

(No Model.)

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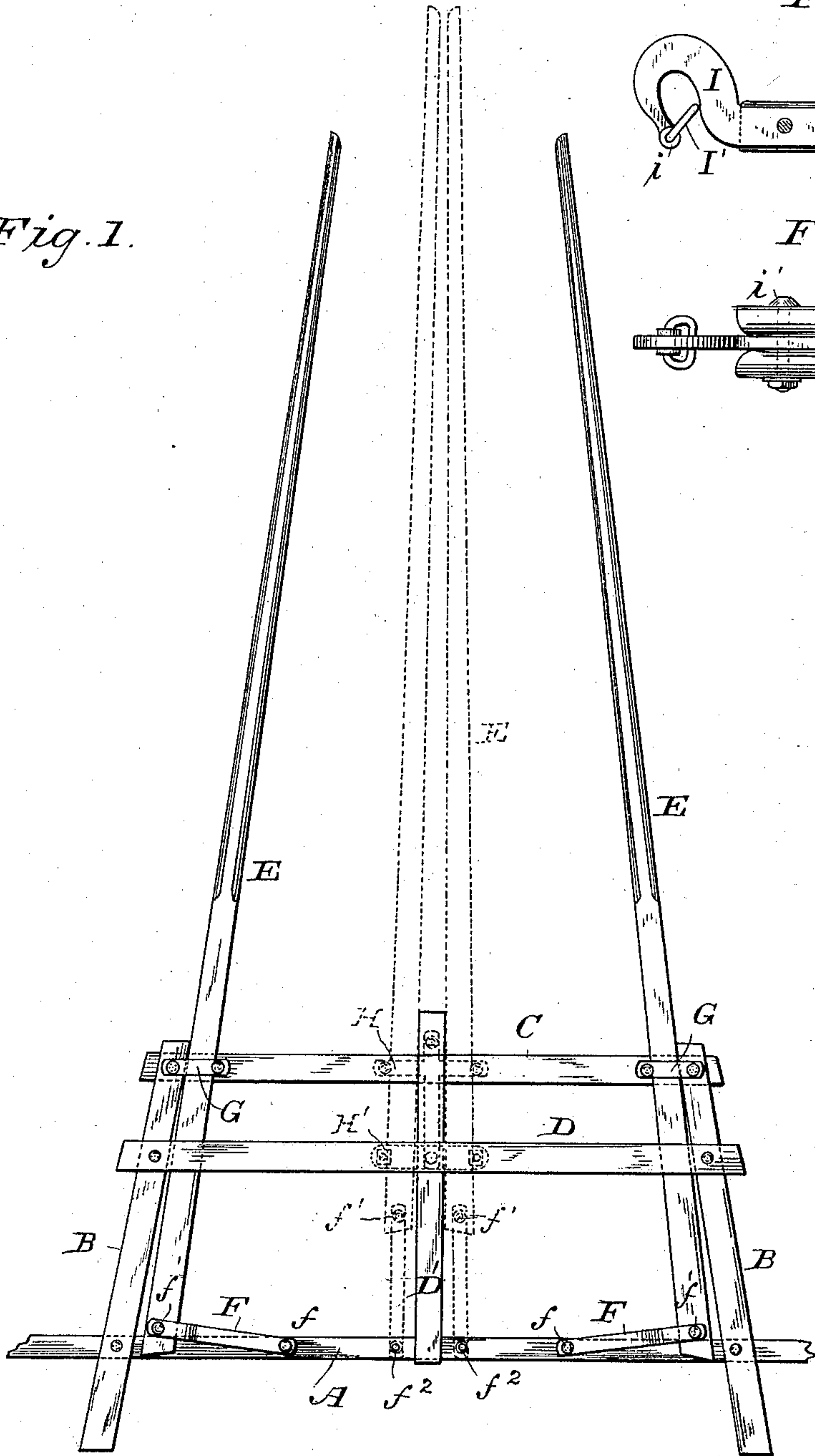
A. E. THOMAS & S. RITTY.

DRAFT APPARATUS FOR VEHICLES.

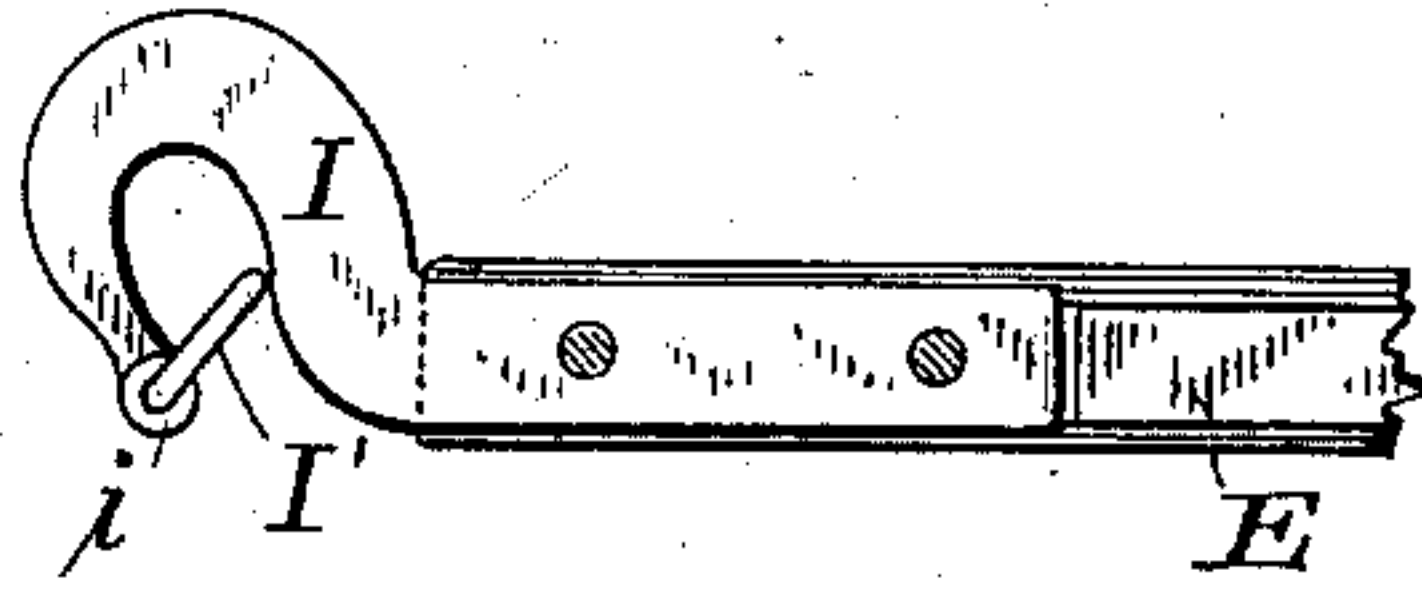
No. 384,100.

Patented June 5, 1888.

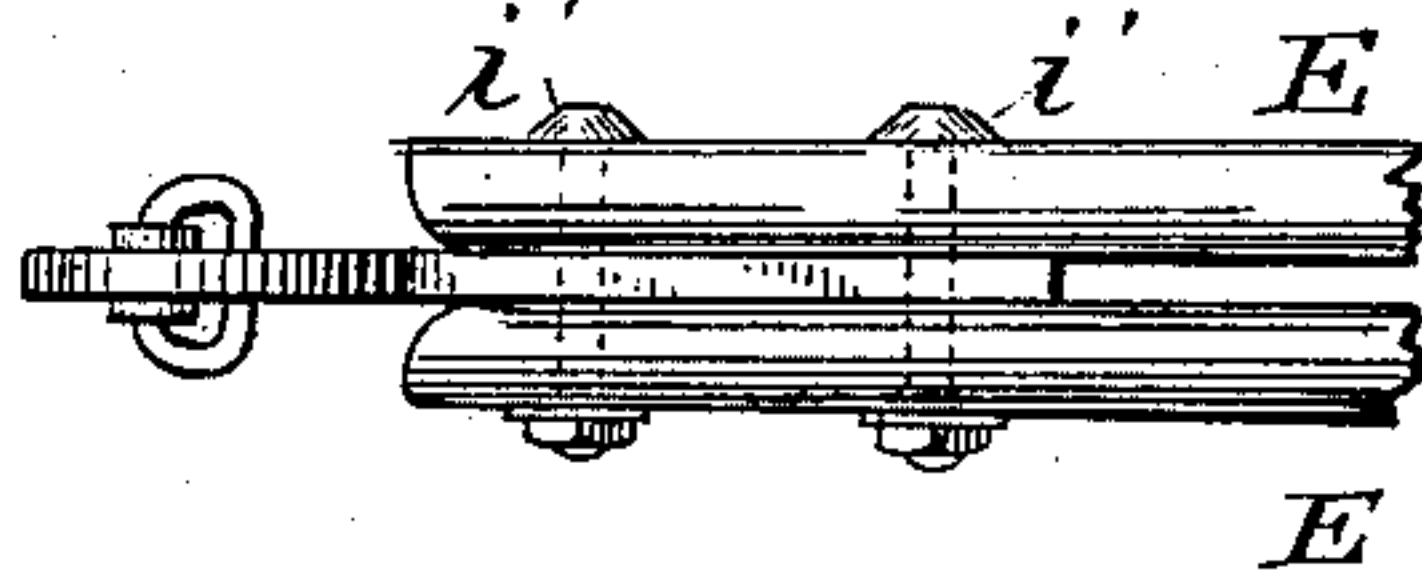
*Fig. 1.*



*Fig. 4.*



*Fig. 5.*



Witnesses

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(No Model.)

2 Sheets—Sheet 2.

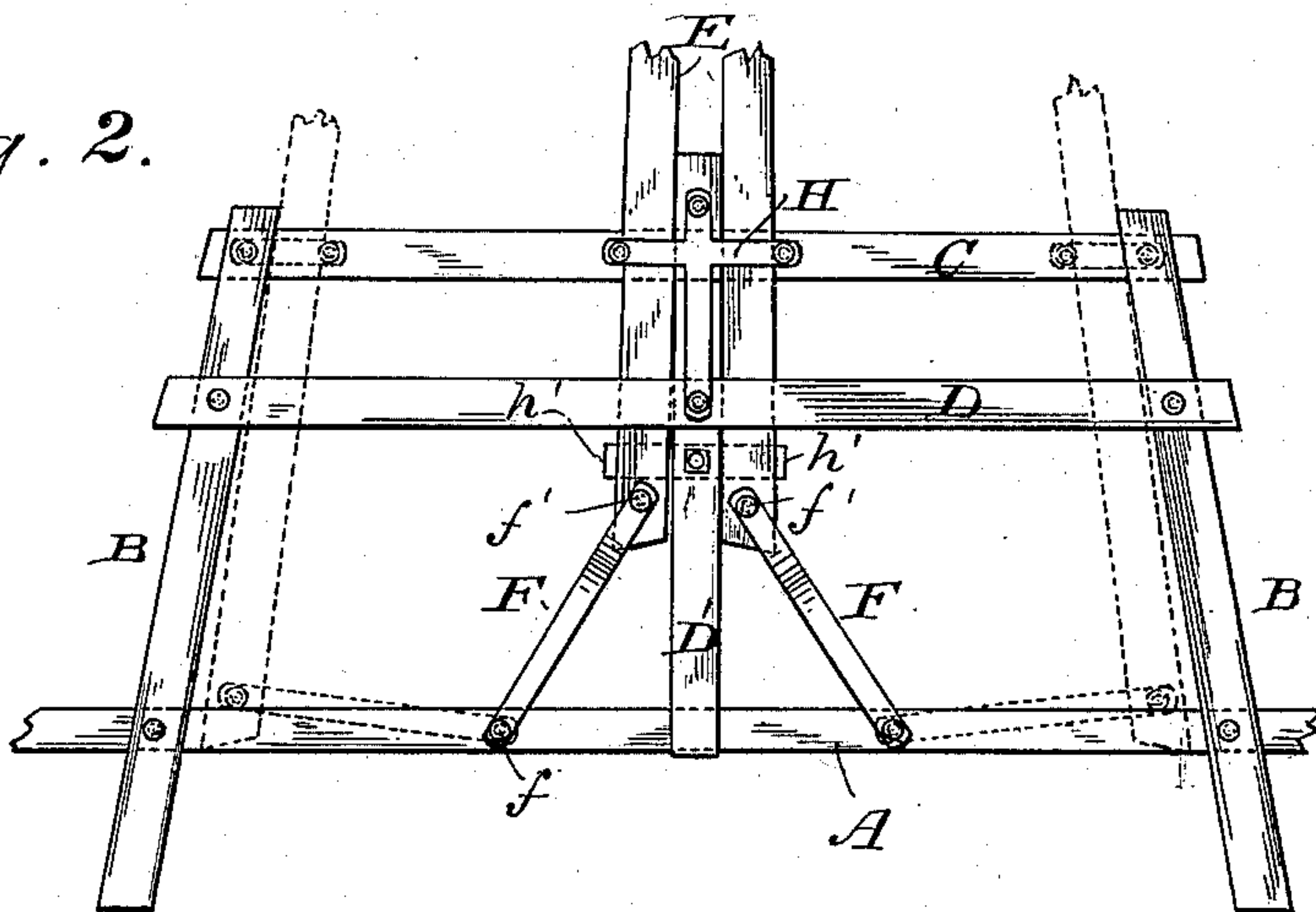
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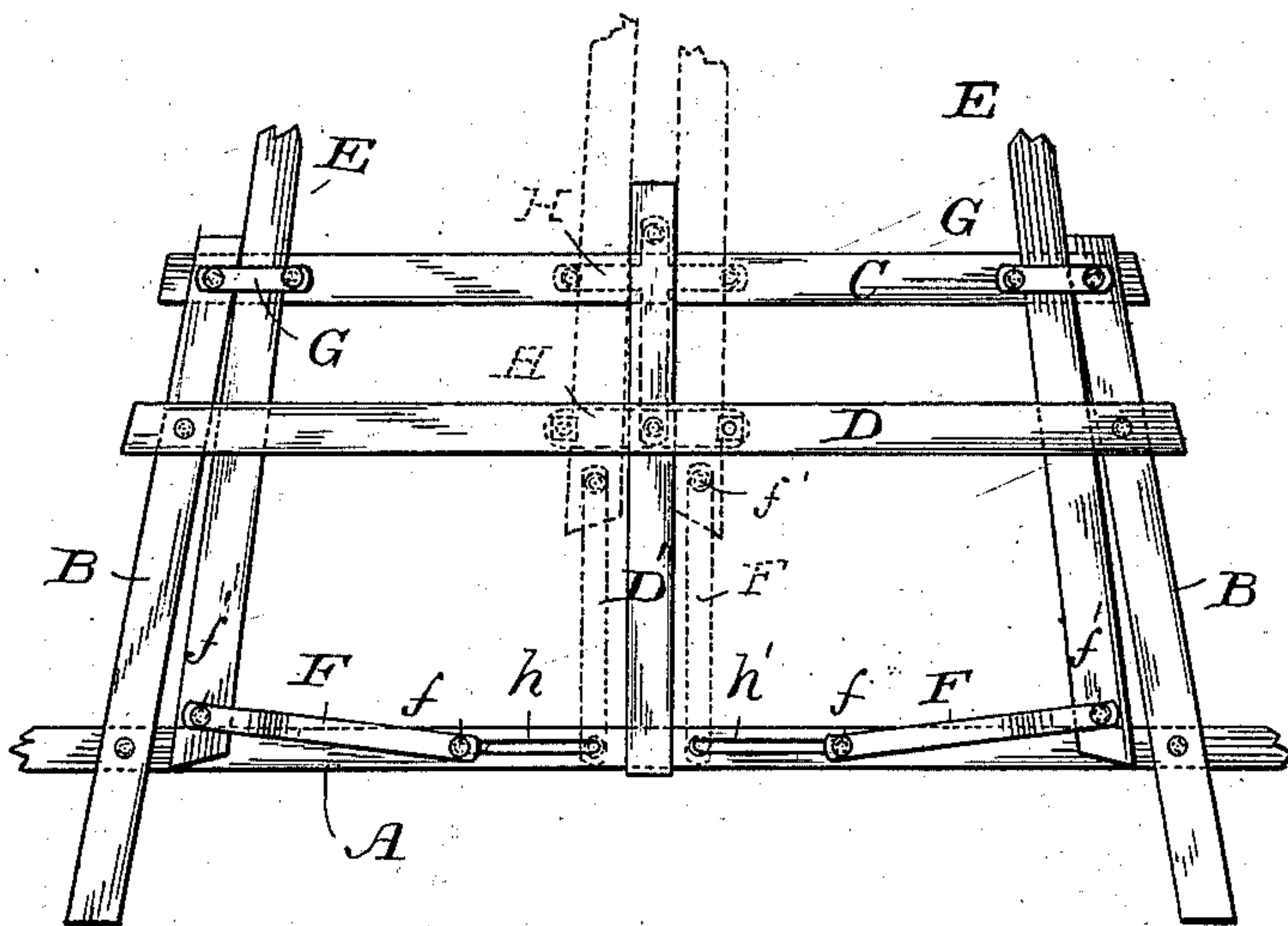
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*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

ALLEN E. THOMAS AND SEBASTIAN RITTY, OF DAYTON, OHIO, ASSIGNORS  
TO THE OHIO RAKE COMPANY, OF SAME PLACE.

## DRAFT APPARATUS FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 384,100, dated June 5, 1888.

Application filed December 17, 1887. Serial No. 258,167. (No model.)

*To all whom it may concern:*

Be it known that we, ALLEN E. THOMAS and SEBASTIAN RITTY, citizens of the United States of America, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Draft Apparatus for Vehicles, of which the following is a specification.

Our invention relates primarily to a combined pole and shafts for vehicles—that is, to a two-part pole which can be separated and its members reset at opposite sides of the draft-frame to provide shafts when but a single horse is to be used.

It also consists in an improved construction of the neck-yoke hook for use with such draft-pole or with other draft-poles, and, finally, it consists in the various details and subordinate combinations hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of a draft-frame for vehicles or agricultural implements, showing in full lines the arrangement of parts to afford shafts and in dotted lines the arrangement to form a pole for a double team. Fig. 2 is also a plan view, partly broken away, showing an alternative form of the construction; Fig. 3, likewise a plan view, showing still another form, in which our invention may be embodied without departing from its essential features; Fig. 4, an enlarged detail in side elevation of the neck-yoke hook, and Fig. 5, a like enlarged detail in top plan view of said hook clasped between the ends of the two shafts or timbers which form the pole.

A represents one of the rear transverse bars of the draft-frame, which may stand for an axle in some classes of vehicles or for that bar adjacent to the axle in a horse-rake where a revolving through-axle or an oscillating axle is commonly used, or, finally, for any suitable rear bar of said frame.

B are two oblique side bars bolted to said transverse bar and extending forward, converging equally in the direction the shafts should assume, and at their front ends united by a cross bar or tie, C, which is preferably clamped against them from beneath. D is an intermediate cross-bar parallel to the other

two, bolted to the top of the side bars, and D a longitudinal bar arranged centrally between the two side bars and bolted to the transverse bars in the same manner as said side bars. The rear transverse bar, like the front bar, is applied to the oblique bars from beneath, so that the central cross-bar is raised above the plane of the other two by the thickness of the side bars, and in case the vehicle is a horse-rake or like agricultural implement the oblique bars will usually project some distance behind said rear bar, as shown, to receive the bearings for the axle of said rake or implement.

E are the shafts, the rear ends of which are dressed down to the same thickness as the oblique bars and practically as all of the bars, since for convenience both the transverse bars and the oblique bars are cut from scantling of the same thickness—say one and seven-eighths of an inch. This permits the shafts to be slipped alongside the oblique bars between the underlying and overlying cross-bars and in close contact with said cross-bars and to lie against the inner edges of said oblique bars, so as to be practically positioned thereby. Means are then adopted to secure them so long as they are to be used as shafts and to permit them to be readily shifted when they are to be brought together to form a pole. Such means consist of a link, F, pivoted to the rear transverse bar at *f*, midway or about midway between the central longitudinal bar and the oblique bar on the side on which the particular shaft is placed, and also the rear end of said shaft, as at *f'*, so as to press it outward against or nearly against the inner edge of said oblique bar. Besides this the shaft must be secured to the front cross-bar or one of the front cross-bars of the draft-frame, so that the strain of the team may not swing it inward upon the link, and this may be accomplished, preferably, by a strap or clip, G, bridging the shaft from the adjacent side bar and bolted to one of the forward cross-bars, as shown, so as to confine said shaft against inward movement, or else a bolt may be employed passing through the shaft and into the cross-bar, this, however, being apt to weaken the shaft, and therefore not so desirable, though if a bolt or any fastening



other than the clip should be employed in connection with the pivoted link at the rear end of the shaft such device we should consider within the principle of our invention.

5 In some agricultural implements—such as horse-rakes—lifting or tilting apparatus depends from the draft-frame in the rectangles formed by the side bars and the rear and central bars of the draft-frame, so that it is necessary in shifting the shafts to the pole position that the rear or inner ends of the links should be uncoupled from the rear transverse bar and transferred to the fresh position. Such a structure is shown in the first figure of the drawings, where two bolt-holes are provided in the transverse bar for each link, one bolt-hole, *f*, as above mentioned, about 10 midway between the side bars and the central bar, though not necessarily so, and the other bolt-hole, *f*<sup>2</sup>, sufficiently close to the central bar to bring the link in line with or about in line with the shaft to which it is attached when secured in said bolt-hole.

When it is desired to adapt the machine to a double-team—that is, to provide a pole—the two shafts are released from the clips *G*, which 25 confine them to the front cross-bar, (or to the central cross-bar, if that should be preferred,) and are carried forward and inward until they meet the position shown in dotted lines in Fig. 1 and in full lines in Fig. 2, when they are again secured by clips *H* to the front cross-bar, and usually by clips *H'* to the rear cross-bar, these preferably being double clips straddling both of the shafts, as shown. Then a suitable neck-yoke hook will be applied to the 35 front end of the pole, confining its two sections firmly together at that point, and the machine will be ready for its team.

40 In the structure shown in Fig. 2, which may be adopted when the vehicle is of such nature that the space between the rear and middle cross-bars is not interfered with by the tilting or lifting levers, or other mechanism, instead of shifting the rear links from one bolt-hole to another when bringing the shafts together to form a pole, as in the just-described form of our invention, they may be swung pivotally upon the bolt which holds them to 45 the rear transverse bar, while the shafts are at the same time drawn out and brought together until they strike the central longitudinal bar of the draft-frame, and are then confined by clips, as before, while in the machine shown in Fig. 3 the rear transverse bar may 55 be slotted from the central bar, as at *h*, to the point where the inner end of the bracing-link should be clamped when holding the shafts in place against the oblique side bars of the frame. Then when it is desired to shift the shaft to 60 form the draft-pole said links will be slightly loosened and will be slid along the slots and straightened out until they and the shaft to which they are attached reach the position shown in dotted lines, when, as before, the 65 shafts will be secured by the clips. Since in this arrangement the links will brace the rear

ends of the pole sections, it may not be found necessary to employ a clip on the middle cross-bar to secure them from spreading, but a ledge, *h'*, may be secured adjacent to or beneath that cross-bar to support the rear ends of said sections against sinking, such office being performed by the clip which holds them to said middle cross-bar in the first-described 75 structure.

The neck-yoke hook which we have invented, and prefer to use, is formed as shown in the fourth and fifth figures of the drawings—that is, it is a sort of goose-neck, *I*, with its opening from beneath, holding in a bearing, *i*, at its point a ring or loop, *I'*, which is of greater diameter than the mouth of the hook, and therefore being placed in position with its inner side resting against the body of the hook within and above the mouth, as shown, 85 cannot escape, but forms a sort of trap closing said mouth. It will therefore admit the ring from the neck-yoke, swinging upon its pivot as it does so, and immediately falling back and closing the mouth to prevent its accidental disengagement, while when removing the neck-yoke the ring can easily be opened up by the thumb and the finger and the ring then slipped out. When this hook is used with our 95 combined shaft and pole, it will have a flat or nearly flat shank to be embraced between the two members of the pole, and will be secured by bolts *i'*, as shown; but when used with poles of different structure will of course have its shank suitably shaped. 100

We claim as our invention—

1. The combination, substantially as hereinbefore set forth, of the oblique side bars, the transverse bars uniting them, the shafts, the links secured to the rear ends of the shafts and to the rear transverse bar, and a clip bridging each shaft from the adjacent side bar and bolted to one of the forward transverse bars. 105

2. The combination, substantially as hereinbefore set forth, of the oblique side bars, the transverse bars uniting them, the central longitudinal bar, the shafts, the links secured to the rear ends of the shafts and to the rear transverse bar, and a fastening or fastenings securing said shafts against the edges of said central bar, whereby they form a pole. 110

3. The combination, substantially as hereinbefore set forth, of the oblique side bars, the transverse bars uniting them, the central longitudinal bar, the shafts, the links bolted to the rear ends of said shafts and to the rear transverse bar, and clips bridging said shafts on each side of the central longitudinal bar, whereby they are brought together and secured in position to form a pole. 115

4. The combination, substantially as hereinbefore set forth, of the oblique side bars, the transverse bars uniting them, the central longitudinal bar, the shafts, the links secured to the rear ends of said shafts and to the rear transverse bar, a device for uniting said shafts to one of the forward transverse bars adjacent to the corresponding side bar, and a device for 120 125 130



uniting said shafts to one or more of the forward transverse bars adjacent to the central longitudinal bar.

5 5. The combination, substantially as herein-  
before set forth, of the oblique side bars, the  
transverse bar, the central longitudinal bar,  
the shafts, the links pivoted to the rear ends  
of said shafts and to the rear transverse bar  
and swinging from the oblique bar over to-  
10 ward the central bar on their pivotal connec-  
tions with said transverse bars, and fastenings  
for uniting said shafts to one of the forward  
transverse bars adjacent to the side bars and  
also adjacent to the central bar.

6. The combination, with the two-part pole, 15  
of the neck-yoke hook herein described, formed  
as a normal goose-neck with a ring or loop jour-  
naled in its point and with a shank entering  
between the ends of the pole and secured by  
bolts.

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