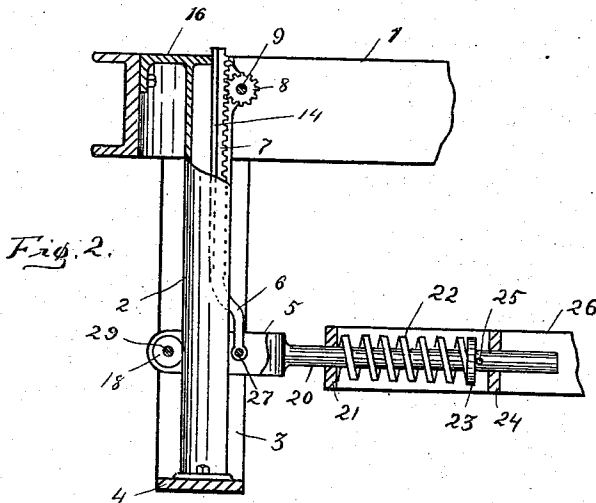
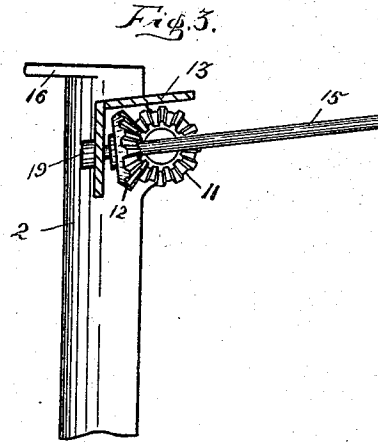
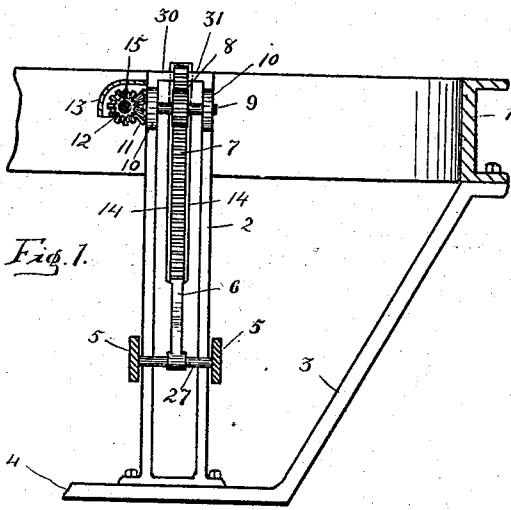


(No Model.)

E. L. LATHROP.
MEANS FOR RAISING AND LOWERING FRONT ENDS OF DRAW BARS IN
ROAD MACHINES.

No. 548,921.

Patented Oct. 29, 1895.



WITNESSES:

Elias L. Lathrop INVENTOR

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his ATTORNEYS.

UNITED STATES PATENT OFFICE.

ELIAS L. LATHROP, OF FORT WAYNE, INDIANA.

MEANS FOR RAISING AND LOWERING FRONT ENDS OF DRAW-BARS IN ROAD-MACHINES.

SPECIFICATION forming part of Letters Patent No. 548,921, dated October 29, 1895.

Application filed November 21, 1894. Serial No. 529,485. (No model.)

To all whom it may concern:

Be it known that I, ELIAS L. LATHROP, a citizen of the United States, residing at Fort Wayne, in the county of Allen, in the State of Indiana, have invented certain new and useful Improvements in Means for Raising and Lowering the Front Ends of Draw-Bars in Road-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in the means for raising and lowering the front end of the draw-bars on a road-working machine on which the scraper-blade is mounted.

The object of my invention is to provide an improved means, in a road-working machine, for vertically adjusting the forward end of the draw-bars on which the scraper-blade is mounted, by which the operator is enabled to let the forward end of the blade into the ground, the blade being arranged in a longitudinal position when so employed for the purpose of plowing. My said improvement is also adapted to enable the operator to tilt the said blade when in a transverse position without the necessity of providing a pivotal connection between the scraper-blade and its supporting-ring, and adapted by its operation to avoid the necessity of reversing the said blade for certain desirable operations, thereby increasing the simplicity, strength, and efficiency of the machine.

My invention comprises an upright hollow $\cap$ -shaped post or standard rigidly mounted on the supporting-bracket for the forward end of the main frame, having a vertically-movable rack mounted therein, connected at its lower end to the said draw-bars and adapted for engagement with an actuating gear-wheel operated by a rigid gear mounted upon the front end of the rearwardly-extended hand-shaft.

Referring now to the drawings, in which similar figures of reference indicate corresponding parts throughout the several views, Figure 1 is a rear view in elevation of my invention in position, showing the relative arrangement of the various operating parts.

Fig. 2 is a side elevation of the same, partly in section, showing its connection with the bifurcated draw-bars. Fig. 3 is a detail of the bevel-gears by which the slidable rack is actuated in position on the vertical supporting-standard.

The main frame 1, of any proper form, size, or material, preferably of channel-iron, as seen in Fig. 1, is supported at its forward end by any proper bracket, preferably a bracket 4, having a pair of oblique supporting-arms 3. On the base of the said bracket 4 is rigidly bolted or otherwise fixed the vertical hollow $\cap$ -shaped standard 2, having its open side facing rearwardly. The top and front face of the said standard has a lateral lug 16 by which it is secured to the main frame and thereby firmly braced against lateral displacement. (Best seen in Fig. 2.) At or near the top of the said standard 2 and upon both sides thereof is provided the perforated lugs 10, Fig. 1, in which the short transverse shaft 9 is rotatably mounted. The said shaft has at its center the rigid gear-wheel 8, adapted for engagement with the slidable rack 7, and it has upon one of its extended ends the rigid bevel gear-wheel 11, adapted to mesh with the correspondingly-beveled gear-wheel 12, rigidly fixed on the hand operating-shaft 15, Fig. 3. The said gear-wheels are protected and partly inclosed by the hood or shield 13, rigidly fixed on the standard 2. The rotatable hand operating-shaft 15 is rearwardly extended to within reach of the operator, has its rear end properly supported and provided with a suitable hand-wheel, and has its forward end loosely mounted in the hollow lug 19 on the said hood or shield 13, and is secured therein when in use by the engagement of the said gear-wheels. The vertically-movable rack 7, mounted within the said hollow standard 2, as shown, is provided upon each side with the longitudinal guides 14, adapted to play in the lateral slots or recesses 30 and 31, (seen in dotted outline in Fig. 1,) and has upon its lower extremity a rearwardly-curved vertical arm 6, the lower end of which is loosely mounted on the transverse pin or shaft 27, having its ends rigidly fixed in the bifurcated head of the draw-bar coupler 20, Fig. 2. The said coupler 20 may be of any proper construction, though pref-

erably having a bifurcated head 5, embracing the standard 2, having its free ends connected by the rigid cross-pin 29, having the idler 18 loosely mounted thereon and adapted to bear upon the front face of the standard 2 to lessen the friction in raising and lowering the said draw-bars. The form of coupler shown in Fig. 2 also has a cylindrical crank loosely mounted in proper perforations in the cross-pieces 21 and 24 of the front end of the draw-bars 26, the said shank having a coil or retracting spring 22 loosely mounted thereon between the said cross-pieces 21 and 24, secured in position by the washer 23 and the pin 25.

It is obvious that the standard 2 may be longitudinally slotted instead of hollow without departing from the spirit of my invention.

The operation of my invention thus described is obvious and, briefly stated, is as follows: The operator rotates the shaft 15 by a proper hand-wheel (not shown) on the rear end thereof, which thereby rotates the rigid meshing gear-wheels 11 and 12 and the rigid gear-wheel 8, meshing with the slidable rack 7, thus actuating the said rack in its vertical adjustment, which carries with it the forward end of the said draw-bars by means of the said coupler 20. The operation of the shaft 15 will secure a like vertical adjustment of the said forward end of the draw-bars by the engagement with the rigid worm 17 on said shaft with the rigid gear-wheel 27.

Having thus described my invention and the manner in which the same is operated, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a road working machine the described means for raising and lowering the front end of the drawbars, comprising the vertical hollow standard 2, secured as shown on the bracket 4, having the shaft 9 loosely mounted on the sides thereof and carrying the rigid gear wheels 8 and 11 for the purpose specified, the vertically movable rack 7 mounted

in said standard, as shown, and connected at its lower end to the forward end of the draw-bars by means of a proper coupler and an operating shaft 15 mounted as described, and having upon its forward extremity the bevel gear wheel 12 adapted to mesh with the said gear wheel 11, thereby actuating the said rack by means of the said wheel 8, all substantially as described.

2. In a road working machine, the combination of the vertical standard 2 rigidly mounted on the bracket 4 and connected to the main frame as shown, having the lateral perforated lugs 10 for the shaft 9, and the vertical guiding slots in the top thereof for the sliding rack, the shaft 9 rotatably mounted in the said lugs and provided with the rigid gear wheels 8 and 11 for the purpose specified, the vertical rack 7 mounted in the said standard as described, and connected at its lower end to the forward end of the draw-bars by means of the bifurcated coupler 20, the said rack being actuated by engagement with the said gear wheel 8, an operating shaft 15 rotatably mounted and provided at its forward end with the bevel gear wheel 12 meshing with the said gear wheel 11 for actuating the said rack, the coupler 20 having a bifurcated head 5 inclosing the said standard and pivotally connected with the lower end of the said rack, and having a rearwardly extended shank loosely mounted in the forward end of the drawbars and provided with a retracting spring 22, a washer 23 secured in position by the pin 25, and the bifurcated drawbars 26, all substantially as and for the purpose described.

Signed by me at Fort Wayne, in the county of Allen and State of Indiana, this 16th day of November, A. D. 1894.

ELIAS L. LATHROP.

Witnesses:

WALTER G. BURNS,
GEO. F. FETTS.