

No. 698,873.

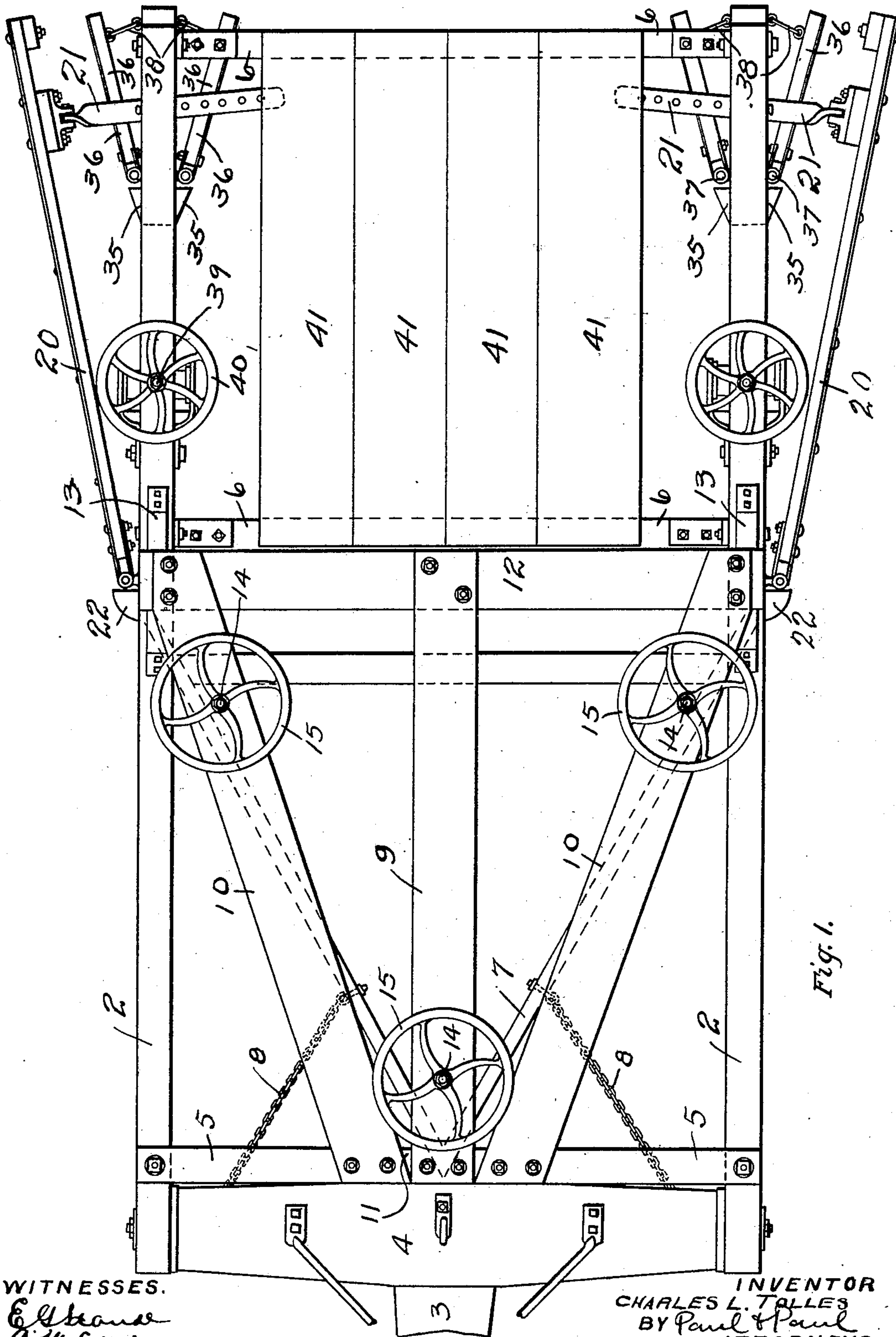
Patented Apr. 29, 1902.

C. L. TOLLES.
SNOW PLOW.

(Application filed Jan. 7, 1902.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES.
E. A. Stone
A. W. Sullivan

INVENTOR
CHARLES L. TOLLES
BY Paul & Paul
ATTORNEYS

No. 698,873.

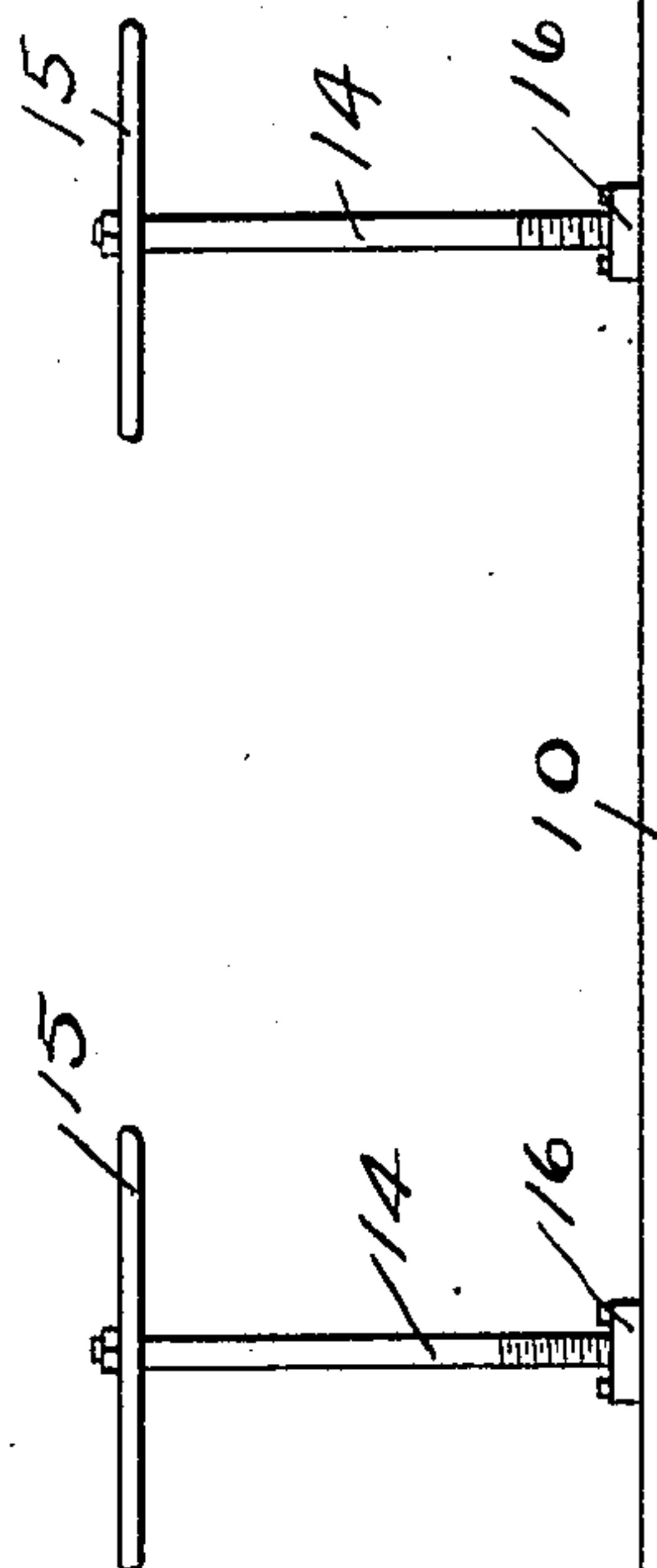
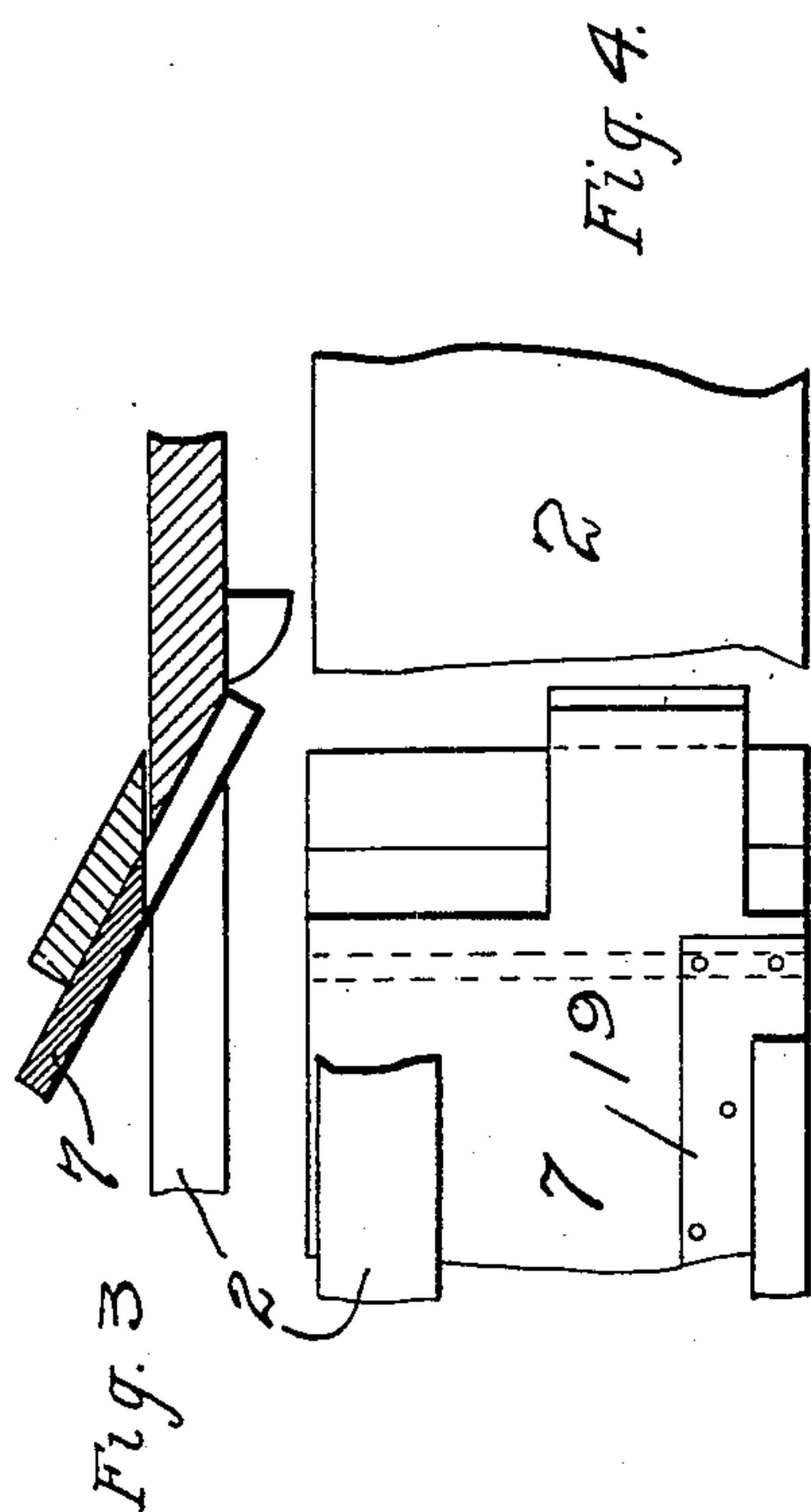
Patented Apr. 29, 1902.

C. L. TOLLES.
SNOW PLOW.

(Application filed Jan. 7, 1902.)

(No Model.)

3 Sheets—Sheet 2.



WITNESSES.
E. H. H. H.
A. M. Sullivan

INVENTOR
CHARLES L. TOLLES
BY *Paul & Paul*
ATTORNEYS.

No. 698,873.

Patented Apr. 29, 1902.

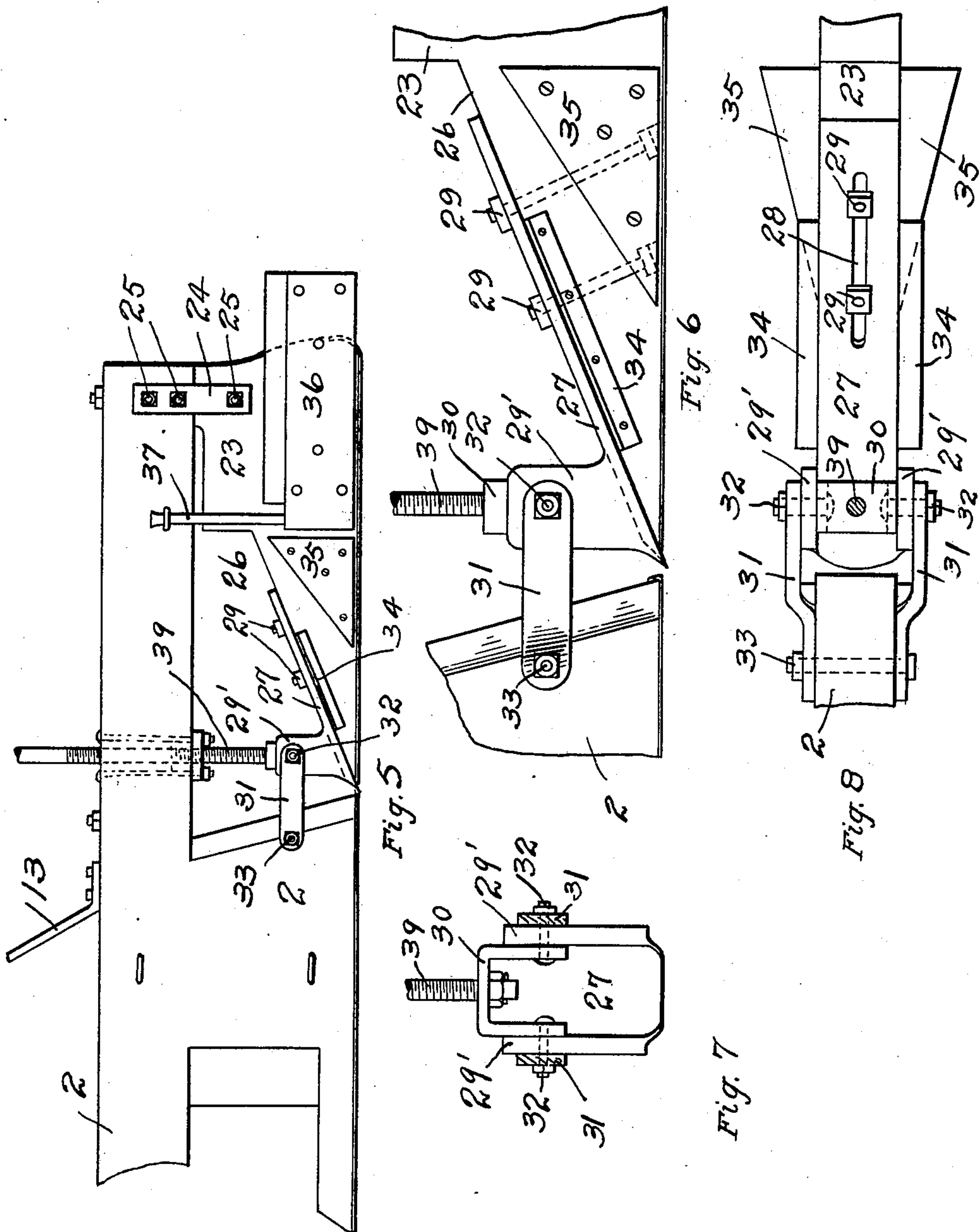
C. L. TOLLES.

SNOW PLOW.

(Application filed Jan. 7, 1902.)

(No Model.)

3 Sheets—Sheet 3.



WITNESSES.
E. G. Stander
A. W. Sullivan

INVENTOR
CHARLES L. TOLLES
BY *Paul & Paul*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES L. TOLLES, OF EAU CLAIRE, WISCONSIN.

SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 698,873, dated April 29, 1902.

Application filed January 7, 1902. Serial No. 88,717. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. TOLLES, of Eau Claire, Eau Claire county, Wisconsin, have invented certain new and useful Improvements in Snow-Plows, of which the following is a specification.

My invention relates to devices for removing snow from logging-roads and to make ruts therein; and the objects of the invention are, first, to provide a snow-plow device whereby the loose ice and snow may be gathered up and deposited at the side of the road; second, to provide means for making ruts in the roads to receive the runners of a sled and form a guide therefor, thereby preventing a loaded sled from swerving or sluing out of the track when passing over the road; third, to provide means whereby the operator without changing the adjustment or position of the rutting-tool may permit or prevent the formation of a rut in the surface of the road; fourth, to provide means whereby the operator without altering the adjustment of the rutting-tool may raise or lower the section of the sled-runner carrying the rutting-tool, so as to bring the edge of the rutting-tool on a level with or above the lower edge of the fixed section of the sled-runner or may drop it below the lower edge of said section; fifth, to provide means whereby the well-known V-shaped plow that is ordinarily placed between the runners of a sled may be used in connection with the rut-forming device, provision being made for discharging the snow and ice upon each side of the sled.

The invention consists generally in a sled-runner having a fixed section and a vertically-movable section, with a rutting-tool arranged upon said movable section, and means controlled by the operator for changing the adjustment or position of said movable section for permitting or preventing the formation of a rut in the road.

The invention consists, further, in constructions and combinations hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of the specification, Figure 1 is a plan view of a sled and rutting-tool embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a section on line $x x$ of Fig.

2, showing the relation of the V-shaped plow to the sled-runner. Fig. 4 is a detailed side elevation, partly broken away, showing the relation of the V-shaped plow to the fixed section of the runner. Fig. 5 is a side elevation of a portion of the sled-runner, showing the section carrying the rutting-tool depressed or adjusted so as to permit the tool to operate. Fig. 6 is a similar view showing a portion of the sled-runner and rutting-tool on a larger scale than that shown in Fig. 5. Figs. 7 and 8 are details of the rutting-tool and the parts arranged in connection therewith.

In the drawings, 2 2 represent the runners of a sled having the usual tongue 3 and roller 4 at the forward end and the cross bars or beams 5 and 6, by means of which the runners are rigidly secured together and held in position. Each of the sled-runners is cut away at the forward portion, so as to provide elongated openings, and a V-shaped plow 7 is arranged between the forward portions of the runners, the rear end of each portion of the plow preferably projecting through the opening in the runner, as shown particularly in Figs. 2, 3, and 4, so as to permit the snow and ice that is cleared from the road by the V-shaped plow to escape through the openings in the sled-runners and to be deposited at the side of the road. Each part of the V-shaped plow is provided with a chain 8, connected thereto and also connected to the sled-roller 4, by means of which the draft upon the V-shaped plow is carried by the roller. The forward portion of the sled is preferably provided with a central longitudinal bar 9 and with the diagonally-arranged bars 10. The forward ends of all of these bars are secured on a bar or beam 11, which is in turn secured upon the cross bar or beam 5. The rear ends of the bars 10 and 11 are secured upon the cross-bar 12, and this bar is supported upon the brackets or supports 13. Screw-rods 14, provided with hand-wheels 15, pass through nuts 16, secured upon the bars 9 and 10, and their lower ends have connected to them the swiveled heads 17, pivotally connected to the plow 7 by means of the straps or lugs 18. By this means the plow 7 may be raised or lowered, as desired, that portion of each part of the plow that extends through the opening in

the runner being of less height than the perpendicular diameter of the opening, so as to permit the plow to be raised or lowered. The lower edge of each part of the plow is preferably provided with a metal shoe or strip 19, suitably secured thereto. Pivotaly secured to the side of the runner, in the rear of the opening therein, is a wing 20. The forward end of each wing is pivotaly connected to brackets arranged upon the side of the runner, and the rear end of each wing has connected to it a perforated bar 21, which passes through a slot in the runner, near the rear end thereof, and by means of these bars the wings may be adjusted toward or from the sled-runners, and by inserting a pin through one of the openings in the bar 21 the position of the wing may be fixed relatively to the sled-runner. A shield 22 is secured to the sled-runner in front of the end of the wing 20. With this construction by operating the hand-wheels 15 and threaded rods 14 the plow may be quickly raised or lowered, as required. The rear portion of each runner 2 is cut away upon its lower side, as shown in Fig. 5, and a movable runner-section 23 is arranged in said opening and is connected to the main portion of the sled-runner by means of the straps 24 and bolts 25. By this means the forward end of the movable runner-section may be raised or lowered, so as to carry it level with, above, or below the rear end of the immovable runner-section 2. The movable runner-section is provided with an inclined upper face 26, upon which the rutting-tool 27 is secured, as shown in Figs. 5, 6, and 8. The rutting-tool 27 is slotted at 28, and bolts 29 secure this tool to the movable runner-section 26. The tool is held in an inclined position, so that it is adapted to cut a rut in the surface of which the sled is being hauled. The lower end of the rutting-tool is provided with upright lugs or ears 29', which are connected by it to the U-shaped strap 30, and the links 31 also connect these lugs with the runner-section 2. (See Figs. 5, 6, 7, and 8.) The same bolts 32 are preferably employed for securing the links 31 and the U-shaped strap 30. A suitable bolt 33 preferably passes through the forward end of the links 31 and through the runner-section 2. (See Fig. 8.) Below the rutting-tool, down each side of the movable runner-section 23, is an inclined plate 34, that aids in carrying the snow or ice taken up by the rutting-tool away from the sides of the runner-section, and wings 35 are secured to the sides of the runner-section in the rear of the rutting-tool 27. These wings extend upward from the sides of the runner-section and assist in moving the ice and snow away from said section. In the rear of the wings 35 are the pivoted wings 36, preferably hinged to the sides of the runner by means of the pivot-rods 37. The rear ends of the wings 36 are adjustably connected to the sides of the runner-section by means of the hooks or links 38. A threaded rod 39 is arranged in each of the

fixed runner-sections 2 above the forward end of the movable runner-section and is connected to said runner-section by the U-shaped strap 30, hereinbefore referred to. (See Figs. 5, 6, 7, and 8.) This rod is provided with a hand-wheel 40, by means of which it may be turned in either direction.

The operation of the device is as follows: The V-shaped plow 7 is adjusted vertically to the desired position by means of threaded rods 14, and the wings 20 are adjusted laterally to the desired position and are secured in such position by means of the perforated bars 21 and suitable pins which are placed in the perforations. The plow being turned over, the rod scrapes away the snow, which is passed laterally through the openings in the runner-sections 2, and it is then moved farther away by means of the wings 20. The road is thus cleared of snow, which is piled up on both sides of the roadway. If it is desired to cut ruts in the road, the forward ends of the movable runner-section 23 are moved downward by means of threaded rods 39, so as to bring the edges of the rutting-tool below the lower edges of the runner-sections 2, and thereby ruts or grooves are cut in the roadway the full width of such tools, the ice and snow that is removed passing upward over the lower part of the rutting-tool and falling upon each side of the runner-section 23 and being moved away from the runner-section by means of the wings 35 and 36. The position of the rutting-tool upon the inclined surfaces 26 of the movable runner-section 23 may be regulated by means of the slot 28 and the bolts 29. The depth of the cut that is made by the rutting-tool is regulated by the position of said tool upon the runner-section 23 and by the adjustment of said runner-sections. A platform for the operator to stand on may be provided by securing suitable boards or planks 41 upon the cross-bars 6. If preferred, the V-shaped plow and the wings 20 may be removed or omitted, in which case the device will be simply a rutter. When the V-shaped plow and the wings 20 are employed, the device will be both a snow-plow or road-maker and a rutter.

Modifications in the construction will suggest themselves to the skilled mechanic, and such modifications may be made without departing from my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a suitable runner having a vertically-adjustable runner-section, of a rutting-tool secured upon said adjustable section, and means for raising or depressing said adjustable runner-section, substantially as described.

2. The combination, with a suitable runner comprising a fixed section, a vertically-adjustable section, of a rutting-tool carried by said adjustable section and means for raising or depressing said adjustable section and

thereby carrying the edge of the rutting-tool above or below the lower edge of the other runner-section, substantially as described.

5 3. The combination, with a runner having a pivotally-supported and vertically-adjustable section, a rutting-tool fixed thereon and means for tilting said adjustable section and thereby raising or lowering the cutting edge of said rutting-tool, substantially as described.

10 4. The combination, with a sled-runner provided with a movable runner-section, of means for pivotally connecting the rear portion of said movable runner-section to said runner, means for raising or lowering the forward portion of said movable runner-section, and a rutting-tool secured upon said movable runner-section, substantially as described.

15 5. The combination, with sled-runners provided in their forward portions with elongated openings, of a V-shaped plow arranged between said runners and adapted to discharge snow and ice laterally through said openings, means for vertically adjusting said plow, the vertically-movable runner-sections adjust-

ably connected to said runners at the rear 25 portions thereof and the rutting-tools arranged upon said adjustable runner-sections, substantially as described.

6. The combination, with sled-runners provided at the forward portions, with elongated 30 openings and at their rear portions with vertically-adjustable runner-sections, the V-shaped plow arranged between the forward portions of said runners, between said elongated openings, adjustable wings secured to 35 the runners in the rear of said openings and in front of said adjustable runner-sections, rutting-tools secured upon said adjustable sections and means for raising or lowering said adjustable runner-sections, substantially 40 as described.

In testimony whereof I have hereunto set my hand this 3d day of January, 1902.

CHARLES L. TOLLES.

Witnesses:

A. M. BUNDY,
ROY P. WILCOX.