(No Model.)

W. M. BRINKERHOFF.

HAY RAKE.

No. 442,794. Patented Dec. 16. 1890.

Fig. 1.

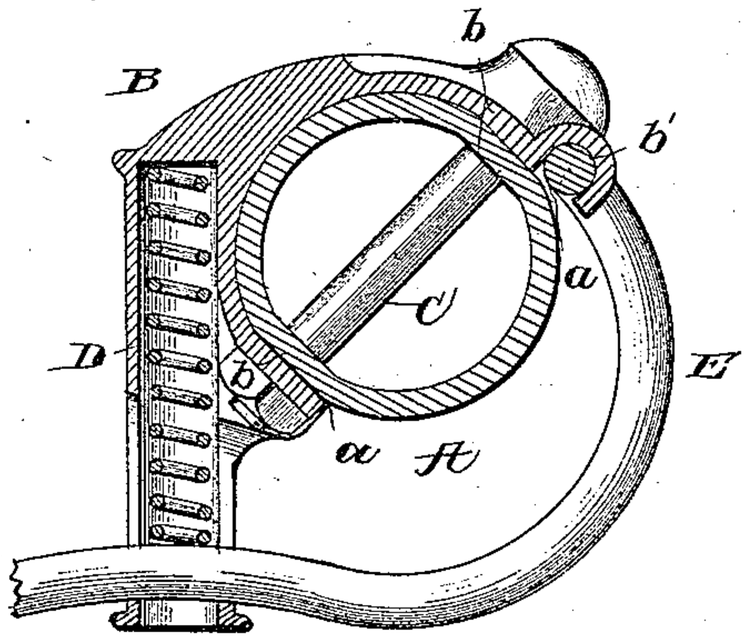


Fig. 2.

Fig. 3.

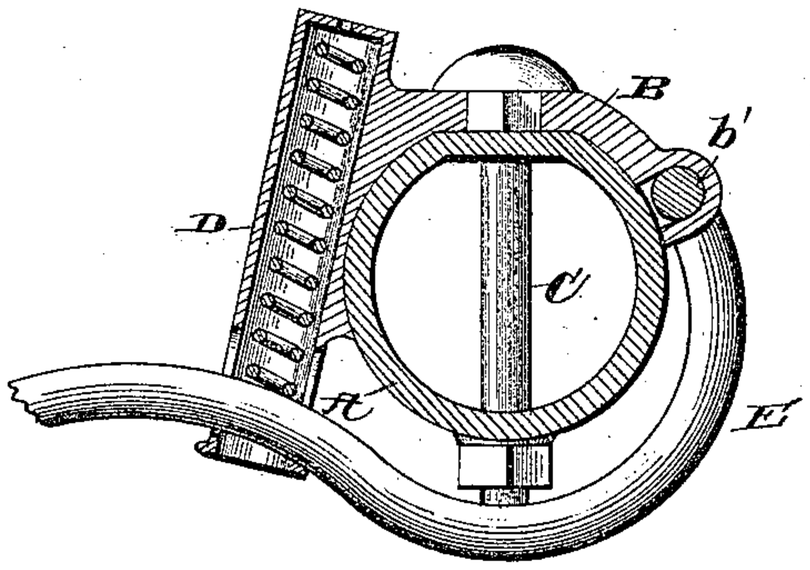
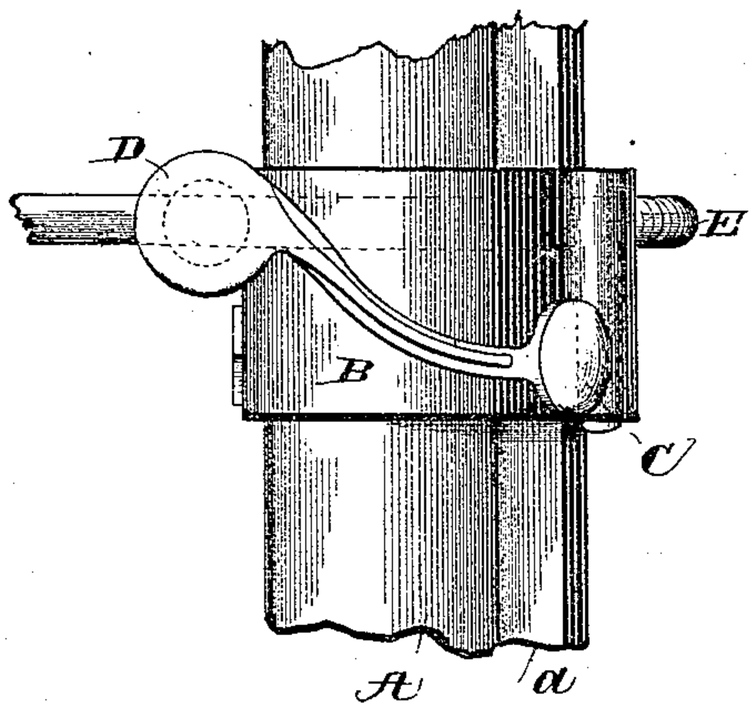
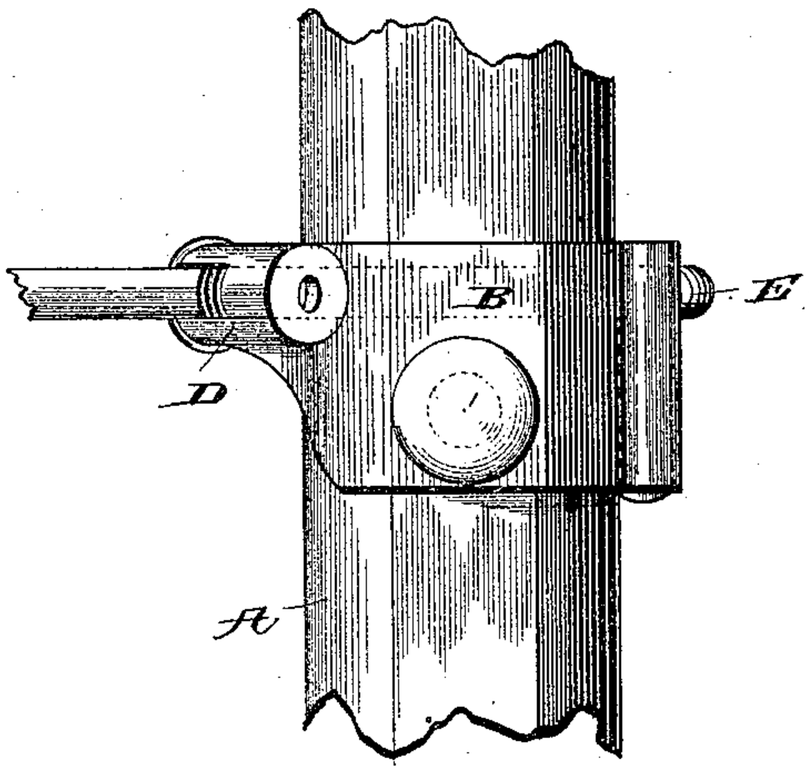


Fig. 4.





Witnesses

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WARREN M. BRINKERHOFF, OF AUBURN, NEW YORK.

HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 442,794, dated December 16, 1890.

Application filed January 17, 1890. Serial No. 337,234. (No model.)

To all whom it may concern:

Be it known that I, WARREN M. BRINKERHOFF, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Hay-Rakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My improvement relates to spring-tooth hay-rakes and to the manner of securing spring-teeth to the rake-head. In the drawings I have illustrated two forms in which I have contemplated embodying my invention, and said invention is disclosed in the following description and claims.

Figure 1 is a transverse section of a tubular rake-head with my clamp and the upper portion of a tooth secured thereto. Fig. 2 is a top or plan view of a portion of the rake-head, tooth, and my clamp. Figs. 3 and 4 are corresponding views of a modified construction.

A is the rake-head, which is of cylindric form, and may be solid, or it may be hollow and made from pipe or tubing.

B is the tooth clamp or support, which is constructed, as shown, to partially encircle the rake-head. The rake-head in the form shown in Figs. 1 and 2 is slightly flattened at *a* on opposite sides, and the tooth-clamp B is provided with straight portions *b b* to engage the flattened parts of the surface of the rake-head. The securing-bolt C, by which the clamp is secured to the rake-head, passes through the opposed straight portions of the clamp and rake-head. This enables me to secure the parts very rigidly together.

The clamp B is provided with a recess *b'* to engage and hold the upper end of the rake-tooth, and also with a spring-socket D, which contains a coiled spring, and has vertical slots on opposite sides, through which the tooth passes. The springs bearing upon the tooth hold it down to its work and yet permit it to rise against the force of the spring to pass over an obstruction or when the unevenness of the ground renders it necessary to do so. The tooth will be forced downward by the spring as soon as the obstruction or elevation of ground is passed. The tooth at its upper end has a portion bent at right angles and engages the recess *b'*, forming a pivot on which the tooth is free to turn. The clamp is broad enough to permit the securing-bolt to pass through the same at one side of the tooth, and passing through the clamp at two points on opposite sides of the rake-head effectually secures the clamp, spring, and tooth in place.

The construction shown in Figs. 3 and 4 differs from that just described, in that the clamp is of slightly different form and is secured to the rake-head by a single bolt, which passes through the clamp at one point only. The rake-head is flattened at one point and the clamp is provided with a flattened portion to engage it, the bolt passing through these flattened portions. In the drawings the bolt is shown as having a polygonal portion near its head which fits polygonal openings in the clamp and rake-head. This construction enables the clamp to hold the tooth more firmly against lateral strain.

In using a hollow rake-head or one made from pipes or tubes on tightening the nut upon the bolt the hollow body will yield slightly and exert a strong spring-pressure upon the nut, acting, in a measure, as a nut-lock to retain the nut in its place. It has been proposed to attach the tooth and spring directly to a cylindrical or tubular rake-head by passing the spring and a guide therefor through the same. This requires an opening of three-quarters or one inch in diameter through the rake-head and seriously impairs the strength of the same, especially the strength of a tubular head. By my construction I am enabled to attach the tooth and spring directly to either a cylindrical or tubular rake-head by one-quarter or three-eighths of an inch bolts, and thus do not materially affect the strength of the same. By making the clamp broad enough to permit the securing-bolts to pass through the same at one side of the tooth the full strength of the metal is secured for holding the tooth and spring.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with a hollow cylindrical rake-head, of a socket adapted to receive a spiral spring having an arm extending therefrom and provided with a recess adapted to form a pivotal seat for the upper end of the rake-tooth, said recess and socket being at substantially opposite sides of the rake-head, and a securing-bolt, substantially as described.

2. The combination, with a hollow cylindrical rake-head, of a socket adapted to receive a spiral spring, having an arm extending therefrom and provided with a recess adapted to form a pivotal seat for the upper end of the rake-tooth, said recess and socket being at substantially opposite sides of the rake-head, a spring-tooth engaging said recess and socket and extending from one to the other on the side of the rake-head opposite said arm, and a bolt for securing said socket and arm to the rake-head, substantially as described.

3. A rake-tooth support consisting of a hollow spring-socket adapted to receive a spring within it, and two arms integral therewith extending from one side of said socket, each of said arms having an aperture therein for the reception of attaching means, substantially as described.

4. A rake-tooth support consisting of a hollow spring-socket adapted to receive a spring within it and two arms integral therewith extending from one side of said socket, one of said arms having a recessed portion adapted to form a pivotal seat for the upper end of the rake-tooth and each provided with an aperture for the reception of attaching means, substantially as described.

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

WARREN M. BRINKERHOFF.

Witnesses:
CHARLES B. QUICK,
WALTER L. FAY.