

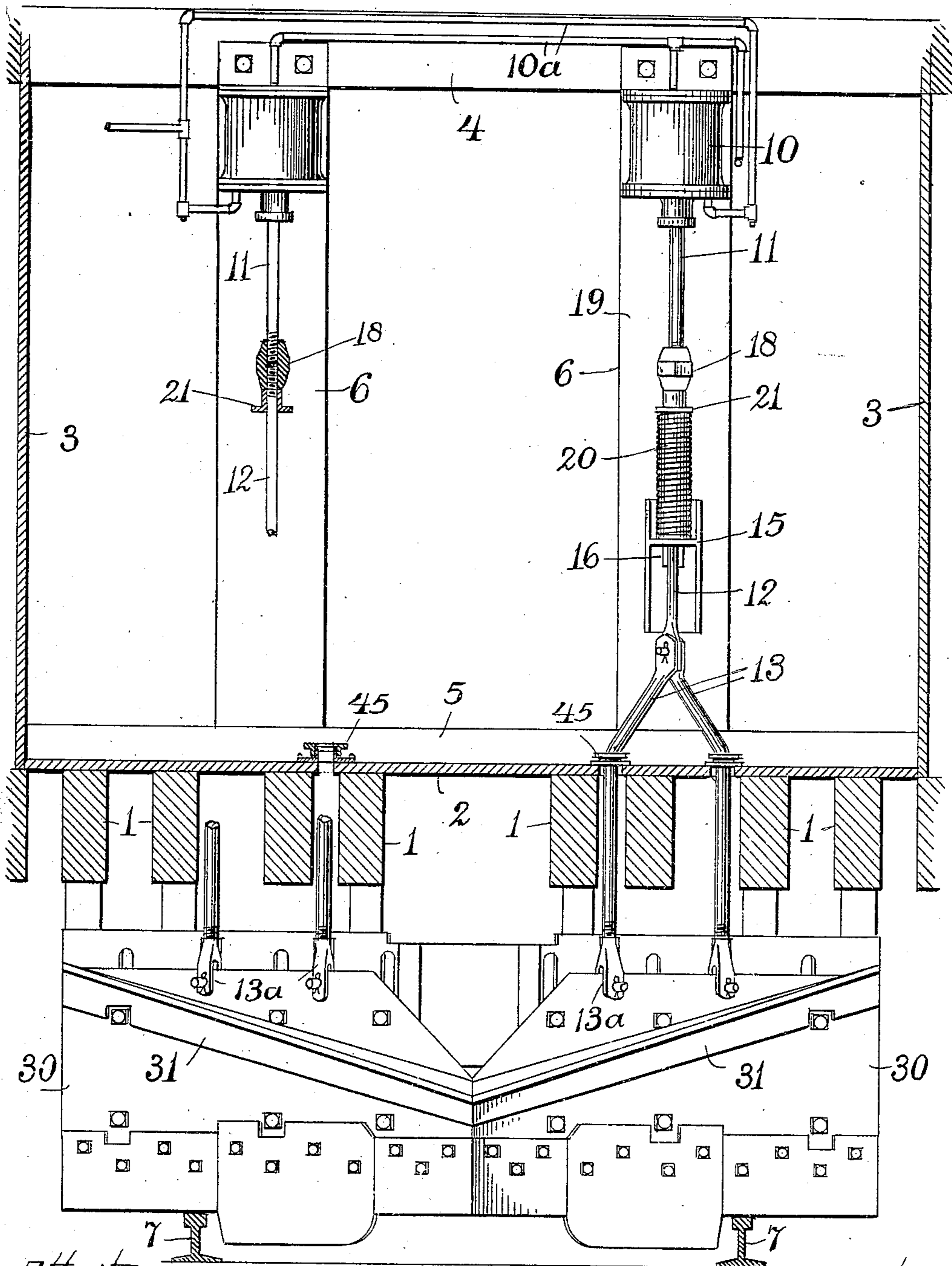
H. E. PARSONS.
FLANGER FOR SNOW PLOWS.

APPLICATION FILED JUNE 22, 1907. RENEWED JUNE 1, 1908.

907,701.

Patented Dec. 22, 1908.

2 SHEETS—SHEET 1.



Attest;

Wm Macomber.
S. H. Waite

Fig. 1

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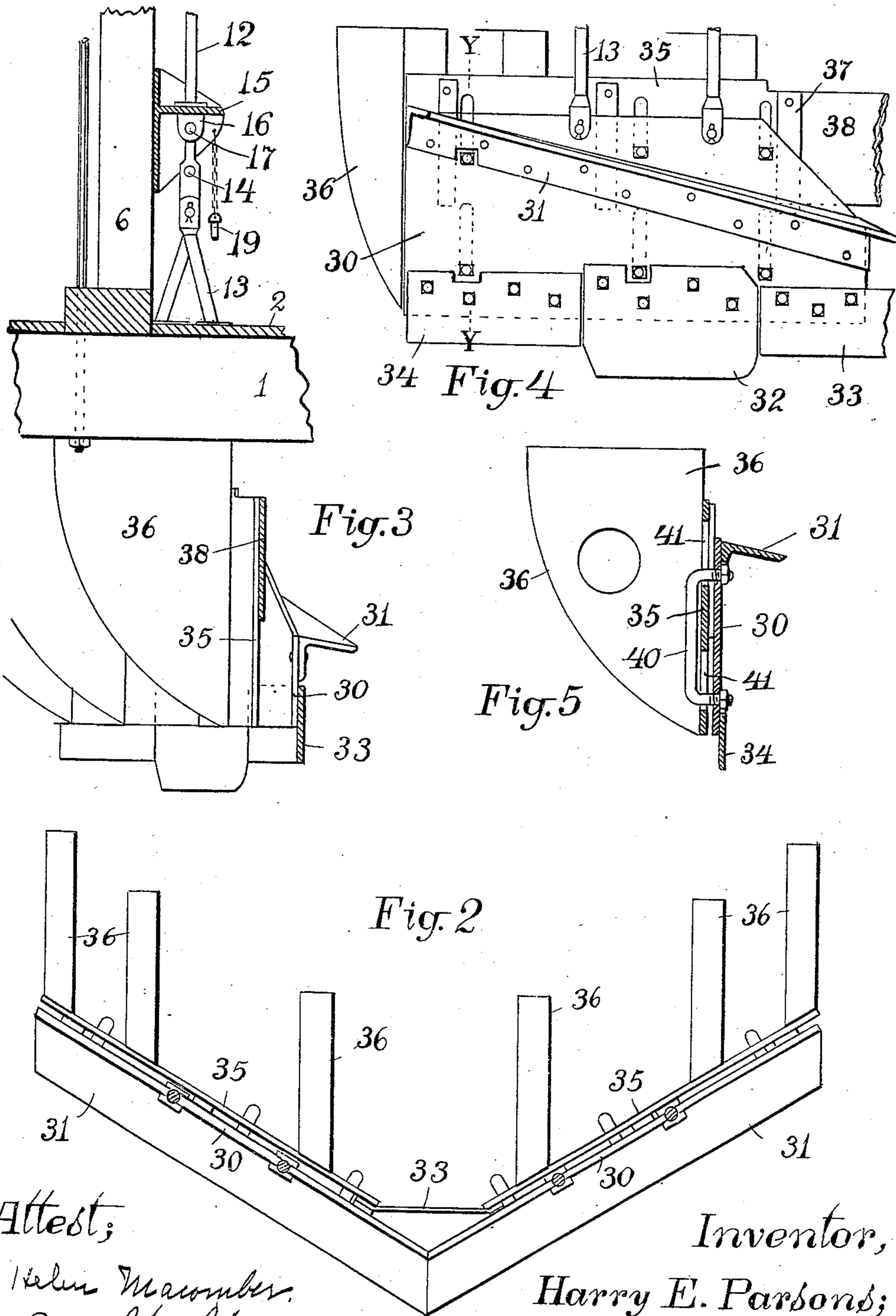
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UNITED STATES PATENT OFFICE.

HARRY E. PARSONS, OF RIDGWAY, PENNSYLVANIA.

FLANGER FOR SNOW-PLOWS.

No. 907,701.

Specification of Letters Patent.

Patented Dec. 22, 1908.

Application filed June 22, 1907, Serial No. 380,292. Renewed June 1, 1908. Serial No. 435,909.

To all whom it may concern:

Be it known that I, HARRY EUGENE PARSONS, a citizen of the United States, and a resident of Ridgway, in the county of Elk, State of Pennsylvania, have invented certain new and useful improvements in Flangers for Snow-Plows, of which the following is a full, clear, and exact description.

This invention relates to devices for removing the snow from between the rails of railroads, and is preferably used in connection with a snow plow.

My invention has for its object the construction of improved means for raising and lowering the flanger from and to the track, and also for locking the flanger against descent to the track whenever desired.

It further has for its object the effecting of certain improvements in connection with the guard by which the snow is prevented from rising up and over the flanger, and insuring its lateral deflection; and other improvements in details of construction hereinafter set forth.

Referring to the drawings forming part of this specification, Figure 1 is a cross section of a car or snow plow showing my improved flanger in front elevation. Fig. 2 is a plan view of the flanger disconnected from its operative mechanism. Fig. 3 is a side sectional elevation of the flanger showing its locking device. Fig. 4 is a front elevation of one-half of the flanger. Fig. 5 is a sectional view on the line Y—Y in Fig. 4.

The snow plow with which my flanger is designed to be connected is provided with the usual longitudinal sills 1, floor 2, and sides 3. Extended transversely of the body of this snow plow is a timber 4 rigidly supported by the roof and sides of the body, and beneath such timber and bolted to said sills is a timber 5. Fixed to said timbers are two posts 6 designed for the support of the flanger operating mechanism.

The flanger itself consists essentially of a pair of vertical plates arranged in the form of an obtuse or acute V, with the vertex midway between the track-rails, and provided with blades designed to perform the actual work of scraping the snow both from the upper surfaces of the rails, and also from the inner surfaces of the same.

The mechanism for elevating and depressing this flanger comprises springs for counterbalancing the flanger, and steam or air-supplied cylinders for raising and lowering

the flanger. Said cylinders 10 are each adapted to receive steam or compressed air at either side of its piston and to thereby raise or lower the flanger accordingly; the pipes 10^a indicating the means for supplying the piston-moving agent. The piston rod 11 of each piston is suitably secured to the connecting rod 12, which latter is joined at its lower end to the bail 13 by which the flanger-section beneath is supported. Said rod 12 passes loosely through a suitable opening in the bracket 15, and also through a counterbalancing spring 20 which abuts between such bracket and the spring-thimble 21. This spring serves to so nearly support its flanger-section as to leave the minimum possible amount of work for the cylinders to accomplish in raising the flanger. At the under side of each bracket 15 are two ears 16 having openings through them for the reception of a suitable locking pin 19; and through the lower part of the associated connecting rod 12 is an eye 14 arranged to come into alinement with the said openings 17 when the flanger is raised to its highest position. When the flanger is not in use, said pins are inserted through said eyes and openings, and so relieve the springs 20 of the strain and ensuing set which would occur, especially during the long months awaiting the time of need.

To render the substitution of a new spring 20 as convenient and quick an operation as possible, the connecting rods 12 are each made separable from the upper section by means of a sleeve nut 18 screwed upon the ends of both. By removing this sleeve nut and section 12, a fresh spring 20 can be quickly substituted for the old one.

Upon the face of the flanger plates 30 are fixed the angle-irons 31 provided for the purpose of preventing the snow from crowding up and over the flanger, and forcing the same to pass outward to the flanger-sides where it can be discharged outside the rails. To render the action more certain, I form the angle-iron with an acute instead of a right angle, as shown in Figs. 3 and 5. When the snow is crowded up against the overhanging ledge formed by said angle iron, such snow finds it easier to be diverted laterally along the inclines to the outer edges of the flanger, than to crowd forward and downward against the oncoming snow and thence to mount up over the ledges past the upper edge of the flanger.

The flanger plates 30 are slidably supported in the following manner: Back of each plate 30 is a fixed plate 35 braced by metal knees 36 bolted to the sills 1; and between each plate 30 and its backing plate 35 are a suitable number of bars 37 for the movable plates to slide upon and so to reduce friction to a minimum, while at the same time making room for the various bolts and rivets by which the parts are secured together. Said movable plates are slidably secured to the fixed plates by means of the U-bars 40 each having its ends threaded and held in the movable plates by suitable nuts; the bent ends of said bars penetrating the vertically elongated slots 41 in the fixed plates, as shown in Figs. 4 and 5. These provide the strongest possible kind of fastening device for the purpose.

The inner ends of the fixed plates 35 are bound together by the wide sheet iron strap 38 passing in a single plane from end to end of said plates, as shown in Fig. 2. Said ends being suitably separated, and the inner corners of the movable plates 30 being cut away, as shown in Figs. 1 and 4, whatever snow should happen to crowd up over the lowermost parts of the ledges 31 will escape through the space thus provided, and so not accumulate to interfere, when frozen, with the flanger's action.

The actual work of clearing the tracks of snow and ice is performed by the blades 32, 33 and 34 which are suitably secured to, and project below, the lower edges of the movable plates. The function of the blade 33, in addition to its snow-removing duty, is that of serving as a tie to bind rigidly together the two flanger plates 30; while the blades 34 act to scrape the snow from the upper surfaces of the track-rails.

The most important work done is that by the blades 32 which are designed to clear the snow and ice from the inner surfaces of the rails, in order to make room for the flanges of the car-wheels; thereby giving the name which is applied to the apparatus as a whole. Should, on account of heavily falling and drifting snow, or possibly because of extra high speed on the part of the snow-plow, the flanger fail to be raised quick enough to avoid some switch track, guard rail or other obstruction, I plan to so arrange and proportion the parts that the blades 32 will be the only members to be bent or broken. To insure this, said blades are made of considerably less thickness than the supporting plates, and will hence bend under a strain which will not injure the latter. It is then but the work of a minute to remove the bolts securing said blades in place, and to replace the distorted member with a perfect one kept on hand for the purpose. Not only is the ledge or shelf 31 on a flanger plate arranged at an

acute angle with respect thereto, but this angle is varied to a lessened degree toward the outer end of each; for the reason that after the snow has once been made to start upon its outward travel along the face of the flanger plates, there is much less danger of its rising up and over such ledges.

To prevent the inflow of cold air and snow through the openings in the floor, I provide each bail-section 13 with a stuffing box 45 fastened to the floor and inclosing said bails entirely airtight, as shown in Fig. 1. This requires that the lower end of each bail-section shall be separable from their jaws 13^a, and I hence make them separate and tap them into said jaws.

What I claim as my invention and for which I desire Letters Patent is as follows, to wit:—

1. A snow flanger comprising a pair of united vertically slidable plates forming an angle with each other, blades carried by said plates, springs normally holding said plates in an elevated position, and cylinders and pistons therein for forcing said plates and blades into engagement with the track rails.

2. A snow flanger comprising a pair of vertically slidable plates forming an angle with each other, blades carried by said plates, a bail connected with each said plate, a spring normally supporting each blade in an elevated position, a cylinder and piston for forcing each plate and its blades into engagement with the track rails, and a vertical rod joining each said bail and its operating piston.

3. A snow flanger comprising flanger plates and blades carried thereby, a vertical rod connected with each said plate, a suitably supported bracket penetrated by each said rod, a cylinder and piston connected with the upper end of each said rod, and a coiled spring located on each said rod and supported by the bracket penetrated by the latter; each said rod being provided with a shoulder for its spring to abut against, and said rod being separable at such shoulder to permit of the ready replacement of said spring.

4. A snow flanger comprising flanger plates, a vertical rod connected with each of said plates, a fixed bracket penetrated by each rod, perforated ears rigid with each bracket below its level, pins for insertion through said perforations, a spring on each rod supported on said brackets, and a fluid-pressure device at the upper end of each rod for depressing the same and said plates; each rod having a shoulder to rest upon its spring, and an eye at a suitable distance below the bracket thereat for engagement with said pin should occasion arrive.

5. In a snow flanger, the combination of a vertically slidable plate, a bail supporting it, a connecting rod rising from said bail, a bracket penetrated by said rod, a spring

supported by said bracket and encircling said rod, a removable section at the upper end of said rod serving as a shoulder for the abutment of said spring, and a fluid-operated cylinder in alinement with said rod having its piston rod joined to said removable section; said rod and section being removably united by having said rod tapped into said section.

6. In a snow flanger, the combination with the vertically slidable plates arranged at an angle with each other, of an angle-iron fixed to the face of each plate and sloping upward toward its outer end.

7. In a snow flanger, the combination with the vertically slidable plates arranged at an angle with each other, of a ledge or shelf fixed to each plate; the said shelves making an acute angle with their respective plates, and rising upward at their outer ends.

8. In a snow flanger, the combination with the vertically slidable plates arranged at an angle with each other, of shelves or ledges fixed to said plates at an angle more acute at their inner ends than at their outer ends.

9. The combination with the car body having the longitudinal sills, of a timber fixed transversely upon said sills, a transverse timber held by said body near its roof and above the first named timber, two vertical posts terminally fixed to said timbers, a cylinder secured to the upper part of each post, a flanger slidable below said sills, and a direct vertical connection between each cylinder's piston and the flanger.

10. The combination with the car body having the longitudinal sills, of a timber fixed transversely upon said sills, a transverse timber held by said body near its roof and above the first named timber, two vertical posts terminally fixed to said timbers, a cylinder secured at the upper part of each post, knees fixed beneath said sills, plates fixed to said knees at an angle, flanger plates slidably held by said fixed plates, and direct vertical connections between said flanger plates and the pistons of said cylinders.

11. The combination with the car having the longitudinal sills, of knees fixed beneath the latter, plates fixed to said knees at an oblique angle with respect to each other but separated a substantial distance one from the other, a flat strap-plate joining the separated edges of said plates, and vertically movable plates slidably held by said fixed plates; the last named plates being united at the lower half of their inner edges, but cut away at the upper half of such inner edges to form a space for the escape of snow thereat.

12. In a snow flanger, the combination with fixed plates having vertical bars located upon their faces, of vertically slidable flanger plates supported in contact with said vertical bars.

13. In a snow flanger, the combination with fixed plates having vertical slots therein, of flanger plates movably supported, and U-bars having their ends projecting through said slots from the rear of the fixed plates and rigidly connected with the movable plates.

14. The combination with vertically slidable flanger plates suitably supported against rearward displacement, of blades removably attached to the lower edges of said flanger plates and made substantially frailer than the latter.

15. The combination with a snow plow body, of flangers slidably supported beneath the same, jaws attached to the plates comprising said flangers, bails removably secured to said jaws, flanger operating mechanism within said body connected with said bails, and stuffing boxes inclosing said bails and fastened to the floor of the body at the points penetrated by said bails.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 7th day of June, 1907.

HARRY E. PARSONS.

Witnesses:

A. M. EUT,
J. F. CARLSON.