(No Model.)

J. H. THOMAS.

HAY RAKE.

No. 482,532. Patented Sept. 13, 1892.

Fig. 1.

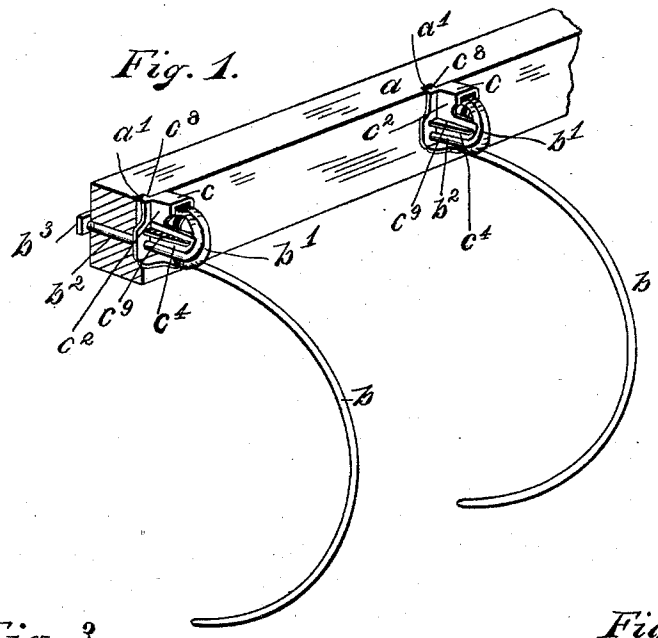


Fig. 3.

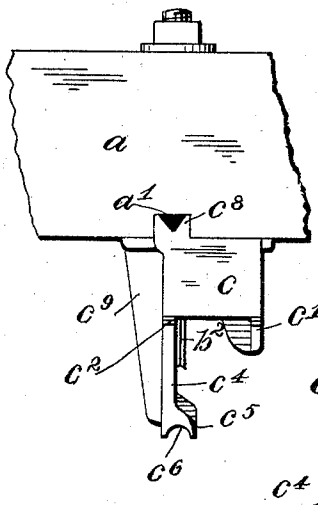
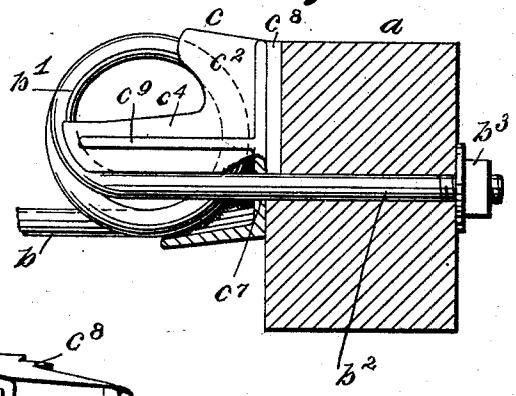


Fig. 2.



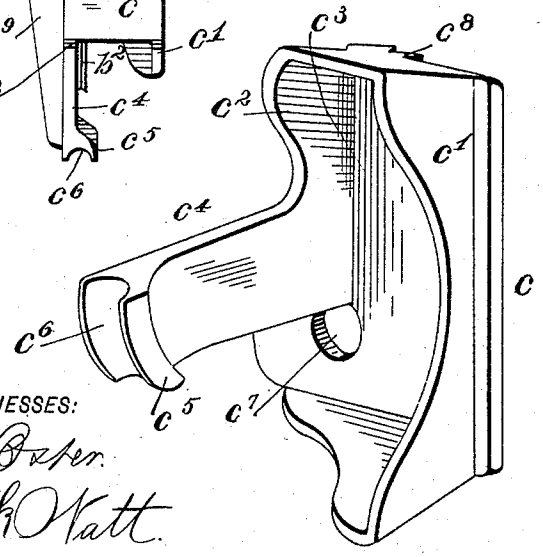


Fig. 4.

WITNESSES:

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN H. THOMAS, OF SPRINGFIELD, OHIO.

HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 482,532, dated September 13, 1892.

Application filed May 11, 1892. Serial No. 432,681. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. THOMAS, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Hay-Rakes, of which the following is a specification.

My invention relates to improvements in spring-tooth hay-rakes; and it especially relates to improvements in the devices for securing and holding the rake-teeth to the rake-head.

The object of my invention is to provide an improved holding device for spring-teeth which shall support a rake-tooth and hold it in the proper position without additional attachment by engaging the coil at a single point so as to firmly support the same and leave the remainder of the coil free to act independently and elastically under pressure exerted on the tooth.

My invention consists in the various constructions and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a hay-rake, showing the rake-head with my improved holding device attached thereto. Fig. 2 is a sectional view of a portion of the same. Fig. 3 is a partial plan view with the rake-teeth removed. Fig. 4 is a perspective view of my improved device in detail.

Like parts are represented by similar letters of reference in the several views.

In the said drawings, *a* represents a rake-head of ordinary construction adapted to be pivotally mounted upon any suitable frame in a well-known manner. *b b* are rake-teeth formed at or near the top with a coil b' in the usual well-known manner to afford sufficient resilience and elasticity to the teeth in operation, the upper end of the tooth being provided with a straight portion b^2, which is screw-threaded and provided with a nut b^3 to connect it to the rake-head *a*.

c is my improved tooth-holder, which is formed with projecting sides c' c^2, adapted to form an open box or socket c^3, to receive the coil b' of the tooth, and with an extending arm c^4, having at its outer end a lateral projection c^5, the periphery of which is formed with a groove c^6, of a shape and size to correspond to that portion of the coil b' which joins the straight extended portion b^2 of the tooth. Immediately below the arm c^4 and in line with the lower side of the grooved portion c^5 is an opening c^7, through which the straight portion b^2 of the tooth is adapted to pass and thence through the rake-head *a* in a well-known manner. A projecting lug c^8 on the back of the holder *c* is adapted to engage in an opening or groove a' in the rake-head, and thus prevent lateral movement of the holder *c* about the straight portion b^2, which forms the sole connection between the tooth, its holder, and the rake-head. The arm c^4 is preferably provided with a rib c^9 to secure the proper strength and lightness of construction.

In assembling the parts the holders *c* are placed on the rake-head *a*, with the lug c^8 resting in the groove a'. The rake-teeth are inserted in place by passing the straight portion b^2 thereof through the opening c^7 in the holder and a corresponding opening formed through the rake-head in the usual manner. The tooth is pressed firmly into the holder with the front portion of the coil resting in the socket between the lateral sides c' c^2 and the rear portion of the coil resting in the groove c^6 at the point where the coil begins—*i. e.*, where the coil joins the straight portion b^2 of the tooth. The nut b^3 is then tightened, which draws that portion of the coil within the groove c^6 against the outer end of the arm c^4, leaving all the remainder of the coil free for elastic and independent action, the point of contact between the end of the arm c^4 and that portion of the coil which engages therewith being the only connection between the holder and rake-tooth when the parts are in their normal position. As the nut is tightened the holder *c* is also tightened against the rake-head, so that all the parts are held firmly together without any other means of fastening, the front portion of the coil resting snugly but freely in the socket c^3 and between the lateral projecting sides thereof is held against any unusual lateral movement or displacement. It will be seen that by the constructions thus described a spring-tooth holder is provided, which serves the double purpose of supporting the tooth in such a manner that the strain thereon is transmitted directly to the coil, thus prevent-

ing any bending of the tooth where it enters or is attached to the rake-head and at the same time holding the tooth against lateral movement without any other connections or attachments.

Having thus described my invention, I claim—

1. A holder for rake-teeth, having an open socket with projecting sides and an extended arm projecting from said socket, said arm being provided with a grooved periphery, substantially as and for the purpose specified.

2. A holder for rake-teeth, formed of a single piece and provided with a receiving-socket for the spring-coil and an extended grooved arm adapted to support the tooth by engaging with the coil at a single point, said holder being provided with an opening in line with the lower side of said engaging-arm, substantially as specified.

3. In a hay-rake, the combination, with the rake-head and the spring-tooth connected thereto, of a tooth-holder having a socket with projecting sides to receive the spring-coil, and a projecting arm with a grooved periphery adapted to receive and support the projecting end of said rake-tooth at the point where it joins the coil, and means for securing said rake-tooth and holder to said rake-head, substantially as specified.

4. The combination, with a rake-head, of a spring-tooth having a coil and an extending screw-threaded portion, a tooth-holder having a socket to receive said coil, and an extending arm adapted to engage and hold said extended portion at the point where it joins said coil, a projecting lug on said holder to engage said rake-head, and means for securing the extended portion of said tooth in said rake-head, substantially as specified.

5. The combination, with a rake-head, of a spring-tooth having a coil and a straight extended portion, a tooth-holder having a projecting arm grooved at its outer periphery to engage said tooth at a single point between said coil and extended portion, and means for securing the extended portion of said tooth in the rake-head, substantially as specified.

In testimony whereof I have hereunto set my hand this 4th day of May, A. D. 1892.

JOHN H. THOMAS.

Witnesses:

GEORGE A. BEARD,

J. W. SHOEMAKER.