(No Model.)

F. BENTEL.

HORSE HAY RAKE.

No. 324,000. Patented Aug. 11, 1885.

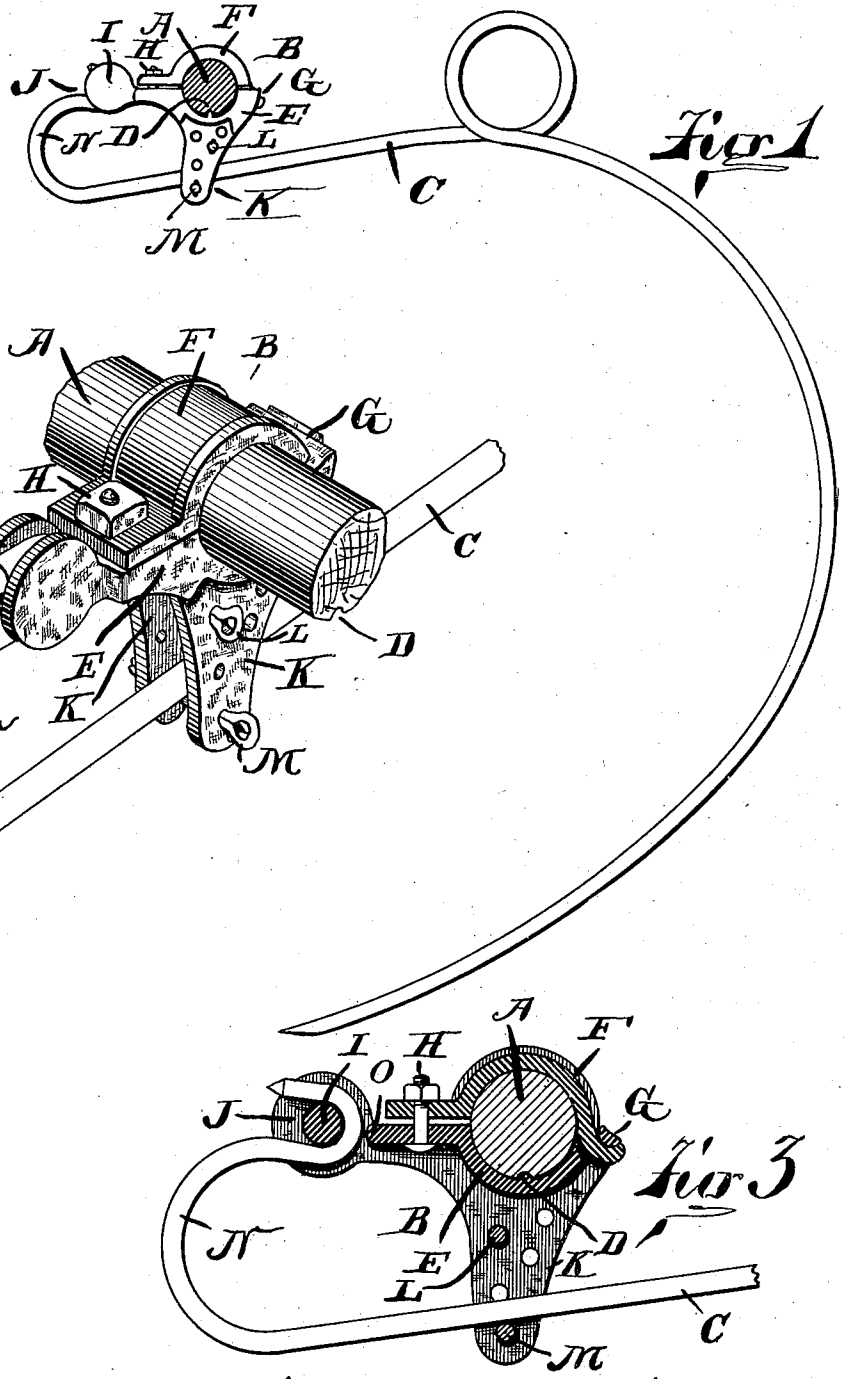


Fig 1

Fig 2

Fig 3

Witnesses:
W. A. Seward.
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UNITED STATES PATENT OFFICE

FREDERICK BENTEL, OF HAMILTON, OHIO, ASSIGNOR TO JOHN W. SOHN, OF SAME PLACE.

HORSE HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 324,000, dated August 11, 1885.

Application filed August 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK BENTEL, of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Horse Hay-Rakes, of which the following is a specification.

This invention relates to the tooth-holding devices of horse hay-rakes, and will be understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side view of my improved tooth-holder; Fig. 2, a perspective view of the same, and Fig. 3 a vertical section of the same transverse to the bar on which the holder is secured.

The present device is an improvement upon the device of Letters Patent No. 283,324, granted August 14, 1883, to the Sohn Ridge Implement Company, of Hamilton, Ohio, as the assignee of Robert S. Carr, of the same place, to which patent the reader may refer with advantage in connection with the present description.

In the drawings, A represents the actuating-bar, to which the series of teeth is to be secured; B, a tooth-holder, by means of which the tooth is secured to the bar; C, the tooth; D, a spline and groove to prevent the holder from revolving upon the bar; E, the lower portion of the tooth-holder; F, the upper portion of the tooth-holder; G, the hinge-like engagement of the two portions of the tooth-holder; H, the clasping-bolt by which the tooth-holder is made fast upon the bar; I, a wrist supported by a forward projection of the tooth-holder; J, an open hook formed at the upper extremity of the tooth and adapted to engage with the wrist, the opening of the hook having a forward presentation; K, a pair of lugs formed with and projecting downward from the tooth-holder and straddling the tooth; L, a pin passing transversely through the lugs above the teeth; M, a similarly-arranged pin below the tooth; N, a bow in the tooth at a point between the tooth's engagement with the wrist and the lugs, and O a projection on the tooth-holder located to the rear of the hook on the tooth.

The bar A serves in actuating the tooth, as usual, and it may also serve as the machine-axle in the manner set forth in the patent previously referred to. In the device of that patent the tooth was rigidly held by the tooth-holder. The result of this arrangement was that the free part of the tooth was liable to get into vibrations of which the rigidly-held portion could not partake, resulting in a crystallization of the metal of which the teeth were made, and the consequent breakage of the teeth.

In the present case the teeth are not firmly bound by the holder. The holder supports the tooth, but does not rigidly grasp any portion of it. When the pin M is removed, the tooth may be swung forward and readily disengaged from the wrist, while at the same time there is no liability of disengagement when the tooth is in normal position.

The lugs are provided, as shown, with a series of holes, by which the pins M and L may be variously located. The pins may be so located as to prevent any vertical movement of the tooth at the point where it passes between the lugs. In such case the tooth depends entirely upon its flexibility for movement as it passes over irregular ground. The bow N in such case serves to relieve the tooth of rigidity at that portion between its two supports, the intention being to remove the element of perfect rigidity from that portion of the tooth.

By so locating the pins L and M as to permit a certain vertical movement of the tooth at the lugs the tooth becomes what is known as a "drop-tooth," the point of the tooth being at liberty to swing a greater or less distance independent of its flexibility and independent of the swing of its fellow tooth, the tooth in such case pivoting freely upon the wrist. In the patent referred to a device was provided for bringing an adjustable support below the tooth; but this device served merely to limit the elastic action of the tooth, and at the same time it made no provision for altering the limit of drop in both directions.

In the present invention the drop is altered by altering the position of the upper pin, leaving more or less space between the two pins, at the same time leaving the lower limit of motion unaltered; and, if desired, both pins may be moved so as to alter either the amount of drop or the mere location of the limits to the drop. The pins also permit of the point

of the tooth being adjusted even if no drop is desired. The pins may be formed by split pins, carriage-bolts, wires, or other devices readily adjustable with reference to each other and to the bar.

I claim as my invention—

In a hay-rake, a tooth-supporting bar, a tooth-holder clamped to the bar, a flexible tooth pivoted to a wrist supported by said tooth-holder, a pair of lugs straddling the tooth to the rear of said wrist, and adjustable supports above and below the tooth at said lugs, combined substantially as specified.

FREDERICK BENTEL.

Witnesses:
W. A. SEWARD,
J. W. SEE.