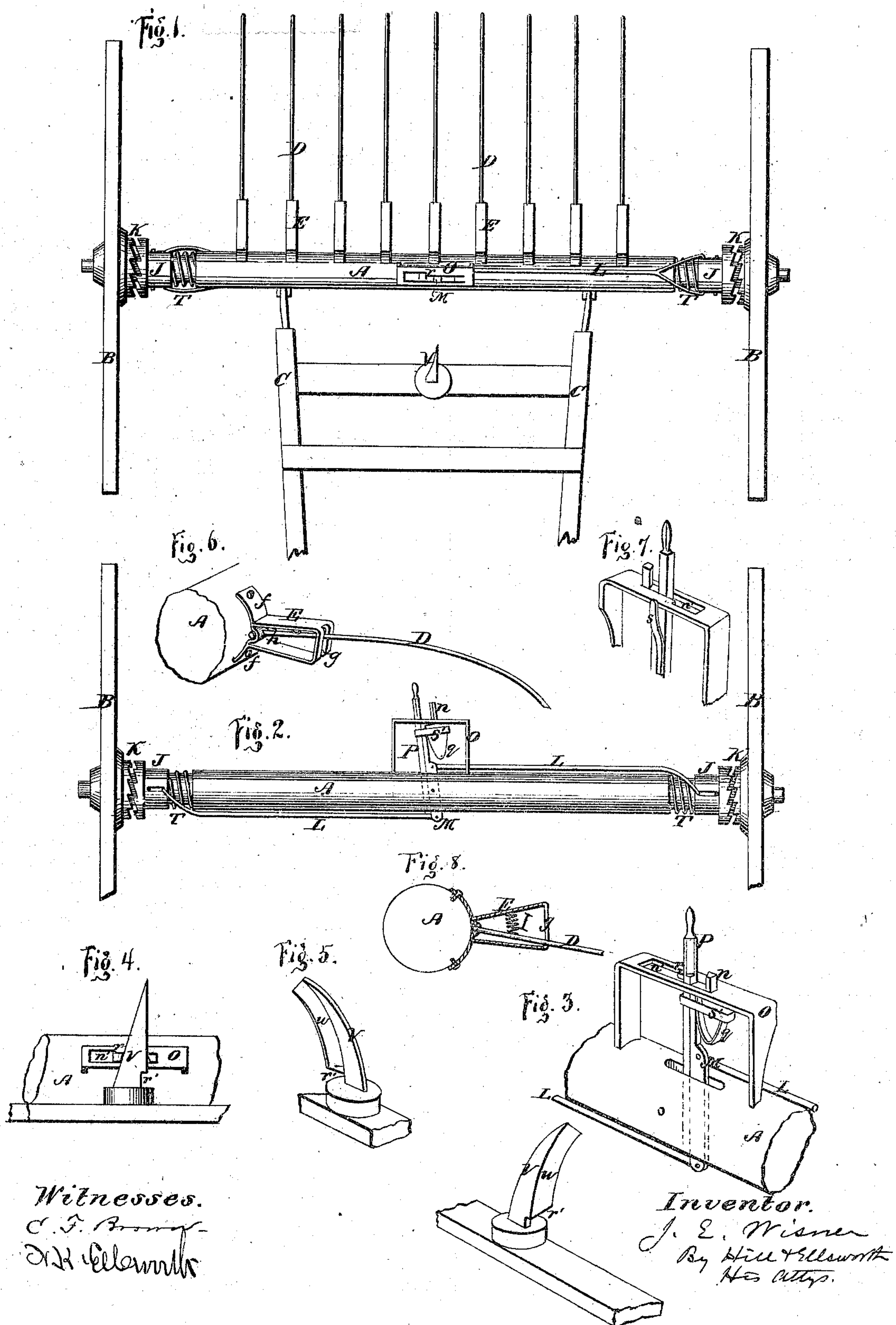


J. E. WISNER.
Improvement in Horse Rakes.
No. 121,035. Patented Nov. 14, 1871.



UNITED STATES PATENT OFFICE.

JAMES E. WISNER, OF FRIENDSHIP, NEW YORK.

IMPROVEMENT IN HORSE HAY-RAKES.

Specification forming part of Letters Patent No. 121,035, dated November 14, 1871.

To all whom it may concern:

Be it known that I, JAMES E. WISNER, of Friendship, in the county of Allegany and State of New York, have invented an Improved Horse Hay-Rake; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a plan view of my improved rake. Fig. 2 is a front elevation with the shafts removed. Fig. 3 is a perspective view of portions of the dumping mechanism. Figs. 4 and 5 are perspective views of detached parts. Fig. 6 is a perspective view of one of the teeth, showing its application to the rake. Fig. 7 is a rear perspective view of the dumping mechanism, and Fig. 8 is a longitudinal section of one of the loops by which the teeth are attached to the axle or rake-head.

Similar letters of reference in the accompanying drawing denote the same parts.

My invention has for its object to improve the construction of horse hay-rakes, whereby the same are rendered more efficient in their operation and their cost of manufacture materially reduced. To this end the invention consists, first, in the method of automatically dumping the hay; and secondly, in the means employed for attaching the teeth to the axle of the rake, as I will now proceed to describe.

In the accompanying drawing, A is the axle; B, the wheels of the rake; and C, the shafts hinged to the axle in any convenient manner. D are the metal or wire teeth, applied to the rear of the axle in the following manner: E are metal loops projecting from the rear of the axle, to which they are secured by bolts or screws passing through the arms *f*. The outer end of each loop is formed with a vertical slot, *g*, through which the teeth is passed, and the inner end of the latter is bent laterally at right angles to enter an opening formed in the case *h* of the loop next the axle. The base of the loop around the opening is raised somewhat, so that the end of the tooth shall have sufficient room next the axle to turn freely. I are springs, which may be spiral, elliptical, or rubber, inserted within the loop above the teeth, and serve to hold the latter against the ground with a yielding pressure. The employment of the springs I is not absolutely essential, as the

teeth may be allowed to play freely up and down in the slotted loops. By this method of attaching the teeth they can be easily applied, and removed separately at any time.

The mechanism for dumping the teeth is constructed and operates as follows: J J are sliding clutches mounted upon the ends of the axles between the wheels, and adapted to engage with clutches K K affixed to the hubs of the latter. The sliding clutches are connected, by means of rods L L above and below the axle, with a short catch-bar, M, which is pivoted vertically within a slot formed in the axle, as shown in Fig. 3. The lower end of the catch-bar is pivoted to one of the rods L, while the upper rod is pivoted to the bar immediately above the axle, as shown, both rods being about the same distance from the pivot of the catch-bar. The upper end of the catch-bar is formed with a lateral arm, *n*, and is adapted to work within a slot, *n'*, formed in the metallic frame O mounted upon the axle. P is a short hand-lever passing through the slot in the axle, and pivoted at its lower end to the lower end of the catch-bar. The upper end of the lever is held against the catch-bar by means of a spring, *q*, one end of which bears against the catch-bar and the opposite end against a loop or stirrup, *s'*, passing around both bar and lever. When the sliding clutches are disengaged from the wheels the lever and catch-bar occupy the position shown in Fig. 2—that is to say, with the lever resting against a shoulder, *r*, at one side of the slot formed in the frame O, where it is held by the spring, *s*, one end of which is attached to the lever and the opposite end bears against the back of the frame O, as shown in Fig. 7. When it is desired to raise the teeth for the purpose of dumping the hay into a window the operator pushes the hand-lever P forward slightly to clear it from the shoulder, and so that both lever and catch-bar shall enter the narrow part of the slot *n'*. As soon as the lever is released the coiled springs T, which are interposed between the sliding clutches and a shoulder formed upon the axle, move said clutches outward to engage with the clutches K upon the wheel-hubs, so that the wheels shall rotate the axle and thus lift the rake-teeth. V is a cam-guide mounted upon the shafts C or a cross-bar of the same in the path of the lever and catch-bar. As the axle continues to rotate the pivot of the cam-guide

passes between the hand-lever and the lateral projection *n* of the catch-bar, guiding the hand-lever down its inclined side against the tension of the spring *q* until said lever again engages with the shoulder *r* of the upright frame. The spring *q* admits of this movement of the hand-lever without affecting the position of the catch-bar, which moves down the opposite side of the cam-guide, and, simultaneously with the return of the lever to the shoulder *r*, the catch-bar passes through a notch, *r'*, at the lower end of the guide-flange *w*, which is formed upon the straight side of the cam, and is thrown by the spring *q* again in contact with the hand-lever, clearing the flange *w* and instantaneously disengaging the clutches J K to allow the rake-teeth to fall by their own gravity. This instantaneous release of the rake-teeth and axle occurs just as the former is in the proper position to dump the hay; and the whole operation is performed without that gradual and continued strain incident to the devices ordinarily employed for dumping a horse hay-rake.

Having thus described my invention, what I claim as new is—

1. The combination of the sliding clutches J, connecting-rods L, the catch-bar M, and the cam-guides for the purpose of positively holding the clutches engaged with the wheels until the proper moment of discharge, substantially as described.

2. In combination with the spring catch-bar M and the cam-guide having the inclined face and the recessed flange, the hand-lever P, substantially as described, for the purpose specified.

3. In combination with the spring catch-bar M, hand lever P, and the cam-guide, the slotted and shouldered frame O, substantially as described, for the purpose specified.

4. In combination with the hand-lever P, the catch-bar M, and the slotted and shouldered frame O, the spring *s*, substantially as described, for the purpose specified.

5. The slotted loops E, constructed as described, with the arms *f* and slotted raised base H, for attaching the teeth to the axle or rake-head.

J. E. WISNER.

Witnesses:

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