(No Model.) 4 Sheets—Sheet 1

H. T. STOCK.

MACHINE FOR REMOVING SNOW FROM RAILROAD TRACKS.

No. 258,150. Patented May 16, 1882.

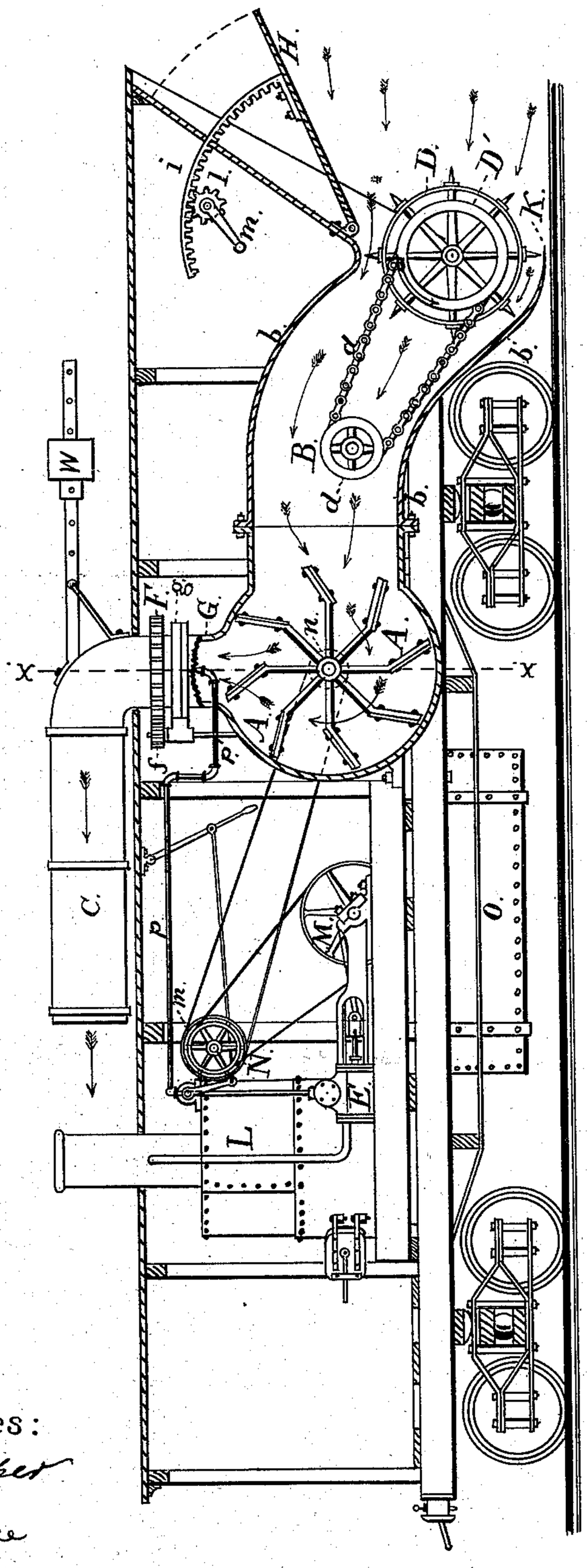

Fig. 1.

Witnesses:
Wm. H. Hooper
Wesley Royce

Inventor:
Horace T. Stock.
By Munson Hall
His atty.

(No Model.) 4 Sheets—Sheet 2.

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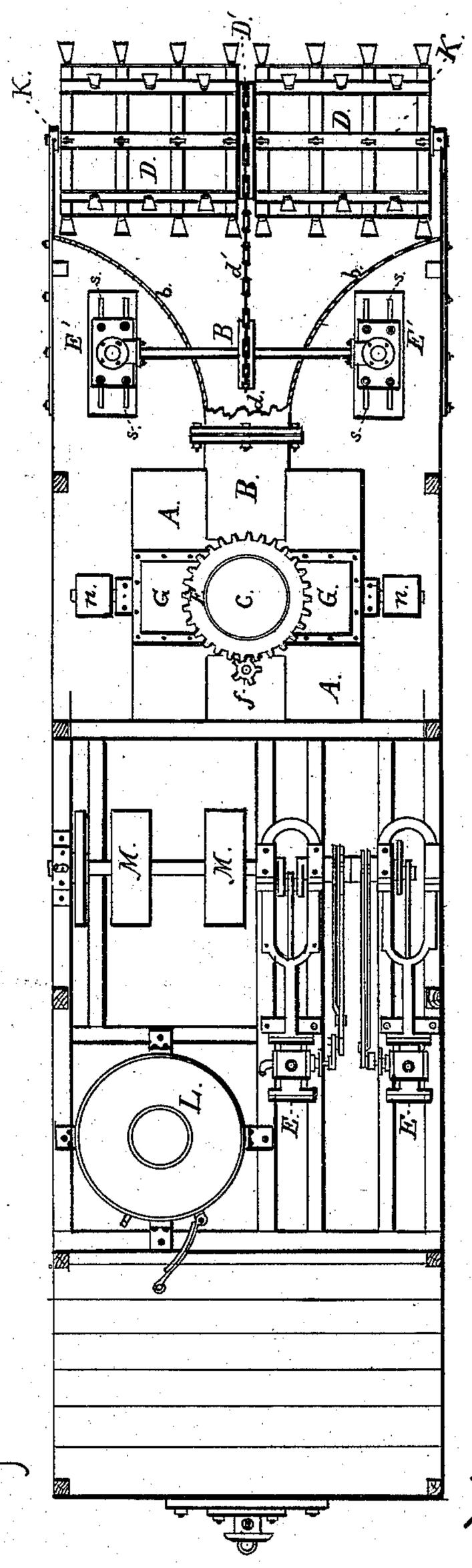

Fig. 2.

Witnesses:
W. H. Hooper
Wesley Royce

Inventor:
Horace T. Stock.
By Munn & Hall
His Attys.

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Fig. 3.

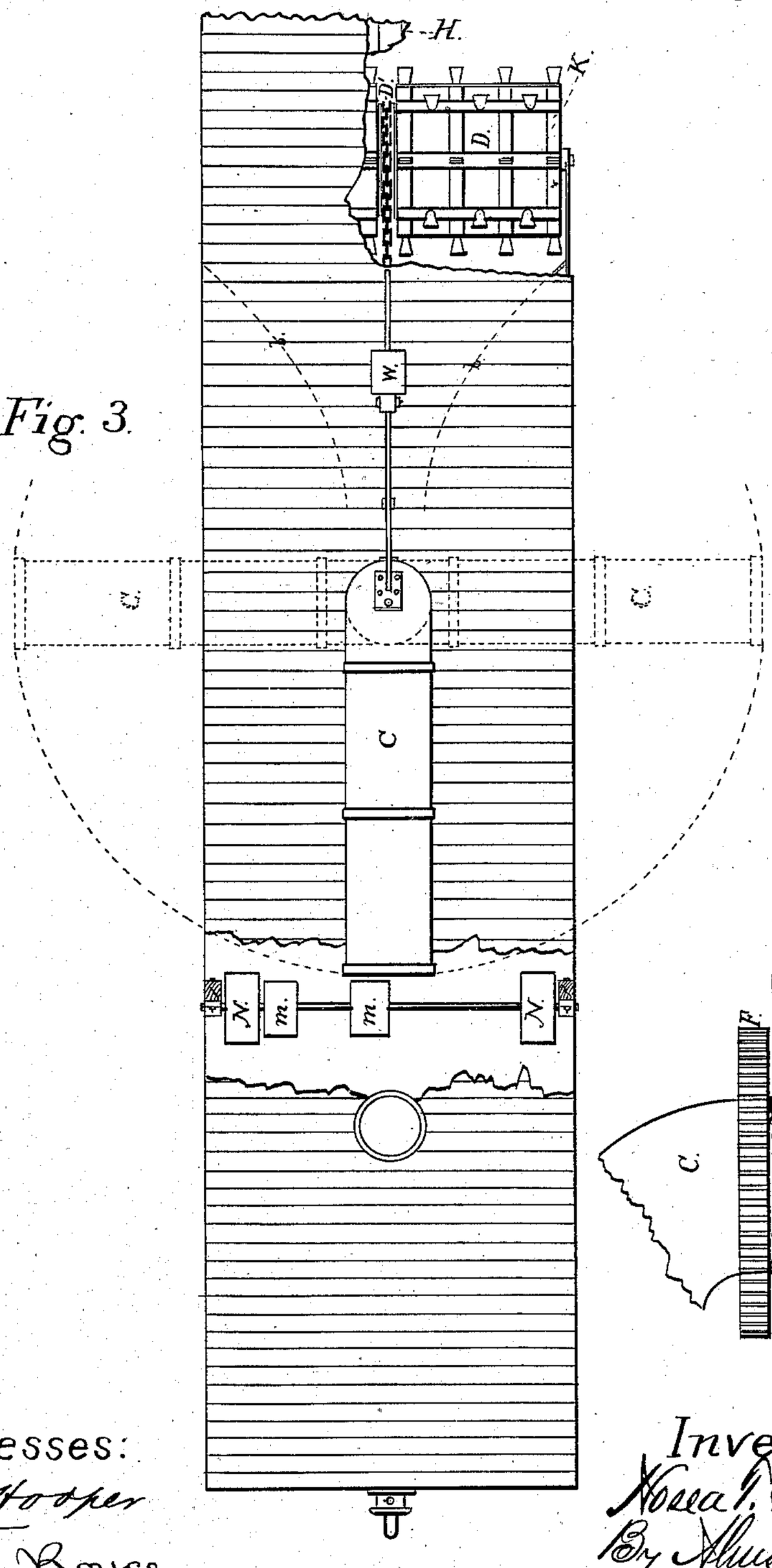


Fig. 4.

Witnesses:
Wm. H. Hooper
Wesley Royce

Inventor:
Horace T. Stock,
By Allen Hall
His Atty.

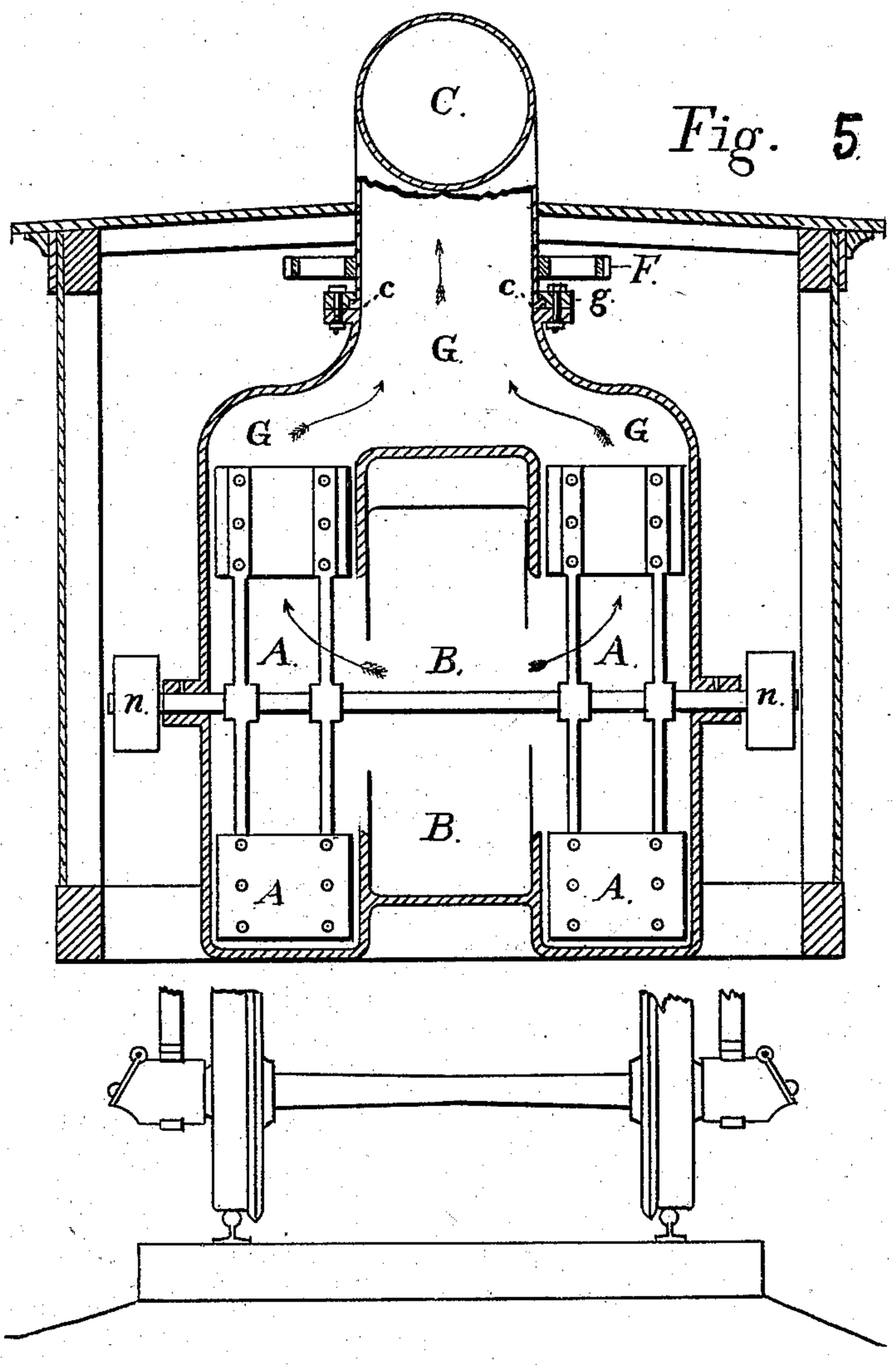
(No Model.) 4 Sheets—Sheet 4.

H. T. STOCK.

MACHINE FOR REMOVING SNOW FROM RAILROAD TRACKS.

No. 258,150. Patented May 16, 1882.

Fig. 5



Witnesses:
Wm. H. Hoopes
Wesley Royce

Inventor:
Hosea T. Stock,
By Alvan Hall
His Atty.

UNITED STATES PATENT OFFICE.

HOSEA T. STOCK, OF TOLEDO, OHIO.

MACHINE FOR REMOVING SNOW FROM RAILROAD-TRACKS.

SPECIFICATION forming part of Letters Patent No. 258,150, dated May 16, 1882.

Application filed November 28, 1881. (No model.)

To all whom it may concern:

Be it known that I, HOSEA T. STOCK, of the city of Toledo, Ohio, have invented a new and useful Machine for Removing Snow from Railroad Tracks, which I call a "Pneumatic Snow-Plow," of which the following is a specification.

My invention relates to improvements in machinery designed for removing snow from railroad-tracks, streets, and ways; and the objects of my invention are, first, by means of an air-blast, created by exhaust-fan or pressure-blower run by steam, and by the discharge of steam from the engines and boilers of such machine, to force the obstructing snow into and through proper conduits, and by the force of the air blast or current thus created to discharge such snow at a distance from the machine; second, by means of steam-pipes leading from the boilers and engines of such machines, and discharging into the air-passage or main conduit of the machine, keeping such passage or conduit clear from clogging snow, and by the same means to saturate light snow with steam, so that by increasing its weight it may be thrown by the air-blast above mentioned to a greater distance from the machine. I attain these objects by means of the mechanism illustrated in the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a side view and vertical section of my device arranged for use on railroads and designed to be pushed by a locomotive. Fig. 2 is a plan of the same. Fig. 3 is a plan above the roof of the same, indicating the range of the swing of the discharge-pipe with portions of the roof removed, showing parts of the revolving toothed cylinder and the gate or guide designed to depress deep snow against said cylinder, also the counter-shaft with the pulleys thereon. Fig. 4 is a vertical section, in detail, of the joint between the swinging portion of the discharge-pipe of the machine and the stationary part of the same. Fig. 5 is a vertical transverse section, indicated by line *x x* in Fig. 1.

Similar letters refer to similar parts throughout the several views.

A is a double exhaust-fan, or, rather, two fans on a single shaft, with a central suction-inlet between them and two outlets converging into one discharge-pipe. B and lines *b b* are the inlet to the fan, which has an opening the entire width of the machine at front, from whence it narrows to the central opening into the two fans, as shown. G G are the outlets from the fan, converging into discharge-pipe C.

E E is a double steam-engine, upon the shaft of which are pulleys M M, from which, by belts passing to pulleys *m m*, motion is communicated to pulleys N N, on the same shaft, which communicate, by belts, motion to pulleys *n n* on the shaft of fan A.

The swinging discharge-pipe C is united to the fixed outlets G G by a joint, the manner of the construction of which is fully shown in Fig. 4 at *c g*. The pipe C is provided with an arm, upon which is placed a weight, *w*, for the purpose of balancing pipe C on its bearings and preventing binding and undue strain and friction at joint *c g*. The weight *w*, or the arm upon which it is mounted, may be made of such form as to serve as a vane, so as to counterbalance the force of the wind against pipe C.

F is a cogged rim or collar, surrounding discharge-pipe C near its lower end. A small pinion, *f*, operated by a hand-crank, (not shown in the drawings,) works into the cogs of collar F, and by turning said hand-crank the pinion *f*, collar F, and pipe C are caused to rotate horizontally, so that the mouth of pipe C may be caused to describe the circle indicated by dotted line in Fig. 3, thus discharging the snow passed through the machine in any desired direction.

The snow could be discharged at either side of the machine by means of fixed pipes provided with means for closing the opening at either side at will; but I prefer the arrangement above described.

D is an open cylindrical rack or frame, placed at and entirely across the front opening of B, having teeth upon its periphery, being in form not unlike the cylinder of a thrashing-machine, and having fixed upon its shaft, at center, a chain-wheel, D′.

E′ E′ is a double upright steam-engine, upon the shaft of which, passing through inlet B, is a chain-wheel, *d*, from which by chain *d′* mo-

tion is communicated to chain-wheel D′, causing the toothed cylinder D to revolve. The engine E′ E′ is set upon plates having slots *s s*, by means of which this engine may be moved so as to tighten chain *d′*, when necessary. The bottom of inlet B, at front, is provided with a shoe, K, sharpened so as to cut the snow as the machine advances. At front, overhanging and projecting beyond the toothed cylinder D, the machine has hinged to it a gate or guide, H, the purpose of which is, as the machine moves forward, to guide, compact, and depress the obstructing snow against the cylinder D and into the influence of the inrushing air. The angle of the gate H may be adjusted according to the depth of the snow to be encountered by means of the toothed segment *i*, pinion *l*, and crank *m*. Side guides or mold-boards extending from either side of the machine at front may also be employed for directing the snow into the machine, if it shall be desired to make a cut wider than the machine. A steam-pipe, *p*, having its discharge in the outlet from the fan A, is provided to facilitate the removal of snow from G and C in case they should become clogged, and for the purpose of augmenting the force of the blast and of saturating very light snow with steam, so that by its increased gravity it may be thrown to a greater distance. The engines may also be caused to exhaust through said pipe *f* or otherwise into chambers G or C for the same purpose. My invention is not, however, restricted to a single steam-pipe, nor to the discharge of the same at any particular point in the air-passage B, A, G G, and C. L is the boiler, and O the water-tank.

From the foregoing description of the machine and the parts, and their arrangement, as shown, the operation of the device is obvious. Upon the engines E E and E′ E′ being set in motion and the machine being moved forward, snow on the track in front of the machine to its full width must come in contact with the revolving toothed cylinder D, and upon being agitated and loosened must be drawn into the opening B by the current created by the exhaust-fan A and the discharge of steam from pipe or pipes *p*, and from thence discharged with force through openings G G and pipe C.

The results above described may also be obtained by the use of a pressure-blower (instead of an exhaust-fan) by pipes leading from such blower and discharging the air-blast into the front opening of a passage of which B, A, G and C, as shown, are the equivalents; but I prefer to attain the object of my invention by means of the exhaust-fan, as simpler, cheaper, and more effective.

I am aware that the fan and swinging discharge-pipe and skeleton toothed cylinder and adjustable guides or mold-boards have been patented in machines for removing snow, and I do not claim them as my invention; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for removing snow from roads and ways by pneumatic force, the steam-pipe *p*, in combination with the fan A and the air and snow passage B, A, G G, and C, substantially as shown and described, for the purposes specified.

2. In a machine for removing snow from tracks and ways by pneumatic force, the combination of steam-pipe *p* with the air and snow passage B, A, G G, and C, substantially as shown and described, for the purposes specified.

3. The combination of the steam-pipe *p*, fan A, inlet B *b b*, having flaring or funnel-like mouth, with converging sides, horizontally-rotating pipe C, and toothed skeleton cylinder D, substantially as shown, for the purpose specified.

HOSEA T. STOCK.

Witnesses:
W. H. HARRIS,
M. C. FOGARTY.