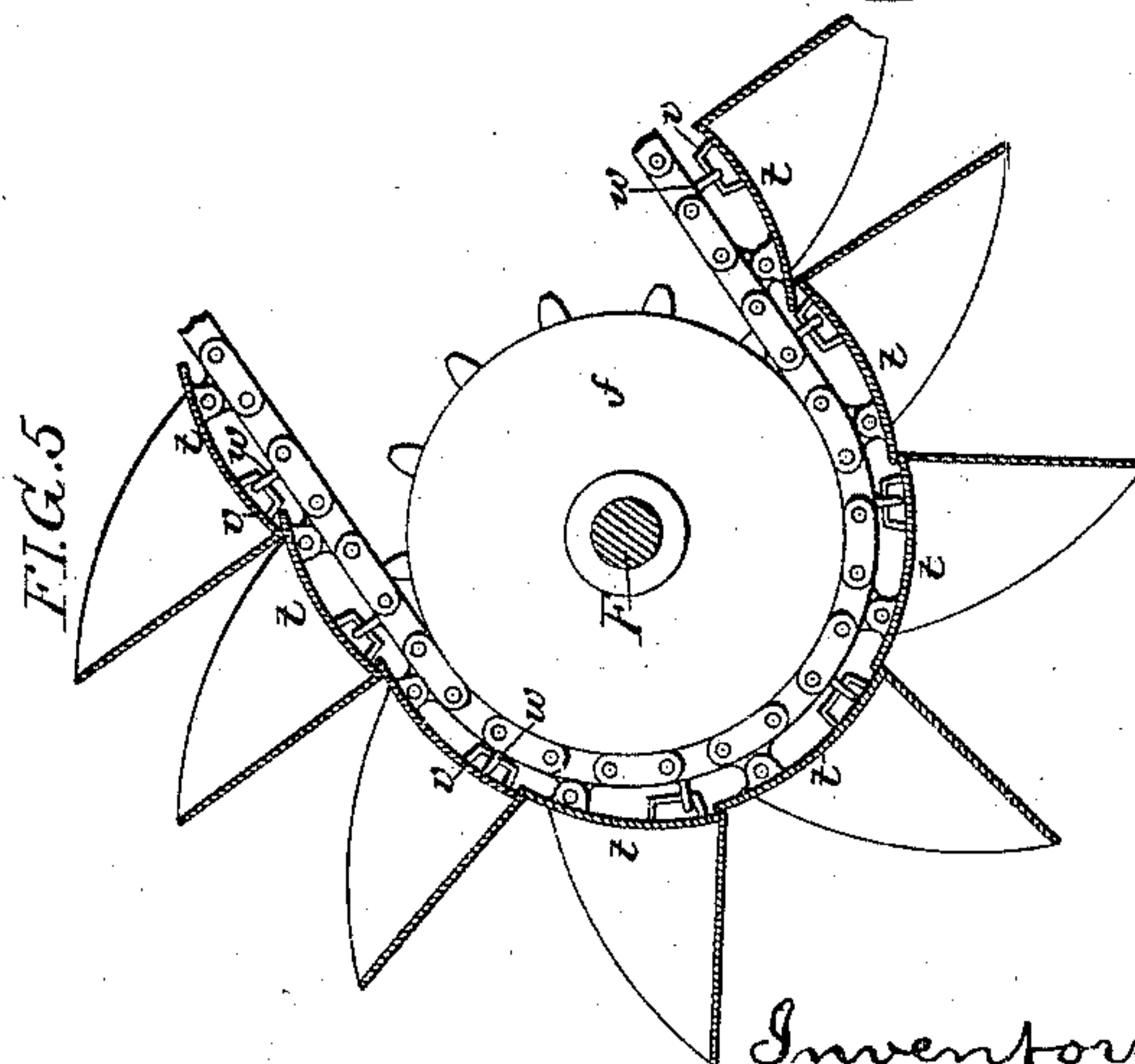


FIG. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM BRISCOE AND CHRISTOPHER GALLAGHER, OF PHILADELPHIA, PA.

APPARATUS FOR REMOVING SNOW FROM RAILWAY-TRACKS.

SPECIFICATION forming part of Letters Patent No. 314,790, dated March 31, 1885.

Application filed November 20, 1884. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM BRISCOE and CHRISTOPHER GALLAGHER, both citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Apparatus for Removing Snow from Railway-Tracks, Streets, &c., of which the following is a specification.

The object of our invention is to construct a device for removing snow from railway-tracks or streets, and for rapidly melting the same before discharging it into the gutter or at the side of the track.

In the accompanying drawings, Figure 1 is a longitudinal view, partly in elevation and partly in section, of our improved snow-melting device; Fig. 2, a plan view of the same; Fig. 3, a transverse section on the line 1 2, Fig. 1; and Figs. 4, 5, and 6, detached views of parts of the machine, Figs. 5 and 6 being on a larger scale than the other figures.

A is a truck or platform mounted upon wheels, in the same manner as an ordinary car-truck, and having bearings for a series of shafts, B, D, and F. The shaft B is near the rear of the truck, and carries a transverse brush, *b*, and there are two shafts, D, arranged one at each side of the car, and carrying at the front ends brushes *d*, one over each track. The shafts F carry the drums *f* of an endless conveyer-belt, *a*, which is contained in a casing, *g*, the upper end of this casing and of the belt terminating above a vessel, G, on the forward end of the truck. The upper shaft, F, of the conveyer is driven from a pulley on the shaft of an engine, H, which, with its boiler, occupies a position near the rear end of the truck. A counter-shaft, *h*, is driven from the shaft of the engine, H, and this shaft drives, through the medium of the bevel-gearing shown, the brush-shaft B, the brush-shafts D being driven by bevel-gearing from the front axle of the truck, so that the brushes *d* sweep toward the center of the track, and the brush *b* sweeps the snow thus collected onto the conveyer *a*, the buckets of which carry the snow up and deposit it in the vessel G. In advance of this vessel is a furnace, J, having two fire-places, both combustion-chambers communicating through passages *i* with the lower portion of the vessel G, and through a passage, *i'*, with a hollow distributor, K, in said vessel.

With the ash-pit of each furnace communicates a blast pipe, M, which receives a supply of air from a blower, N, driven by a belt from the shaft of the engine, the blast being directed by a suitable valve, *k*, in the pipe, so that the furnaces can be run alternately, and a continuous flow of heated products of combustion into the melting-vessel thus maintained, the ignited gases escaping in the form of numerous small jets through perforations in the casing of the distributor K, and through a perforated plate at the end of the passage *i*. The snow being subjected to this intense heat is rapidly melted, and the water escapes from the vessel G through a pipe, P, which may discharge on one side of the track; or, when there is an obstruction which would prevent such discharge, the pipe may be directed so as to discharge into a tank suitably located on the truck, the tank being afterward emptied. We prefer, however, to provide the upper end of the pipe with ports or passages, and to form similar ports or passages in the fixed hood P' of the pipe which is within the vessel G, so that, when the discharge end of the pipe is projected, the ports will be open and the free flow of water through the pipe will be permitted; but, when the end of the pipe is drawn inward, the ports will be closed, and will remain closed until the discharge end of the pipe is again projected. The construction of the upper end of the pipe and its hood is shown in Fig. 6.

In order to prevent the brushes *d* from throwing the snow onto each other and interfering with their proper action, we place a central longitudinal plate or guard, *m*, beneath the front end of the truck, as shown in Fig. 3; and in order to prevent the rear brush from scattering the snow laterally onto the track we arrange at each end of the brush a guard-plate, *n*. (See Figs. 1 and 4.) A pronged frame, S, projects from the front of the truck down to within a few inches of the track, so as to prevent the passage of any obstructions of such size as would tend to jam or otherwise interfere with the operation of the brushes or conveyer-belt.

In order to gain access to the melting-vessel for the purpose of removing obstructions therefrom, we prefer to provide said melting-vessel with a door, *s*, at one or both sides.

The endless-belt conveyer is constructed in

the manner shown in Fig. 5, and consists of endless chains carrying the buckets, each of the latter having a base-plate, *t*, which is concentric with the drums *f*, around which the chains pass, and is pivoted at the front end to one of the links of each chain and provided at the rear end with loops *v*, which engage with the eyes *w* on the chains, these loops and eyes being such that there is in the connection the freedom of movement necessary in order to permit the buckets to change position, as required in passing around the drum. The rear edge of the base-plate of one bucket overlaps the front edge of the base-plate of the following bucket, so that no openings are afforded through which the snow can pass.

It will be observed that, owing to the arrangement of brushes and conveyer, the brush *b* sweeps forward, or in the direction in which the machine is to be propelled, so that any snow which fails to be deposited upon the conveyer is again brought under the action of the brush, the track being thus left in much cleaner condition than when the brush sweeps backward upon a conveyer.

We claim as our invention—

1. The combination of a truck, an endless conveyer, a melting-vessel beneath the upper front end of the latter, a brush in the rear of the lower end, mechanism for operating the brush and conveyer, and a furnace for heating the melting-vessel, as set forth.

2. The combination of the melting-vessel, the furnace, the passage *i*, communicating with the bottom of the vessel, and the central distributor, *K*, in the upper portion of the vessel, as set forth.

3. The combination of the melting-vessel, two furnaces, each communicating with the said vessel, and two blast-pipes, through either

of which the blast can be directed, whereby the furnaces may be operated alternately, as set forth.

4. The combination of the melting-vessel, the pivoted discharge-pipe, and an automatic valve whereby the pipe is opened when projected and closed when drawn inward, as set forth.

5. The combination of the truck, the side brushes, *d*, and the central guard-plate, *m*, as set forth.

6. The combination of a truck and endless conveyer, a melting-vessel beneath the upper front end of the latter, a brush in the rear of the lower end, mechanism for operating the brush and conveyer, a furnace for heating the melting-vessel, and cleaners for removing the snow in advance of the front wheels of the truck, as set forth.

7. The combination of the truck, and its elevator and brushes, with the clearer *S*, as set forth.

8. The combination of the brush *b* with an endless conveyer, consisting of the chains with buckets, the base-plates of which are curved and overlap each other, as set forth.

9. The combination of the brush *b* with the conveyer, consisting of the chains with buckets having overlapping curved bases *f* pivoted to the chains near the front end, and having a yielding connection with the chains near the rear end, as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM BRISCOE.
CHRIS. GALLAGHER.

Witnesses:

JOHN M. CLAYTON,
HARRY SMITH.