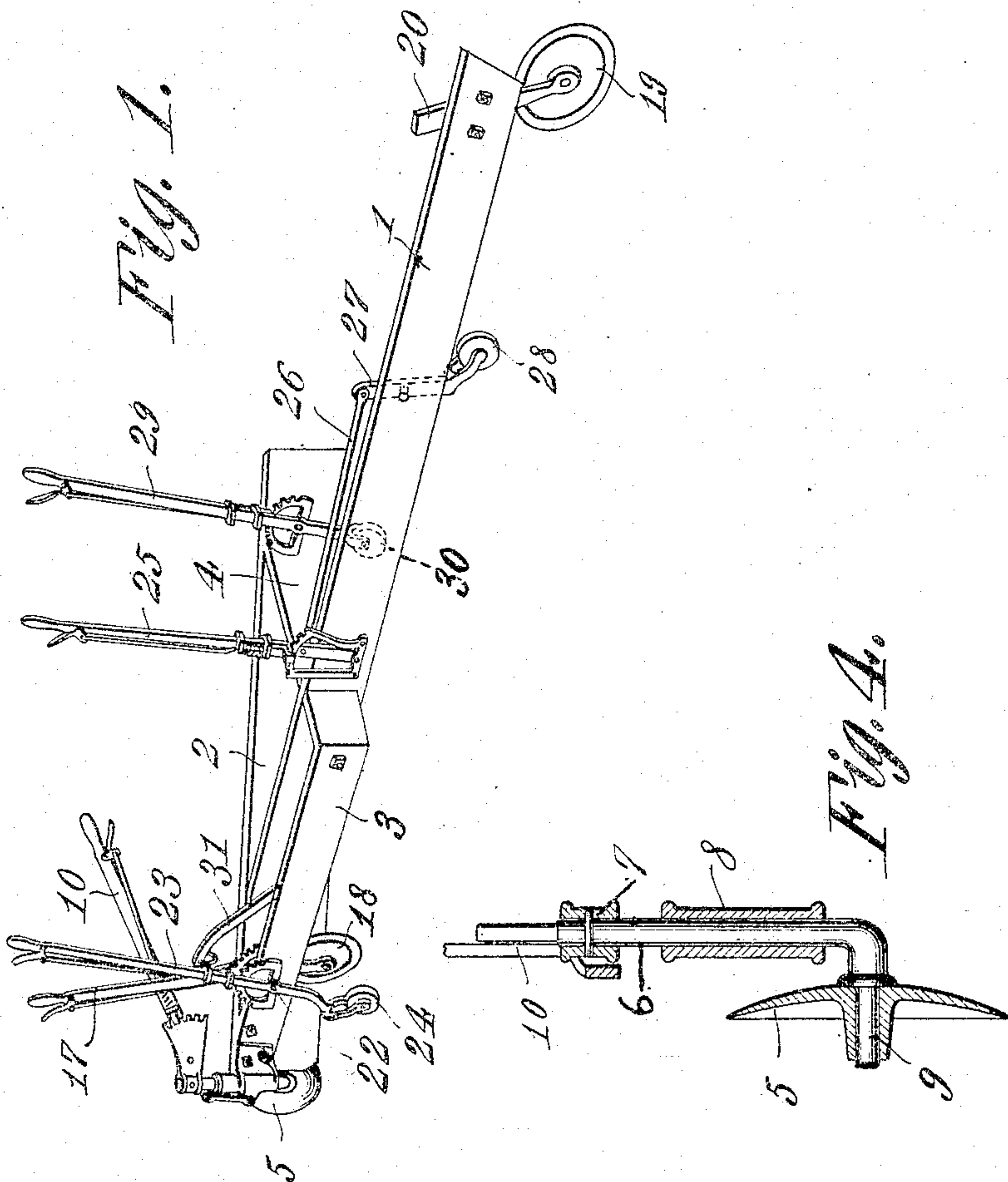


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ROAD GRADER AND DRAG.  
APPLICATION FILED MAR. 26, 1909.

939,003.

Patented Nov. 2, 1909.  
2 SHEETS—SHEET 1.



Witnesses

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By

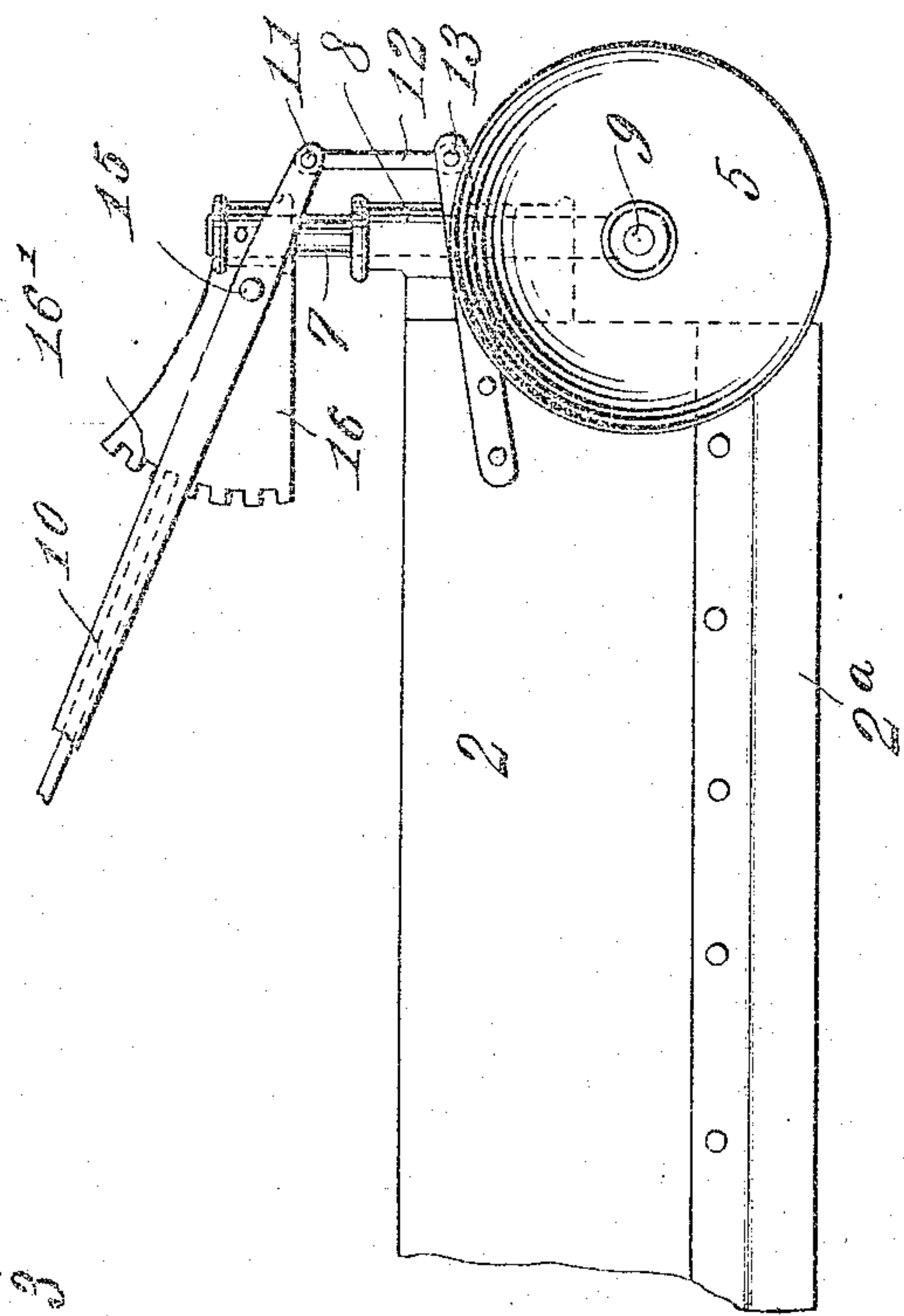
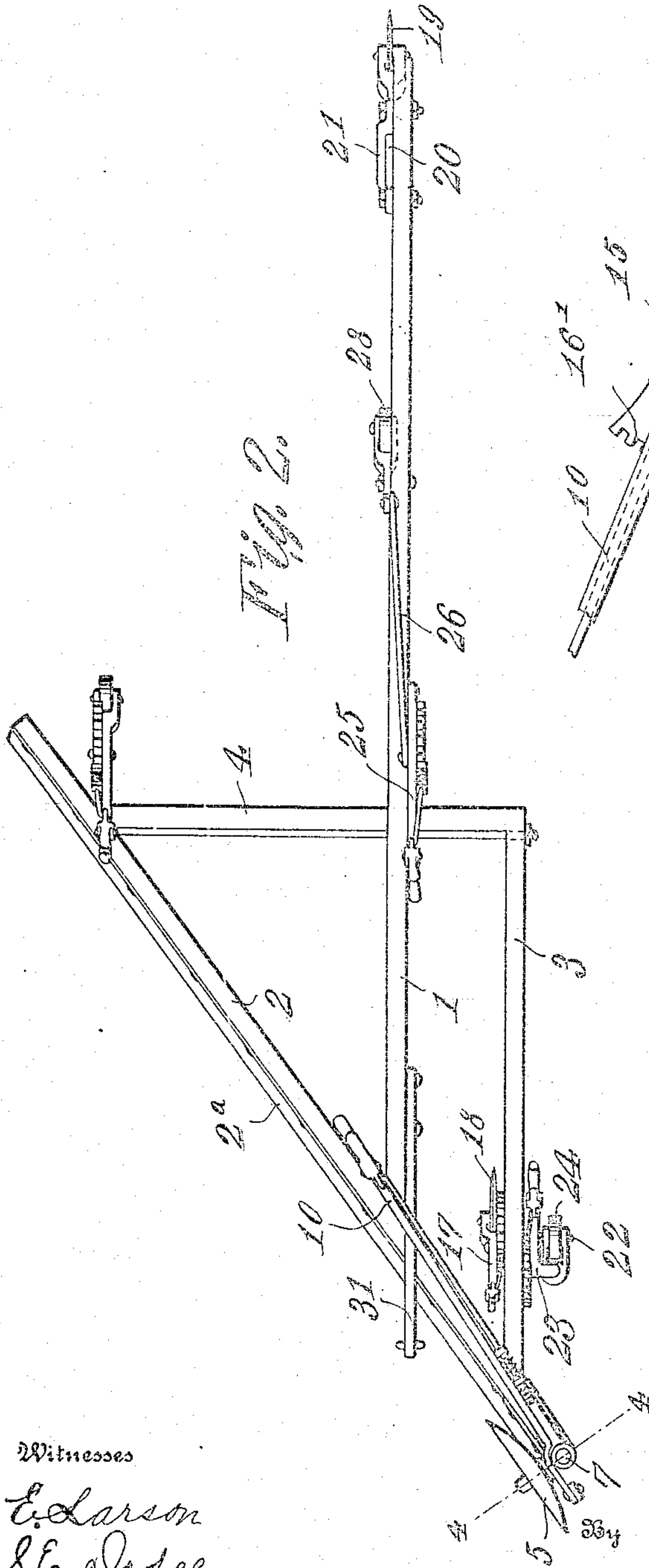
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# UNITED STATES PATENT OFFICE.

ELMER B. FRITCHMAN, OF HUMANSVILLE, MISSOURI.

ROAD GRADER AND DRAG.

939,003.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed March 26, 1909. Serial No. 485,951.

*To all whom it may concern:*

Be it known that I, ELMER B. FRITCHMAN, a citizen of the United States, residing at Humansville, in the county of Polk and State of Missouri, have invented certain new and useful Improvements in Road Graders and Drags, of which the following is a specification.

The present invention embodies certain novel improvements in road graders and scrapers.

The invention resides particularly in the general construction of the frame of the scraper including the arrangement of the draft beam and the scraper itself, and also in the peculiar mounting of a cutting disk in coöperation with the scraper and for facilitating the operation of cutting a ditch or any similar purpose.

For a full understanding of the invention, reference is to be had to the following detail description, and to the accompanying drawings, in which—

Figure 1 is a perspective view showing a road grader and scraping machine embodying the invention; Fig. 2 is a top plan view; Fig. 3 is a fragmentary side elevation showing more clearly the mounting of the cutting disk with respect to the scraper, and Fig. 4 is a vertical section partly broken and taken about on the line 4—4 of Fig. 2.

Throughout the following detail description, and on the several figures of the drawings similar parts are referred to by like reference characters.

In carrying out the invention and specifically describing the preferred construction as illustrated in the drawings, it will be noted that the frame of the scraper comprises a longitudinal draft beam 1, a diagonally arranged scraper 2 secured to the front end of the beam 1, a side 3 spaced from the draft beam 1, and a transverse rear bar 4 connecting the scraper with the beam and the beam with the side 3. It will be observed that the draft beam 1 is near twice as long as the length of the body of the frame of the scraper, and this is advantageous in order to cause the scraper to be advanced in a straight line under actual conditions of work. The scraper bar 2 is provided at its lower edge with the customary blade 2<sup>a</sup> shown most clearly in Fig. 3 of the drawings. At the forward extremity of the scraper bar 2 is located a cutting disk 5, said disk being mounted rotatably upon the

laterally projecting extremity of a vertically adjustable standard 6 mounted in a suitable bearing 7 secured firmly by fastenings 8 to the front portion of the parts 2 and 3 of the frame. The lower lateral extremity of the standard 7 constitutes virtually a stub axle 9 for the disk 5, and the means for raising and lowering said disk to throw the same into and out of action includes a hand lever 10 which is pivotally connected at its lower end, as shown at 11 to a vertical link 12, the lower extremity of which is pivoted at 13 to the outer end of an arm 14, projecting forwardly from the front end portion of the scraper bar 2. The lever 10 is pivoted at an intermediate portion, as shown at 15 to a plate 16 fastened in any suitable manner to the upper end of the standard 7, the outer end of the plate 16 being formed with a toothed segment 16' with which a suitable hand-operated latch on the lever is adapted to engage and thereby lock said lever at a predetermined adjustment. It will be apparent that by depressing the lever 10 the standard 7 with the disk 5 will be lowered so that the disk may be locked in operative cutting position under which conditions it operates substantially as a rotary plow, in an obvious manner.

On the inner side of the side 3 of the frame of the machine is mounted a lever 17 carrying on its lower end a cutting wheel 18 in the form of a flat disk, and said lever 17 is adjustable so as to permit of raising and lowering the disk 18. On the rear extremity of the draft beam 1 is mounted a similar cutting wheel 19 carried by a standard 20 held in place by any suitable form of clamp 21. The pivot that supports the lever 17, and designated 22 also supports another lever 23 located on the outer side of the side 3 of the frame, a roller 24 being carried by the lower end of the lever 23. Both of the levers 17 and 23 are adjustable by means of suitable latches coacting with toothed segment plates on the frame of the machine. Arranged near the rear transverse bar 4 of the frame and mounted on the beam 1 is an operating lever 25 which is connected by a rod 26 with the standard 27 pivoted to the beam 1 and carrying at its lower end a supporting roller 28. Another lever 29 pivoted to the rear end of the scraper bar 2 carries at its lower end a roller 30 and the levers 25 and 29 are adjustable by suitable toothed segments coacting with hand latches thereon. A small me-



tallic draft arm 31 is rigidly attached to the front end of the draft beam 1 and may be coupled with the draft means employed to advance the machine in operation.

5 It will be observed that when the machine is being transported from one place to another the levers 23, 25, and 29 may be operated to lower rollers 24, 28, and 30 respectively so that the weight of the machine may  
10 be supported thereon to facilitate movement thereof. When, however, it is designed to put the machine in operation so that it will perform its function as a drag and scraper the several rollers aforesaid may be elevated,  
15 the cutting wheel 18 lowered by the lever 17 and the scraping blade 2<sup>a</sup> thrown into action in an obvious manner.

The cutting disk 5 may or may not be arranged in cutting position when the scraping  
20 plate 2<sup>a</sup> is operating, and according to the desires of the operator and the class of work to be accomplished. The cutting wheels 18 and 19 of course coast to insure movement of the machine in a straight line and prevent  
25 the side draft on the device from causing the machine to move sidewise.

Having thus described the invention, what is claimed as new is:

1. A machine of the class described comprising a frame embodying a scraper bar, a  
30 scraping blade applied thereto, supporting members for facilitating movement of the frame over the ground, a cutting disk arranged at the front end of the scraping bar,  
35 a standard mounted for vertical movement on the front end of the scraper bar and car-

rying said cutting disk, a toothed segment plate attached to the upper end of the standard, an arm projecting forwardly from the scraper bar, an operating lever pivoted to  
40 the segment plate, a link connecting an end of said lever with the arm above mentioned, whereby the standard may be raised and lowered with the cutting disk, and latch  
45 means on the last mentioned lever coacting with the segment plate to hold the standard at a desired adjustment.

2. In a machine of the class described, the combination of a longitudinal draft beam, a scraper bar connected between its ends  
50 with said beam and extending diagonal relative thereto, a scraping blade applied to the lower edge of said bar, the frame of the device including a side extending rearwardly from the front end of the scraper bar and  
55 parallel to the draft beam, a transverse rear bar connecting the rear end of the side with the rear end portion of the draft beam, rollers supported upon the side draft beam and rear portion of the scraper bar, levers  
60 for raising and lowering said rollers, a cutting wheel movably mounted on the side of the frame, a similar cutting wheel mounted on the rear end of the draft beam, and a cutting disk arranged at the front end of the  
65 scraper bar.

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

ELMER B. FRITCHMAN.

Witnesses:

JAMES F. BROWN,

B. F. INGRAN.