(No Model.)

J. H. JONES.

HORSE HAY RAKE.

No. 379,895. Patented Mar. 20, 1888.

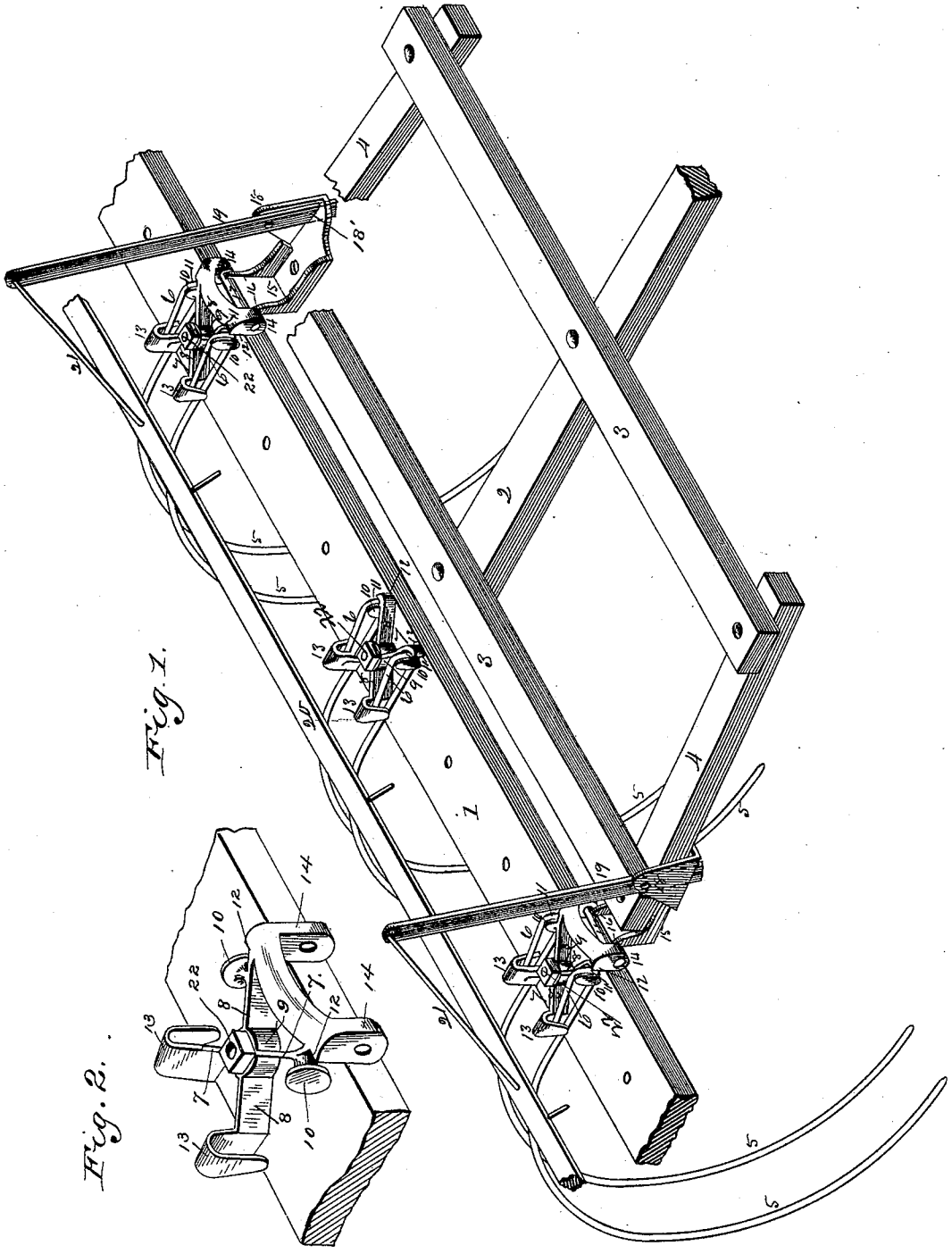

Fig. 1.

Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

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HORSE HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 379,895, dated March 20, 1888.

Application filed July 7, 1887. Serial No. 243,644. (No model.)

To all whom it may concern:

Be it known that I, JAMES HERVA JONES, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Horse Hay-Rakes, of which the following is a specification.

This invention relates to a class of horse hay-rakes known as the "spring-toothed" rake. Its object is the improvement of this class of rakes, to cheapen their construction, and make them more durable and more efficient. To this end I have designed and constructed the improvements represented in the accompanying drawings, which will be hereinafter described.

In the accompanying drawings, Figure 1 is an isometrical perspective of my invention, and Fig. 2 a detail perspective view of one of the tooth-holding spiders.

In the drawings, the rake-head 1, and the tongue-frame consisting of the tongue 2, cross-beams 3, and end beams, 4, joined to each other, are substantially the same as like parts of rakes heretofore in use.

The rake-teeth 5 are of the usual curved form. Their head ends, however, are made in the vertical open-loop form shown, in which its head end portion, 6, is bent rearward, overlapping the rearward extension of the tooth in the same vertical plane.

A tooth-holder, 7, of spider form, is made with arms 8 radiating from a central hub, 9, having an axial opening to receive a screw-bolt, 22, passing through the rake-head, by which it is fixed in place on the rake-head. The forward-extending radial arms of the spider are provided with button-formed ears 10 on their opposite outer faces, and these ears are provided with a necking to receive the loop ends 11 of the rake-tooth, and a lip of the spider overlaps the necking of the ears on their forward side to prevent a forward movement of the tooth when in place on the necking of the ears, or an accidental displacement of the tooth. The rearwardly-extending radial arms of the spider are made in vertical loops 13 to receive both arms of the loop-formed head portion of the tooth at or near the rear end of its overlapping portion 6.

The rake-teeth are placed in the spider-shaped holder by passing its loop end over the button-formed ears onto the neck-formed portion thereof, and are then turned rearward into the vertical loop of the spider-formed holder, which is then placed on the rake-head at proper intervals throughout its length, and are fixed in place thereon by a screw-bolt passed upward through the rake-head and through the axial opening in the holder, and a screw-nut to the bolt serves to fix the parts in place. This connection of the tooth with the rake-head in its construction and application is such as to permit a limited free vertical movement of the tooth until the end of its overlapping arm 6 engages the under face of the vertical loop 13, and a further vertical spring movement until the tooth proper comes in contact with the end of its overlapping arm 6 in the vertical loop 13.

The spider-shaped holders immediately rearward of the end beams of the tongue-frame are provided at their front ends with depending ears 14, which are perforated to receive a bolt, 17, parallel with the rake-head.

A socket, 15, is fixed to the under face of the rear ends of the end bars, 4, of the tongue-frame, and its rear end is provided with ears 16, to fit between the ears 14 of the tooth-holding spider, and are perforated to receive the bolt 17, to form a hinge-joint connection of the tongue-frame and rake-head.

The forward end portion of the socket 15 is provided with an arm, 18, rising from its outer face edge, and a foot opening, 18′, is formed in the base-plate of the socket immediately inside of the uprising arm 18.

The lower end of the rearwardly-inclined support 19 to the bar 20 is placed in the opening in the base of the joint-socket, and is fixed in place by a screw-bolt passed through it and through the upper end of the uprising arm 18.

A clearer-bar, 20, of the usual bar form, with depending teeth to engage the hay, is connected by links 21 to the upper ends of the inclined supports 19 in a manner to permit the clearer-bar to conform to the vertical movements of the rake-teeth, and in their upward movements to discharge the hay contained in the curved teeth.

I claim as my invention—

1. The combination, with the tooth-holding spider consisting, essentially, of a hub portion, arms radiating from the hub portion, the rearwardly-extending arms provided with loops, and the forwardly-extending arms with laterally-extending ears, of a rake-tooth having its forward end bent around the said lateral-extending ears and back upon the tooth, and, together with the backward-bent portion, projecting rearwardly within the said loop on the arm, substantially as set forth.

2. The herein-described tooth-holding spider, consisting, essentially, of a hub portion provided with a bolt-hole, arms radiating from the hub, the forwardly-extending arms being provided with laterally-extending ears on the ends and the rearwardly-projecting arms being provided with loops at their ends, and shoulders in front of the said laterally-extending ears, whereby a single spider is adapted to secure two adjacent teeth in position, substantially as set forth.

3. The combination, with a tooth-holding spider and with the tongue-frame, of a socket fixed to the tongue-frame and hinge-jointed to the tooth-holding spider, substantially as and for the purpose set forth.

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Witnesses:

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