

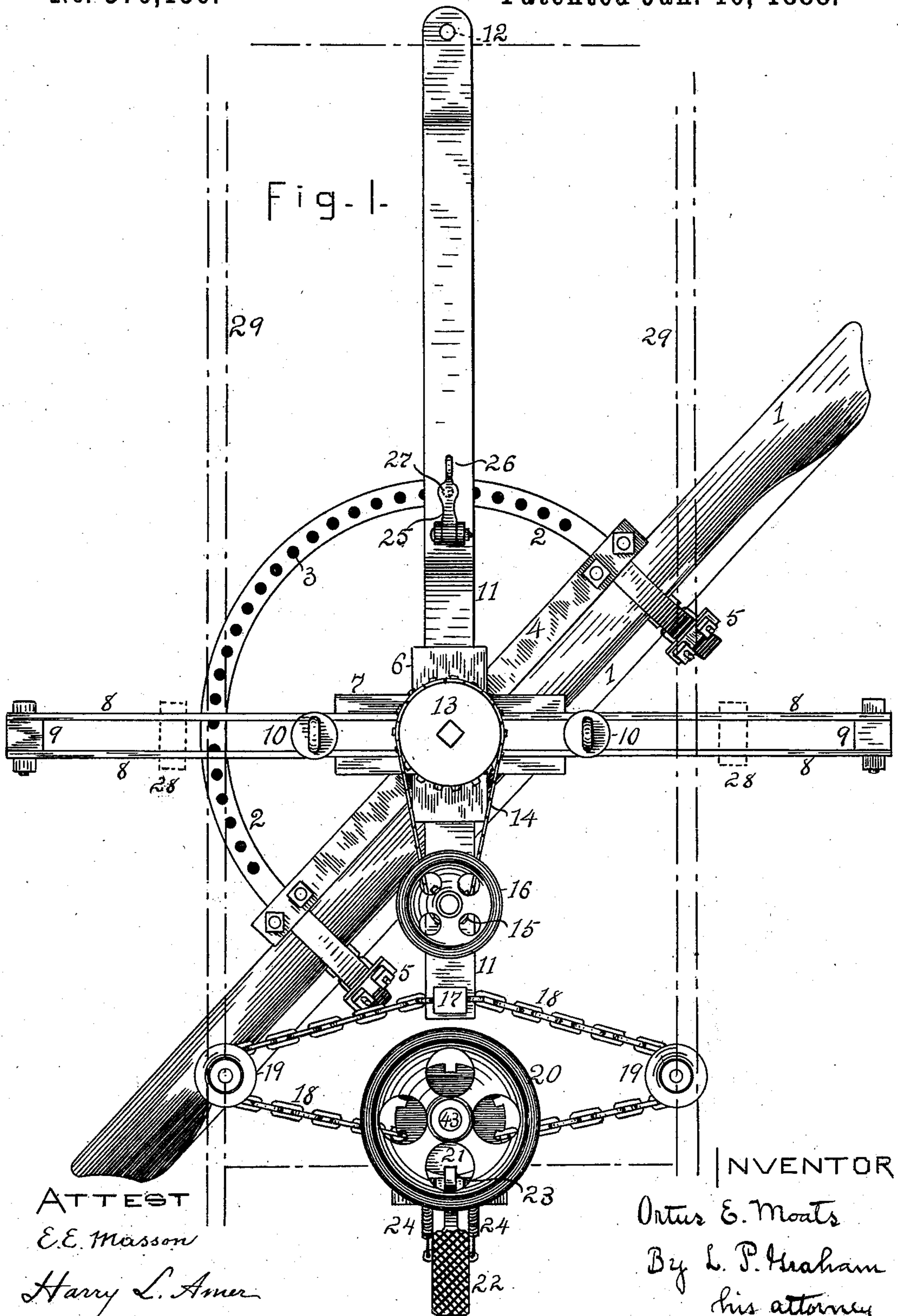
(No Model.)

2 Sheets—Sheet 1.

O. E. MOATS.
ROAD GRADER.

No. 376,156.

Patented Jan. 10, 1888.



(No Model.)

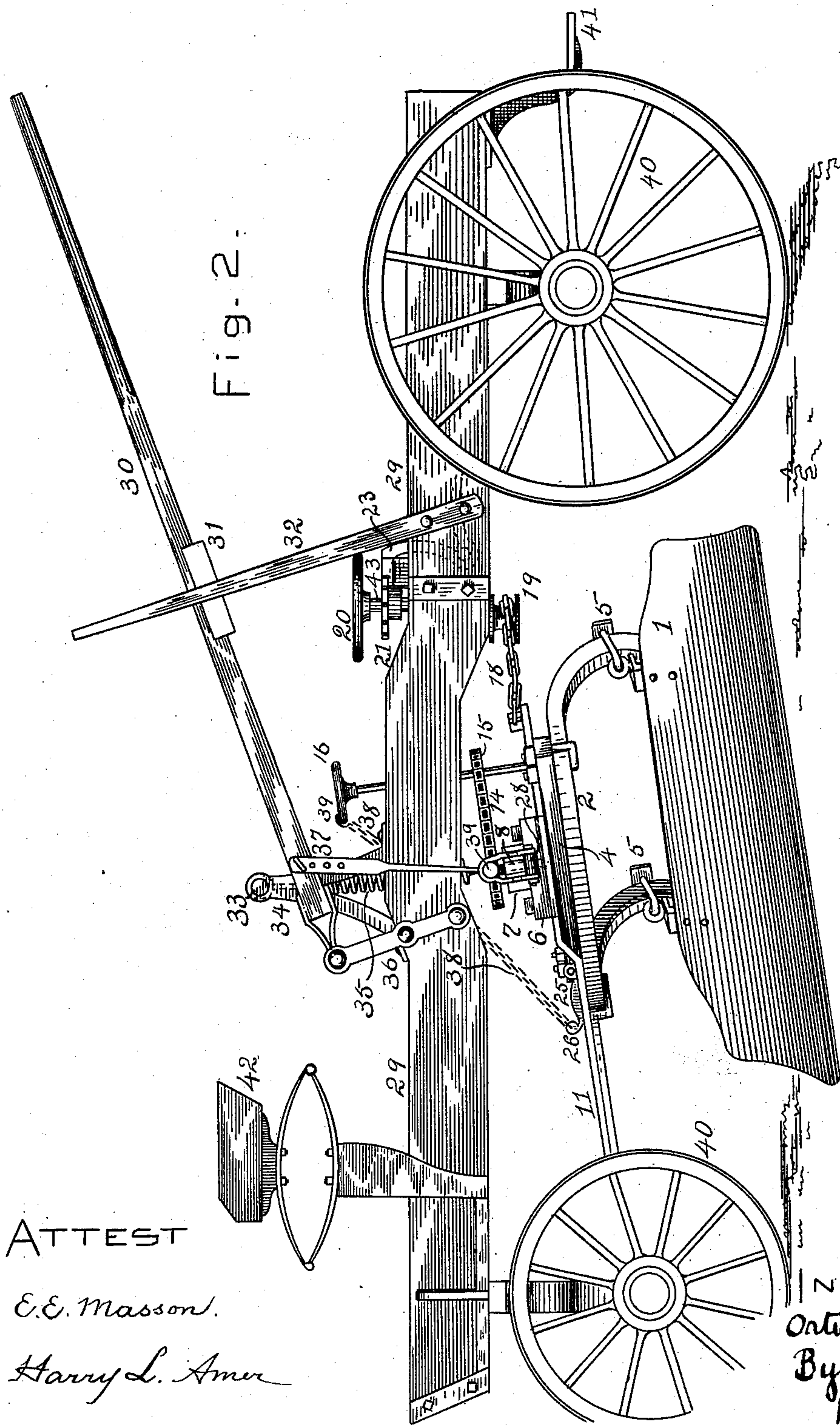
2 Sheets—Sheet 2.

O. E. MOATS.

ROAD GRADER.

No. 376,156.

Patented Jan. 10, 1888.



ATTEST

E. E. Masson.

Harry L. Amer

INVENTOR

O. E. Moats
By L. P. Graham
his attorney.

UNITED STATES PATENT OFFICE.

ORTUS E. MOATS, OF DECATUR, ILLINOIS.

ROAD-GRADER.

SPECIFICATION forming part of Letters Patent No. 376,156, dated January 10, 1888.

Application filed October 5, 1887. Serial No. 251,533. (No model.)

To all whom it may concern:

Be it known that I, ORTUS E. MOATS, of the city of Decatur, county of Macon, and State of Illinois, have invented certain new and useful
5 Improvements in Road Graders, of which the following is a specification.

My invention relates to road graders in which a scraping and plowing blade is supported from a wagon or other wheeled frame
10 in a manner permitting universal adjustment, and it includes the means for facilitating such adjustment, hereinafter set forth and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan
15 of all the features of my invention that may be shown in plan with clearness, the relative position of the supporting-frame being indicated by broken lines. Fig. 2 is a side elevation, on a reduced scale, of a machine embody-
20 ing my invention.

Like reference-numbers indicate like parts in the different figures of the drawings.

The scraper-blade 1 is attached to downward extensions of the approximately-hori-
25 zontal arc 2. Cross-bar 4 traverses the arc diametrically, and is secured thereto by yokes, as shown, or by other suitable securing devices. Sprocket-wheel 13 is rigidly secured to an approximately-vertical shaft that has a
30 rotative bearing in the cross-head 6 7 and that is rigidly secured to cross-bar 4 at the center thereof. Draft-bar 11 pivots at 12 to the front of the wagon or other carrying frame, and carries the cross-head and the adjusting
35 hand-wheel 16.

Supported in the cross-head, and extended at right angles to the draft-bar, is a frame composed of parallel strips 8, which are separated by blocks 9 and bound by suitable bolts. The
40 hand-wheel 16 has sprocket-wheel 15 on its shaft, and chain 14 connects said sprocket-wheel with sprocket-wheel 13. Shaft 43 of hand-wheel 20 is supported vertically in bearings on the main frame in a manner permit-
45 ting rotative adjustment, and carries wheel 21, having peripheral lock-recesses.

Wound around shaft 43 and secured thereto is chain 18, which passes around guide-pulleys 19, secured to opposite sides of the
50 main frame, and terminates at both ends in connection with block 17, which is rigidly secured to the rear end of the draft-bar. Lock-

catch 23 is pivoted to engage the peripheral recesses of wheel 21, and is provided with the releasing-pedal 22. Springs 24 tend to hold
55 the catch in contact with the wheel. The arc 2 is provided with a series of holes, 3, and a pin, 27, on the under surface of the catch-bar 25 on the draft-frame is designed to engage the holes and hold the arc in any desired position
60 of rotative adjustment. Chain 38 connects with catch-bar 25 at 26 and extends upward to a point readily accessible to the manipulator of hand-wheel 16. Yokes 5 provide means
65 for securing the blade at different positions on the terminations of the arc, and the curvature of said terminations is such that a variation in the position of the connections will cause a variation in the angle formed by the blade
70 with the ground. The main frame 29 has wheels 40 and a driver's seat, 42.

Bars 36, secured to the sides of the main frame, provide pivotal bearings for the levers
30, two in number. Suspended from the levers 30 are rods 37, which connect pivotally at 39
7 with yokes that carry rollers 28 under the frame, composed of strips 8.

Brackets 34 on opposite sides of the main frame carry a transverse shaft or bar, 33. Suspended from bar 33 are springs 35, that
80 connect with the cross-frame at the points indicated by 10 in Fig. 1 and yieldingly support a portion of the weight of the scraping mechanism. Rack-uprights 32 provide means
85 for regulating the elevation of the rear ends of the levers 30. Step 41 provides ready access to the rear of the main frame.

In Fig. 1 the chain 38 and bars 37, with their concomitant elements, have been omitted as
90 tending from their verticality to confuse; but the positions of the rollers that support the cross-frame are indicated by dotted lines, to which the proper reference-number is applied.

As will be observed in Fig. 2, the draft-bar
95 is somewhat oblique with the horizontal, and as a consequence as the ends of the blade are swung—the one forward, the other backward—the forward end also moves downward. This motion continued sufficiently will convert the
100 scraper into a plow, and it is effected very readily in my device by a manipulation of wheel 16, catch-pin 27 being first withdrawn from the arc through chain 38. In using the

blade as a scraper at an angle more or less oblique it becomes necessary to neutralize the tendency of the front end to pitch downward, and this is effected and requisite pressure applied by means of the levers 30, which have independent adjustment and operate on the scraper-bar through rods 37, frame 8, and cross-head 6 7.

While the blade is being used as a plow a firm and accurate adjustment will be necessary to hold it to its work. Means to effect this adjustment are provided in chain 18, pulleys 19, shaft 43, hand-wheel 20, and lock-wheel 21, with its coacting catch.

By means of the mechanism designated the rear end of the draft-frame may be swung laterally, carrying with it the entire scraping mechanism, and when properly adjusted may be temporarily but firmly secured by the catch of the lock-wheel.

I claim—

1. In road-graders, in combination, a frame supported on wheels, a draft-bar carrying a scraper-blade and connecting pivotally at its front end to the frame, and a chain secured to the rear end of the draft-bar and passed around pulleys on opposite sides thereof, as and for the purpose set forth.

2. In road-graders, in combination, a frame supported on wheels, a draft-bar carrying a scraper-blade and connecting pivotally at its front end to the frame, a rotative shaft on the frame near the rear end of the draft-bar, and a chain secured to the draft-bar, passed around pulleys on opposite sides thereof, and connected with the shaft, as and for the purpose set forth.

3. In road-graders, in combination, a frame supported on wheels, a draft-bar carrying a scraper-blade and connecting pivotally at its front end to the frame, a rotative shaft on the frame near the rear end of the draft-bar, a hand-wheel and a lock-wheel on the shaft, and a chain secured to the rear end of the draft-bar, passed around pulleys on opposite sides thereof, and connected with the shaft, in the manner and for the purpose set forth.

4. In road-graders, in combination, a frame supported on wheels, a draft-bar pivoted at its front end to the frame and having its rearward extension inclined upward, a scraper-blade on

the draft-bar having pivotal adjustment, a shaft on the frame near the rear end of the draft-bar, a hand-wheel and a lock-wheel on the shaft, and a chain secured to the rear end of the draft-bar, passed around pulleys on opposite sides thereof, and secured to the shaft, in the manner and for the purpose set forth.

5. In road-graders, in combination, a frame supported on wheels, a draft-bar pivoted at its front end to the frame in a manner permitting universal adjustment, a transverse bar over the frame, from which the draft-bar is yieldingly supported, a scraper-blade on the draft-bar having pivotal adjustment, a shaft on the frame near the rear end of the draft-bar, a hand-wheel and a lock-wheel on the shaft, and a chain secured to the rear end of the draft-bar, passed around pulleys on opposite sides thereof, and secured to the shaft, in the manner and for the purpose set forth.

6. In road-graders, in combination, the draft-bar 11, the cross-head 6 7, the cross-frame 8, adapted to be adjusted vertically at one or both ends by the levers 30 and their intermediate connections, the cross-bar 2 under the cross-head, having holes 3, the detachable pin 27, the chain 38, connected with the pin and extended upwardly and backwardly, the scraper secured to the arc, the shaft on which the arc pivots in the cross-head, the sprocket-wheel 13 on the upper termination of said shaft, the hand-wheel 16 and sprocket-wheel 15 on a vertical shaft, and the chain 14, connecting wheels 13 and 15, as and for the purpose set forth.

7. In road-graders, in combination, the draft-bar, the cross-head, the cross-frame, the supports for the cross-frame permitting longitudinal adjustment, the scraper-blade pivotally secured to the cross-head, the shaft on the frame near the rear end of the draft-bar, carrying the hand-wheel and the lock-wheel, and the chain secured to the rear end of the draft-bar, passed around the pulleys at opposite sides thereof, and secured to the shaft, in the manner and for the purpose set forth.

ORTUS E. MOATS.

Attest:

IRA B. CURTIS,
EDWIN G. ALLEN.