

No. 714,325.

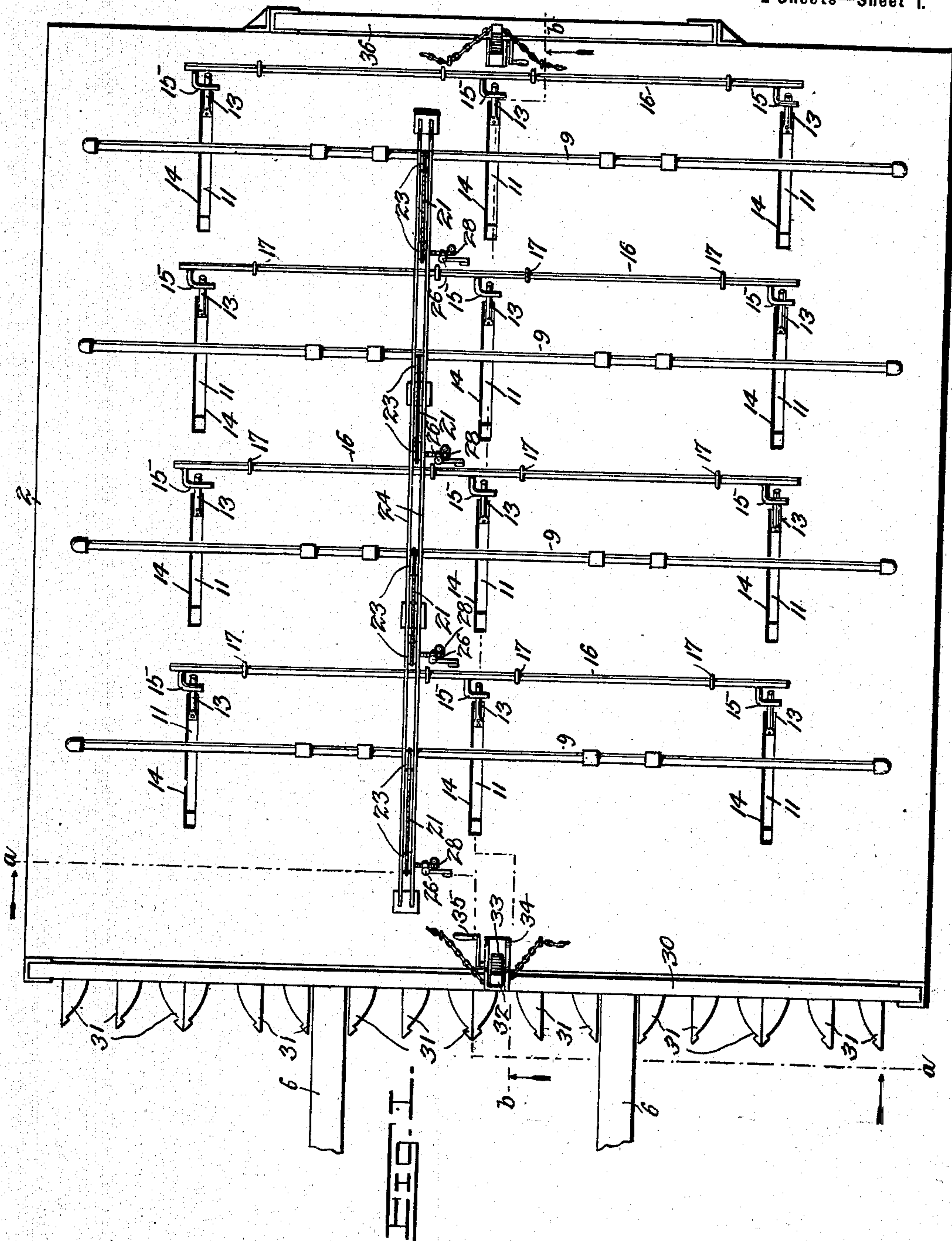
Patented Nov. 25, 1902.

W. S. PAGET.  
ROAD GRADING AND SCRAPING MACHINE.

(Application filed Dec. 26, 1901.)

(No Model.)

2 Sheets—Sheet I.



Witnesses •  
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*C. A. Snow & Co.*  
Attorneys



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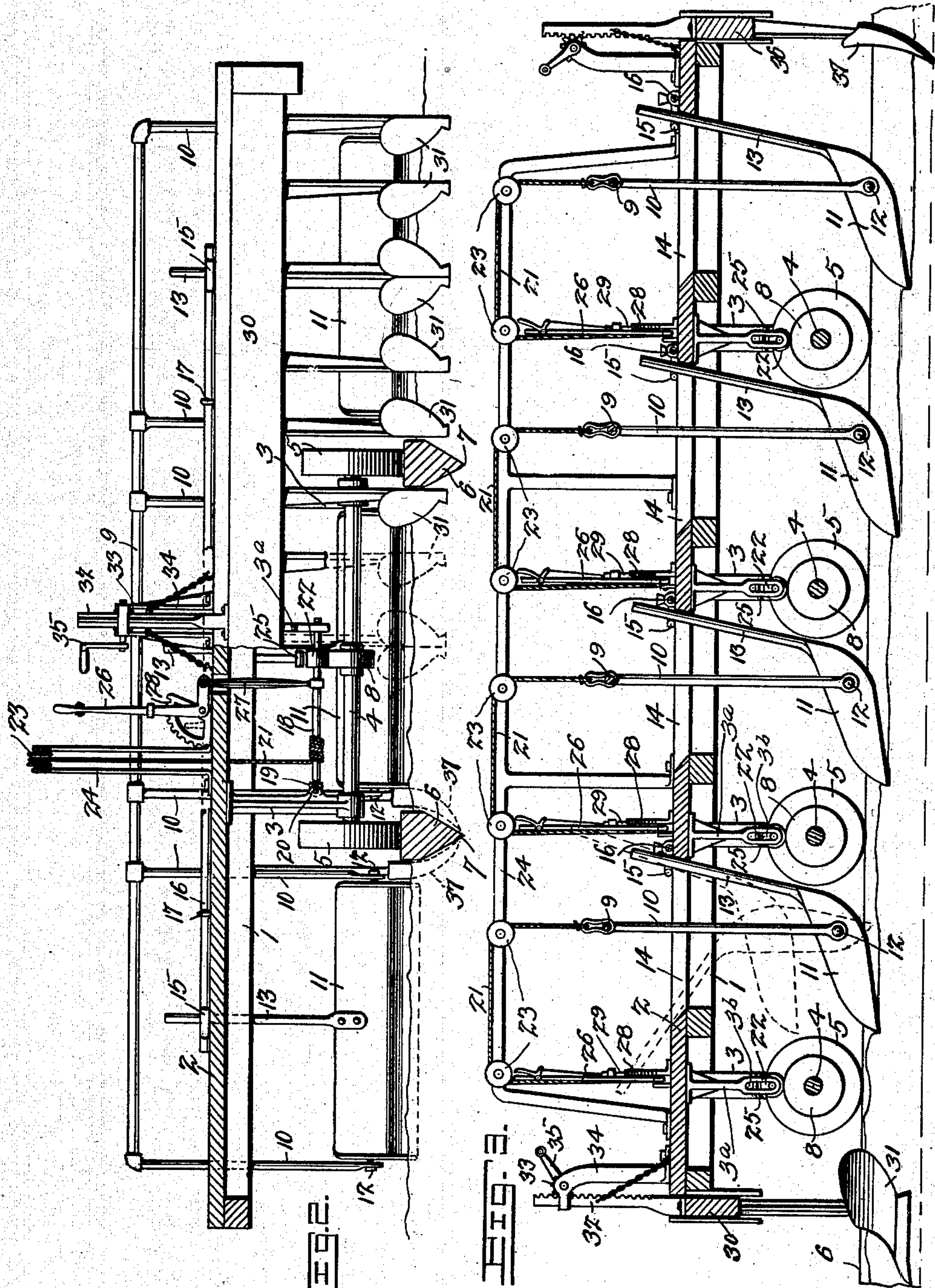
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# UNITED STATES PATENT OFFICE.

WILLIAM S. PAGET, OF DARLINGTON, FLORIDA.

## ROAD GRADING AND SCRAPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 714,325, dated November 25, 1902.

Application filed December 26, 1901. Serial No. 87,314. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. PAGET, a citizen of the United States, residing at Darlington, in the county of Holmes and State of Florida, have invented a new and useful Road Grading and Scraping Machine, of which the following is a specification.

My invention is an improved machine for grading and scraping roads and for analogous uses; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a top plan view of a road grading and scraping machine constructed in accordance with my invention. Fig. 2 is partly a transverse sectional view taken on a plane indicated by the line *a a* of Fig. 1 and partly a front elevation of my improved road grading and scraping machine. Fig. 3 is a vertical longitudinal sectional view of the same, taken on a plane indicated by the line *b b* of Fig. 1.

In the embodiment of my invention I provide a suitable car or truck, which is here shown as consisting of a frame 1 of suitable construction, a platform 2 on the said frame, hangers 3, secured to and depending from the frame, axles 4, journaled in the said hangers and supporting wheels on the said axles. The car or truck may have as many of the axles as may be desirable and may be of any desired size, form, and construction. The sides of the platform project outwardly beyond the wheels 5, and in the operation of my improved machine the wheels run on track-rails 6, which may be made of wood or any other suitable material and are embedded in the earth and have their lower sides beveled on opposite sides to form the lower cutting edges 7, which enable the track-rails to be forced downwardly into the earth by the weight of the machine when the same is in operation and by the action of the plows hereinafter described, which loosen the earth on opposite sides of and under the rails as the machine passes over them, so that when the machine again passes over the rails its weight causes the rails to settle lower in the loosened earth.

On each axle 4, which rotates with its supporting-wheels 5, is secured a friction-wheel 8. Disposed above the platform and over each of the axles 4 is a vertically-movable

yoke 9. The said yokes have depending pairs of arms or hangers 10, between which are pivoted scoops 11, which are respectively disposed between and on the outer sides of the respective rails 6, as shown in Fig. 2. The trunnions or pivots 12 of the scoops are located at some distance in rear of the central portions of the scoops, so that the latter when they are filled with earth tend by the gravity of the loads therein to turn on their pivots and assume such inclined positions as will cause their loads to be discharged by gravity therefrom. Each of the said scoops has at its rear end an upwardly-extending arm or lever 13, and the said arms or levers pass upwardly through and are adapted to move endwise in longitudinal slots or openings 14, with which the platform 2 is provided.

Any suitable means may within the scope of my invention be employed to hold the scoops in position to scrape the earth when the machine is in operation, and thereby become loaded. I here show bolts 15 for this purpose, which bolts are connected to axially-movable bars 16, which are disposed transversely on the platform and operate in suitable guideways or keepers 17.

Above each of the axles 4 is a vertically-movable winch 18. The same may be mounted by any suitable means which will admit of vertical movement thereof. As here shown, one end of each winch, which I will call the "inner" end, is stepped in a block 19, which is pivotally connected, as at 20, to one of the hangers 3, and the outer end of each winch revolves and is vertically movable in a vertical slot 3<sup>b</sup> in a companion hanger 3<sup>a</sup>. To each winch is attached a flexible elevating element 21, here shown as a rope, and the said ropes are adapted to be wound on the winches when the latter are rotated. Each winch has a friction-wheel 22, which is adapted to engage one of the friction-wheels 8 when the winch is lowered, thus when the machine is in motion causing power to be communicated from the axles to the winches and the latter to be rotated and caused to draw upon the ropes 21. The said ropes pass over direction-sheaves 23, which are mounted on suitable standards 24, which rise from the platform, and the said ropes are connected to the yokes 9. Hence when the winches are



thrown into operative position and are rotated by the friction-wheels 8 22 the yokes, together with the scoops which they carry, may be raised after the scoops are loaded.

5 To support the scoops in their elevated positions while the machine is being drawn to the place where the scoops are to be unloaded, I provide friction-shoes 25, which are disposed over the friction-wheels 22 and with  
10 which the latter come in contact when the winches are raised to discontinue the action thereof in raising the scoops. Any suitable means may within the scope of my invention be employed for raising and lowering the  
15 winches to put the same in or out of operation. For this purpose I here show hand-levers 26, which are connected, respectively, to the winches by pitmen 27. A segment-rack 28 is associated with each hand-lever,  
20 and the latter is provided with a suitable locking-dog 29 to engage the said segment-rack and lock the hand-lever in any desired position. It will be understood that the scoops are discharged of their contents by  
25 simply moving the bolts 15 out of engagement with the arms or levers 13, the scoops turning by gravity and discharging their contents, as hereinbefore described. The length of the slots is such that the arms or  
30 levers 13 may move therein through as many degrees as may be required to cause the scoops to discharge their contents by gravity.

At the front end of the car or truck is a vertically-movable beam 30, which carries a  
35 number of plows 31 of suitable construction and which operate between and on the outer sides of the track-rails 6 to plow the ground in advance of the scoops, so that the latter may scoop up and become loaded with the  
40 same. Any suitable means may be employed for raising and lowering the plows. I here show rack-bars 32 and pinions 33 for this purpose. The pinions are carried by standards 34 and are provided with cranks 35, by  
45 which they may be turned.

At the rear end of the car or truck I provide a similarly vertically movable beam 36, which carries plows 37, that are adapted to operate close to and on opposite sides of the  
50 track-rails and under the same to loosen the earth under the track-rails and move it laterally from them, so that when the machine is again run over the rails its weight will cause the rails to settle more deeply in the  
55 ground. Hence after the rails have been once laid and the machine put in motion to grade a road the track-rails are automatically

lowered after each passage of the machine until the grading has been completed.

Having thus described my invention, I 60 claim—

1. In a machine of the class described, the combination of a car or truck having a friction-wheel revolved by the supporting-wheels thereof, a winch having a friction-wheel, 65 means to move the winch to engage the friction-wheel thereof with that of the truck, a vertically-movable element, a scoop carried thereby and a connection between the vertically-movable element and the winch where- 70 by the scoop will be raised when the winch is operated, substantially as described.

2. In a machine of the class described, the combination of a carrier element adapted to be raised and lowered, a scoop pivotally con- 75 nected thereto and having its pivotal axis out of the center of gravity thereof, for the purpose set forth, a lever attached to the scoop to sustain the same in loaded position, a guide in which said lever moves axially 80 when the scoop is raised and means to release the lever and thereby permit the scoop to automatically discharge its contents by gravity, substantially as described.

3. A machine of the class described having a 85 plurality of simultaneously-operating scoops disposed one in rear of another and in successively lower planes, and plows to operate in the soil in advance of the scoops, substan- 90 tially as described.

4. In combination with a track, a grading-machine thereon and plows carried by the grading-machine to loosen the soil contiguous to the track and permit the settling of the 95 latter, substantially as described.

5. In combination with a track, a grading-machine thereon and plows carried by the grading-machine to loosen the soil contiguous to and under the track to permit the settling 100 of the latter, substantially as described.

6. A track having its lower side tapered downwardly and thereby adapted to settle in the soil, in combination with means to loosen the earth contiguous to the track to facilitate the settling thereof, substantially as de- 105 scribed.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM S. PAGET.

Witnesses:

J. H. JOCHUM, Jr.,  
F. S. APPLEMAN.