

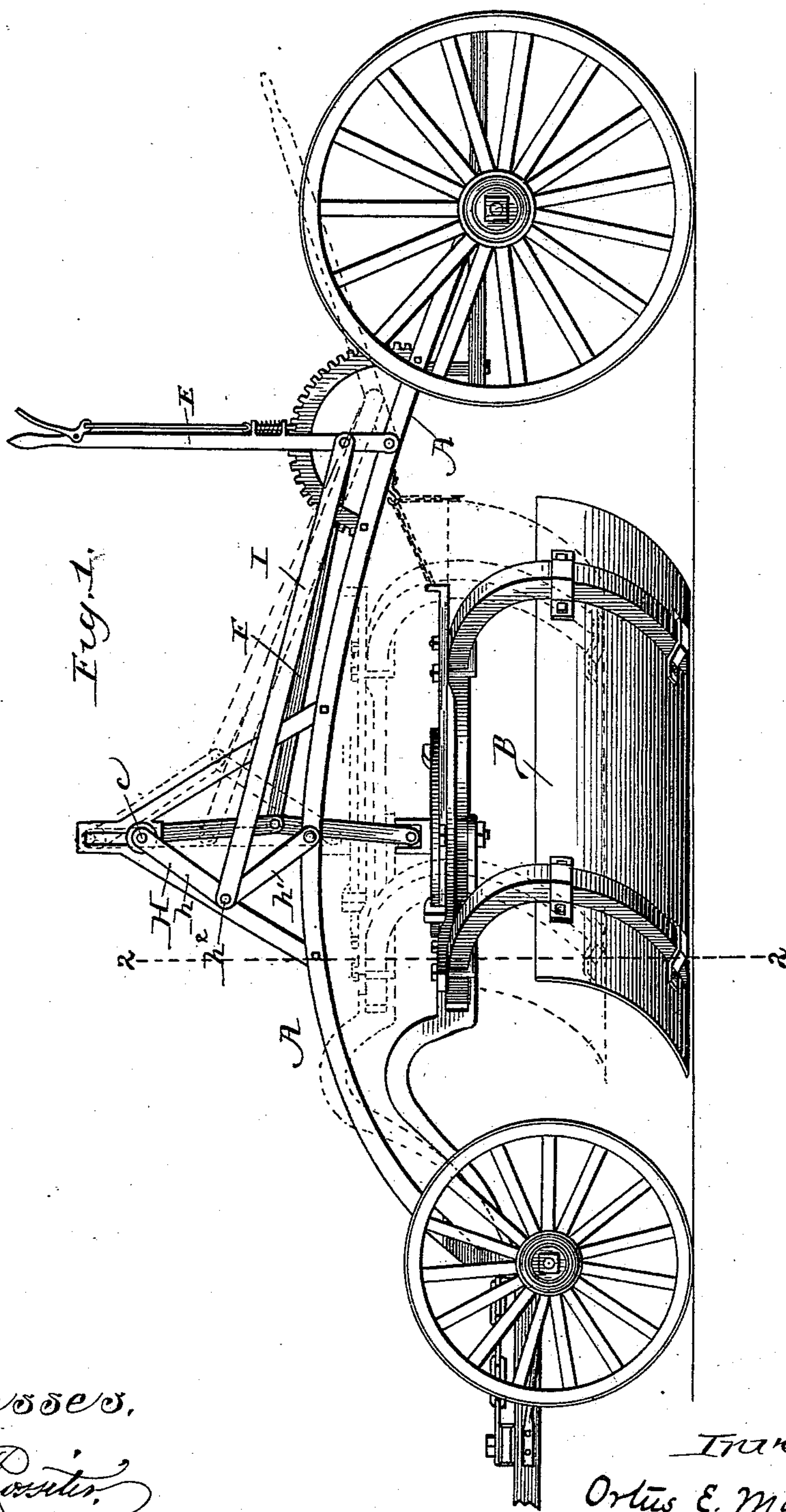
(No Model.)

4 Sheets—Sheet 1.

O. E. MOATS.  
ROAD SCRAPER.

No. 403,891.

Patented May 21 1889.



Witnesses.

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*J. H. Mills.*

*Inventor*  
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*By Chas. G. Page.*  
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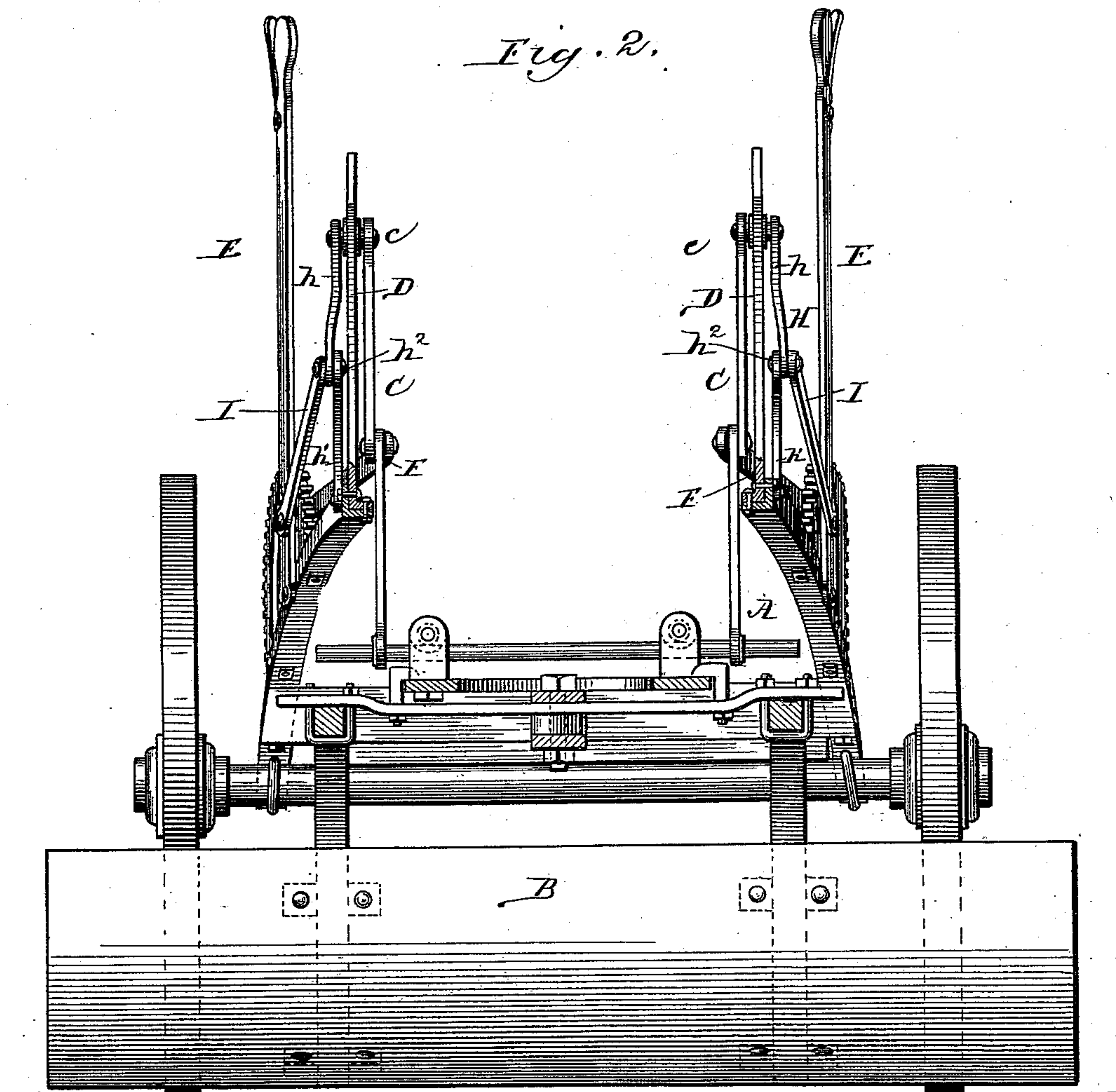
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4 Sheets—Sheet 2.

O. E. MOATS.  
ROAD SCRAPER.

No. 403,891.

Patented May 21 1889.



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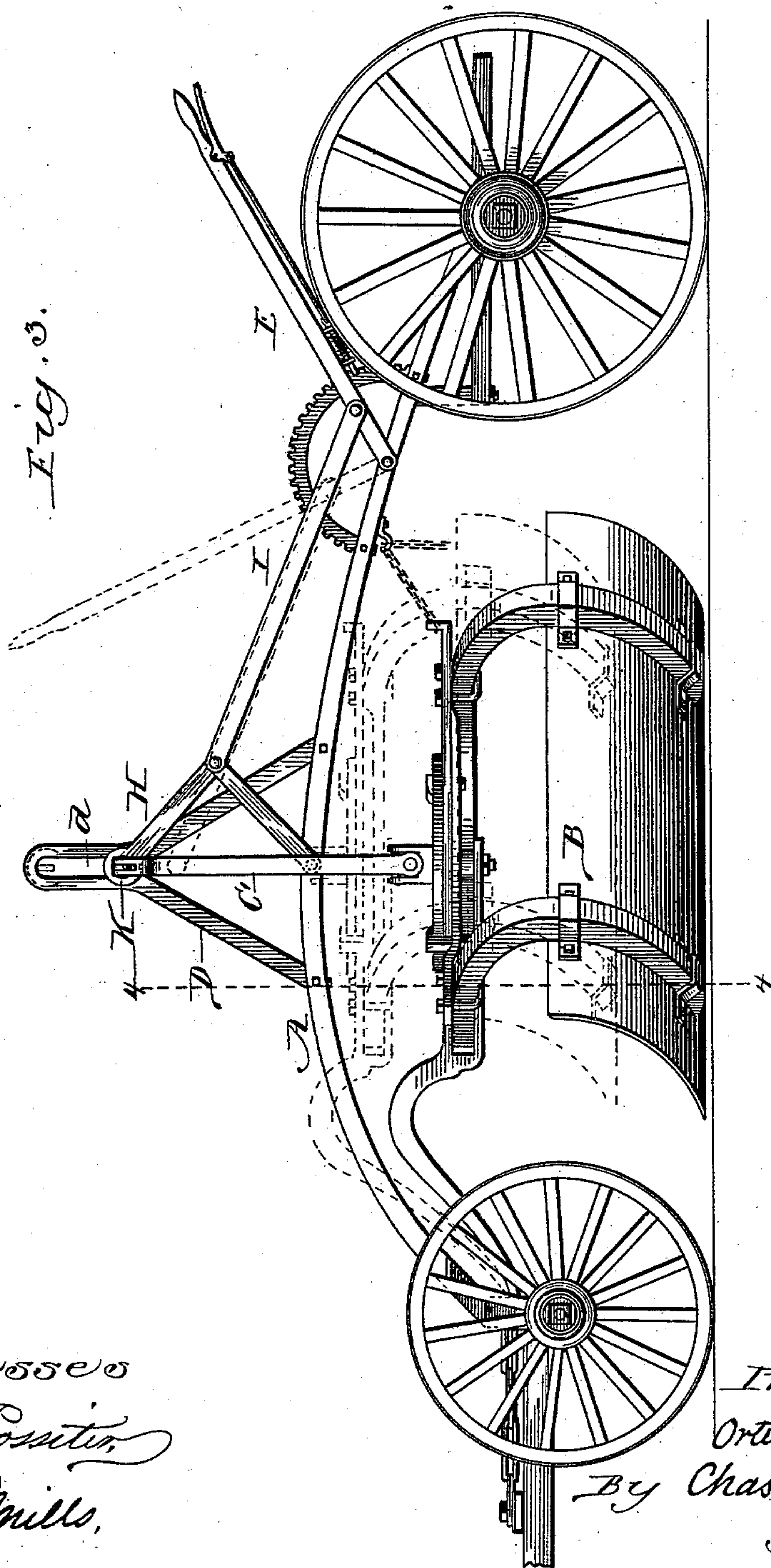
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O. E. MOATS.  
ROAD SCRAPER.

No. 403,891.

Patented May 21 1889.



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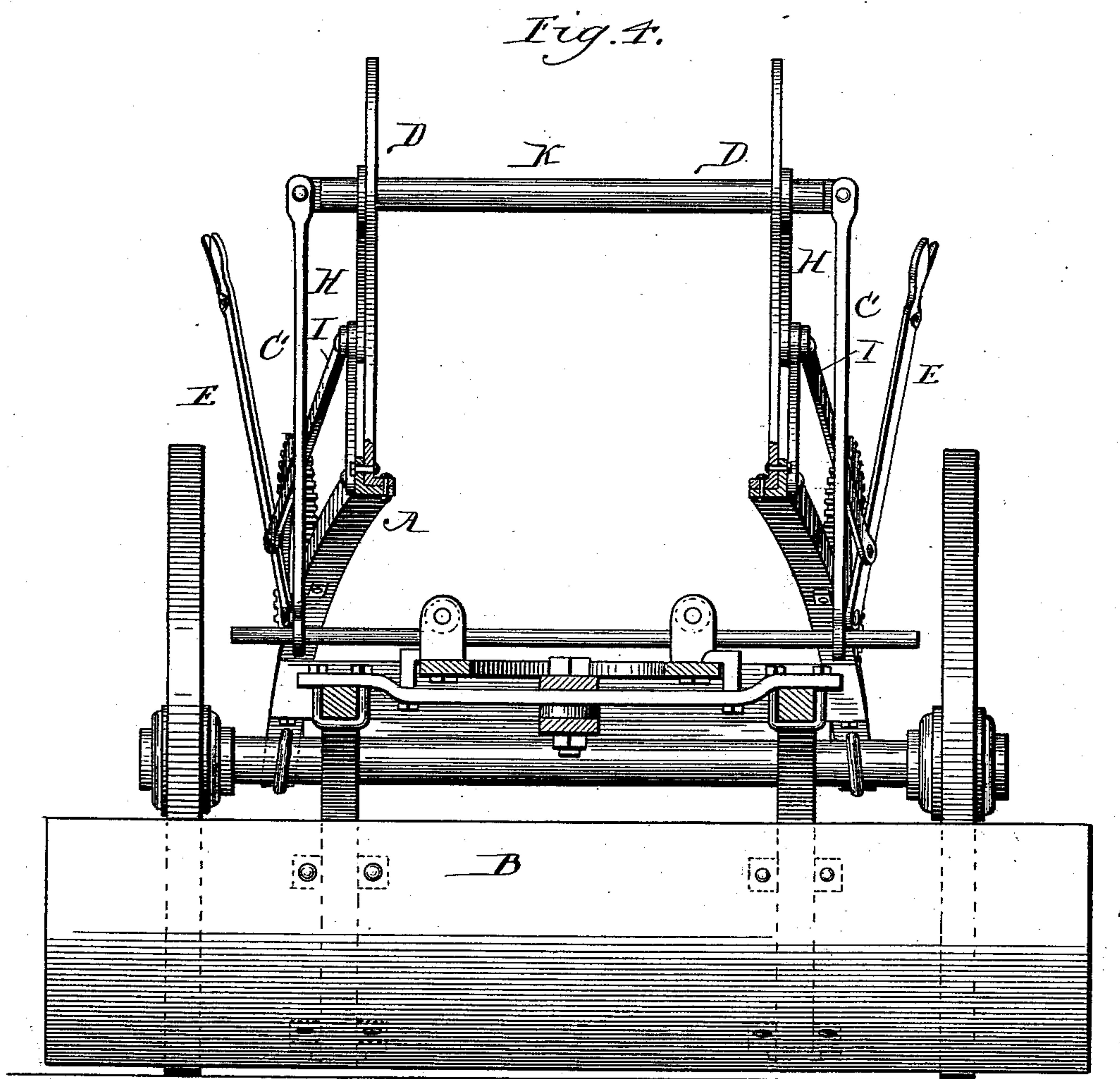
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4 Sheets—Sheet 4.

O. E. MOATS.  
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No. 403,891.

Patented May 21 1889.



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# UNITED STATES PATENT OFFICE.

ORTUS E. MOATS, OF CHICAGO, ILLINOIS, ASSIGNOR TO FREDERICK C. AUSTIN,  
OF SAME PLACE.

## ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 403,891, dated May 21, 1889.

Application filed January 2, 1889. Serial No. 295,240. (No model.)

*To all whom it may concern:*

Be it known that I, ORTUS E. MOATS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Road-Scrapers, of which the following is a specification.

The object of my invention is to provide exceedingly powerful means for raising the scraper-blade and for forcing the same into the ground, to permit the scraper-blade to be raised with great rapidity, to permit the scraper-blade to be raised to the desired height by a comparatively short stroke on the part of a hand-lever which is to be operated by an attendant on the machine, and to provide certain novel and improved details, as hereinafter set forth.

In the accompanying drawings, Figure 1 represents in side elevation a road-scraper embodying my invention, the construction shown in said figure being the same as that illustrated in my application for Letters Patent, of even date herewith, Serial No. 295,239. Fig. 2 is a transverse section taken through Fig. 1 on a plane indicated by line 2 2. Fig. 3 is a view similar to Fig. 1, but shows a hanger consisting of a single bar or link in place of the elbow or toggle jointed hanger shown in Fig. 1. Fig. 4 is a section taken transversely through Fig. 3 on line 4 4.

In said drawings, A indicates the wheeled body-frame, and B the scraper-blade, which latter is preferably of the reversible type and drawn by a draft-bar that is hinged or pivoted at the forward end of the machine, although, if desired, other forms of draft attachment can be used, or a push-frame could be employed. It may be, however, noted that a draft-bar is preferable for various well-known reasons.

In Fig. 1 the scraper is suspended by an elbow or toggle-jointed hanger, C, similar to that embodied in Letters Patent of the United States, No. 393,434, it being understood that the said hanger is at or near the side of the machine shown in said figure, and that a like hanger is provided at or near the opposite side of the machine, as indicated in Fig. 2. The devices for operating these hangers, while independent of one another, are desir-

ably similar in construction and arrangement, and hence a description of one will serve for both.

The hanger C is suspended from a slide or pivot, *c*, arranged to have a suitable extent of vertical play, and guided in such play by a suitable guideway, *d*, that is arranged at the upper portion of a stand, D, on the body-frame. The elbow or toggle jointed hanger C is connected with a hand-lever, E, by a link, F, and said hand-lever is fulcrumed on the body-frame, whereby it can be conveniently operated by an attendant standing on the rear platform, G.

The pivot *c* is applied to the upper end of an elbow or toggle lever, H, which said elbow or toggle lever is at its lower end pivoted upon the body-frame. The upper and lower links or members, *h* and *h'*, of the elbow or toggle lever are jointed together at *h*<sup>2</sup>, and at said point further connected with a link, I. The link I extends back to and is pivotally connected with the hand-lever, preferably at the point whereat connection between the link F and the hand-lever is made. By such arrangement the hand-lever can be operated for the purpose of simultaneously actuating the elbow or toggle jointed hanger C and the elbow or toggle jointed lever H, it being seen, for example, that when the hand-lever is swung to the rear the pull of one link on the jointed hanger will tend to close the same, and thereby lift the scraper-blade, and that simultaneously therewith the pull of the other link upon the toggle-lever H will tend to open or straighten out the same, and thereby raise the slide or pivot from which the jointed hanger is suspended. The toggle-lever H constitutes, therefore, an auxiliary lifting-lever, which serves to raise the point from which the jointed hanger is suspended, and thereby not only effect a rapid lift of the scraper-blade, but also permit it to be raised to a suitable and considerable height by a comparatively short stroke on the part of the hand-lever. The toggle-lever H constitutes a powerful auxiliary to the lifting action of the elbow or toggle jointed hanger, as will be readily understood.

In Figs. 3 and 4 each hanger is suspended from a slide or pivot arranged upon the up-



per ends of the elbow or toggle levers H; but in said figures the hangers C' are not jointed, and hence only the toggle-levers are link-connected with the hand-levers. The toggle-levers H in said Figs. 3 and 4 are connected with the hand-levers E by links I, and said toggles are pivotally supported upon the body-frame. As a means for pivotally suspending the upper members of the toggle-links in Figs. 3 and 4, I have shown a cross-rod, K, which is arranged to extend through the guides d, so that the toggles can be jointed to the ends of said rod. The toggles can be connected with the rod K by universal or single joints, the rod being in effect a vertically-sliding pivot or hanger support carried at the upper ends of the toggles H. When the toggle H is arranged as in Fig. 3, the forward swing of the hand-lever will tend to open or straighten out the toggle, and thereby lift the rod and hanger suspended therefrom. It will be observed, however, that the toggle H can be arranged as in Fig. 1.

It will be obvious, and is herein understood, that I may substitute for the hand-lever E a wheel having either a crank-handle or a handle consisting of a radially-extending arm, and that, if desired, such link or links as I have herein shown attached to the hand-lever could be either attached directly to such wheel or indirectly thereto through the medium of some suitable power-transmitting connection—as, for example, the link or links could be attached to a shifting rack-bar engaging a cog either upon the axle of said wheel or otherwise attached to the latter.

While I prefer the hand-lever as the simpler form of lever, it will be obvious that the principle involved in the said hand-lever would also be involved in the said wheel.

What I claim as my invention is—

1. The combination, substantially as hereinafore set forth, of the scraper-blade, a hanger with which the scraper-blade is connected, a toggle pivotally supported at one end upon the body-frame of the machine and having its opposite free end provided with a pivot from which the hanger is suspended, and an upright guide by which said pivot is

guided in such up and down movements as it may have as a result of the opening and closing of said toggle.

2. The combination, substantially as hereinafore set forth, of the scraper-blade, the toggle H, supported upon the body-frame of the machine, a hanger connected with the scraper-blade and suspended from a pivot on the free end of the toggle, means for guiding said pivot in its up-and-down movement, and a hand-lever fulcrumed upon the body-frame of the machine and connected by a link, I, with said toggle.

3. The combination, substantially as hereinafore set forth, of the scraper-blade, the elbow or toggle jointed hanger connected with the scraper-blade and suspended from a movable support, and the toggle H, supported upon the body-frame and connected with said movable support from which the hanger is suspended, whereby, while the hanger may by suitable application of power be operated for raising the scraper-blade, the toggle H may by a similar application of power be operated as an auxiliary to the lift of the scraper-blade.

4. The combination, substantially as hereinafore set forth, of the scraper-blade, the elbow or toggle jointed hanger with which the scraper-blade is connected, the toggle-lever fulcrumed on the body-frame of the machine and at its free end connected with the hanger, which is pivotally suspended from said end of the toggle-lever, and a couple of links, respectively connecting said toggle-lever and said jointed hanger with a hand-lever, for the purpose described.

5. The combination, substantially as hereinafore set forth, of the scraper-blade, hangers connected with the scraper-blade, a vertically-sliding cross-bar from which the hangers are suspended, and toggle-levers pivoted at their lower ends upon the body-frame and at their upper ends connected with said cross-bar, for the purpose described.

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