No. 803,820. PATENTED NOV. 7, 1905.

H. GRIMES.

SNOW PLOW.

APPLICATION FILED MAR. 18, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

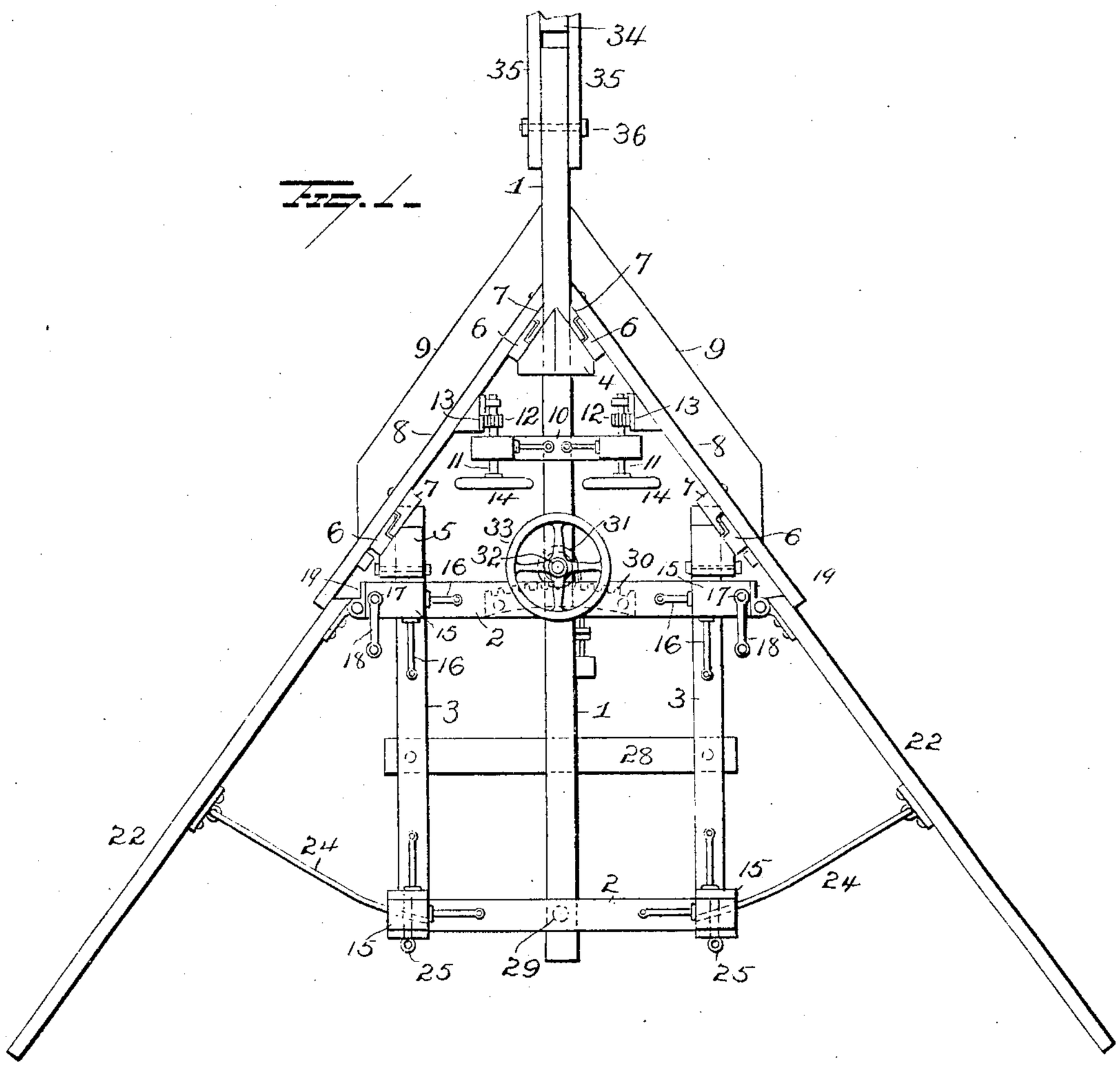
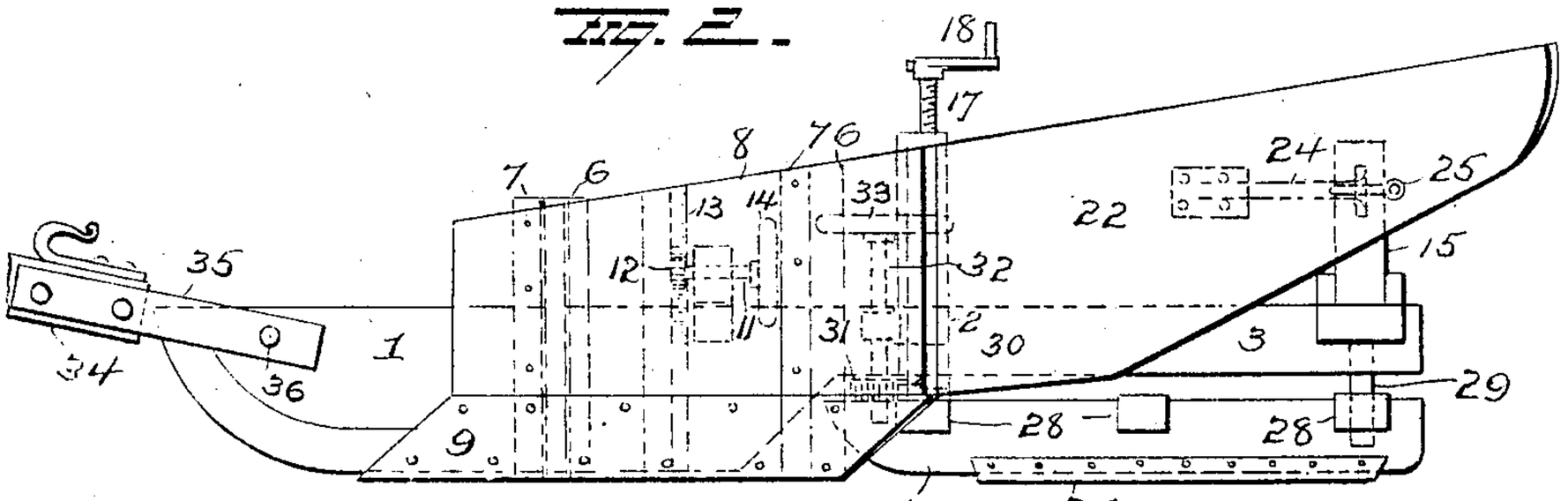


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

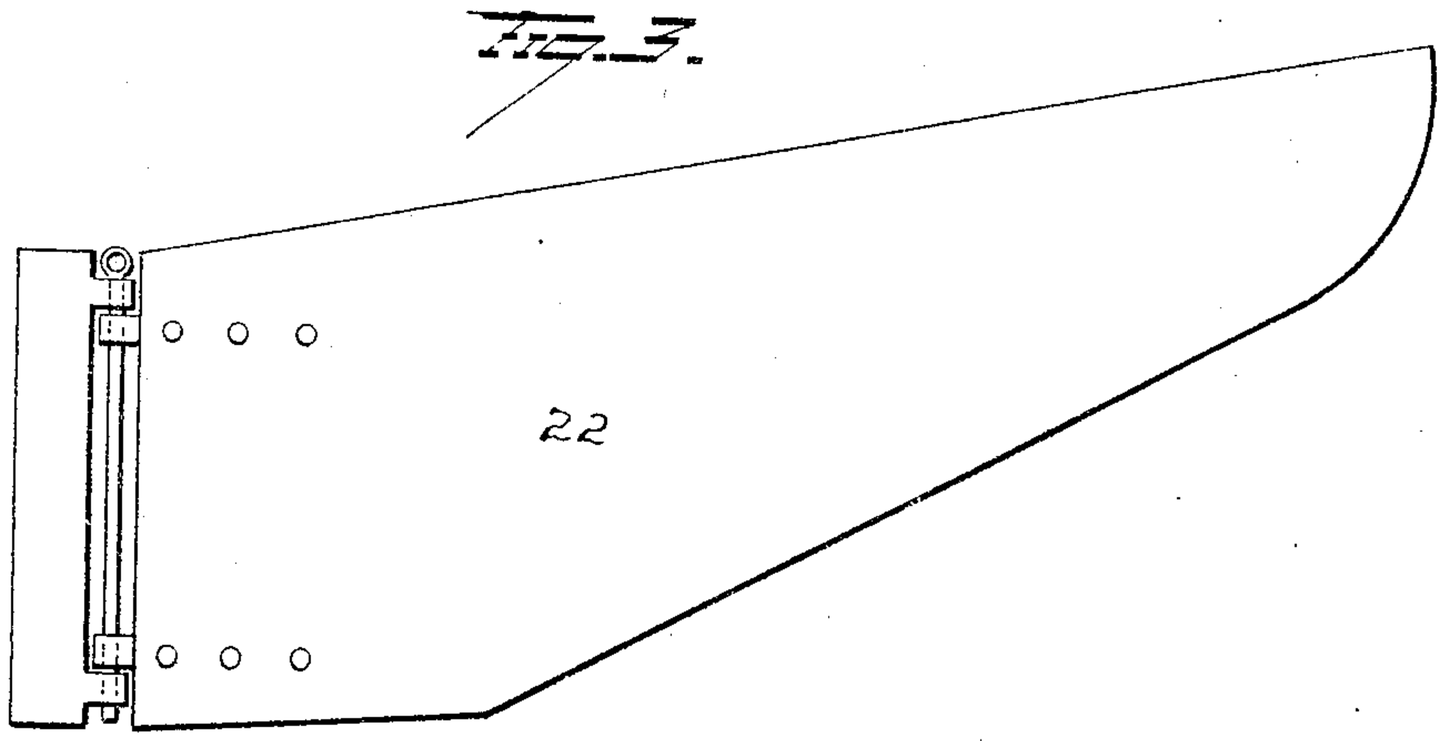


Fig. 4.

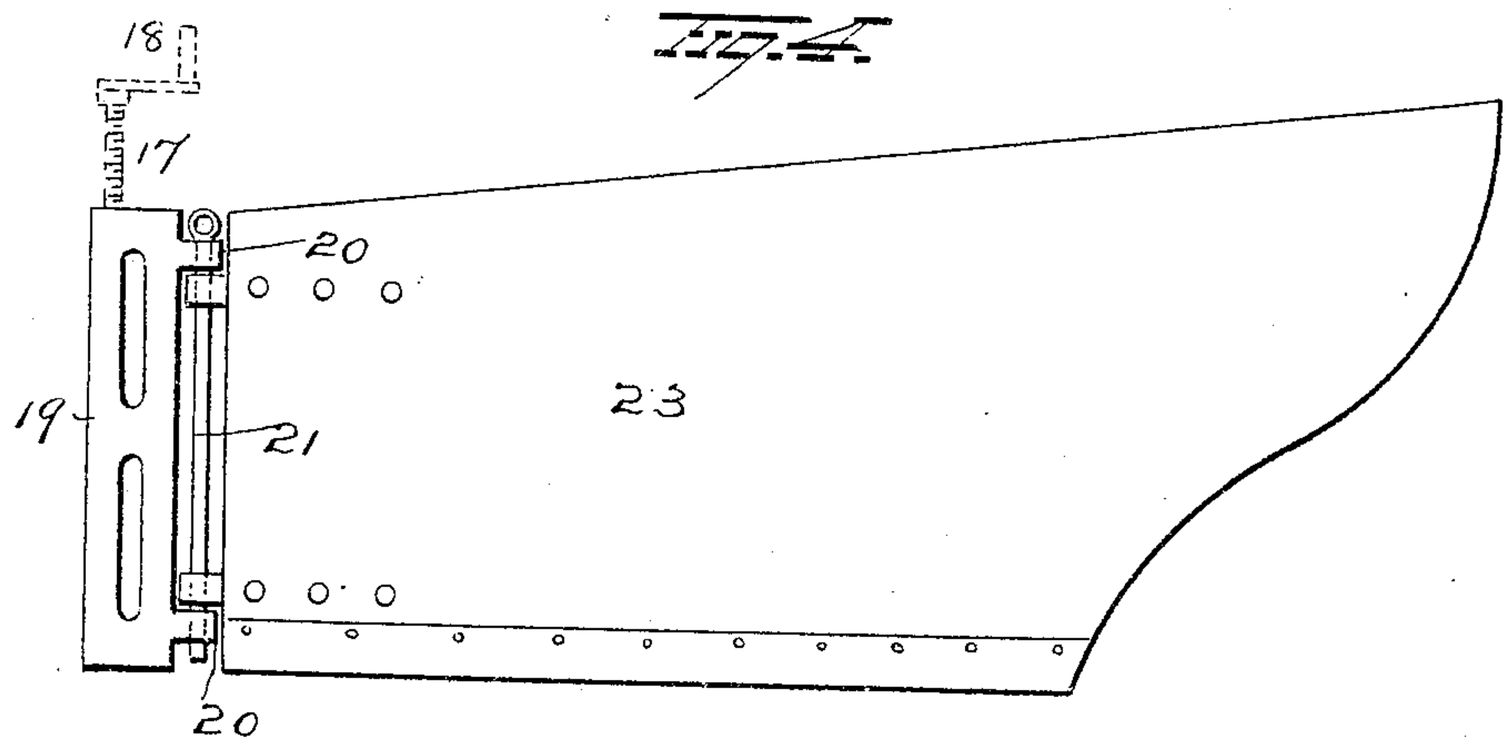
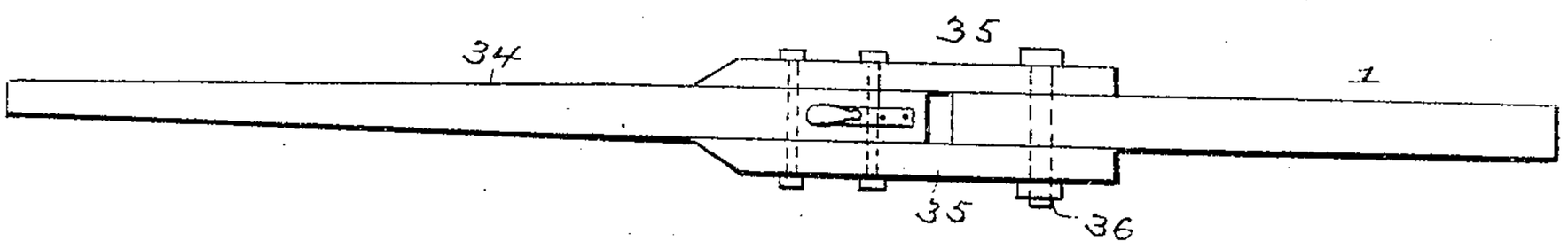


Fig. 5.



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UNITED STATES PATENT OFFICE.

HOWARD GRIMES, OF NEWCOMB, NEW YORK.

SNOW-PLOW.

No. 803,820. Specification of Letters Patent. Patented Nov. 7, 1905.

Application filed March 18, 1905. Serial No. 250,787.

To all whom it may concern:

Be it known that I, HOWARD GRIMES, a resident of Newcomb, in the county of Essex and State of New York, have invented certain new and useful Improvements in Snow-Plows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in snow-plows, and more particularly to plow of the character mounted on sleds and adapted for cleaning roads, streets, and the like, the object of the invention being to provide an improved plow and adjustable mounting therefor and improved adjustable wings for throwing the snow as far to the side of the road as may be desired, and also provide a plow with wings that can be raised and lowered at will.

A further object is to construct a sled with a central runner with improved plows at both sides and provide improved coöperating mechanism to insure the perfect operation thereof.

A further object is to provide the sled with improved steering mechanism to enable the operator to hold the plow in position around curves in the road, or, in other words, to guide the plow at an angle different from the direct draft of the same.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view illustrating my improvements. Fig. 2 is a view in side elevation. Fig. 3 is a view of one form of wing and attaching device. Fig. 4 is a view of another form of wing, and Fig. 5 is a view of the coupling connecting the tongue with the central runner.

1 represents a long central runner on which a platform is secured, comprising cross-timbers 2 and longitudinal timbers 3, and the spaces between said timbers may be filled with slats, if desired. A post 4 is secured on runner 1, and posts 5 are secured on the forward ends of timbers 3. These posts 4 and 5 are provided with grooved guide-bars 6 to receive the flanges of similarly-shaped bars 7 on the rear faces of plows 8 and secure the plows against displacement, yet permit free vertical adjustment thereof. These plows 8 extend diagonally and rearward from the central runner 1 and preferably have metal cutting-flanges 9 at their lower edges, which project forward from the plows proper and are adapted to dislodge ice and other stubborn obstruction.

On central runner 1, near its forward end, a cross-frame 10 is located and supports horizontal shafts 11, having pinions 12 thereon, meshing with vertical racks 13 on the plows 8, and hand-wheels 14 are secured on the rear ends of the shafts 11 in convenient reach of the operator to enable him to adjust the plows vertically to suit conditions, and any approved ratchet or other mechanism may be provided to lock the plows at the positions to which they are adjusted. This mechanism not only enables the plows to be adjusted to suit the conditions of the ground to be cleared, but also permits the plows to be raised out of contact with the ground when the device is to be transported from place to place.

At or near the corners of the platform formed by timbers 2 and 3 vertical posts 15 are located and are strengthened by brace-rods 16. The forward posts 15 support set-screws 17, having crank-handles 18 on their upper ends. These screws 17 have brackets 19 mounted thereon, and said brackets are adjustable vertically by turning the screws. The brackets 19 are made with alined perforated ears 20 to receive hinge-pins 21 to connect thereto either wings 22 or 23, as shown in Figs. 3 and 4. Wing 22 is for ordinary use, while wing 23 is to be used to clean ice and other like difficult material to remove.

Brace-rods 24 are connected to the rear of wings 22 and 23 some distance from their forward ends and are mounted in slots in the rear posts 15, and said rods 24 are made with a series of openings, any of which may be alined with openings in the posts and secured by pins 25, thereby permitting the angle of the wings to be adjusted to suit conditions and be effectually braced in any and all positions.

The rear portion of central runner 1 is recessed, as shown, to accommodate a steering-sled 26, which comprises two runners located at opposite sides of the runner 1 and normally parallel therewith. These runners 26 are provided with blades 27 to firmly hold the runners true in any position the steering-sled is moved and prevent sluing of the plow. The runners 26 are connected by cross-bars 28, and the rear bar 28 is connected at its center with the rear timber 2 by means of a king-bolt 29, permitting free lateral adjustment of the steering-sled. The forward cross-bar 28 has a curved rack 30 thereon, with which a

pinion 31 on a vertical shaft 32 meshes. This shaft 32 is supported in the cross-bar 2 of the platform and has a steering-wheel 33 secured on its upper end. By turning this steering-wheel the steering-sled can be swung to either side and serve as a rudder to change the direction of movement of the plow, permitting the plow to round a curve of the desired arc or move to either side. Any suitable mechanism can be employed to lock the steering-sled against accidental movement when adjusted.

34 represents a tongue having bars 35 secured to its opposite sides, and these bars 35 are adapted to receive the forward end of central runner 1 between them. The runner 1 and bars 35 are made with alined openings to receive a bolt or coupling-pin 36 to couple the tongue to the plow and permit its ready disconnection whenever desired.

By the construction above described it will be seen that the plows and wings can be adjusted to suit conditions or can be elevated to inoperative position for transporting the plow from place to place, and the apparatus can be guided at the will of the operator to clean a stretch of any angle or curvature.

A great many slight changes and alterations might be made in the general form and arrangement of the parts described without departing from my invention, and hence I would have it understood that I do not restrict myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a snow-plow, the combination of a central runner, plows secured to opposite sides thereof, and side runners at both sides of the central runner, said side runners connected together and having a lateral pivotal movement for steering the plow.

2. In a snow-plow, the combination of a central runner, a platform thereon, posts on the central runner and platform, guides on said posts, plows located at both sides of the central runner, and bars on said plows movable vertically in said guides, and means for adjusting the plows vertically.

3. In a snow-plow, the combination of a runner located in line with the longitudinal axis of the machine, plows attached to said runner, and a steering-sled movably connected with said runner.

4. In a snow-plow, the combination with a central runner, and a platform thereon, of a steering-sled pivoted to the platform, a curved rack on said steering-sled, a vertical shaft on the platform, a pinion on the shaft meshing with the curved rack, and a hand-wheel on said shaft.

5. In a snow-plow, the combination with a central runner, plows supported thereby, and a platform secured on said runner, of a steering-sled below the platform, a king-pin pivotally connecting the rear ends of the platform and sled, a curved rack on the front end of the sled, a vertical shaft on the platform, a pinion on said shaft meshing with the curved rack, and a hand-wheel on said shaft.

6. In a snow-plow, the combination with a central runner, plows supported thereby, and a platform secured on said runner, of a steering-sled beneath the platform, pivoted thereto, and comprising two runners, one located at each side of the central runner, downwardly-projecting guide-blades on the sled-runners, and means for changing the angle of the steering-sled to change the direction of movement of the snow-plow.

7. In a snow-plow, the combination with a central runner, and a platform secured thereon, of plows at opposite sides of the central runner, adjusting-screws on the platform adjacent to the rear ends of the plows, brackets adjustable vertically on the screws by turning the latter, and wings having removable hinged connection with said brackets.

8. In a snow-plow, the combination with a central runner, and a platform thereon, of plows at opposite sides of the central runner, adjustable supports on the platform adjacent to the rear ends of the plows, wings hinged to said supports, posts on the rear portions of the platform having slots therein, brace-rods secured to the wings and projecting through said slots in the posts, and means for securing the rods at various adjustments in the post-slots to vary the angle of the wings.

9. In a snow-plow, the combination of plows, and a sled supporting the same, comprising three normally parallel runners, two of which are constructed to be moved simultaneously to vary the direction of movement of the sled.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HOWARD GRIMES.

Witnesses:
JOHN ANDERSON, Jr.,
PATRICK J. TUMMINS.