(No Model.) 2 Sheets—Sheet 1.

A. C. PLUMLEY.

SNOW PLOW.

No. 549,817. Patented Nov. 12, 1895.

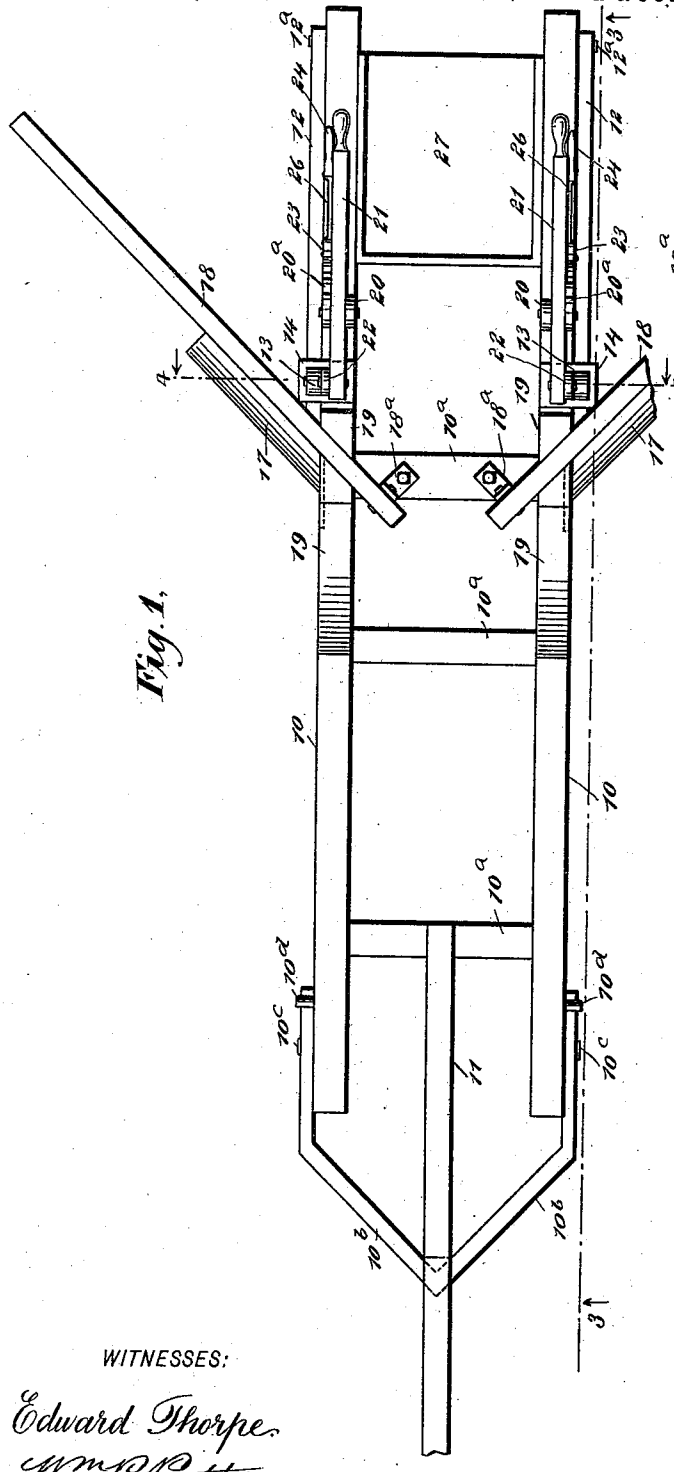

Fig. 1.

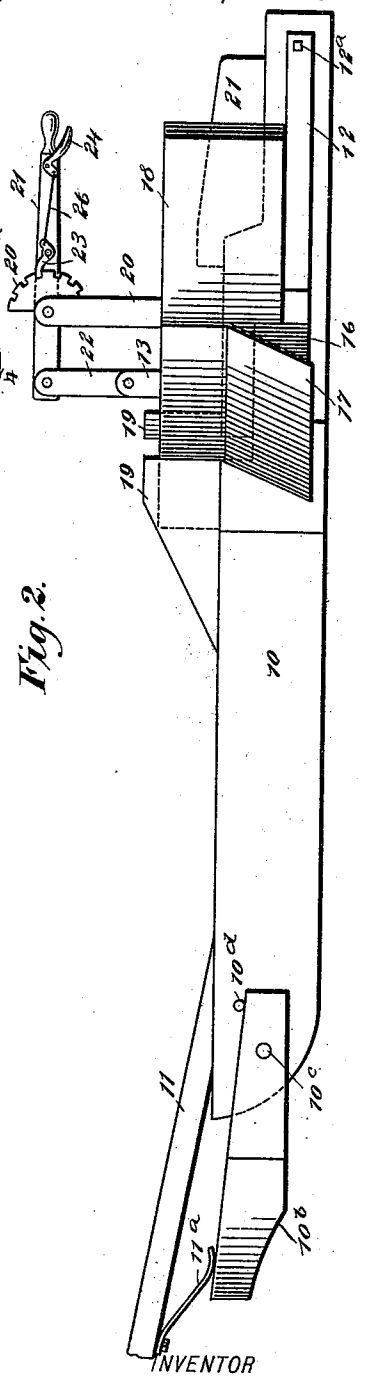

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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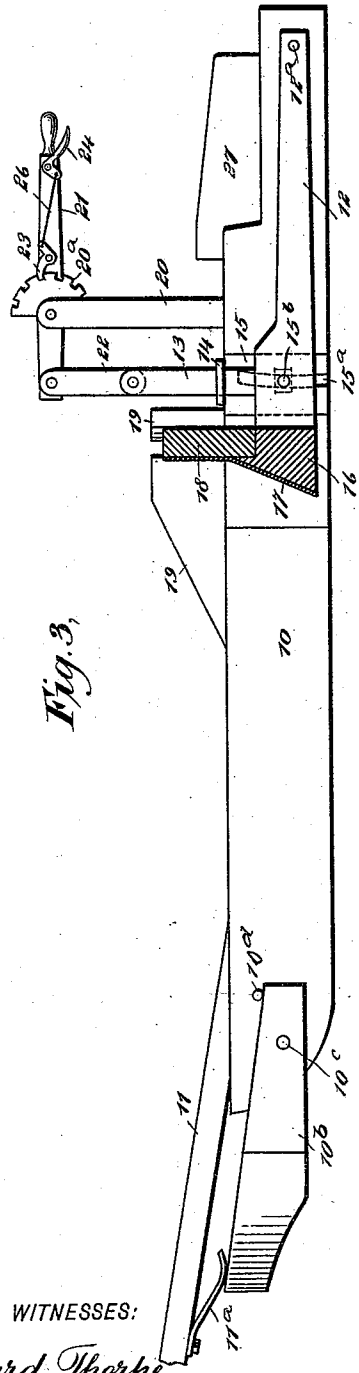

Fig. 3.

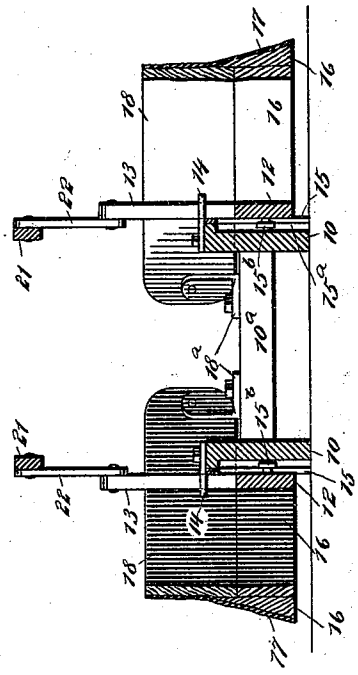

Fig. 4.

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UNITED STATES PATENT OFFICE.

ALBERT C. PLUMLEY, OF SHERBURNE, VERMONT.

SNOW-PLOW.

SPECIFICATION forming part of Letters Patent No. 549,817, dated November 12, 1895.

Application filed March 28, 1895. Serial No. 543,499. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. PLUMLEY, of Sherburne, in the county of Rutland and State of Vermont, have invented a new and Improved Snow-Plow, of which the following is a full, clear, and exact description.

This invention relates to an improved plow that is well adapted for use on wagon-roads to clear away snow.

The object of the invention is to provide a simple and comparatively inexpensive device of the indicated character which will be adapted for movement along a road-bed that is obstructed by snow and effectively remove the snow, depositing it at one or both sides of the road, as may be desired.

A further object is to provide novel details of construction for the improvement which will enable an operator riding on the plow to graduate the depth of cut of the cutter-blades or shovels of said device, so that the work of removing snow which has considerable depth may be effected by degrees, and thus avoid stalling the draft-animals used to pull the plow over the road-bed, from which an excessive depth of snow must be laterally removed.

The invention consists in the construction and combination of parts, as is hereinafter described, and defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improved snow-plow, parts of some features being removed. Fig. 2 is a side elevation of the improvement. Fig. 3 is a partly sectional side view of the device on the line 3 3 in Fig. 1; and Fig. 4 is a transverse sectional view on the line 4 4 in Fig. 1.

In carrying the invention into effect a sled having comparatively-long runners 10 is provided for the support and progressive movement of other details of construction which embody the invention. The runners 10, which are formed of wood or other available material, have a sufficient height to insure effective service as a vehicle and have their forward ends curved as usual from their treads to the top edges. The runners are properly spaced apart by the cross-bars 10^a, and from the front cross-bar a tongue or pole 11 is forwardly projected for the guidance of the sled.

At the front of the sled a V-shaped plow is attached by pivoting its two diverging members 10^b on the outer sides of the runners, two parallel portions being produced on said plow members to permit their pivoted attachment to be made, as indicated at 10^c in Figs. 1, 2, and 3.

It will be seen that a spring 11^a is attached at one end to the pole 11 and presses on the pivoted plow and normally holds it in contact with the stop-pins 10^d and allows the plow to have a yielding working motion. The lower edges of the plow members 10^b are incurved a proper degree, so as to correctly shape the road-bed the width of the sled proper when the entire device is drawn over the road to remove the snow therefrom and adapt the highway for travel.

At a suitable point, preferably near the rear ends of the runners 10, an arm 12 is pivoted at its rear end on the outer side of each runner, these arms that have equal length extending forwardly and being loosely secured near their forward ends on the runners. The preferred means for connecting the arms 12 with the runners comprises the following details of construction:

A standard 13 is erected from each of the arms 12, projecting a suitable height, and is loosely held in contact with the adjacent runner by a loop 14, that is secured on the upper edge of said runner.

A keeper-plate 15, having a slot 15^a, is attached to the outer side of each runner, said slots having a curvature which will allow free vertical rocking movement of the arms 12 on their pivots 12^a when the arms are connected with the keeper-plates by T-head bolts 15^b, that project from the arms toward the plates and loosely engage with the slots therein.

There is a cutter-blade 16 secured at its inner end on the forward end of each arm 12, and said blades extend a proper length diago-

nally outward and rearward from the arms, as indicated in Figs. 1 and 4. The front faces of the cutter-blades 16 are rearwardly sloped from their lower edges, and said faces are each, preferably, sheathed with a metal plate 17.

Two similar wings 18 are furnished, one for each side of the plow, and said wings are pivoted on a suitable bracket 18^a or other projection from a cross-bar of the sled at their inner ends, so that they will be held free to rock upwardly, each wing extending of a greater length than the cutter-blades 16 above the latter and in the same direction, or, in other words, project from the runners 10, on which they rest, outwardly and rearwardly with their rear faces in the same vertical planes with the rear surfaces of the cutter-blades.

The wings 18 are sustained in position by the brackets 19, that project upwardly in pairs from the top edges of the runners 10, there being two brackets for each wing, so spaced apart as to adapt them to receive the wing between them and afford necessary support thereto, the brackets being made very substantial to enable them to withstand heavy pressure that is imposed on them by the wings when the snow-plow is in service.

As clearly shown in Figs. 3 and 4, the sheathing-plates 17 are upwardly extended from the sloped faces of the cutter-blades 16 and have close contact with the front surface of the wings on which the sheathing-plates are secured, thereby practically uniting each wing with the cutter-blade that is below it and adapting the wing and blade on each side of the sled to receive adjustment together.

At a convenient distance from the standards 13 strong stanchions 20 are erected, having a greater height than the standards, the said stanchions being stationed on the runners of the sled, or they may be placed on a connecting cross-bar of the sled, if there be such a cross-bar introduced at a correct point. On the upper ends of the stanchions 20 the two similar levers 21 are pivoted intermediately of their ends and have their forward ends pivoted on the upper ends of the links 22, that are pivoted at their lower ends to the upper ends of the standards 13. A rack 20^a is secured on each stanchion 20, which rack is adapted to receive the toe of a dog 23, that is pivoted on the lever 21, which works adjacent to said rack, the usual tripping-dog 24 being pivoted on the lever near its rear end, whereon a handle is preferably formed, and the dogs 23 24 are connected by a link rod 26, so that the levers 21 may be reliably held at any desired point of rocking adjustment.

It will be seen that the operator, who may stand in or on a box-like platform 27, can at will raise or lower the cutter-blades and wings, so as to cause them to engage with snow at different heights from the ground.

In operation the draft-animals that are hitched to the sled in front and connected by their harness in the ordinary manner with the tongue 11 may be driven by the occupant of the platform 27, who can regulate the depth of cut to be given the cutter-blades 16 and wings 18, so that these parts will cut away the snow and transfer it to the sides of the road-bed, the wings being provided to insure the lateral movement of snow cut by the blades or scrapers 16 a sufficient distance for clearance of the road.

When the fall of snow is very heavy and deep or drifts are formed in the road-bed which is to be cleared by the improved snow-plow, the depth of the cut of the blades 16 is so adjusted that but a part of the snow will be moved at one passage of the plow over the road, the plowing operation being repeated until the entire mass of snow is removed from the wagon-road or is cut away so that free travel may be had in sleighs or other vehicles that have to traverse the road.

Should it be necessary where the road-bed is narrow one wing and cutter-blade may be removed from the machine and the single cutter-blade and wing that remains on the sled be utilized for removal of snow in the manner hereinbefore described.

It will be evident that the herein-described improvement is simple, comparatively inexpensive, and that its operation can be controlled to render efficient service by a single operator, if this is desired.

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

1. In a plow, the combination with a sled of a V-shaped plow in front of said sled and having a pivotal connection at its rear ends with said sled, a spring bearing on the front portion of the plow whereby the plow may be held yieldingly in its normal or working position, and the laterally projecting scrapers rearward of said plow, substantially as described.

2. In a snow plow, the combination with a sled, of a V-shaped plow pivoted at the front of said sled and incurved on the lower edges of its members, substantially as described.

3. In a snow plow, the combination with a sled, of a scraper device, comprising an arm pivoted on a runner of the sled, an outwardly and rearwardly projecting cutter blade on the arm, a pivoted wing projecting above and in the same diagonal plane with the blade, and means for jointly raising or lowering the wing and blade, substantially as described.

4. In a snow plow, the combination with a sled, and arms pivoted at their ends on the rear portions of the sled runners, a cutter blade outwardly and rearwardly projected from the front end of each arm, said blades being sloped upwardly and rearwardly on their front faces, and a wing pivoted at its inner end above each cutter blade and joined therewith by a sheathing plate, of an adjust-

ing device for the wings and cutter blades, comprising a standard projecting upwardly from each arm, loose connections between the arms and runners, adjacent to the cutter blades, a stanchion at each side of the sled, and a lever pivoted on the stanchion, having an adjustable locking device, and connected by a link with the standard, substantially as described.

ALBERT C. PLUMLEY.

Witnesses:
JOHN E. DAVIS,
CLARA N. J. DAVIS.