(No Model.) 2 Sheets—Sheet 1.

T. A. FICK.

SNOW PLOW.

No. 561,980. Patented June 16, 1896.

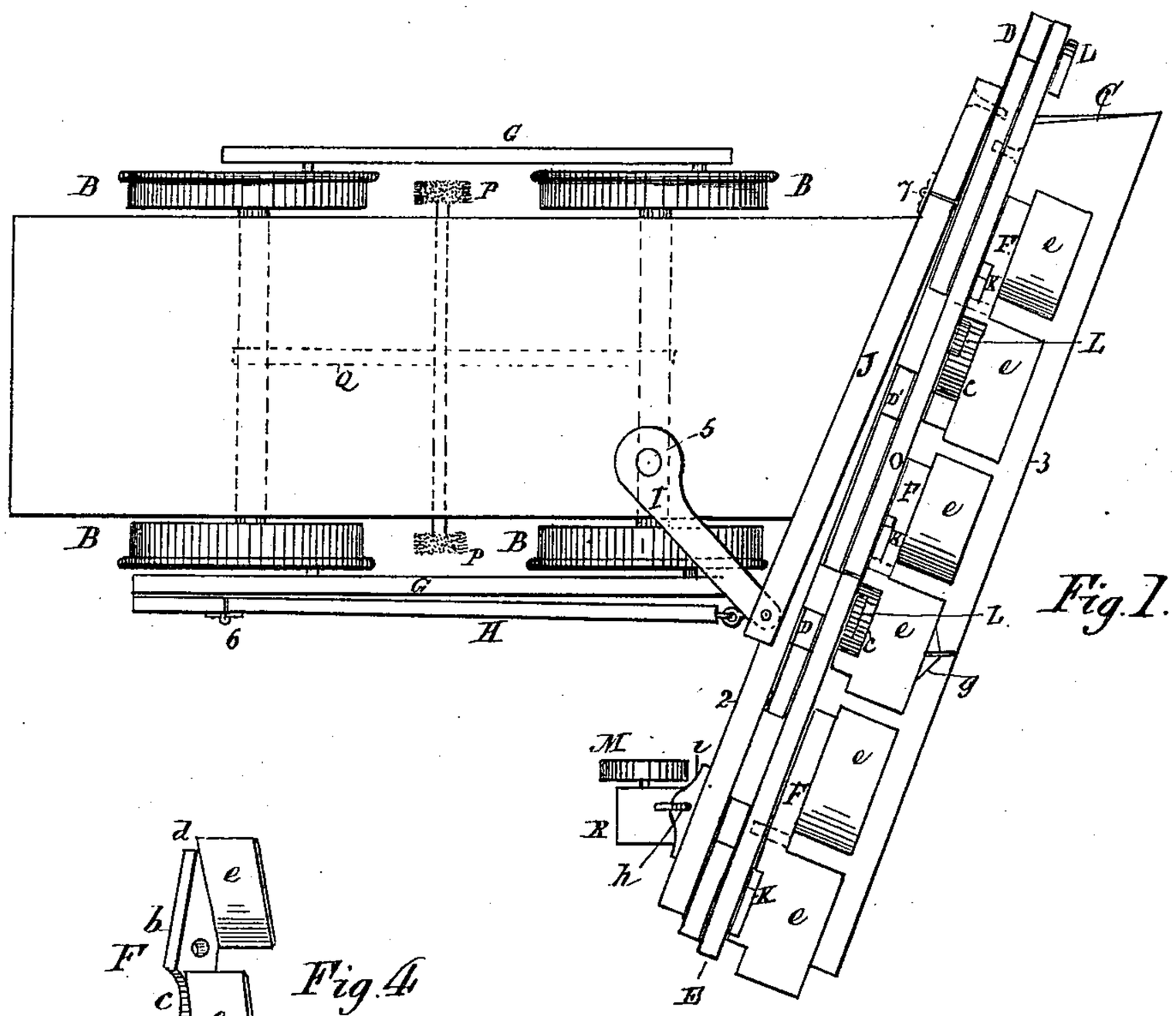

Fig. 1.

Fig. 4

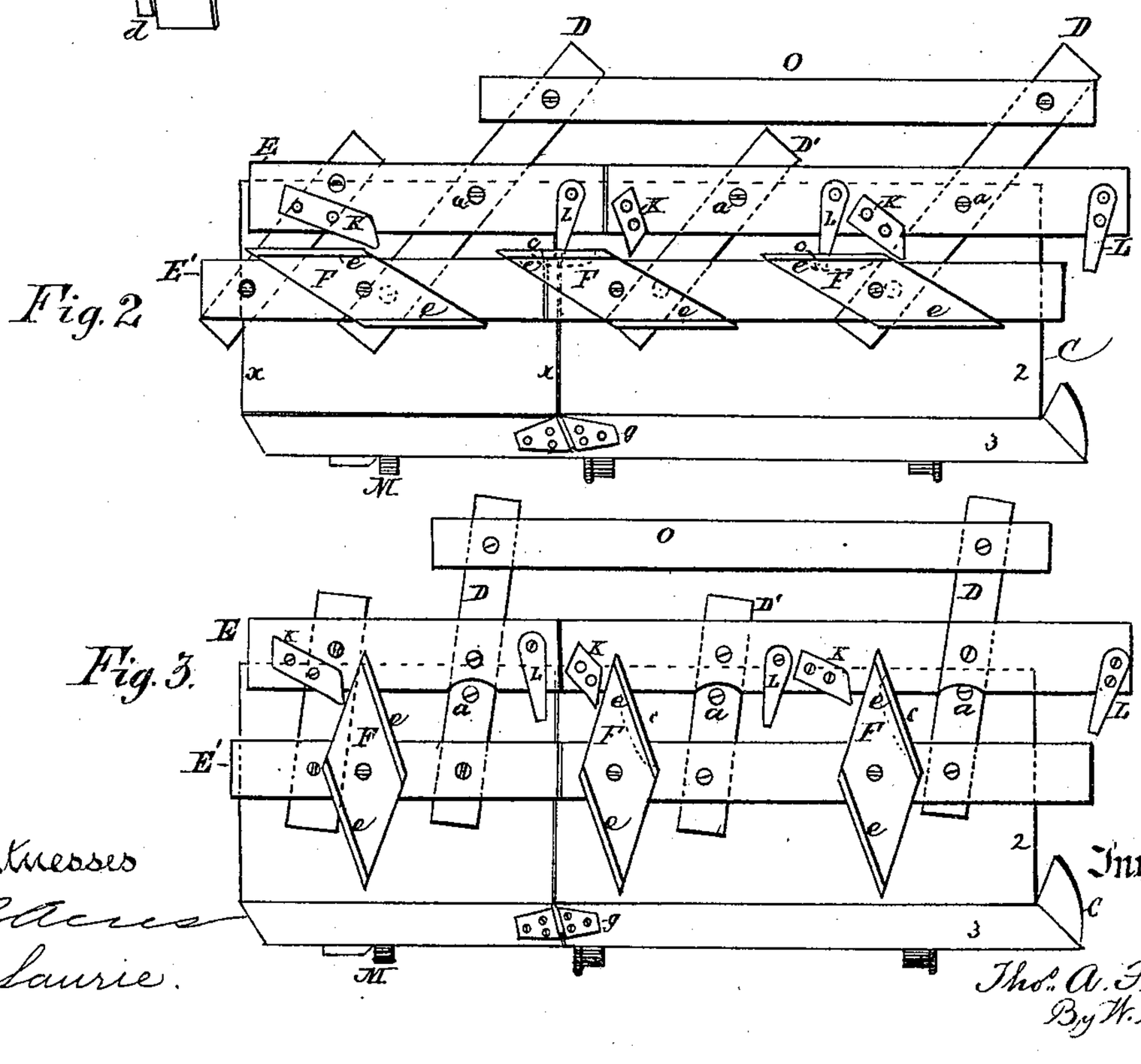

Fig. 2.

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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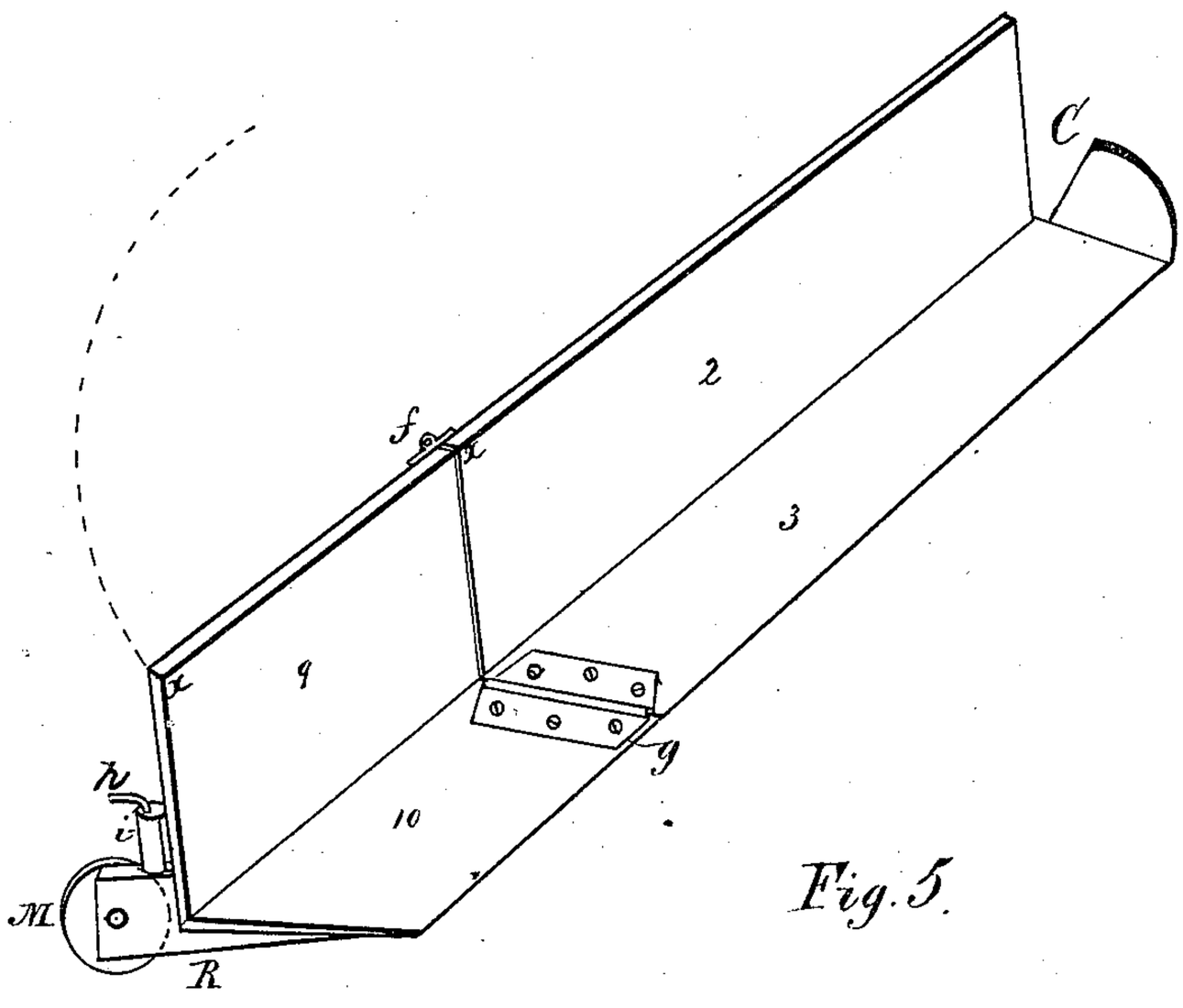
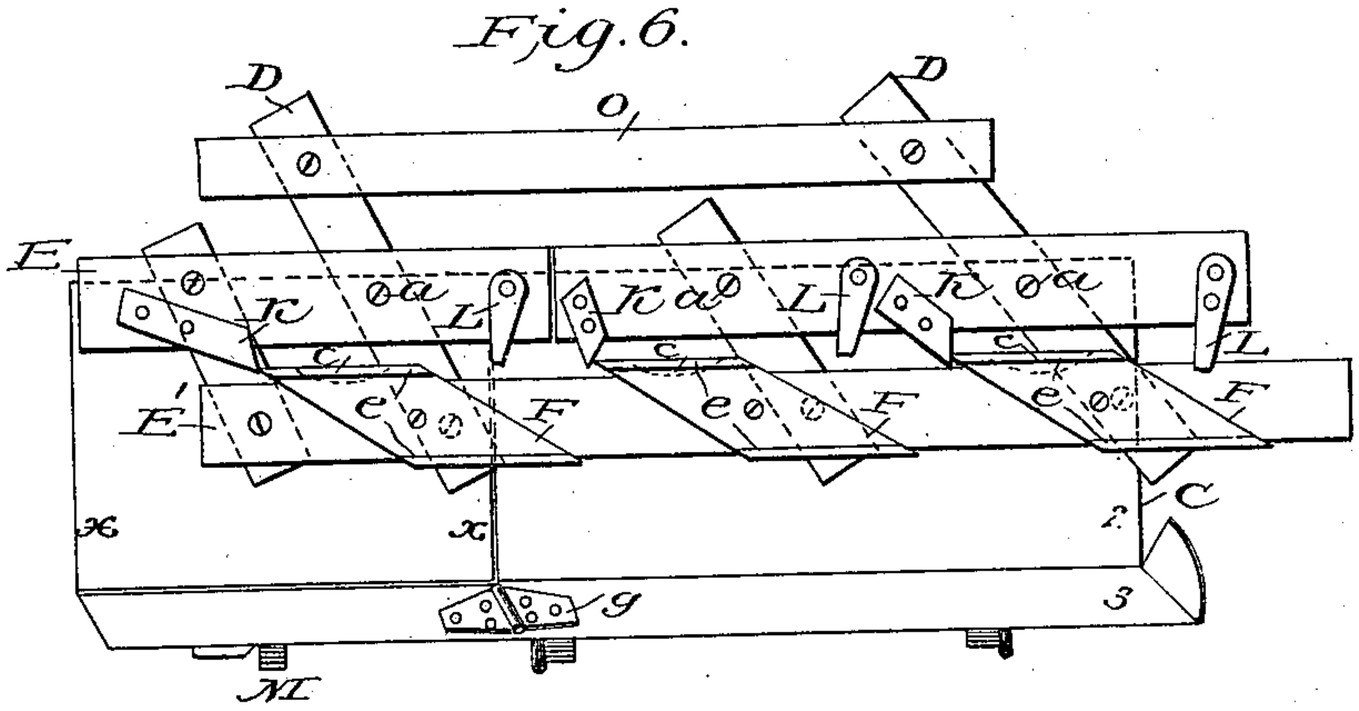


Fig. 5.

Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS ALEXANDER FICK, OF PARIS, CANADA.

SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 561,980, dated June 16, 1896.

Application filed February 8, 1895. Serial No. 537,724. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ALEXANDER FICK, of Paris, in the county of Brant, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Snow-Plows; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being made to the accompanying drawings, in which—

Figure 1 is a plan view of my snow-plow attached to a car-truck. Fig. 2 is a front view showing the shovels in a horizontal position. Fig. 3 is also a front view showing shovels in a vertical position when in the act of pushing the snow to one side. Fig. 4 is a perspective view of one of the shovels detached and in an upright position. Fig. 5 is a perspective view of the front platform detached. Fig. 6 is a front view showing the shovels, &c., in a reverse position from that shown in Fig. 2.

The invention relates to certain improvements in machines for removing snow from railway-tracks, not by the usual manner of plowing or pushing off the snow from the center to each side, but by mechanism constructed in such a manner as to pick up the snow on a platform attached to a car, and as fast as gathered up is by a series of specially-constructed double-bladed shovels thrown off to one side of a railway-track.

The device is simple in construction, easy to operate, requires only one man to control it, is comparatively light and does not require much power to drive it, is adjustable to different widths, and can be advantageously used on horse, electric, or other cars.

The invention consists, first, in an oblique vertical and horizontal frame secured to a car, and to which are attached the operating parts of the device; second, two movable horizontal bars are pivoted to upright bars pivoted to the back frame of the platform and are moved horizontally back and forth by means of pitmen and connecting-rods moved by the car-wheels, the pitmen being attached to the latter; third, a series of diamond-shaped double-bladed shovels, preferably of steel, are pivoted to the lower horizontal bar and are thrown around or rotated by means of dogs on the upper horizontal bar by coming in contact with them intermittently. When the shovels are in a vertical position, they are drawn to one side by the horizontal bars and take the snow on the platform with them and throw it off on one side of the track. A revolving brush will be placed between the wheels to clear the rails of what small portion of snow would be left on the tracks after being left by the shovels' operation.

In the drawings, A, Fig. 1, represents a car-truck, to which the four wheels B are attached in the ordinary manner.

C is a platform which may be fastened to the beams at both ends of a car, and consists of an upright back 2 and a sloping horizontal front 3 to catch the snow upon it.

D D D are vertical bars pivoted at the points *a a* to the back 2 of the platform, and E and E′ are horizontal bars pivoted to the said upright bars and made to operate horizontally back and forth, similar to the blades of a parallel-ruler. The lower horizontal bar E′ has a series of diamond-shaped shovels F pivoted in the center to it. Each shovel has three inclined sides, as at *b*, Fig. 4, and one side with a curved depression *c*, also a notch *d* at each end, the uses of which will be shown hereinafter.

e e are the double steel blades attached to the diagonal sides to form the shovel, which entire will be known by the letter F, and they are moved back and forth on the lower horizontal bar, while dogs on the bar E cause the said shovels to move from a horizontal to a vertical position, when they all move together to push the snow off the platform, the details of which will be shown hereinafter in the operation of the machine.

The parts of the mechanism to drive the horizontal bars will be described as follows: The wheels B on each side of a car are connected by pitman-rods G G, the wheels being the source of power to operate the shovels. H is a rod secured at one end to one of the pitmen G, and at the other to a horizontally-swinging arm I, which is pivoted to the car-floor at or about the point 5. The said connecting-rod H is hinged at the wheel end by a hinge 6 to enable the opposite end to move laterally, and it is swiveled to the swinging arm I to adapt itself to the different positions of the said swinging arm. J is also a hinged connecting-rod pivoted at one end to the

swinging arm I, and the other end secured to one of the vertical pivoted bars D, which it moves. The said rod J is also hinged near its outer end by a hinge 7, so as to admit the back-and-forth movement of the said swinging arm I. O is a horizontal rod connecting the two vertical bars D D for transferring motion to the lower horizontal bars E E′ to operate the shovels. K K K are three dogs firmly attached to the upper horizontal bar E, and are for the purpose of coming in contact with the inclined edges of the shovel-plates to assist in throwing the shovels over into a vertical position during the operation of removing the snow, while the vertical dogs L L L, which are also attached firmly to the same bar E, are for the purpose of coming in contact with the opposite side of the shovel-plate and depress the shovels horizontally as they return after each discharge of snow when in a vertical position. Thus it will be seen that as the bars E E′ move back and forth horizontally the shovels are vertical when they are removing the snow to the right side off the track, as seen in Fig. 3, and are horizontal when they are on the return stroke, making one entire revolution to one direct and return movement of the said parallel bars E and E′. The shallow recess *c* in one side of two shovel-plates *b* is to admit the dogs L when the shovels are horizontal, so as to allow of their movement without binding.

A revolving brush P will be placed between the wheels to clear the rails of what snow may remain on the track after the shovels remove the greater part of it. It is operated by an endless belt Q, carried over the axles of the car-wheels.

R is a bracket attached to the under side of the platform C to attach a small wheel M to support easily the outer projecting portion of the said platform, and it will here be observed that a provision is made to narrow the device when required by hinging the vertical portion 2 of the back of the platform C by a hinge *f* and the horizontal front 3 by a hinge *g*, and by not uniting solidly the back and front of the platform from the point *x* to *x* by the removal of a pin *h* from the bracket *i* on the back 2 and bracket R on the bottom the said hinged portion of the platform (marked 9) may be thrown back and the bottom portion (marked 10) be turned up vertically and held in that position by any convenient means.

Having thus described my device and its advantages, what I claim, and desire to secure by Letters Patent, is—

1. A machine for removing snow from railway-tracks consisting of a platform having a vertical back and a downwardly-sloping front attached to a car, a series of vertical bars pivoted to the platform, horizontal bars pivoted to the upright bars, and a series of diamond-shaped shovels pivoted to the horizontal bars, having means attached for revolving them— a swinging arm attached to the car, connected to the upright bars by a connecting-rod, on one side, and the other side connected by a rod to the pitman connecting one pair of wheels, all constructed substantially as and for the purpose specified.

2. In a machine for removing snow from railway-tracks, the wheels B, B, of a car connected by pitmen G, G, a hinged connecting-rod H having one end connected to a pitman and the other end connected to a swinging arm I by a hinge or universal joint, a hinged rod J connecting the swinging arm I to one of the vertical bars D, to drive the horizontal bars E, E′, for operating shovels F, attached to the lower horizontal bar E′, and the dogs K, K, K, and L, L, L, attached to the horizontal bar E for rotating the shovels as the said bars E and E′ are moved back and forth, all constructed substantially as and for the purpose specified.

3. The peculiar construction of the shovels F consisting of a plate with diamond-shaped sides *b*, one of which has a depression *c*, a notch *d* at each end for the dogs K to catch under, two steel blades *e*, *e*, attached to opposite sides diagonally of the shovel-plate, each shovel being pivotally connected to the horizontal bar E′, and operated substantially as and for the purpose specified.

4. In combination with the platform C, the bracket R, attached to the bottom of the platform C, the bracket *i* attached to the rear of the platform, and held together at the outer end by a pin *h*, hinges *f* and *g*, attaching the inner end of the parts 9 and 10 of the platform C, and a wheel M, attached to the bracket R, substantially as and for the purpose specified.

5. In a machine for removing snow from railway-tracks, the platform C having its vertical part hinged by a hinge *f* and the front portion by a hinge *g*, so as to admit an easy means of narrowing the platform when necessary, substantially as and for the purpose specified.

Dated at Paris, Ontario, this 8th day of November, A. D. 1894.

THOMAS ALEXANDER FICK.

In presence of—
C. M. FOLEY,
THOS. J. MURRAY.