E. F. STODDARD.

HORSE HAY-RAKE.

No. 186,025. Patented Jan. 9, 1877.

Fig. 1.

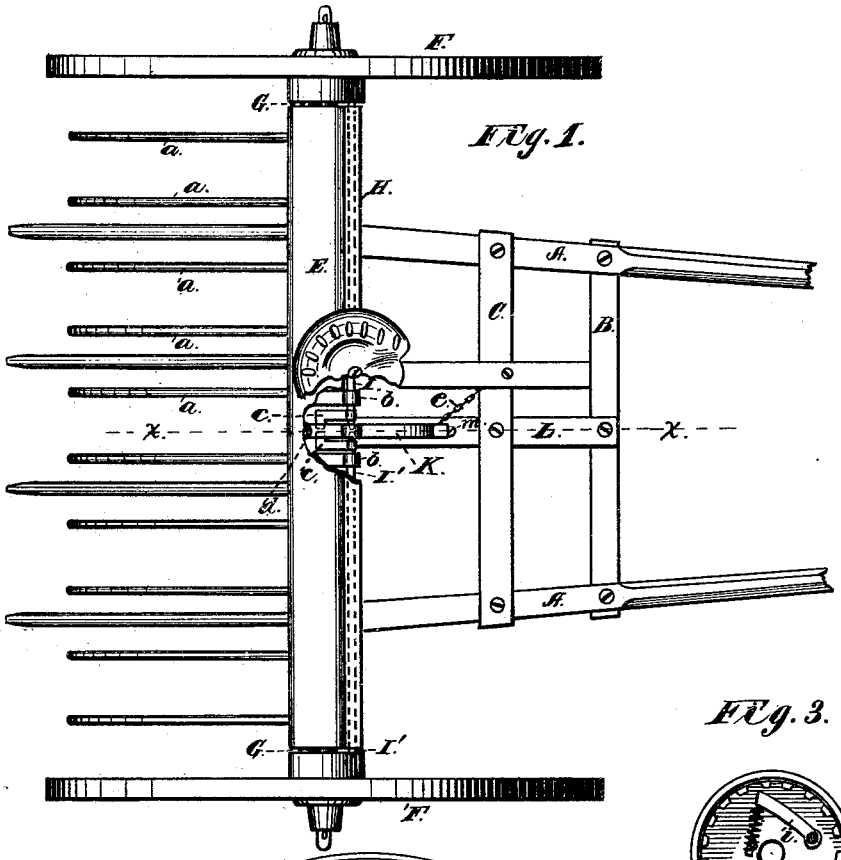


Fig. 3.

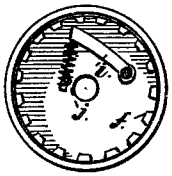
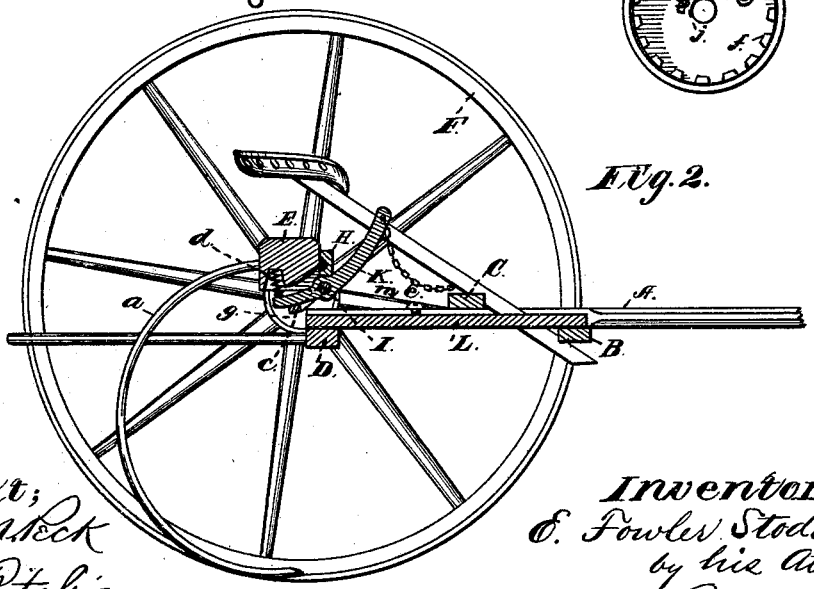


Fig. 2.



Attest;
Chas. M. Peck
Wm. Ritchie

Inventor;
E. Fowler Stoddard
by his Attys
Peck & Co

UNITED STATES PATENT OFFICE.

E. FOWLER STODDARD, OF DAYTON, OHIO.

IMPROVEMENT IN HORSE HAY-RAKES.

Specification forming part of Letters Patent No. **186,025**, dated January 9, 1877; application filed October 9, 1876.

To all whom it may concern:

Be it known that I, E. FOWLER STODDARD, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Horse Hay-Rakes; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to that class of horse hay-rakes which are self-discharged by the forward motion of the machine at the will of the driver.

My improvement consists in the application of novel mechanism for elevating the rake-head to discharge the collected hay, consisting of a divided rod upon the front face of the rake-head, having spring-dogs on its outer ends engaging with inclosed ratchets in the wheel-hubs, and having detents on their abutting ends which engage with a pivoted spring arm or lever, the parts being so connected and arranged that upon drawing forward the lever the spring-dogs automatically engage with the ratchets to interlock the wheels and rake-head, thereby causing the elevation of the teeth and the discharge of the collected hay, all as will be hereinafter set forth.

Figure 1 represents a plan view of a horse-rake provided with my improved dumping mechanism. Fig. 2 is a side elevation through line *x x* of Fig. 1. Fig. 3 is an enlarged view of the wheel-hub.

The thills A braced by the cross-bars B, C, and D are of the usual construction, and are hinged in any convenient manner to the under side of the axle or rake head E. The carriage-wheels F revolve upon metal stub axles G, which are secured to the under side of the head E. The teeth *a* are passed through apertures in the rake-head, and have their bent ends confined in a groove in the strip H, which covers them, and is secured to the front face of the head by bolts or screws.

For dumping the rake I provide the following mechanism: A metal rod, I I′, is secured in bearing-loops *b* at the lower forward edge of the rake-head. This rod is divided at its middle, and has keyed near its abutting ends two right-angular detents, *c*, as seen in Fig 1, where a portion of the head is broken away. The abutting ends of the rod also form pivotal points, on which is pivoted the curved arm or lever K. As seen in Fig. 2, the under part of the head is cut away to allow the free action of this arm K, and also to form a recess, in which is confined a spiral or other spring, *d*, that presses upon the rear end of the arm K. The bent or right-angular portions of the detents *c* rest against the under side of the arm K at some distance from its pivotal point, and nearly under the spiral spring *d*. A chain, *e*, connects the top of the arm K with the seat-beam, and serves as a means whereby the driver, with his foot, can control the arm.

In the hollow portion of the inner sides of the hubs are formed ratchet-gearings *f*, as seen in Fig. 3, and upon the stub-axles G are disks *g*, Fig. 2, which cover the aperture in the hubs and effectually inclose the gearing. The outer ends of the rods I I′ are passed through these disks, and have keyed upon their ends dogs *i*, Fig. 3, that, by means of spiral or other springs *j*, as shown, are made to engage with the internal gearing *f*.

In the construction of these parts and their arrangement the spring in the rake-head, which acts against the arm K, must have sufficient expansive force to keep the springs *j* on the dogs compressed. This is done, as is clearly seen, through the medium of the arm K and the detents *c*, which unite the action of the springs by connecting all the intermediate parts. While the teeth are at work raking, the dogs *i* are kept disengaged by the expansive force of the spring *d*, as above described, and when sufficient hay has been collected the driver presses upon the chain *e*, and thereby draws forward the arm K, by which motion the spring *d* is compressed and the springs *j* relieved, whereupon they force the dogs into engagement with the gearing, and thus, by interlocking the wheels and rake-head, cause the latter to be turned and the teeth to be elevated.

It should be mentioned that, as soon as the engagement of the dogs is effected, the friction is sufficient to hold them so without the continued pressure of the driver's foot.

When the teeth are sufficiently elevated the arm K comes into contact with a stop or projection, *m*, upon the cross-bar L, which gives it a backward motion, causing it to press upon

the detents *c*, and thus to force the dogs out of engagement with the ratchets, and allow the teeth, by their gravity, to fall back to raking, and carry the head to its original position.

By having the rod divided, as shown, into the parts I I′ the rake can be dumped while turning. Various forms of dogs may be employed upon the ends of the rods without affecting the character of my invention; and I would say that I do not wish to limit myself to the particular shape and construction of the dogs shown.

By the above arrangement it will be particularly noticed that there are no rough revolving surfaces about the axle or wheel hubs to catch loose hay or grass, as is the case where ratchet-wheels are left exposed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

The combination of rake-head E, divided rocking rod I I′, journaled to said head, and provided at its adjacent ends with detents *c*, and at its outer ends with dogs *i*, adapted to engage internal hub-gearing *f* and arm K, and spring *d* for keeping the dogs disengaged, substantially as and for the purpose specified.

Witness my hand this 30th day of September, A. D. 1876.

E. FOWLER STODDARD.

Witnesses:
CHAS. M. PECK,
WM. RITCHIE.