

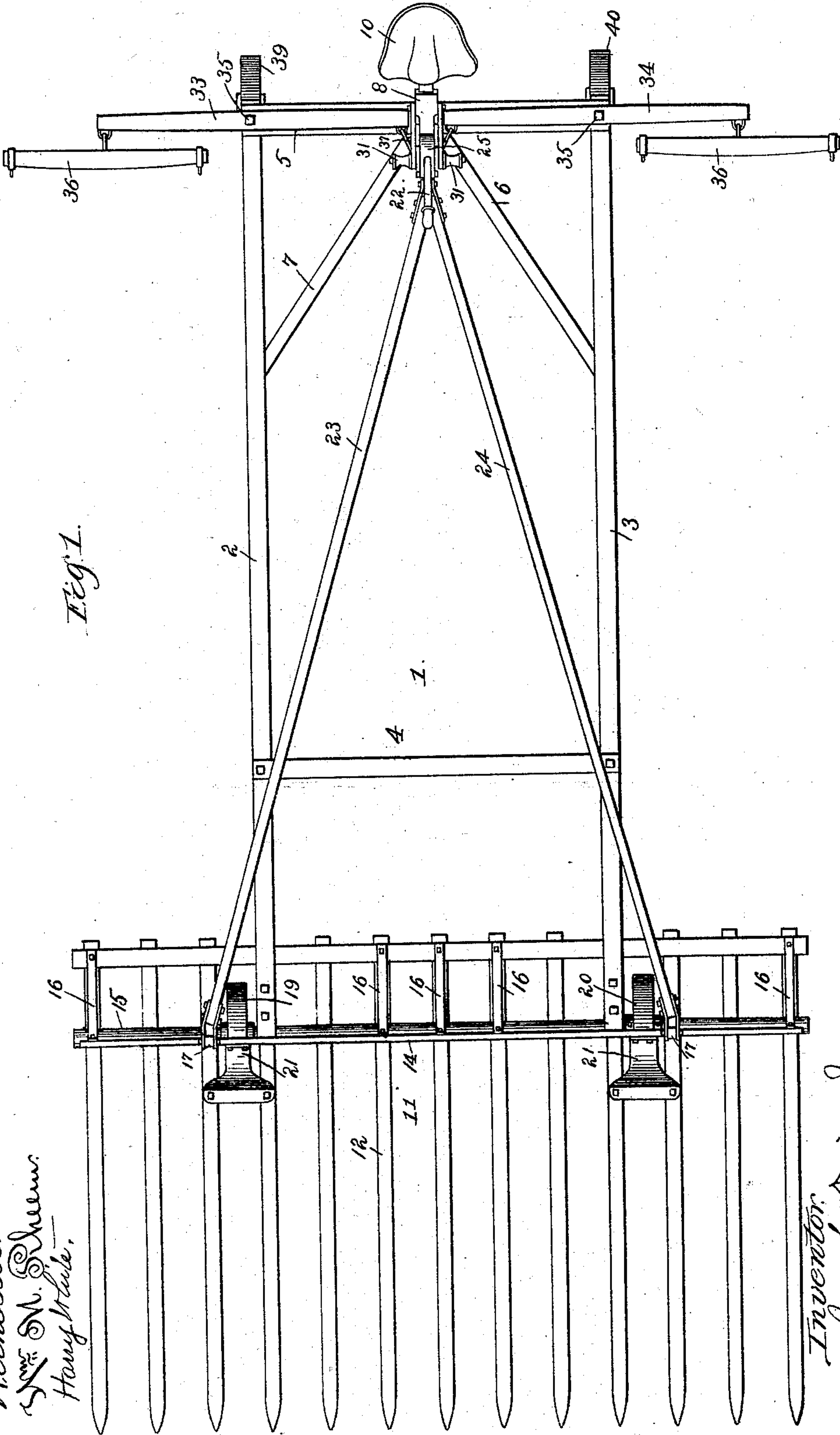
(No Model.)

2 Sheets—Sheet 1.

J. DAIN, Jr.
RAKE.

No. 560,692.

Patented May 26, 1896.



Witnesses:
S. M. D. Dain,
Harry W. W. W.

Inventor:
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Attorneys.

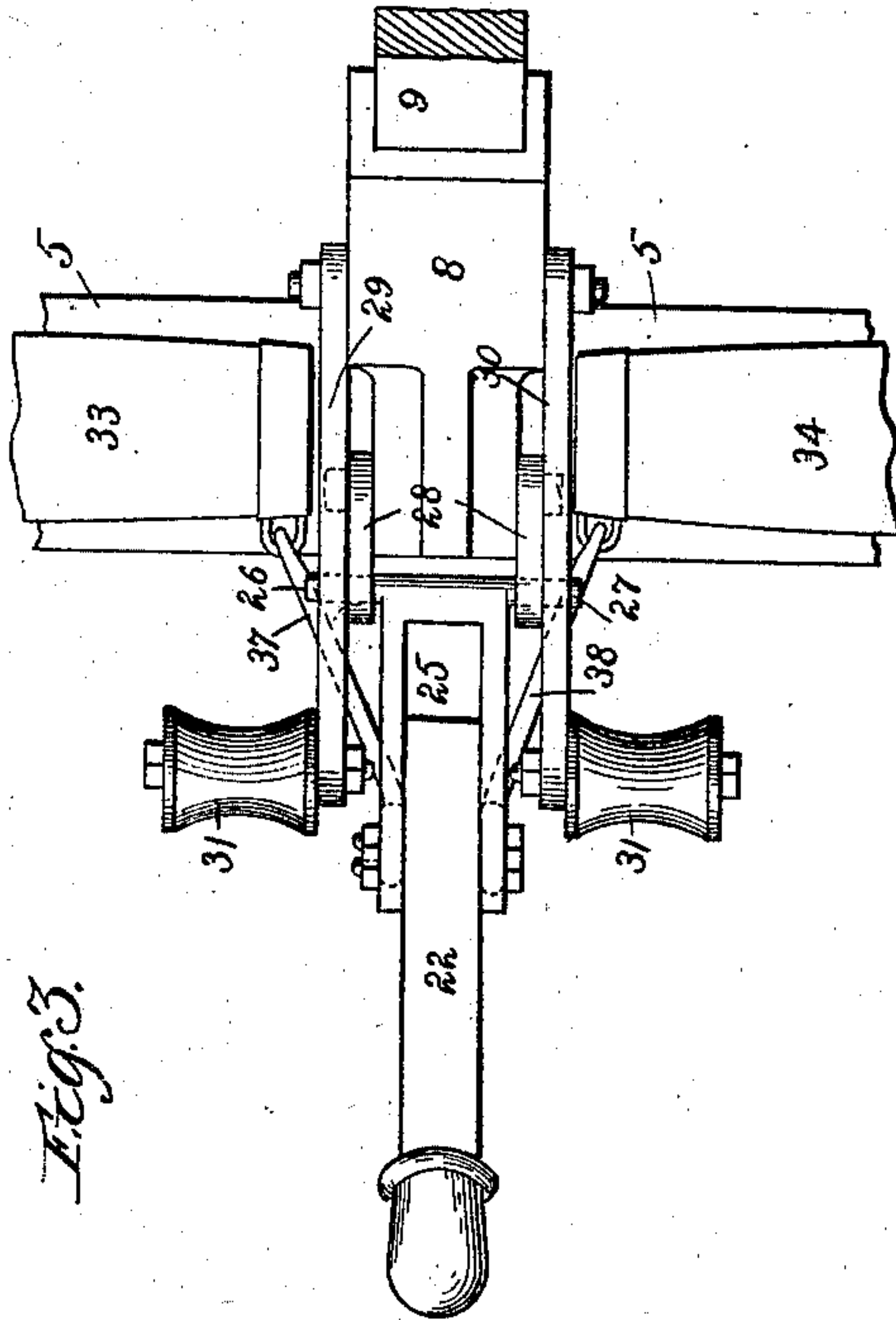
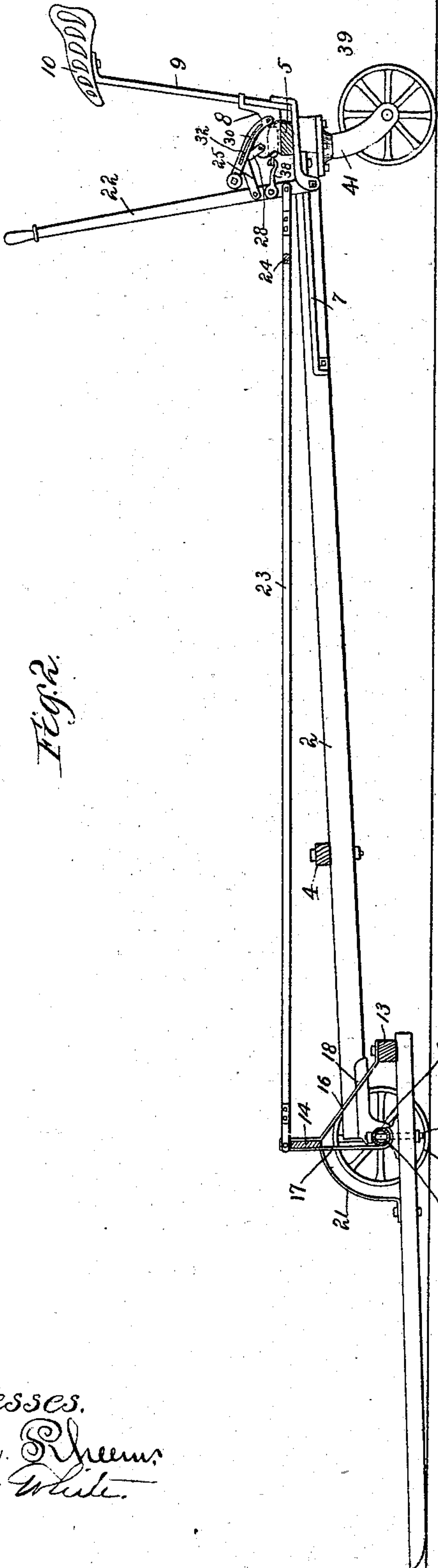
(No Model.)

2 Sheets—Sheet 2.

J. DAIN, Jr.
RAKE.

No. 560,692.

Patented May 26, 1896.



Witnesses.
Wm. M. P. Green.
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Inventor.
Joseph Dain, Jr.
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UNITED STATES PATENT OFFICE.

JOSEPH DAIN, JR., OF CARROLLTON, MISSOURI, ASSIGNOR TO THE DAIN MANUFACTURING COMPANY, OF SAME PLACE.

RAKE.

SPECIFICATION forming part of Letters Patent No. 560,692, dated May 26, 1896.

Application filed April 10, 1893. Serial No. 469,835. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH DAIN, JR., a citizen of the United States, residing at Carrollton, in the county of Carroll and State of Missouri, have invented certain new and useful Improvements in Rakes, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a top or plan view. Fig. 2 is a central longitudinal vertical section; and Fig. 3 is an enlarged detail, being a top or plan view of a portion of the lifting mechanism.

My invention relates to rakes, and particularly to that class commonly known as "push-rakes," in which the rake-teeth are arranged in front of the horses.

The objects of my invention are to provide improved means for holding the rake-teeth near the surface of the ground; to provide improved devices for lifting the teeth, so that the teeth may be raised either by power or by hand, or both, and to provide means for automatically locking the teeth in their raised position. I accomplish these objects as herein-after specified and as illustrated in the drawings.

That which I regard as new will be set forth in the claims.

In the drawings, 1 indicates the frame of the machine, consisting of side pieces 2 3 and end pieces 4 5.

6 7 indicate braces.

8 indicates a casting mounted centrally upon the rear cross-bar 5, as best shown in Figs. 2 and 3.

9 indicates a seat-supporting beam secured at its lower end in the casting 8.

10 indicates a seat carried by the beam 9.

11 indicates a rake-head, which carries rake-teeth 12. The head 11 is composed of cross-bars 13 14 and a rod or shaft 15, which is circular in cross-section. I arrange the bars 13 14 and shaft 15 substantially in triangular form, as shown in Fig. 2, the bars 13 14 being connected by braces 16, and the shaft 15 being supported from the bar 14 by supporting-bars 17. The bar 13 is connected to the rear ends of the teeth 12, as best shown in Figs. 1 and 2, and the shaft 15 is also connected to the teeth, blocks 42 being provided between the teeth and said shaft.

43 indicates bolts which pass through the bars 17, shaft 15, blocks 42, and teeth 12, as shown in Fig. 2, firmly securing such parts together. The shaft 15 is journaled in bearings formed in brackets 18, carried by the bars 2 3, as best shown in Fig. 2. By this construction the head 11 may be partially rotated with the shaft 15 as its axis, thereby raising or depressing the points of the rake-teeth.

19 20 indicate wheels mounted upon the rod or shaft 15 at opposite sides of the machine, as shown in Figs. 1 and 2.

21 indicates shields arranged in front of the upper portion of the wheels 19 20, as shown in Figs. 1 and 2.

22 indicates a lever pivotally secured at its lower end upon the frame of the machine forward of the casting 8, as shown in Fig. 2.

23 24 indicate connecting-rods, the forward ends of which are connected to the cross-bar 14, respectively, at opposite sides of the machine, their rear ends being connected to the lever 22 a short distance above its pivot, as best shown in Fig. 2. By this construction the rake-head may be rocked by operating the lever 22, thereby raising or depressing the points of the rake-teeth.

25 indicates a link, the forward end of which is pivotally connected to the lever 22. The link 25 is provided at its rear end with laterally-projecting pins 26 27, as shown in Fig. 3.

28 indicates a link pivotally connected at one end to the link 25 by means of the pins 26 27 and at the other end to the casting 8, as best shown in Fig. 3.

29 30 indicate foot-levers, the rear ends of which are pivoted to the casting 8 at opposite sides of such casting. The levers 29 30 project forward and are provided with spools 31, adapted to receive the feet of the operator. Each foot-lever 29 30 is provided with a slot 32 to adapt them to receive the pins 26 27, as best shown in Fig. 3. By this construction downward pressure upon the foot-levers 29 30 will cause forward pressure upon the lever 22, thereby depressing the points of the rake-teeth.

When the lever 22 is thrown back to lift the rake-teeth, the link 25 and foot-levers 29 30 will be moved back, the pins 26 27 moving

in the arc of a circle about the lower pivots of the links 28 until said pins come into line with or lie slightly lower than said pivots. The lifting-lever 22 will thereby be automatically locked in its backward position, holding the rake-teeth up. The lever may be unlocked by raising the pins 26 27 slightly by means of the foot-levers.

33 34 indicate doubletrees, which are pivotally mounted at the opposite sides of the frame 1 by means of pivots 35. Each double-tree carries a singletree 36. The inner ends of the doubletrees 33 34 are connected by rods 37 38, respectively, to the lever 22, as shown in Figs. 2 and 3, by which construction forward pull applied to the singletrees will exert a backward pull upon the lever 22, thereby elevating the rake-teeth.

39 40 indicate rear carrying-wheels, which are mounted in brackets 41, depending from the cross-bar 5, as shown in Fig. 2.

By my improved construction when power is applied to the singletrees to start the rake the lever 22 will be moved slightly backward and the points of the teeth elevated. To counteract the effect of the draft, the lever 22 may be operated either by hand or foot through the levers 29 30 and the pressure of the points of the teeth upon the ground may thereby be accurately regulated. If it is desired to elevate the rake-teeth when the rake is at rest, it may be readily accomplished through the lever 22.

My improved construction renders the rake particularly adapted for gathering hay from the swath, windrow, or shock, as the pressure of the points of the teeth against the ground can be accurately regulated by the operator and the points of the teeth instantly raised for carrying the teeth clear of the ground for passing obstacles or traveling long distances.

I do not wish to limit myself to the use of the two rods 23 24 for connecting the lever to the rake-head, as any other suitable device may be used. Neither do I wish to limit myself to the use of my improved lifting mechanism only with a rake-head of the peculiar construction shown, as other forms of heads and supporting devices which may be rocked to elevate or depress the rake-teeth may be used. The rake-head shown is, however, that which I prefer to use.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. A push-rake, consisting of a supporting-frame, a rake-head mounted on the front end of the supporting-frame and having vertically-movable rake-teeth, draft devices on the rear end of the supporting-frame, a hand-lever pivotally mounted on the rear end of the sup-

porting-frame and connected with the rake-head for operating the same to vary the distance of the points of the rake-teeth relatively to the surface traversed, connections between the draft devices and the hand-lever, foot-levers pivoted at the rear end of the supporting-frame, and links loosely connecting the foot-levers with the said hand-lever, so that downward pressure upon the foot-levers shifts the hand-lever forwardly to depress the points of the rake-teeth, substantially as described.

2. In a rake, the combination with a supporting-frame, a rake-head supported thereby, and rake-teeth carried by said head, said rake-head being adapted to be rocked to elevate or depress said teeth, of doubletrees pivotally mounted at the opposite sides of said frame, a lifting-lever pivoted upon said frame, devices connecting the inner ends of said doubletrees to said lifting-lever, and devices connecting said lifting-lever to said rake-head, substantially as described.

3. In a rake, the combination with a supporting-frame, a rake-head supported thereby, and rake-teeth carried by said head, said rake-head being adapted to be rocked to elevate or depress said teeth, of doubletrees pivotally mounted at the opposite sides of said frame, a lifting-lever pivoted at one end upon said frame, devices connecting the inner ends of said doubletrees to said lifting-lever, devices connecting said lifting-lever to said rake-head, a foot-lever, and devices connecting said foot-lever to said lifting-lever, whereby by downward pressure upon said foot-lever said lifting-lever may be operated to depress the rake-teeth, substantially as described.

4. In a push-rake the combination with a supporting-frame, a rake-head supported thereby, and rake-teeth carried by said head, said rake-head being adapted to be rocked to elevate or depress said teeth, of doubletrees pivotally mounted at the opposite sides of said frame, a lifting-lever pivoted at one end upon said frame, devices connecting the inner ends of said doubletrees to said lifting-lever, devices connecting said lifting-lever to said rake-head, a link 25 pivotally connected to said lifting-lever, link 28 pivotally supported by said frame and connected to said link 25, and foot-levers 29 30 connected to said link 25, whereby by downward pressure upon said foot-levers said lifting-lever may be thrown forward and the rake-teeth thereby depressed, substantially as described.

JOSEPH DAIN, JR.

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