2 Sheets—Sheet 1

E. D. & O. B. REYNOLDS.

Horse Hay Rake.

No. 201,833. **Patented March 26, 1878.**

Fig. 1

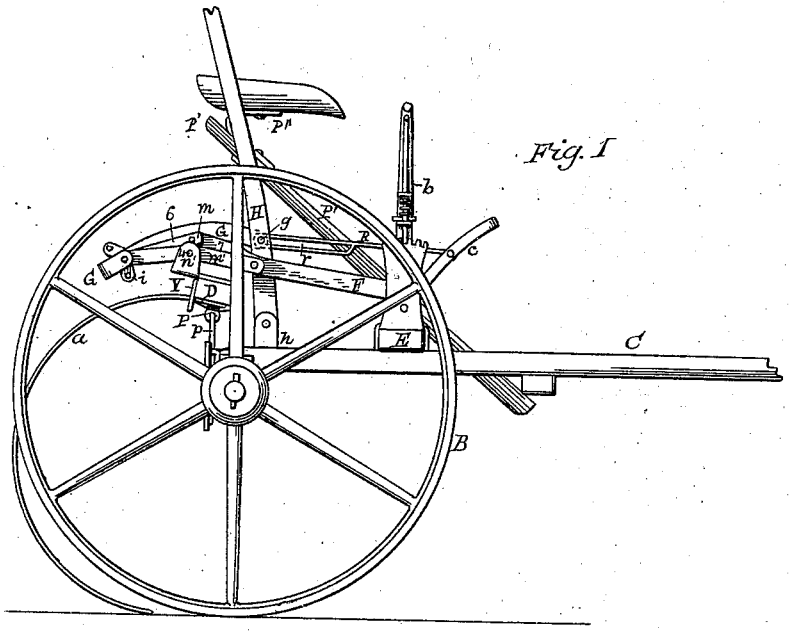
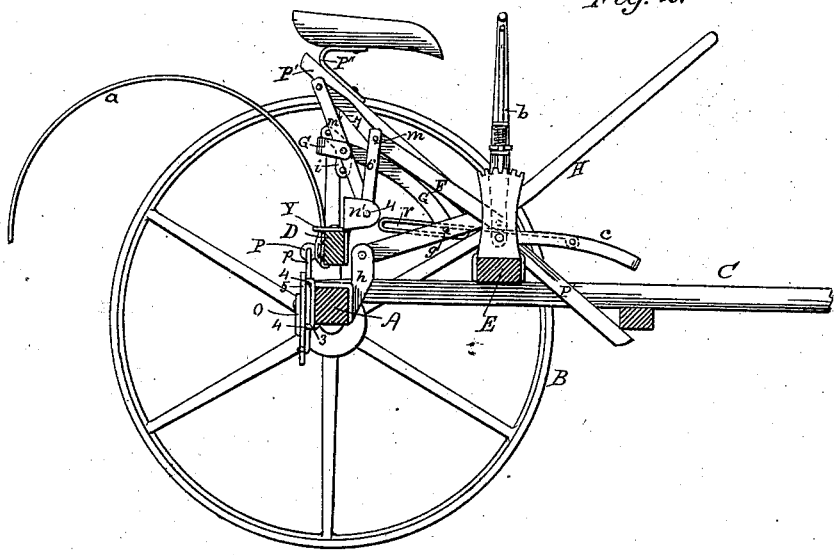


Fig. 2.



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2 Sheets—Sheet 2.

E. D. & O. B. REYNOLDS.

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Fig. 3.

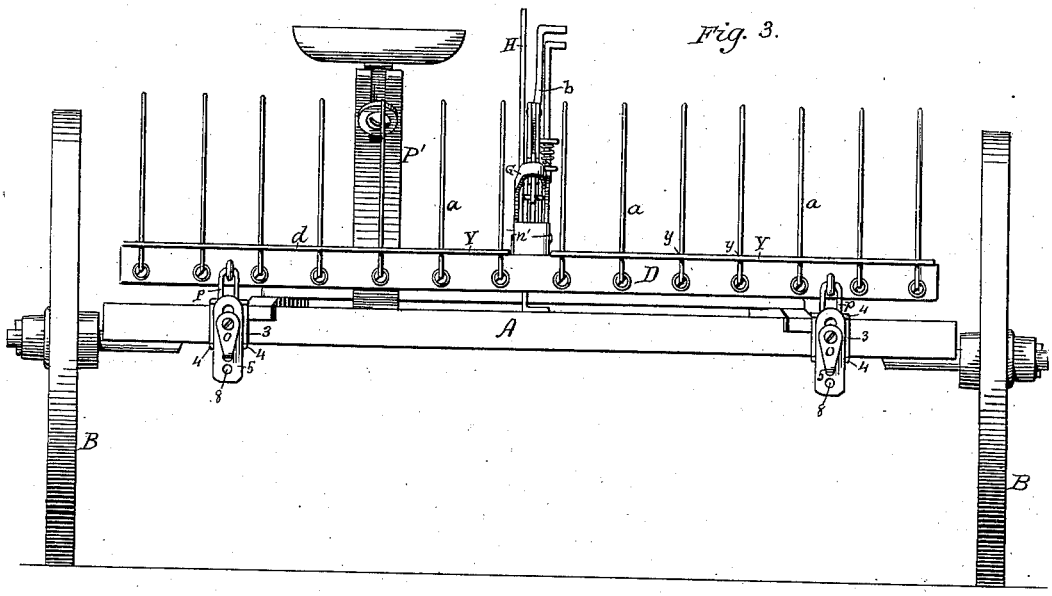


Fig. 4.

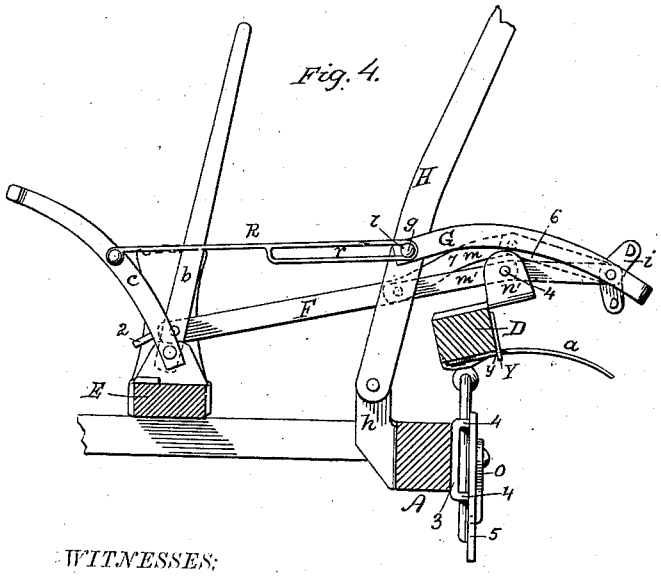


Fig. 6.

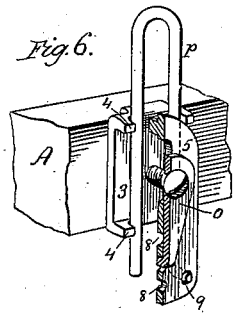
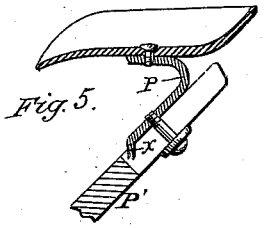


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDMUND D. REYNOLDS AND OLIVER B. REYNOLDS, OF BROCKTON, MASS.

IMPROVEMENT IN HORSE HAY-RAKES.

Specification forming part of Letters Patent No. **201,833,** dated March 26, 1878; application filed January 25, 1878.

To all whom it may concern:

Be it known that we, EDMUND D. REYNOLDS and OLIVER B. REYNOLDS, of Brockton, Massachusetts, have invented certain new and useful Improvements in Horse Hay-Rakes, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the rake. Fig. 2 is a vertical cross-section. Fig. 3 is a rear view. Figs. 4, 5, and 6 are details.

The object of our invention is to provide an improved means for raising and locking the teeth of a horse hay-rake, and adjusting the angle of the teeth and the height of the tooth-bar for fastening in the teeth and attaching the driver's seat to the standard; and it consists, first, in series of toggle-levers combined with a hand and foot lever; secondly, in a lever with spring-catch and ratchet to adjust the angle of the teeth; thirdly, in an adjustable hinge connecting the tooth-bar with the axle; and, fourthly, in combining a slotted seat-standard with a peculiarly-constructed spring attached to the driver's seat.

In order that others skilled in the art may make and use our invention, we will proceed to describe the exact manner in which we have carried it out.

In the drawings, A is the axle, B the wheels, C the shafts, and D the tooth-bar, of the rake, to which are fastened the teeth *a a* after passing through a plate, *y*, on the rear face of the bar, the said teeth being provided at their upper ends with suitable openings for their attachment to the bar by screws, bolts, or other suitable devices. Extending between the rear portion of the shafts is a cross-bar, E, serving to support lever *b*, which lever is provided with a spring-catch and ratchet, *b′*, to adjust the angle of the teeth through the medium of the bar F acting on the tooth-bar D.

On the tooth-bar D are secured two ears, *n′*, between which is pivoted the lower point 4 of the double toggle *m m′*. The inner toggle *m* is formed of the links 6 and an extension, 7, of a bar, F, which has its opposite end pivoted on the lower portion of the lever *b*. The peak of the rear toggle is pivoted in a bight made in the end of a bar, G, and between the bars of the toggle is a stop, *i*, on the same pivot, which prevents the toggle from passing too far beyond the line of strain. The other end of bar G is pivoted to a hand-lever, H, which has its lower end attached to the axle at *h*. The operation of this toggle and lever is substantially the same as the like toggle and lever shown in our Patent No. 182,735.

The pivot *g*, which connects lever H and bar G, is provided with a head, *l*, which engages in a slot, *r*, in a bar, R, the forward end of which is pivoted to foot-lever *c* on cross-bar E. When the rake-teeth are on the ground and filled with hay it takes a heavy lift to raise it and dump the load. By means of the levers and their connections it is obvious that the foot of the driver and his weight can be utilized on lever *c* while he pulls on lever H. This extra push on foot-lever terminates when the stop 2 strikes cross-bar E; but the slot *r* allows lever H to pass forward until the teeth are completely raised.

The tooth-bar is hinged to the axle by an adjustable hinge, (see Fig. 6,) made as follows: Against the axle, at proper points, are two plates, 3 3, having the center portions of their upper and lower edges turned over, so as to clasp the corners of the axle and leave projecting lugs 4 4 at each corner. Between plates 3 and slotted plates 5 5 are clasped U-shaped rods *p p*, which pass through eyebolts P P on the tooth-bar. The lower end of one leg of each of rods *p* is bent at right angles, and passes through hole 9 in slotted plates 5 5, said plates 5 being provided with a series of central holes, 8 8. O is a plate having a hole in one end and hooked at the other. A single bolt passes through hook-plate O, the slot in slotted plates 5, rods *p*, and plates 3, and into the axle. The slotted plate provided with the holes allows of an adjustment of the tooth-bar to and from the axle and the teeth in relation to the ground.

Along the rear side of the tooth-bar is a plate, Y, pierced with holes *y y*, through which the teeth pass, and are bolted in a suitable manner to the lower side of the bar. The plate acts as a brace for the teeth.

The top of the seat-standard P′ is slotted, and the spring P″ is provided with a button, the shank of which slides into the slot. The

lower end of the spring P has a tongue, *x*, turned inward to go into the slot and keep it from tilting.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The toggle raising, lowering, and locking device, in combination with the foot-lever *c* and connecting-rod R, substantially as described.

2. The adjustable hinge, consisting of the plates 3 and 5, constructed as described, U-shaped rod *p*, and hook-plate O, substantially as set forth.

3. The slotted seat-standard P′, in combination with seat-supporting spring P″, provided with a bent tongue, *x*, for the purpose set forth.

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