

O. H. OLSON.

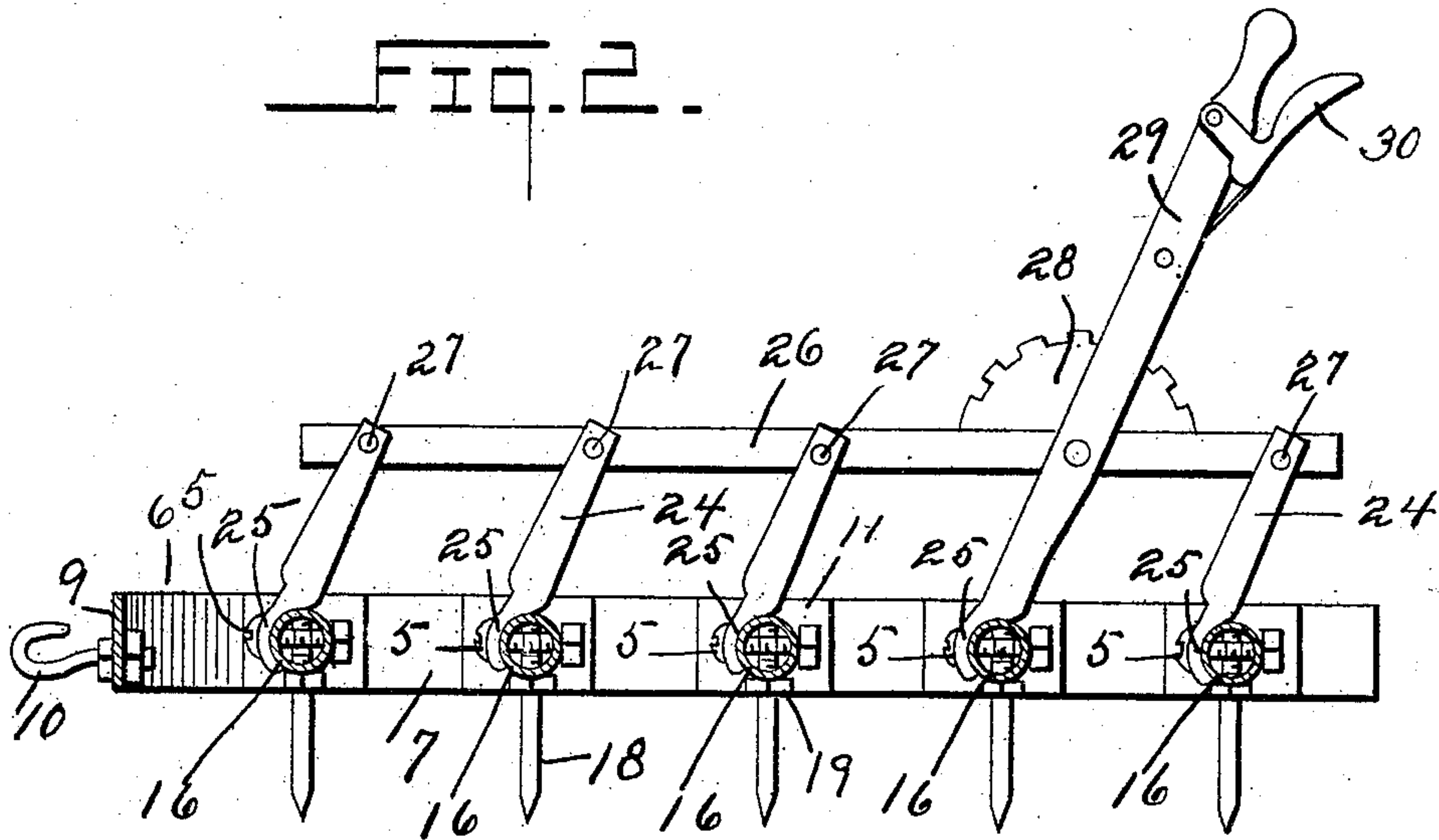
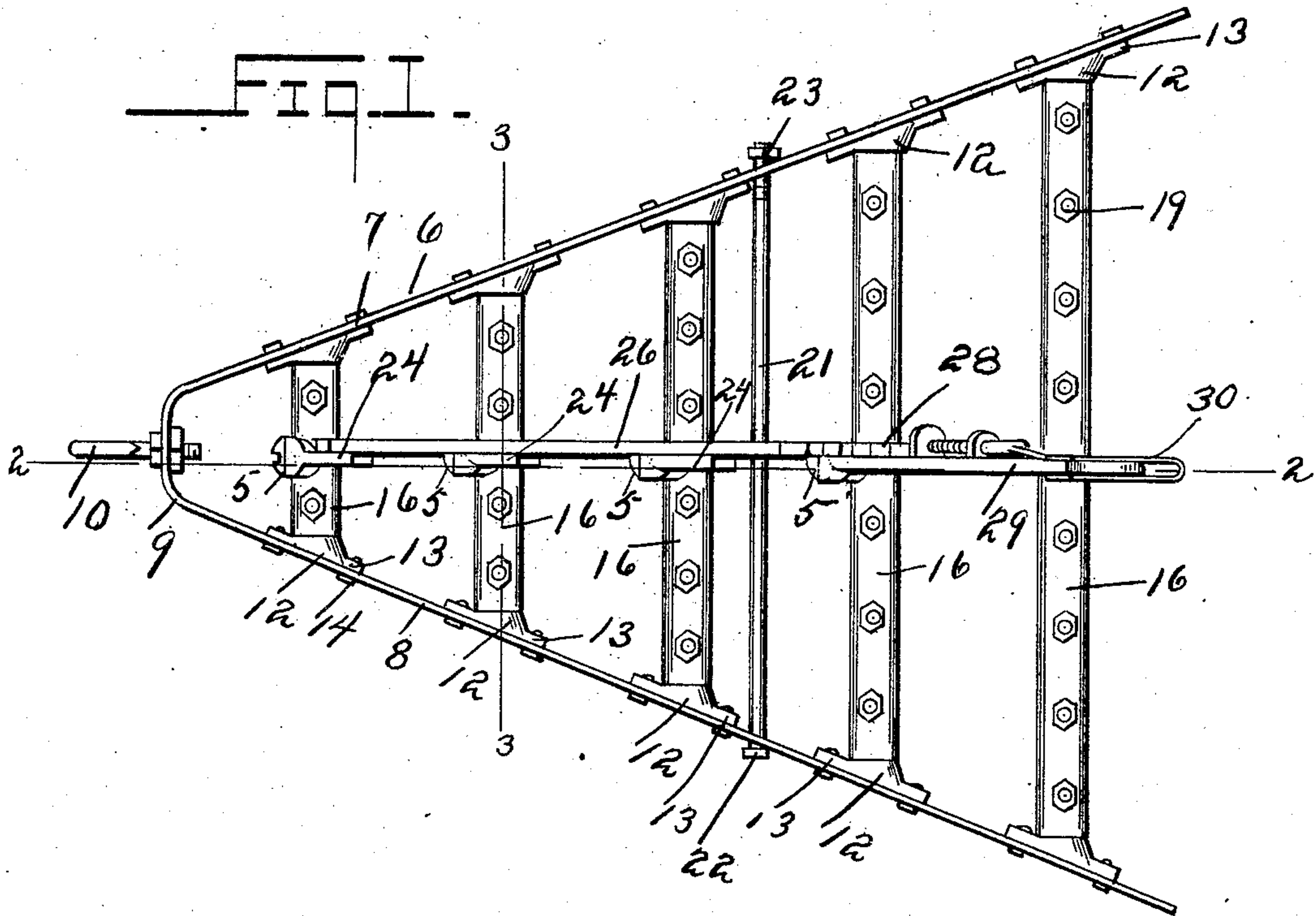
HARROW.

APPLICATION FILED JULY 17, 1908.

929,105.

Patented July 27, 1909.

2 SHEETS—SHEET 1.



Inventor
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Witnesses
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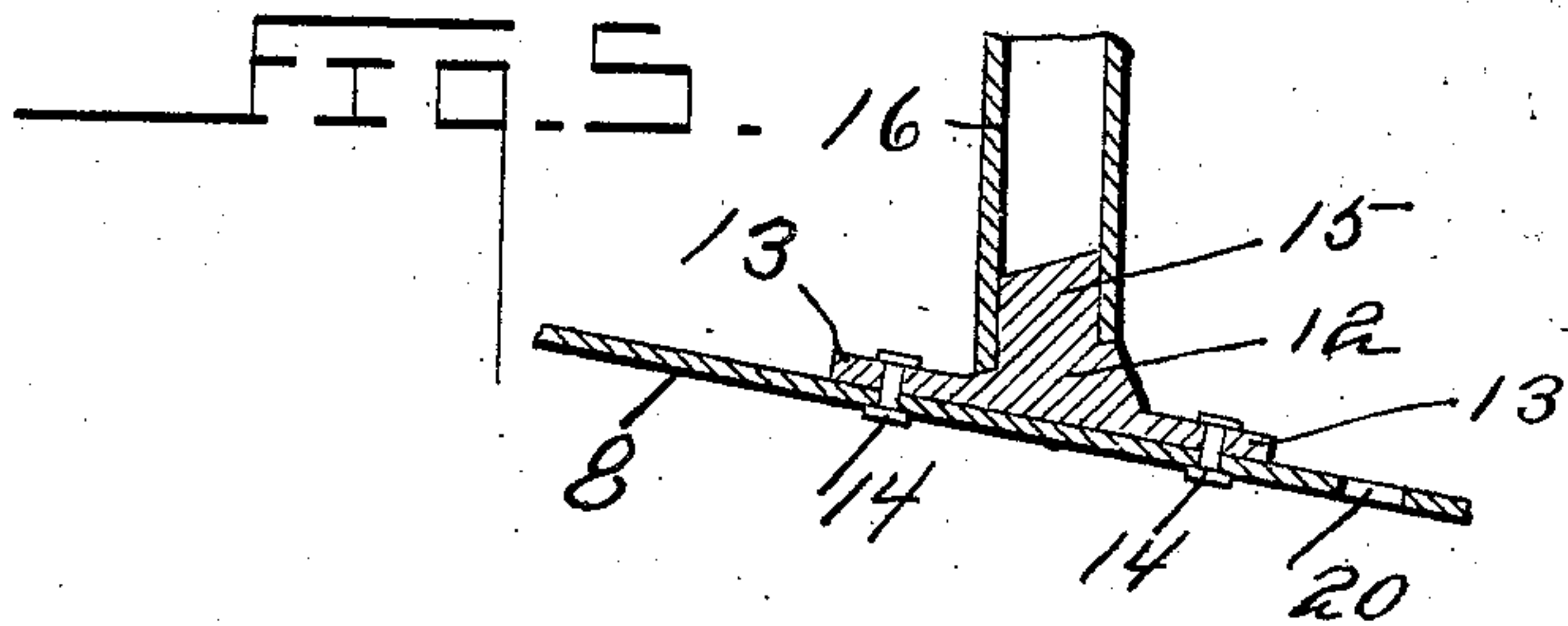
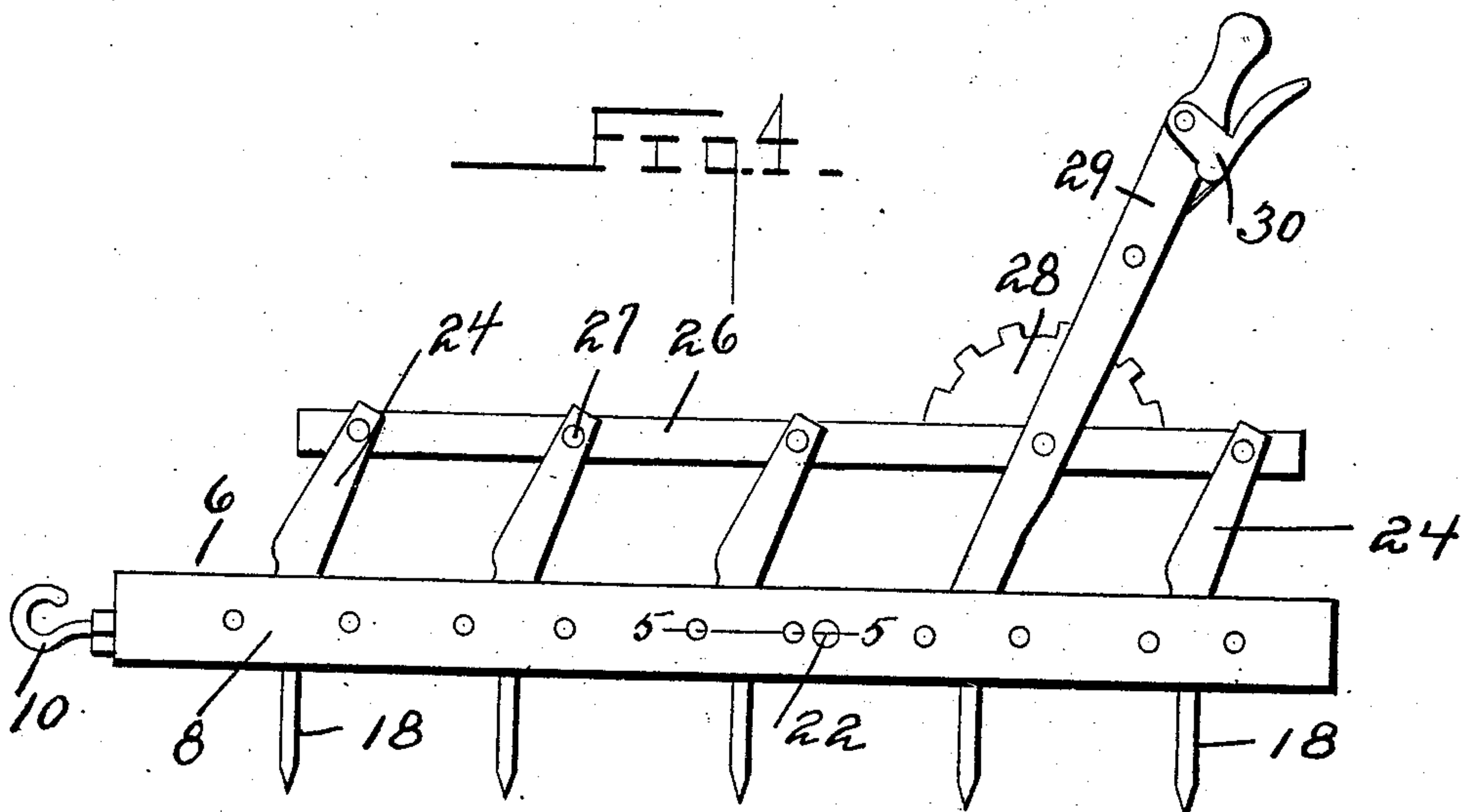
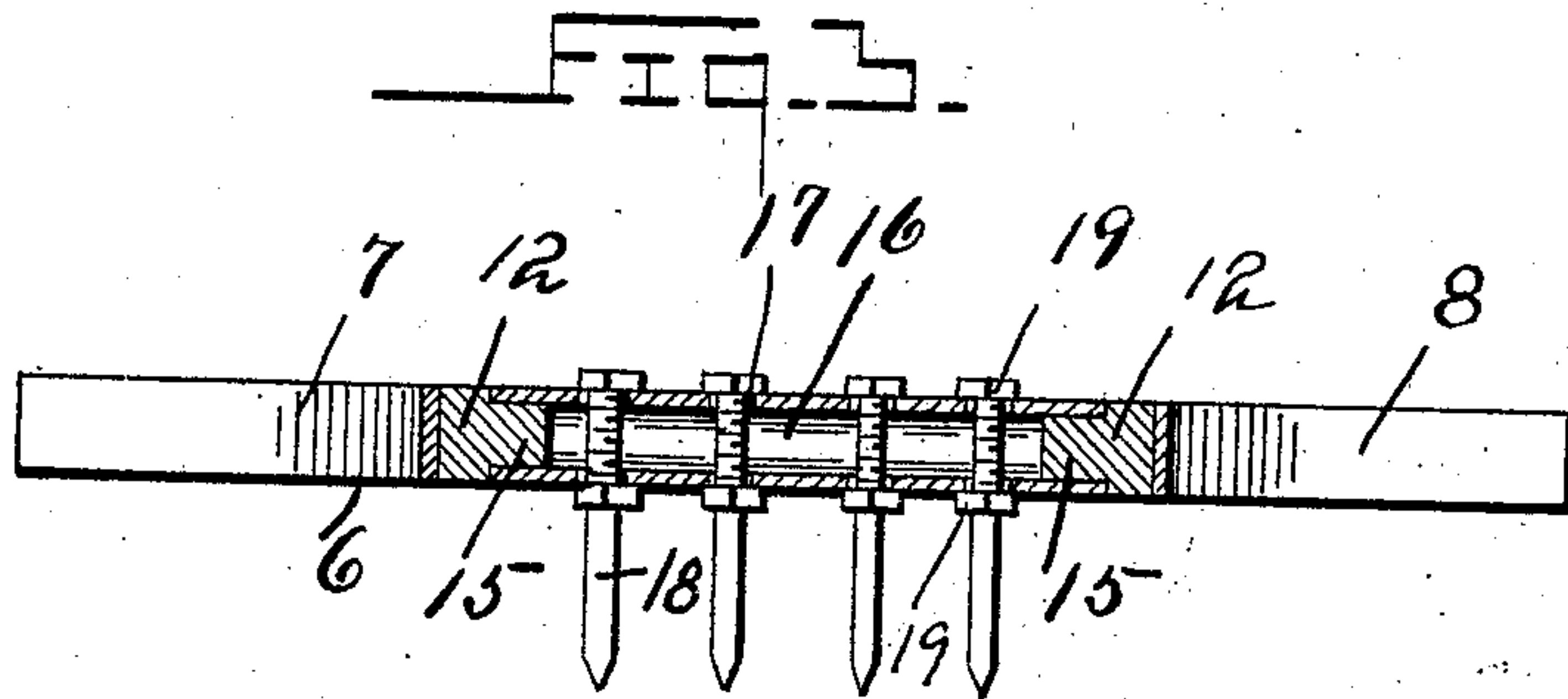
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UNITED STATES PATENT OFFICE.

OSCAR H. OLSON, OF MOUNT VERNON, SOUTH DAKOTA.

HARROW.

No. 929,105.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed July 17, 1908. Serial No. 444,023.

To all whom it may concern:

Be it known that I, OSCAR H. OLSON, a citizen of the United States, residing at Mount Vernon, in the county of Davison and State of South Dakota, have invented certain new and useful Improvements in Harrows, of which the following is a specification.

This invention relates to an improvement in harrows, and has for an object to provide a harrow which will be simple in construction, which may be manufactured at a relatively low cost, and which will include a frame and a plurality of tooth holding members which may be operated to set the teeth of the harrow at different angles to suit various working conditions.

A further object of this invention is to provide a harrow the teeth holding elements of which may be conveniently and quickly disengaged from between the divergent yieldingly held frame bars.

Other objects and advantages will be apparent from the following description and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims and that any suitable materials may be used without departing from the spirit of the invention.

In the drawings forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a top plan view of the harrow, Fig. 2 is a vertical longitudinal sectional view therethrough, on the line 2—2 of Fig. 1, Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1, with portions removed, Fig. 4 is a side elevational view, Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 4.

Referring now more particularly to the drawings, there is shown a harrow consisting of a frame formed of a single strip of sheet or strap metal which is bent V-shaped to form the outwardly diverging yieldingly held members 7 and 8 connected by means of the curved bight portion 9. This curved portion is pierced and is thus arranged to receive a draft hook 10, as shown.

The members 7 and 8 are provided upon their inner faces with spaced gudgeons 15 which are each provided with the securing flanges 13, as shown in Fig. 5, these gudgeons being secured to the frame members by means of rivets or similar fastening devices

14. Each gudgeon is provided with a hub enlargement 12 for a purpose to be hereinafter described.

Disposed between the divergent members 7 and 8 of the frame there is shown a plurality of pipe sections 16 to properly fit between the frame and which are engaged at their ends with the gudgeons 15 carried by the just described flanges, the tubes 16 being thus arranged for rotary movement. Each pipe section is provided with a plurality of alined pairs of passages forming tooth openings which receive the threaded shanks of the harrow teeth 18. The threaded ends 17 of the harrow teeth receive the clamping nuts 19, one nut being arranged above the pipe section and the other nut being disposed beneath the pipe section, as shown in Fig. 3.

Midway between the ends of the frame, each of the members 7 and 8 is provided with an opening, and these openings are adapted to receive the ends of a transversely disposed clamping rod 21. One end of the rod is preferably headed as indicated at 22, and the other end of the rod is threaded for the reception of a clamping nut 23. It will thus be seen that by the provision of the transversely disposed rods the members 7 and 8 of the frame may be moved toward or away from each other, thereby permitting the tooth carrying tubes to be clamped between the frame members 7 and 8. The gudgeons 15 may be disengaged from or engaged with the ends of the pipe sections as will be readily understood.

Each pipe section is provided with a centrally located rock arm 24, each arm having a perforated curved portion 25 arranged to conform to the curvature of its pipe section, and each arm is secured to a pipe section by means of suitable clamping bolts 5.

A longitudinally disposed rock bar 26 is pivotally connected as indicated at 27 to the arms 24, and adjacent to the rear ends the bar 26 is provided with a rack segment 28. One pipe 16 is provided with an upwardly extending hand lever 29 which carries a spring operated sliding dog 30 for engagement with the segmental rack as will be readily understood. Upon movement of the operating lever 29 the pipe sections will be revolved whereby the position of the teeth may be given any desired angle.

The hub enlargements 10 serve as bearing surfaces upon which the tube ends press,

the bearing surface extending obliquely to the plane of the flanges 13, as shown in Fig. 5. And

Having thus described my said invention, what I claim as new and desire to secure by United States Patent is:

1. A harrow comprising a strap metal V-shaped frame, to provide two yieldingly held divergent frame bars, having in combination a draft hook projecting from the bight portion of said frame, a plurality of gudgeons secured to the inner opposite faces of said frame bars, each gudgeon being provided with an inwardly directed trunnion, a plurality of perforated tubes of different lengths revolubly held upon said trunnions, a plurality of harrow teeth within the perforations of said tubes, a rock arm secured to each of said tubes, a rock bar connecting all of said arms, means to clamp said yieldingly held frame bars against said tubes, and mechanism to adjustably hold said connecting bar.

2. A harrow comprising a strap metal V-shaped frame, to provide two yieldingly held

divergent frame bars, having in combination a draft hook projecting from the bight portion of said frame, a plurality of gudgeons secured to the inner opposite faces of said frame bars, each gudgeon being provided with an inwardly directed trunnion, a plurality of perforated tubes of different lengths revolubly held upon said trunnions, a plurality of harrow teeth within the perforations of said tubes, a rock arm secured to each of said tubes, a rock bar connecting all of said arms, a threaded clamping bar carried by said divergent frame members, a nut upon said bar to clamp said frame members against said tube, and an operating lever secured to rock bars, as and for the purpose set forth.

In testimony whereof I affix my signature, in presence of two witnesses.

OSCAR H. OLSON.

Witnesses:

C. L. BEATY,
E. L. BRIDGE.