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W. H. PATTEN.

HORSE HAY-RAKE.

No. 192,081. Patented June 19, 1877.

Fig. 1.

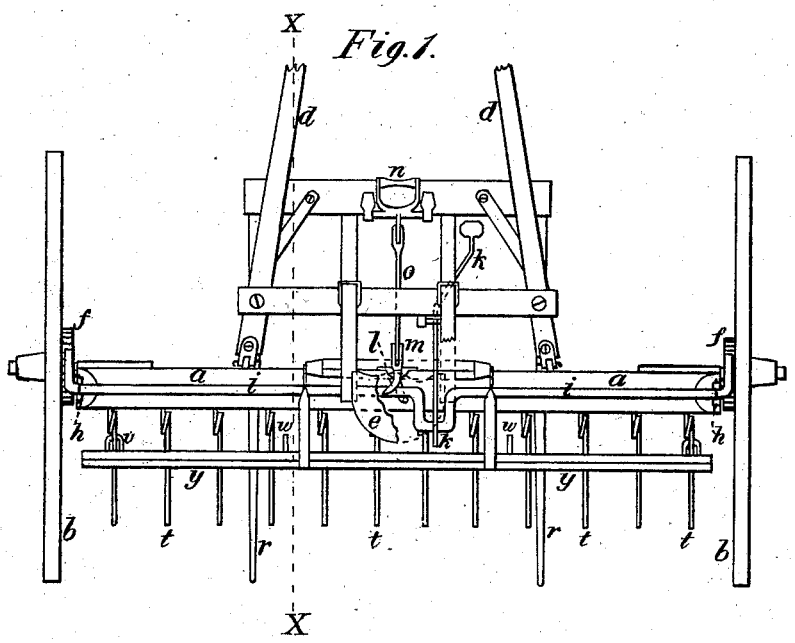
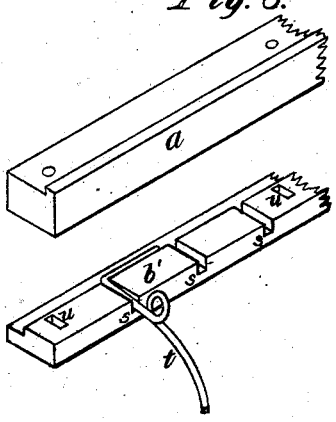


Fig. 3.



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2 Sheets—Sheet 2.

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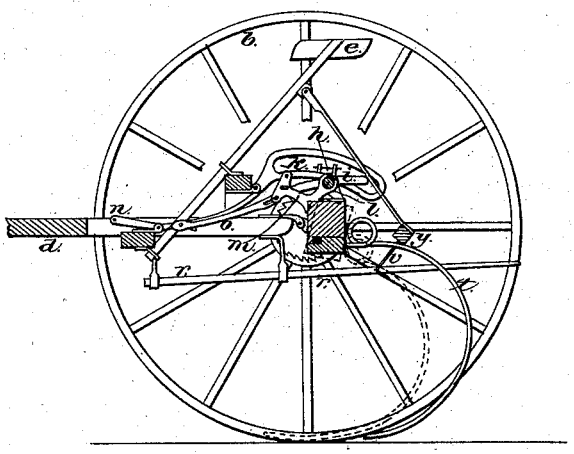
Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. PATTEN, OF CLOCKVILLE, NEW YORK.

IMPROVEMENT IN HORSE HAY-RAKES.

Specification forming part of Letters Patent No. **192,081**, dated June 19, 1877; application filed January 29, 1877.

To all whom it may concern:

Be it known that I, WILLIAM H. PATTEN, of Clockville, Madison county, New York, have invented certain Improvements in Wheel-Rakes, of which the following is a specification:

In structures of this kind, subject to very rough usage in the field, it becomes a matter of very great importance to simplify the parts and their construction so as to guard against injury and derangement, and the smallest improvement that better secures this end becomes valuable.

My improvements herein described consist in the mode of constructing the parts of the apparatus for elevating the teeth automatically in the method of holding the teeth elevated, and in the method of constructing the parts for securing the teeth in the head, and in the clearing and discharging apparatus.

In the drawing referred to in this description, Figure 1 is a top plan of the rake, the seat in dotted lines. Fig. 2 is a vertical section on line *x x*, Fig. 1; Fig. 3, details of the rake-tooth fastening.

The same letters indicate like parts in all the figures.

A long axle, *a*, that forms the rake-head, is supported on two wheels, *b*, and a pair of shafts, *d*, are so jointed to the rake-head as to allow it to turn. The driver's seat *e* is supported by cross-bars on the shafts in a common and well-known way. On the inner end of both hubs there is a ratchet, *f*. A single rod, *i*, made in one piece, extends along the top of the rake-head from one end to the other, resting in bearings *h* at the ends of the rake-head, which allow the ends of the rod to spring upward by being elongated in that direction. Near the center there is another bearing, *l*, for the rod *i* to rest in, which embraces the rod all around, holding it steady at that point. To free the rod from it, its ends are spread apart laterally, so that, when the ends of the rod are lifted out of their bearings at *h*, it can be turned and freed from bearing *l*, which otherwise holds it securely in place. The rod *i* is bent into a sunk crank near its center, said crank projecting rearward, and its two ends are turned forward at right angles, and curved down and formed into hooks or pawls that can be brought down onto the ratchets *f* on the hubs of the wheels when desired, by means of the sunk crank, the wrist of which rests in a curved slot in a lever, *k*, pivoted under the rear cross-bar of the shafts before named. The forward end of this lever *k* is formed into a flat foot-piece, by bearing down on which the operator raises the sunk crank and then the pawls into the ratchet-teeth, and the revolving wheels then turn the rake-head with them, and thus elevate the teeth until the sunk crank strikes the forward end of the slot in lever *k*, which disengages the pawls, and the rake-teeth fall back into raking position. By the above-described construction of parts, and especially by making the rod *i* in one piece, there is no danger of loosening or displacing the works—a matter of great importance in the field, and greatly cheapening, simplifying, and increasing the durability of the machine. To further control the rake, a short arm, *m*, is affixed to the rake-head *a*, projecting forward, as seen in Fig. 2, to which the arm of a treadle, *n*, on the splinter-bar is united by a connecting-rod, *o*, having a slot in its rear end through which a pin passes, that is inserted into one of the holes in the end of arm *m*. By this construction and arrangement of parts, it will be seen that when the teeth of the rake are down, as in Fig. 2, by pressing down on the treadle *n* the teeth are held down, and if the wheels are backed the teeth of the rake pass under, as shown by the dotted lines, being permitted so to do by the slot aforenamed in connecting-rod *o*. Again, when the rake-teeth are elevated the end of arm *m* is brought below the center of rotation, and then by bearing down on treadle *n* they are held up until released by the foot of the operator.

The teeth *t* are inserted into the rake-head, as shown in the detached sectional parts, Fig. 3, the under side of the rake-head being rabbeted, as seen in that figure. The cap *b'* is also rabbeted in a similar manner. A series of grooves, *s s*, in number equal to the number of teeth to be inserted, are cut into the projecting part of the rabbet, and the tooth *t*, the inner end of which is bent at right angles, as clearly seen in the Fig. 3, is inserted into the groove *s* in the cap, which is then screwed onto the under side of the axle or rake-head.

The holes in the cap b', through which the screws pass that hold it to the axle, are oblong, so that the space in which the ends of the teeth lay can be contracted, as the parts holding the teeth wear away, to properly confine the teeth in position.

The clearer consists of two rods, r r, which are inserted in sockets under the shafts, so that they can be readily removed or replaced, as required. They project backward between the teeth of the rake, and serve to hold down the hay when the rake-teeth are raised out of it. In addition to these rods r a bar, y, is suspended by rods u to a bar, w', just below the seat. The bar y rests on the convex side of the curved teeth, as seen in Fig. 2, to which it may be confined by curved staples v, and it has short teeth w projecting down from it between the rake teeth t, as is clearly seen in Fig. 2.

Having thus described my invention, I claim—

1. The shaft or rod i, formed with its crank and pawls of one piece, as herein described, and mounted with its ends free to spring upward to relieve it from either wheel in turning, as and for the purposes herein specified.

2. The device for attaching the teeth to the rake-head, consisting of two parts, one of which is grooved transversely and rabbeted to hold the teeth, and the other formed with a lip and bearing adjusting slots, to compensate for wear.

3. The slotted lever k, constructed and arranged as specified, in combination with the sunk crank on rod i, as and for the purposes herein set forth.

4. The slotted connecting-rod o, in combination with the arm m and treadle n, to permit the rake-teeth to swing under in backing, as described.

5. In combination with treadle n, the lever m and connecting-rod o, constructed and arranged so as to pass beneath the rake-head in its oscillation, and permit two points of bearing, as and for the purposes described.

6. The center bearing l, with its oblique opening above to hold the rod i steadily when in place, and to readily release it, as described.

7. The oblong bearings h, in combination with the rod i, and pawls rigidly affixed thereto so as to allow the rod i to rise to free the pawl from the ratchet, in the manner and for the purpose described.

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