

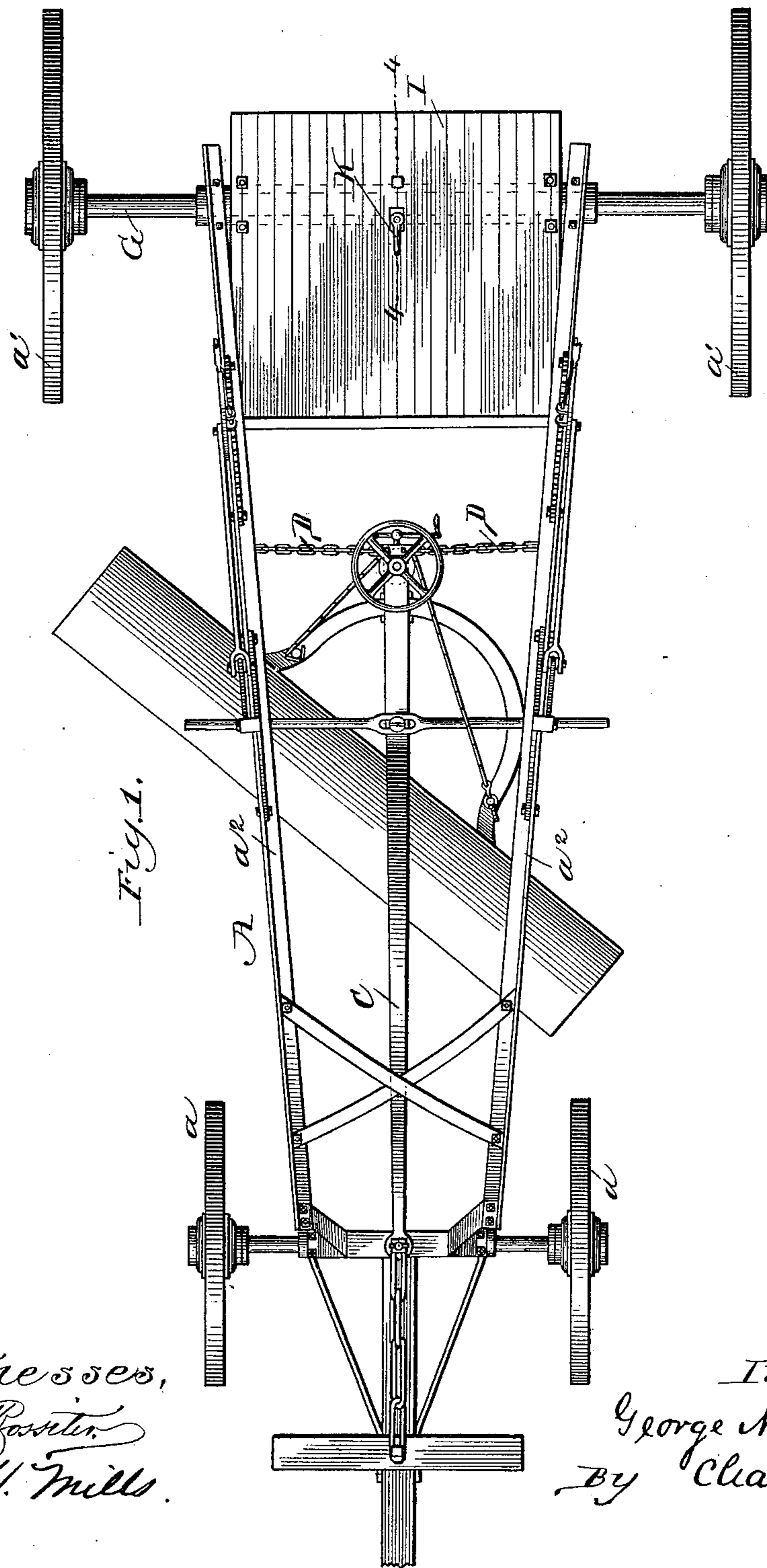
(No Model.)

3 Sheets—Sheet 1.

G. N. MILLER.
ROAD SCRAPER.

No. 403,889.

Patented May 21 1889.



Witnesses,
W. Foster.
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Inventor
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(No Model.)

3 Sheets—Sheet 2.

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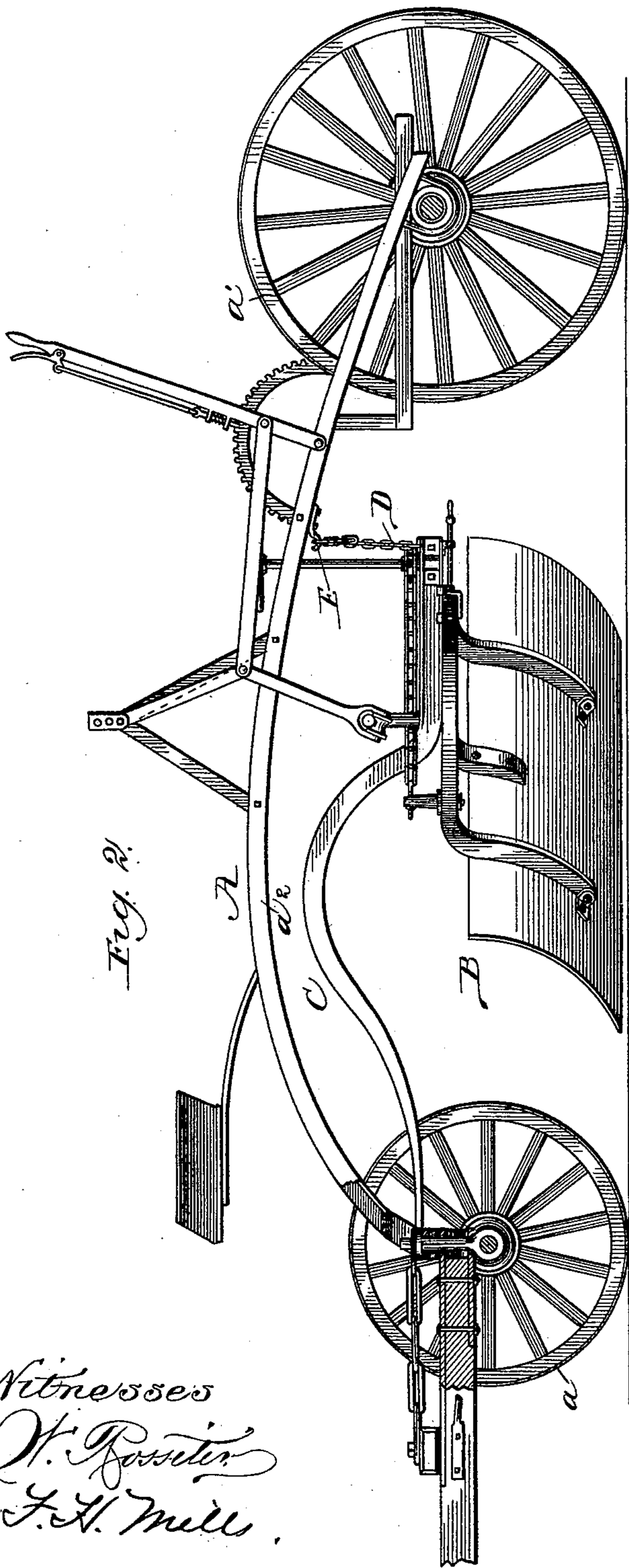


Fig. 2.

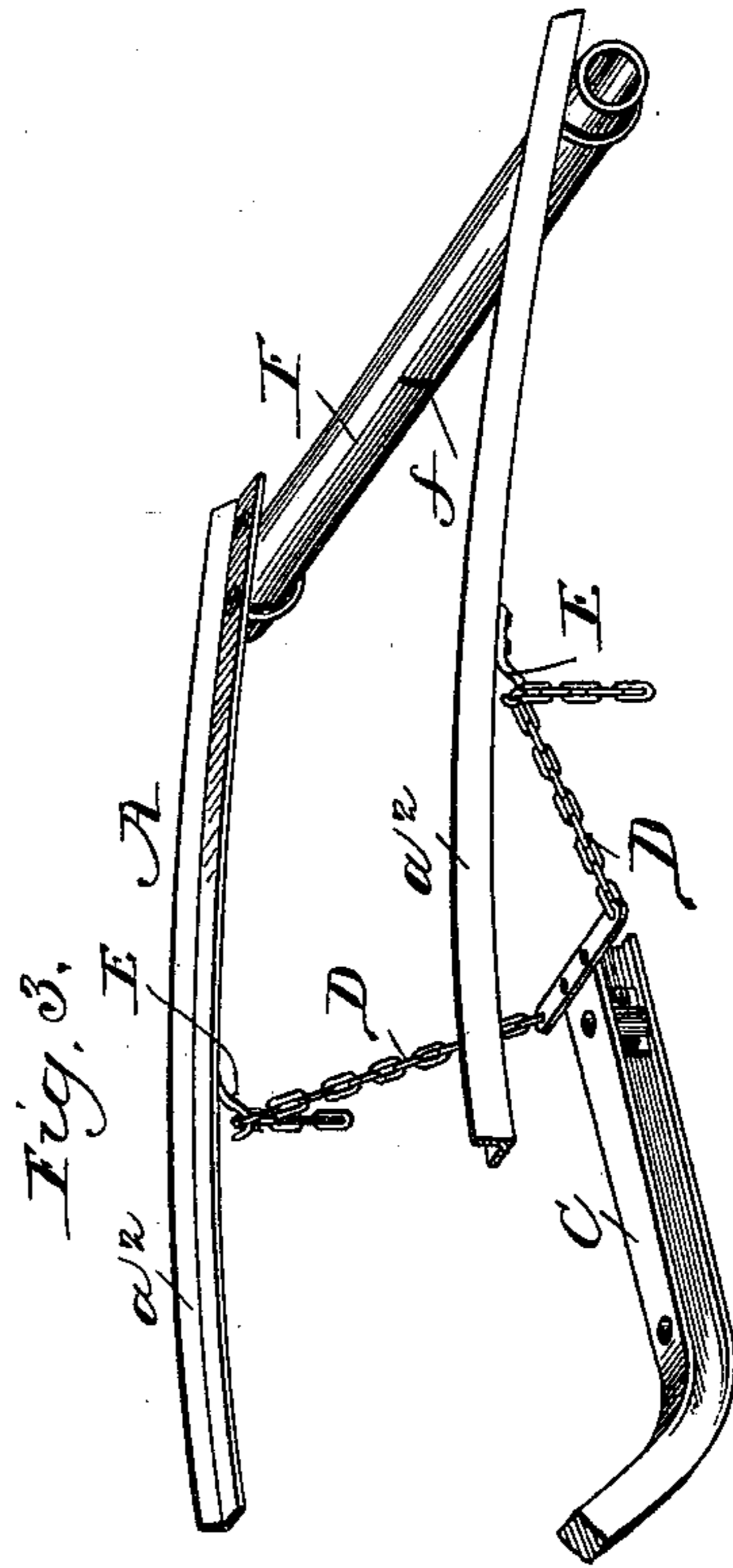


Fig. 3.

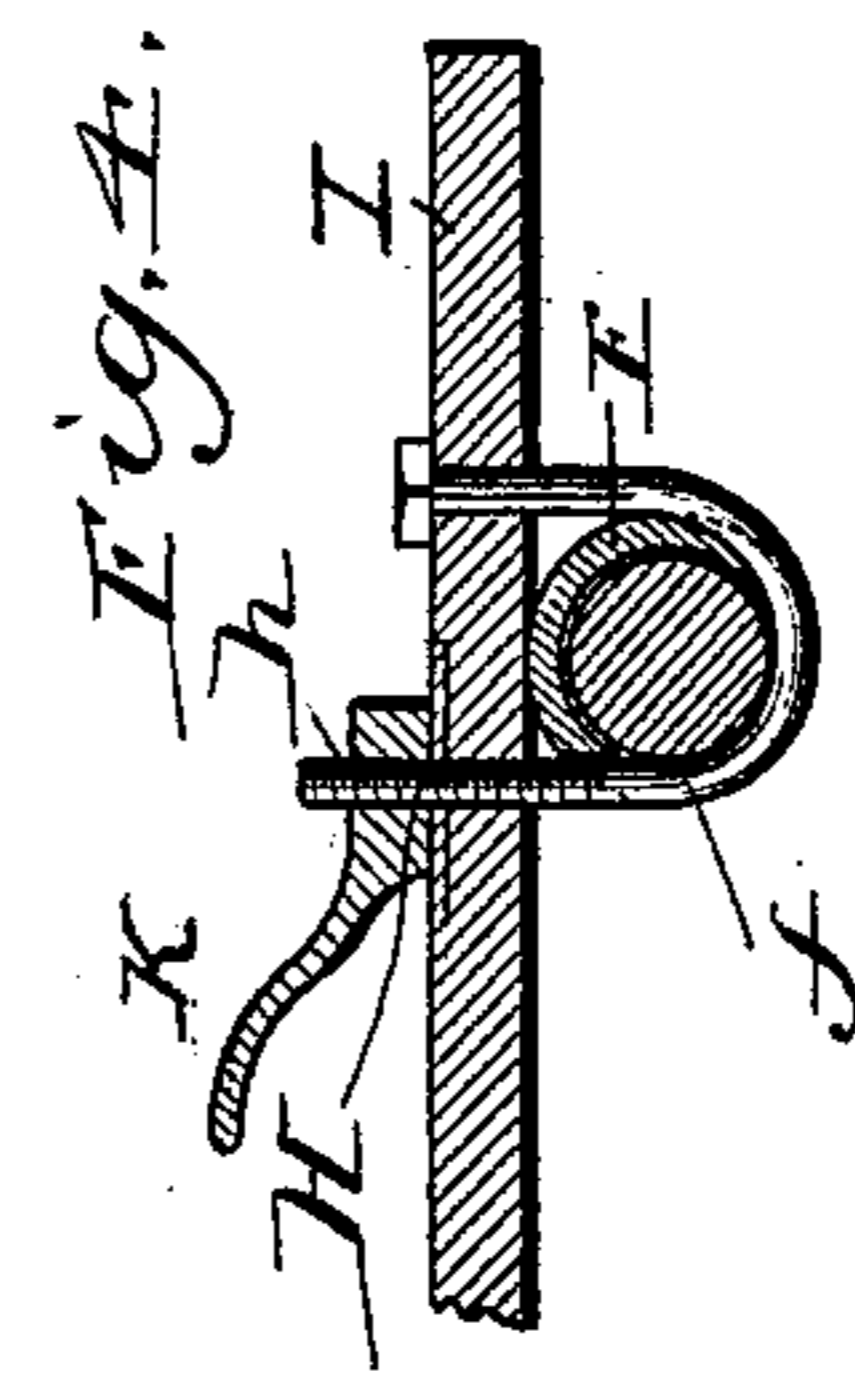


Fig. 4.

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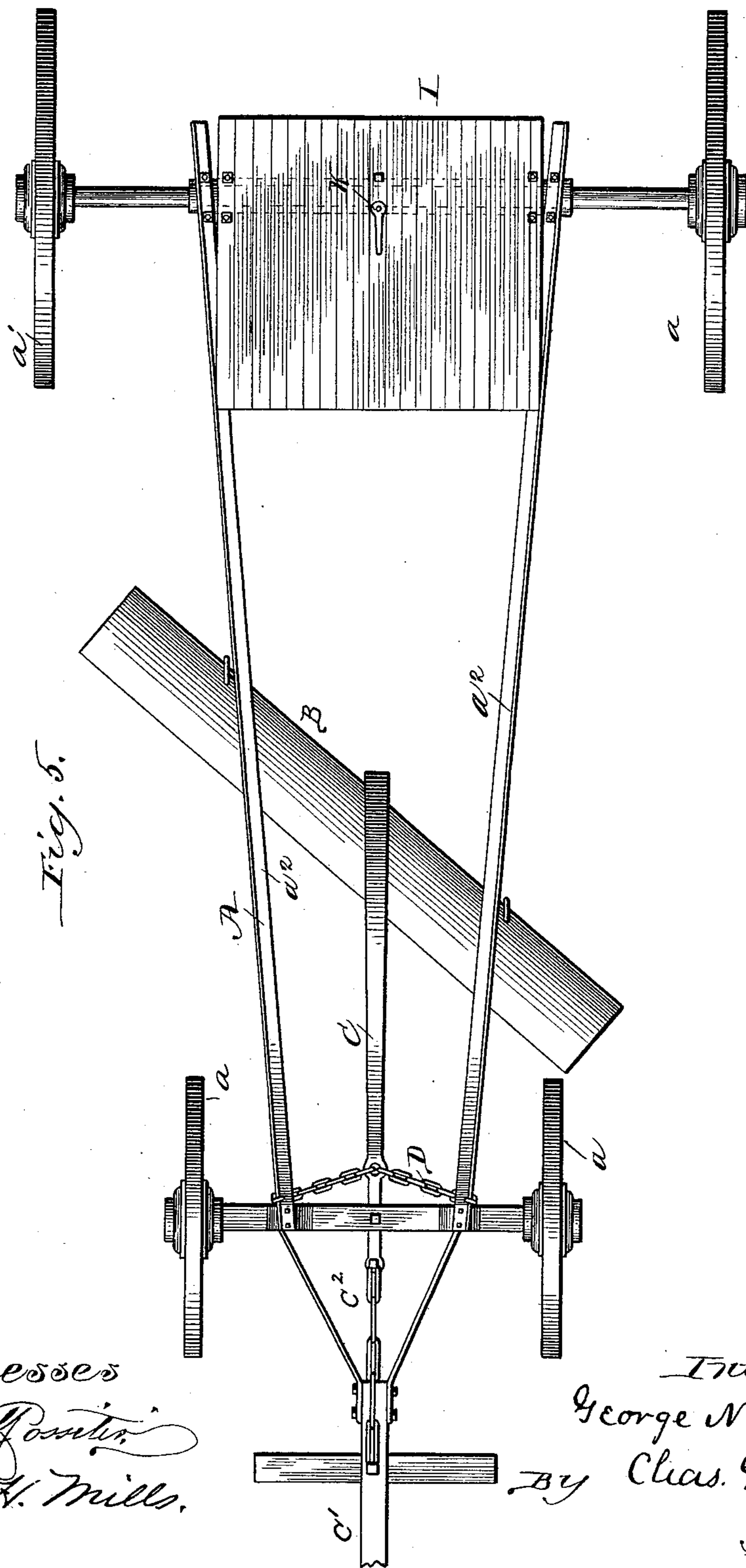
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3 Sheets—Sheet 3.

G. N. MILLER.
ROAD SCRAPER.

No. 403,889.

Patented May 21 1889.



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UNITED STATES PATENT OFFICE.

GEORGE N. MILLER, OF ASHTON, ASSIGNOR TO FREDERICK C. AUSTIN, OF CHICAGO, ILLINOIS.

ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 403,889, dated May 21, 1889.

Application filed January 28, 1889. Serial No. 297,888. (No model.)

To all whom it may concern:

Be it known that I, GEORGE N. MILLER, a citizen of the United States, residing at Ashton, in the county of Lee and State of Illinois, have invented a certain new and useful Improvement in Road-Scrapers, of which the following is a specification.

My invention relates to road-scraping machines (or "road-scrapers," as they are more commonly termed) of that class in which the rear end of the body-frame is so arranged upon the rear axle that it may be shifted thereon toward either of the rear wheels.

Prior to my invention such lateral shift of either the forward or the rear end of the body-frame has in grading and ditching and other like machines been effected by means of a rack engaged by a gear that is subject to the control of an attendant on the machine, as illustrated, for example, in Letters Patent of the United States No. 146,810 of January 27, 1874, and also in subsequent patents.

The object of my invention is to dispense both with such rack and gear device and with the manual labor of shifting the body-frame, and to cause the work to be done automatically and rapidly as a result of the penetration into the soil of such end of the scraper-blade as may be ahead or foremost. To attain such end I arrange the body-frame to shift freely and readily along one of the axles and arrange the reversible scraper-blade at the rear portion of a draft attachment, which is connected with the sides of the body-frame by a stay device, but so arranged that the blade shall be drawn solely by a direct draft from ahead, and not by reason of the stay-connection between the draft attachment and the sides of the body-frame. When the scraper-blade is in an oblique position and the machine started up, the resistance of the soil to the penetration therein of the forward end of the scraper-blade will instantly tend to throw the scraper-blade and rear portion of the draft attachment toward one side of the machine. Said side throw or swing of the scraper-blade and draft attachment exerts, through the medium of the stay device, a quick and strong pull upon one side of the body-frame, which in response to such pull will slide along the axle, thereby causing the

desired relative shift between the body-frame and axle.

In the accompanying drawings, Figure 1 is a top plan view of a road-scraper embodying the principles of my invention. Fig. 2 represents the same in side elevation, with the exception, however, that one of the side bars of the body-frame of the machine has its forward end portion broken away, and that the rear end portion of the tongue is in vertical longitudinal section on a plane which also cuts through and shows in section the forwardly-arranged cross portion of the frame through which the king-bolt extends. Fig. 3 is a detail representing in perspective the rear portion of the draft-bar and rear portions of the sides of the body-frame connected together by a sleeve or tubular bearing. Fig. 4 is a vertical section on line 4 4, Fig. 1, and shows a portion of the rear platform and a device for locking together the body-frame and rear axle. Fig. 5 is a top plan view of a road-scraper embodying my invention, the stay device being farther forward than in Fig. 1, and certain other portions of the machine somewhat differently constructed. In said view devices for raising and lowering the scraper-blade are omitted, since any suitable means for such purpose can be employed.

In said drawings, A indicates the body-frame, and B the reversible scraper-blade, of a road-scraping machine. The body-frame is at its forward end supported from the front wheels, *a*, and at its rear end supported from the rear wheels, *a'*.

The scraper-blade is connected with the rear end portion of a draft attachment, C, which in Figs. 1 and 2 is at its forward end pivotally held at the forward portion of the machine. The scraper-blade is drawn by said draft attachment, which latter in its simplest form consists of a draft-bar. The draft attachment is arranged between the sides *a*² of the body-frame and is in the direct line of draft. Said draft attachment or draft-bar is also directly drawn by the draft which results from the pull of the team, and as one of various ways in which the draft attachment can be placed subject to the pull or draft I have in said Figs. 1 and 2 connected it at its forward end, as in Letters Patent No. 392,965, heretofore

granted me, it being understood, however, that I do not confine myself to such precise arrangement, since other ways of placing the draft attachment subject to the direct pull
5 from the doubletree may be employed, as will be understood with those familiar with the art to which my invention appertains.

The scraper-blade is herein shown connected with the draft attachment and suspended by
10 raising and lowering devices, substantially as illustrated in my application, Serial No. 280,232, for Letters Patent of the United States, filed July 17, 1888, and hence such arrangement need not be particularly herein
15 described. It will be observed, however, that various known or suitable ways of connecting the scraper-blade with the draft bar or draft attachment can be employed, it being desirable, however, in all cases that the scraper-
20 blade should be reversible—that is to say, it should be arranged whereby it can be turned horizontally about a vertical line midway of its ends, whereby either end of the blade can be made to occupy a forward position.

The draft-bar or draft attachment is arranged so that it may be swung horizontally for the purpose of projecting the scraper-blade from either side of the machine, and as
25 a means for locking the draft attachment against such side swing independently of the body-frame I can provide various stay devices, such as extensible rods or the like; but as an exceedingly simple and economical de-
30 vice, I have herein provided as a stay device the chains D, which are connected with the rear end of the draft-bar and arranged whereby they can be caught onto hooks E, herein shown attached to the sides a^2 of the body-
35 frame. By such arrangement it will be seen that by disengaging the chains from said hooks the draft attachment and scraper-blade may as a whole be swung toward either side
40 of the machine, and then locked against side swing by catching the chains upon their allotted hooks. When the draft attachment is thus connected with the sides of the body-
45 frame by a suitable stay device, the power applied in a direction to throw the scraper-blade and attachment bodily toward one side
50 of the machine will be taken up by one of the chains and transmitted to the body-frame, whereby said power will tend to move the body-frame laterally. To permit the rear por-
55 tion of the body-frame under such circumstances to yield to such power, so as to shift independently of the rear axle, the said body-frame is at its rear end provided with a sliding connection with the axle—such, for example,
60 as a sleeve or tubular bearing, F—through which the rear axle, G, extends. The rear axle is made considerably longer than the width of the body-frame, whereby the latter may slide upon the rear axle toward either end, it being observed that the tubular bearing F, which is
65 rigid with the body-frame and loosely fitted upon the rear axle, constitutes an exceedingly simple form of sliding connection between said

rear axle and said body-frame. When the scraper-blade is in a position oblique to the line of progression—as in Fig. 1, for example—
70 the forward end of the scraper-blade may be caused to penetrate the soil the instant the machine is started up, and in so doing the resistance of the soil will tend to throw the scraper-blade, and consequently the draft at-
75 tachment, toward one side of the machine. The tendency of the draft attachment to swing toward one side will under such circumstances cause it to exert a lateral pull upon the body-frame, which will thereupon
80 freely slide along the rear axle. By the foregoing arrangement the rear end of the body-frame can be made to slide toward either rear wheel, the direction of its movement depending upon which end of the scraper-blade is
85 ahead.

It will be observed that the scraper-blade must be drawn by a direct forward draft to attain the foregoing results, and that the same cannot be attained where the scraper-blade
90 is drawn from the sides of the body-frame.

As an exceedingly simple mode of locking the tubular bearing F to the axle, I provide a clamp, H, which may enter a slot, f , in the tubular bearing. Said clamp has one end
95 hung in the platform I, and has its other end portion, h , threaded and extended up through the rear platform, so as to receive an adjusting device, such as a nut, K. The nut K is
100 desirably provided with a handle or foot piece, whereby it can be turned by the foot of an attendant standing upon the rear platform.

In Fig. 5 I have shown the draft-bar connected with the tongue C' by the draft-chain C², it being understood that the draft-bar in
105 this figure passes over the forward axle without being connected with the king-bolt, and that the forward end of the draft-bar is laterally adjustable, as in my application, Serial No. 297,888, filed January 26, 1889, for Letters
110 Patent of the United States; also, that the stay-chain D in Fig. 5 is arranged as in my said application, it being observed that the stay-chain will in this instance also subserve the functions of the stay-chain, as hereinbe-
115 fore set forth in connection with Figs. 1 and 2, since in said Fig. 5 the stay-chain is, for the purpose of my present invention, attached to the rear portion of the draft attachment—that is to say, it is attached to a portion of
120 the draft attachment which is in rear of the forward end of the latter.

What I claim as my invention is—

1. In a road-scraper, the combination, substantially as hereinbefore set forth, of the
125 body-frame supported to slide upon the rear axle, the scraper-blade connected with a draft attachment and drawn by a direct draft from ahead, and a stay device connecting the rear portion of the draft attachment with the side
130 of the body-frame, for the purpose described.

2. The combination, substantially as hereinbefore set forth, of the body-frame provided with a tubular bearing, F, the rear axle ex-

tending through said tubular bearing, the scraper-blade with a draft attachment and drawn by a direct draft from ahead, and a stay device connecting the rear portion of the draft attachment with the sides of the body-frame.

3. The combination, with the body-frame and rear axle, of the tubular bearing F, attached to the body-frame and fitted to slide upon the rear axle, and the clamp H, arranged to lock together said tubular bearing and rear axle.

4. The combination, substantially as here-

inbefore set forth, with the rear axle, of the body-frame having its rear end portion arranged to slide upon said rear axle, the clamp for locking the body-frame upon the rear axle, and the adjusting device K, arranged for adjusting said clamp, and having a foot-piece within reach of the foot of an attendant standing upon the rear platform, I, for the purpose described.

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