No. 897,124. PATENTED AUG. 25, 1908.

T. H. MITCHELL.

COMBINED ROAD GRADER, DRAG, &c.

APPLICATION FILED MAY 29, 1908.

2 SHEETS—SHEET 1.

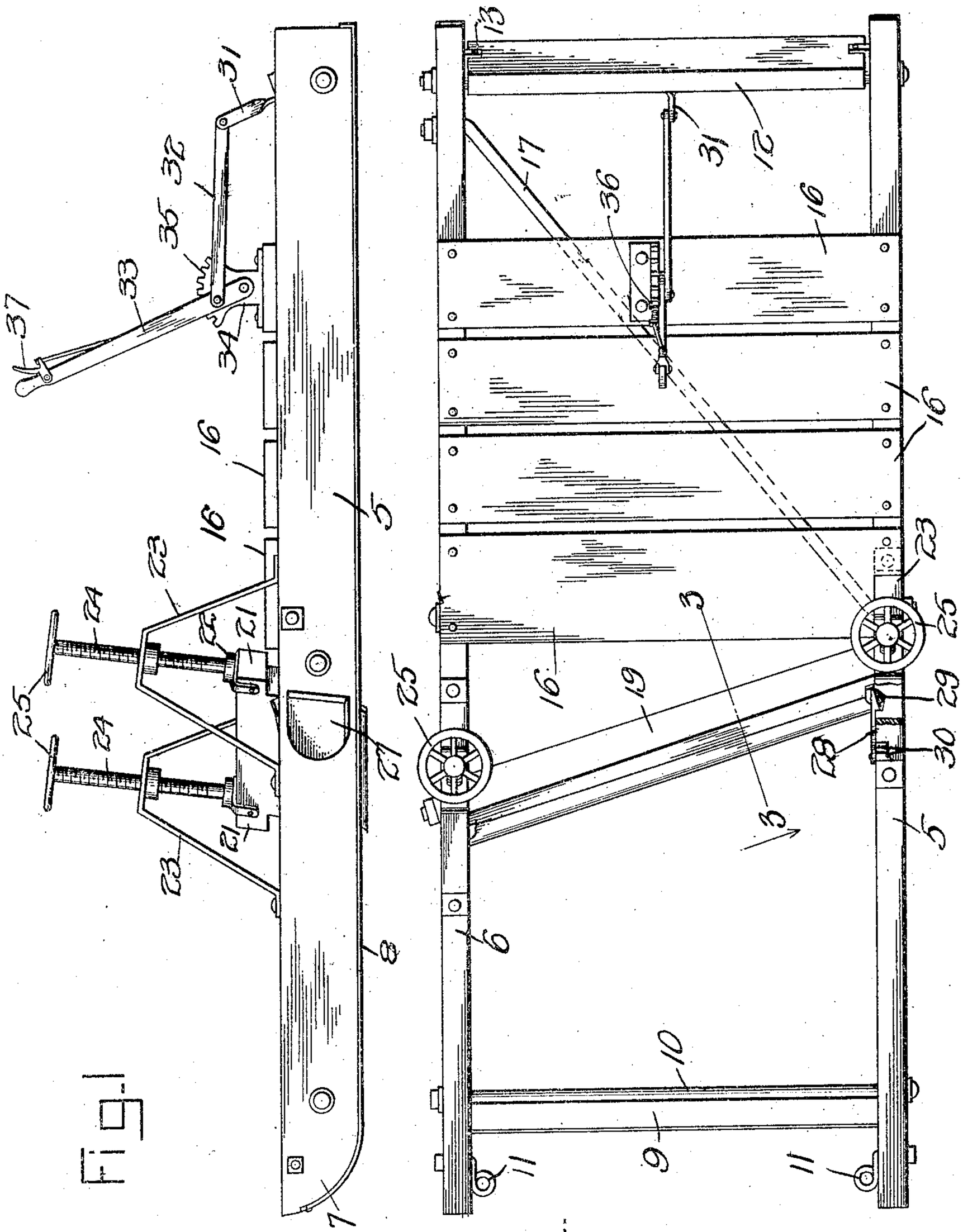

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 3.

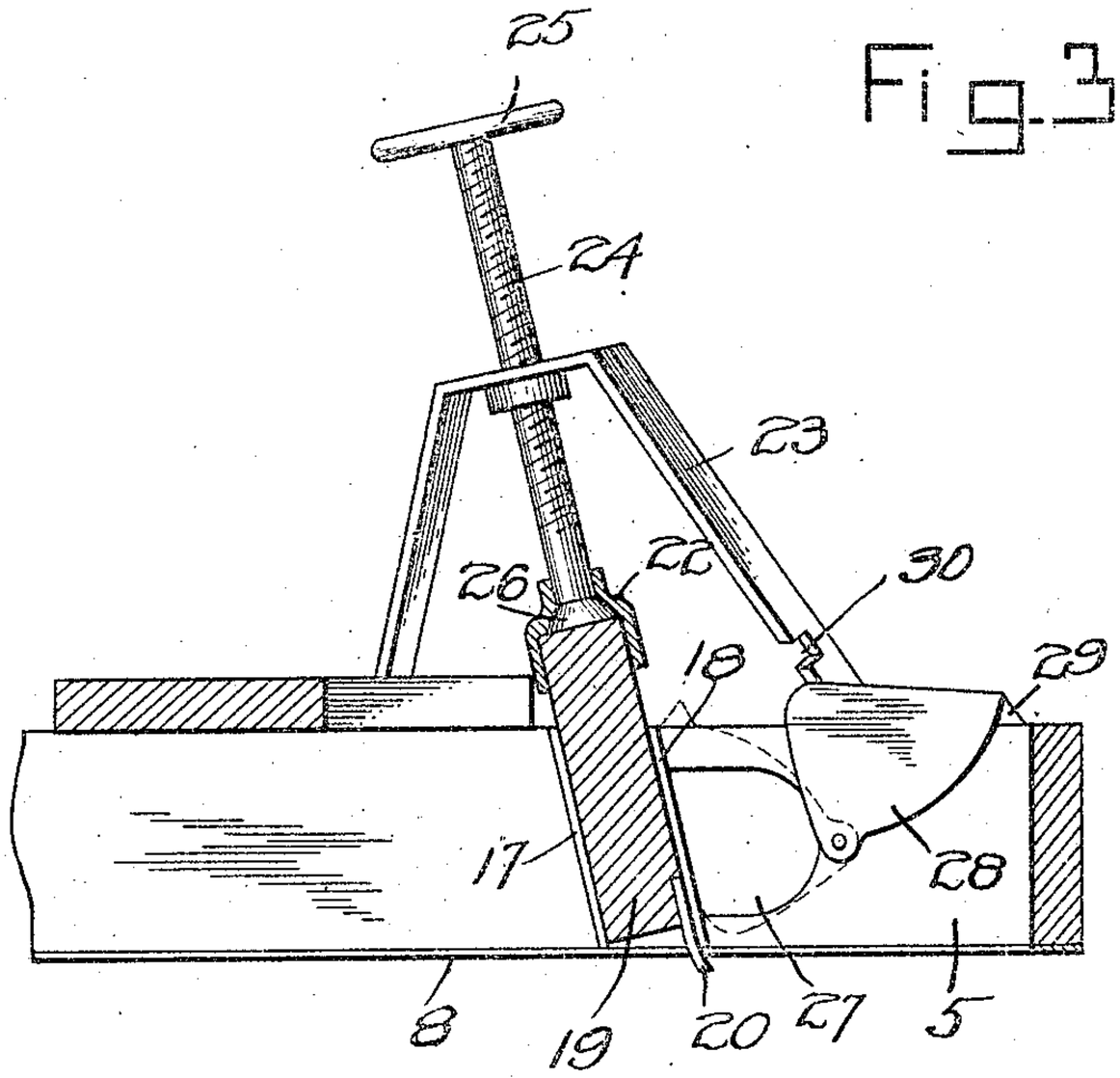
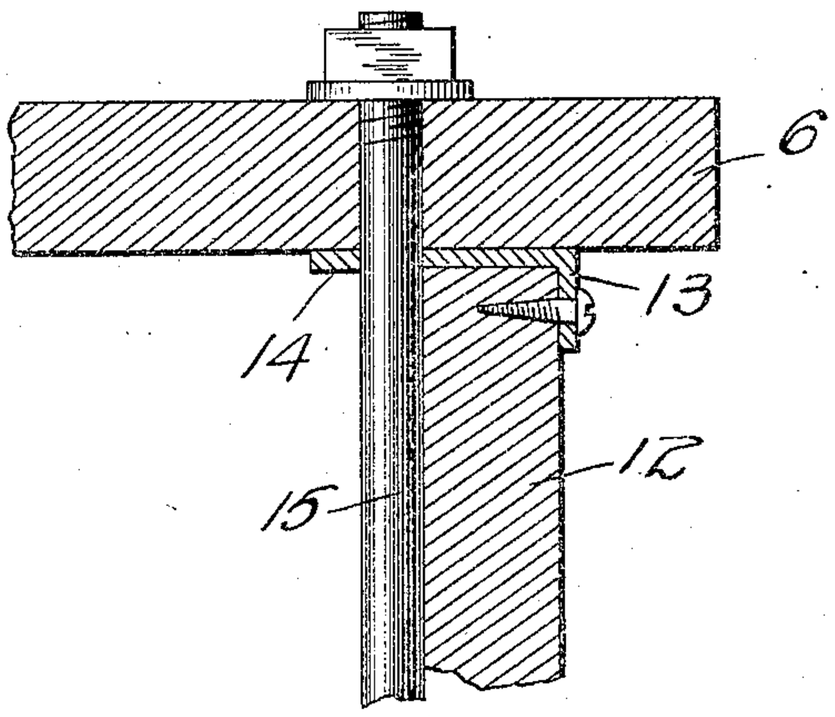


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS H. MITCHELL, OF CLAYTON, INDIANA.

COMBINED ROAD GRADER, DRAG, &c.

No. 897,124. Specification of Letters Patent. Patented Aug. 25, 1908.

Application filed May 29, 1908. Serial No. 435,607.

To all whom it may concern:

Be it known that I, THOMAS H. MITCHELL, a citizen of the United States, residing at Clayton, in the county of Hendricks and State of Indiana, have invented certain new and useful Improvements in a Combined Road Grader, Drag, &c., of which the following is a specification.

This invention relates to drags, graders and jointers, to be used in making and preparing roads and highways, race tracks and other work of this character where a smooth surface is required, said surface being either level or inclined to one or both sides for the purpose of shedding water.

The object of the invention is to provide a machine which may be dragged over the surface of the road or track for the purpose of smoothing the same, the surplus dirt being directed and discharged to one side.

A further object of the invention is to provide a simple and convenient means for adjusting the scraper and the drag which form parts of the machine.

Still further objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention; it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawings—Figure 1 is a side elevation of a machine constructed in accordance with the invention. Fig. 2 is a top plan view of the same. Fig. 3 is a sectional detail view taken on the plane indicated by the lines 3—3 in Fig. 2. Fig. 4 is a sectional detail view taken through one end of the drag, and adjacent parts.

Corresponding parts of the several figures are denoted by like characters of reference.

The frame of the improved machine comprises two side beams 5 and 6, constituting runners, the front ends of which are beveled as shown at 7, so as to pass easily over the ground said runners being preferably shod with strips 8 of suitable metal. The side beams 5, 6, are spaced adjacent to the front ends by a cross-bar 9, and connected adjacent to said cross-bar by a bolt or connecting rod 10; said side beams are also provided adjacent to their front ends with eyes or clevises 11, for the attachment of the draft. Adjacent to their rear ends the side beams 5 and 6 are spaced by the drag which consists of a cross-bar 12, upon the ends of which are secured L-shaped clips 13, the long arms of which project in advance of the cross-bar to form ears or lugs 14, as will be best seen in Fig. 4, of the drawings; said ears or lugs being provided with apertures for the passage of a bolt or connecting rod 15, the ends of which extend through the side beams 5, 6; said connecting rod and apertured lugs coöperating to form hinges upon which the cross-bars constituting the drag may be tilted. A flooring composed of planks 16 is secured upon the side beams, and the latter are connected beneath said flooring by diagonal brace-rods 17.

The inner faces of the side beams 5, 6, are provided with inclined cleats 18, forming guides for the scraper 19, which preferably consists of a wooden bar or beam equipped at its lower front edge with a metallic plate 20. The scraper is disposed obliquely or diagonally as shown, and it is provided with terminal brackets 21, overhanging the side beams 5, 6, and serving for the attachment of the sockets 22. Supported upon the side beams 5, 6, are brackets 23, having bearings which are threaded for the passage of screw-threaded rods 24, provided at their upper ends with hand-wheels 25, by means of which they may be conveniently manipulated. The lower ends of the screw-threaded rods 24 are provided with heads or enlargements 26, operating in the sockets 22, so that, by properly manipulating the screw, the ends of the scraper may be adjusted vertically.

The side beam 5 is provided adjacent to the rearward end of the scraper with an aperture 27, and a plate 28, which may constitute a closure for said aperture, is pivoted upon the side beam, adjacent to the aperture, said plate being provided with a lug 29, constituting a handle whereby it may be manipulated; said lug also serves, by engagement with the upper edge of the beam 5, to support the plate or closure either in an open or a closed position, as may be required,

as indicated in full and dotted lines, respectively, in Fig. 3, of the drawings. The bracket 25 upon the beam 5 is provided with a notch 30, for the passage of the lug 29.

The drag 12, is provided with an upward extending arm 31, which is connected by a link 32, with an adjusting lever 33, pivoted upon a bracket 34, which is mounted on the flooring 16, said bracket being provided with a segment rack 35 engaged by a spring actuated stop member 36, which is suitably connected with the adjusting lever and adapted to be operated by means of a handle 37; thus enabling the drag to be tilted to various positions and to be securely retained in any position in which it may be placed.

From the foregoing description taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood. The machine may be made of any desired dimensions, and it may be propelled by horses or by power of any description. By properly adjusting the scraper, the surface of the road or track over which the machine is dragged will be smoothed, and the surplus dirt which is removed by the scraper may be discharged from time to time through the aperture 27 by opening the closure 28. The drag 12, which tilts in a downward and rearward direction, will serve to pack and compact the surface of the soil, thus leaving the roadbed in a smooth and perfect condition.

Having thus described the invention, what is claimed is:

1. A machine of the character described, comprising side beams constituting runners, a cross beam and a connecting member spacing and connecting the side beams adjacent to their front ends, a drag beam and a connecting member spacing and connecting the side beams adjacent to their rear ends, said drag beam being tiltably mounted upon the connecting member, a scraper disposed obliquely between the side beams, and means for effecting vertical adjustment of the scraper.

2. In a machine of the character described, side beams constituting runners, a rod or bolt connecting the side beams adjacent to their front ends, a drag beam spacing the side beams adjacent to their rear ends and L-shaped cleats secured upon the ends of the drag beam and extending forwardly of the latter to form lugs; said lugs being provided with apertures engaging the connecting rod, enabling the drag beam to be tilted upon said rod.

3. In a machine of the character described, side beams constituting runners, a cross beam and a connecting member spacing and connecting the side beams adjacent to their front ends a bolt or rod connecting the side beams adjacent to their rear ends, a drag beam tiltably connected with the rod and spacing the side beams adjacent to their rear ends, a flooring upon the side beams, a segment rack upon the flooring, an adjusting lever pivoted upon the rack, an arm extending from the tiltable drag beam, and a link connecting said arm with the adjusting lever.

4. In a machine of the character described, side beams constituting runners, guide cleats upon said beams, a scraper engaging said cleats and having terminal brackets overhanging the side beams, sockets secured upon said overhanging brackets, supports upon the side beams, screw-threaded rods engaging the supports and provided at their lower ends with enlargements operating in the sockets, and hand-wheels at the upper ends of the screw-threaded rods.

5. In a machine of the character described, side beams constituting runners, guide cleats upon said beams, a scraper engaging the cleats and extending obliquely between the side beams, the side beam adjacent to the rear end of the scraper being provided with an aperture, and a plate constituting a closure for said aperture pivoted upon the side beam and provided with a lug constituting a handle and adapted to engage the upper edge of the side beam to support the plate in various positions.

6. In a machine of the character described, side beams constituting runners, means for connecting and spacing said side beams including a tiltably supported drag beam adjacent to the rear ends of the side beams, means for adjusting and retaining the drag beam, a scraper disposed obliquely between the side beams, one of said side beams being provided with an aperture adjacent to the rearward end of the scraper, means for effecting vertical movement of the scraper, and a plate pivoted upon the apertured side beam and constituting a closure for the aperture, said plate being provided with a lug engaging the upper edge of the side beam to support the plate in various positions.

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

THOMAS H. MITCHELL.

Witnesses:

LESLIE STONE,

JAMES J. FARQUER.