

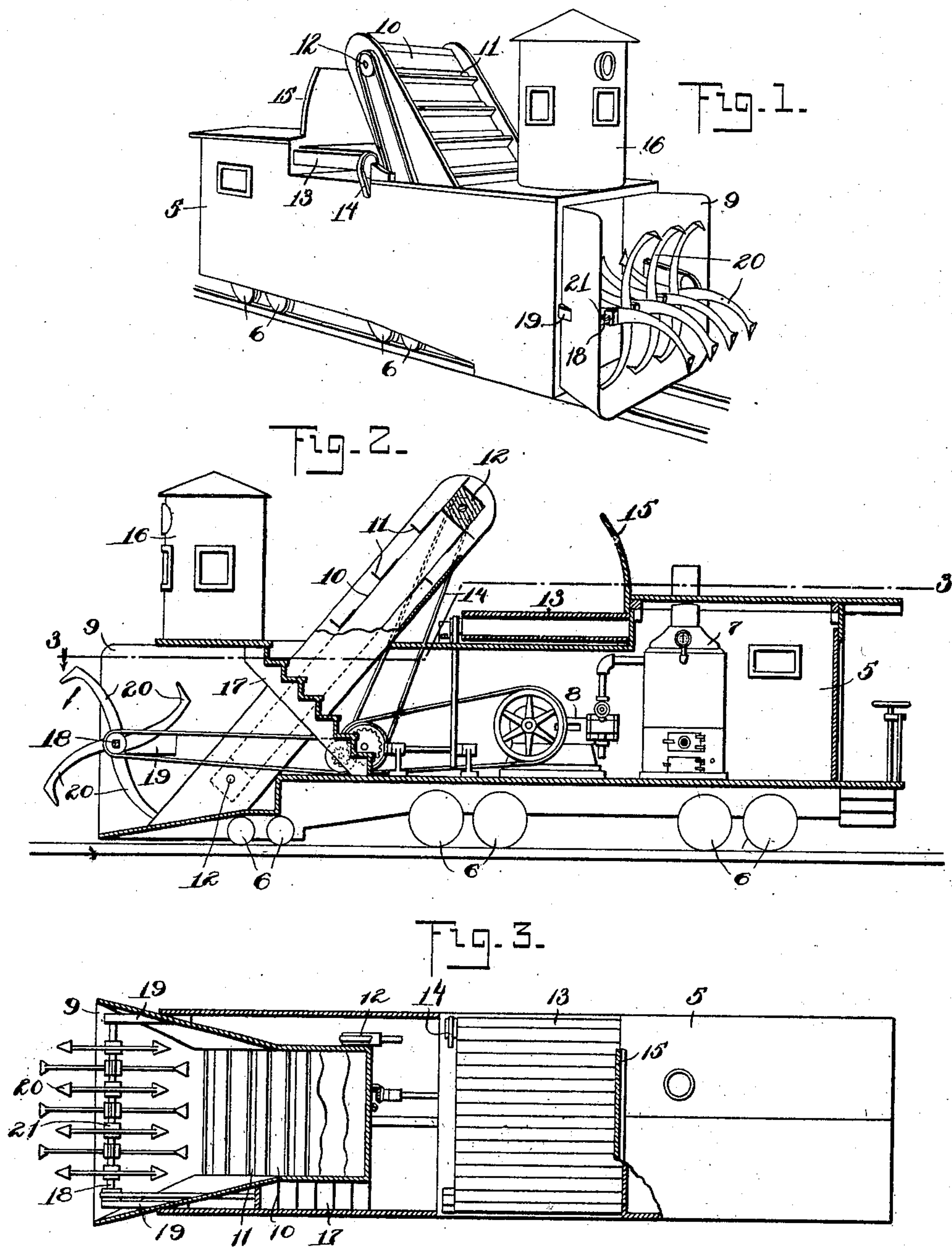
No. 682,731.

Patented Sept. 17, 1901.

K. C. MUNSON.  
RAILWAY SNOW PLOW.

(Application filed Nov. 5, 1900.)

(No Model.)



Witnesses=  
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# UNITED STATES PATENT OFFICE.

KATHARINE C. MUNSON, OF WINTHROP, MASSACHUSETTS.

## RAILWAY SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 682,731, dated September 17, 1901.

Application filed November 5, 1900. Serial No. 35,537. (No model.)

*To all whom it may concern:*

Be it known that I, KATHARINE C. MUNSON, of Winthrop, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Railway Snow-Plows, of which the following is a specification.

The object of this invention is to provide a railway snow-plow for use on ordinary steam-railways or electric-street-car tracks and adapted to operate in deep or compacted hardened snow, provision being made for first disintegrating any icy portions, if required, and for elevating the snow obliquely and discharging the same laterally.

My invention includes various improvements adapted to loosen, take up, and remove from the tracks the accumulation of snow, the apparatus being mounted on a suitable truck or platform-car and the movable parts being driven by a suitable motor located on such platform.

My improvements include an endless elevator-belt arranged obliquely and extending upwardly from the rear of the mouth of the plow in combination with a discharger provided with a traveling belt to discharge the snow so elevated to either side of the plow. This discharging-belt may be provided with a scraper and with lateral fenders to guard against the snow being dropped so as to fall again upon the track. The shaft for the endless belts will be angular in cross-section, so as at the turn to change the direction quickly and more effectively throw off the snow therefrom.

The front of the plow will be formed as a flaring mouth of boiler-plate or like sheet metal, with nearly vertical sides, rounded lower corners, and an inclined floor, so as to take up the snow the full width of the train as the plow is pushed forward by the power of the locomotive. A cross-bar or platform extends from side to side across the top of this metallic mouth, connecting its opposite sides and serving when sufficiently extended as a support for the lookout or station for the guard or operator. A horizontal shaft across the front of this mouth carries a series of rotary knives mounted at the extremity of radial arms, which may have sharpened edges. Said shaft is preferably angular in cross-section

to receive the series of arms, which radiate in different directions, each arm having a flanged inner end with a socket to fit upon the shaft, two opposite arms being bolted or otherwise united to each other and to the shaft by means of such flange. Belt connections, gearing, or other driving means will be provided, extending from the motor to the pulley, gearing, or crank on the shaft carrying the knives and the elevator-belt. Provision is made for disconnecting either of these devices when not required by the conditions of the snow, since in light or soft snow the knives and cutter would not be required.

In the drawings, Figure 1 is a perspective view of one of my improved snow-plows. Fig. 2 is a longitudinal vertical section thereof. Fig. 3 is a top plan partly in a horizontal section on line 3 3 of Fig. 2.

This invention is in the nature of improvement upon the snow-plow set forth in the patent to Julius S. Munson, No. 133,792, dated December 10, 1872, in which rotary cutters were provided to loosen the snow, an elevator-belt to raise it to a proper height, and inclined slides to remove it laterally. Hence, while I use some of these devices, I do not claim them broadly or separately, but only in combination with other features, as hereinafter stated, for the accomplishment of better results.

5 represents the body of the car or snow-plow, mounted on wheels 6 to run on railway-tracks. Its interior and rear portion is furnished with a suitable motor, shown in Fig. 2 as a steam-generator 7, and a steam-engine 8, with belting, pulleys, &c., to actuate the mechanism.

9 represents the mouth or flaring front of the plow, formed of heavy boiler-plate, with an upwardly-inclined bottom. From this bottom rises the obliquely-arranged endless elevator-belt 10, provided with a series of transverse buckets 11. This belt is supported on and carried by two rotatable shafts 12, shown in Fig. 2 as angular in cross-section to afford a flat seat for each bucket and facilitate discharge of the snow.

13 represents the discharging-belt in rear of the upper portion of the elevator 10 in position to receive and discharge to either side the snow deposited upon it. This belt is sup-



ported on suitable rotating shafts and is shown as driven by belting 14 from a shaft of the motor. Lateral fenders 15 are provided to direct the snow from the elevator to the discharging-belt and prevent it from being thrown from the one beyond the edge of the other.

16 is a lookout-station upon the front of the plow erected on a platform which connects transversely the upper edges of the side walls of the mouth 9. From this point of view the operator can see ahead and also observe the operation of the mechanism. Access to the station is gained in any suitable manner, stairs 17 being indicated at one side of the elevator in Figs. 2 and 3.

18 represents a transverse shaft mounted horizontally in bearings 19 at the front of the flaring mouth 9, and 20 a series of revolving cutters secured on such shaft. These cutters are peculiar in construction, comprising radial arms having sharpened terminal blades and each arm being formed with a flange 21 at its inner end, fitting laterally on the shaft, such arms being secured thereon and to each other in pairs by suitable clamping-bolts.

I claim as my invention—

1. In a railway snow-plow, the tapering metallic mouth, broader at front than any other part of the plow, and having an inclined floor, upright sides and a top platform connecting such sides, the lookout-station 16 located on said platform, the snow-loosening cutters 20 revolving in said mouth between such floor

and platform and assisting to carry snow into the mouth, in combination with an endless elevating-belt rising from the rear of said mouth and cutters, a transverse discharging-belt back of said elevator, and driving apparatus within the plow-body for actuating said cutters and belts, substantially as set forth.

2. A railway snow-plow having at its front end a lookout-station, a tapering metallic mouth beneath such station and a transverse rotary shaft revolving in bearings in said mouth and carrying independent radial cutter-arms, in combination with a middle section comprising oblique endless elevating and horizontal discharging belts and a transverse fender in rear thereof, and with driving apparatus occupying the interior and rear section of the plow-body, for actuating said cutters and belts, substantially as set forth.

3. In a railway snow-plow, the plow-body having a suitable frame and endless elevating and discharging belts, in combination with a cutting apparatus consisting of a rotary shaft carrying radial arms with flanged inner ends provided with sockets to fit laterally upon such shaft, and clamping means adapted to secure two of such arms to each other and to the shaft, substantially as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

KATHARINE C. MUNSON.

Witnesses:

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