T. H. DODGE.

Horse Rake.

No. 45,481. Patented Dec. 20, 1864.

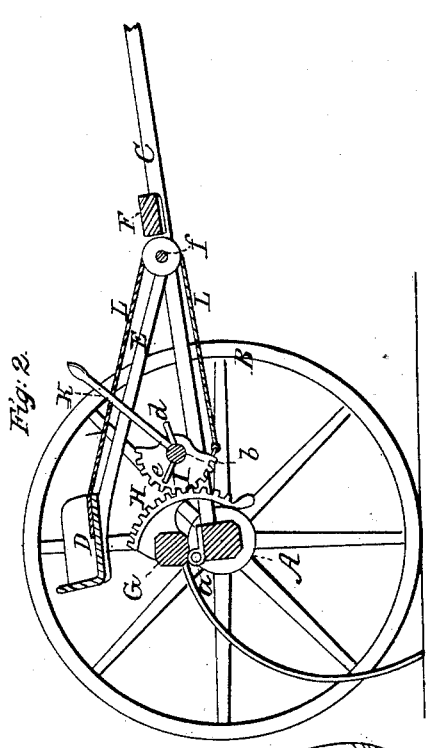

Fig. 2.

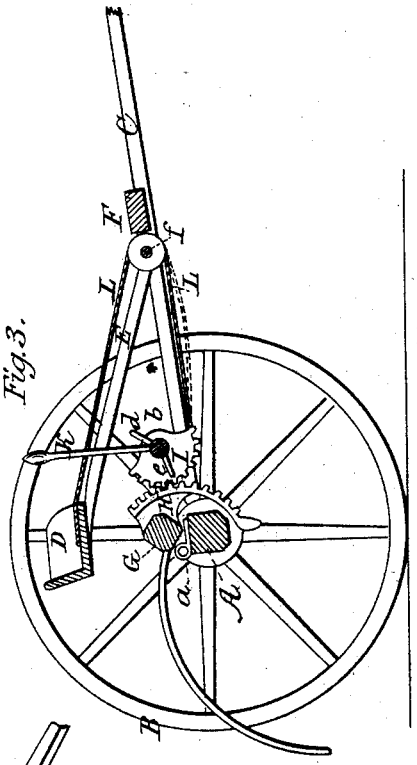

Fig. 3.

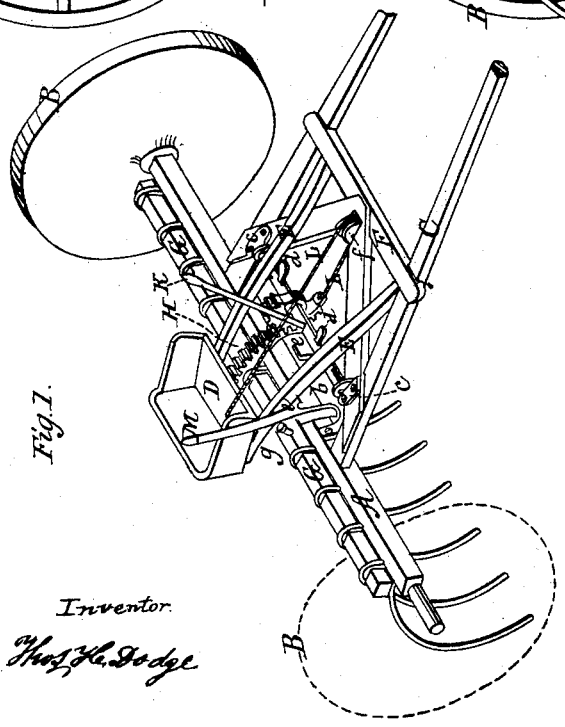

Fig. 1.

Witnesses.

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THOMAS H. DODGE, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN HORSE-RAKES.

Specification forming part of Letters Patent No. **45,481**, dated December 20, 1864.

To all whom it may concern:

Be it known that I, THOMAS H. DODGE, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Horse-Rakes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of said horse-rake, one of the supporting-wheels being represented in dotted lines to show the parts in its rear. Fig. 2 represents a longitudinal vertical section through the same, showing the rake-teeth resting on the ground in the operation of raking. Fig. 3 represents a similar section, showing the rake-teeth in an elevated position to discharge the raked hay.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the axle of the machine, on which the supporting-wheels B are set. The thills C are firmly secured to the said axle, and the driver's seat D is supported on the spring-bars E, which are secured to the cross-bar F of the thills.

G represents the rake-head, to which the curved rake-teeth are secured in the ordinary manner. It is hinged to the axle A by means of the hinges *a*, and can freely swing on said hinges to conform to the undulations of the ground and to elevate the rake to discharge the raked hay.

By reference to Figs. 2 and 3 it will be observed that the rake-head is hinged to the main axle in such a manner that its weight is thrown forward of its fulcrum *a*, and when the said rake-head is depressed to raise the rake-teeth its weight acts a counterpoise, and thus greatly facilitates the operation, which otherwise would be difficult by reason of the pressure of the hay upon the rake-teeth.

H represents a curved segmental spur-gear, which is secured to the rake-head G. It is of such a shape that the center of its periphery is in the center of the hinge *a*.

I represents another segmental or full spur-pinion, which is in gear with the toothed sector H, and which is keyed on the shaft *b*, whose ends are supported by the lugs *c*. The shaft *b* is provided with a lever, K, and treadles *d e*, which are within convenient reach of the driver on his seat, and by means of which he can operate the rake whenever he wants to raise or lower it. I also provide a rope or cord, L, which passes around the sheave *f*, and one end of which is secured to the driver's seat and the other to the periphery of the spur-wheel I to enable the driver to operate the rake also by this device. Thus it will be seen that the operator can raise the rake or hold it down with either foot by pressing upon either of the treadles *d e*. He can also raise or hold it down by means of the hand-lever K, and can at the same time employ both his hands and feet to raise or hold down the rake.

To the right of the driver's seat is a hand catch-lever, M, which is secured to the side of the axle A. A pin, *g*, on the rake-head strikes against a cam, 2, on said lever when the rake-head is forced forward, and forces it sidewise until the pin is below the catch 3, and the rake-head can thus be retained in an elevated position until the pin *g* is set free by the driver, disconnecting the lever M therefrom.

It is evident that a full spur-wheel could not be secured to the rake-head to impart to it the motion above described, but that it must be a segmental curved gear, as set forth.

Instead of using a segmental spur-gear and pinion, a segmental bevel-gear and bevel-pinion may be employed, if such an arrangement should be found to be more convenient to apply this invention to certain machines. When bevel-gears are used the shaft *b* of the bevel-pinion must be set in a direction at right angles to the rake-head G, instead of being parallel to the same, as above described.

By my invention the rake-head can be operated by the hand-lever in both directions and in a positive manner, while the power is applied to the head in such a manner as not to require any great force to elevate the teeth. Again, the position of the lever K when the teeth are down is such that the operator can exert his strength to the greatest advantage, his feet being braced against the frame-work of the machine.

Having thus fully described the nature of my invention, what I claim herein as new, and desire to secure by Letters Patent, is—

1. The employment, in connection with the rake-head, eccentrically hinged, as described,

of the gears H I, shaft *b*, and hand-lever K, all arranged substantially as and for the purposes described.

2. The combination, with the rake-head, hinged as described, of the pin *g* and spring catch-lever M, substantially in the manner and for the purposes set forth.

3. The arrangement, in combination with the rake-head G, gears H I, and shaft *b*, provided with hand and foot levers K *d e*, of the elevating and lowering rope L, substantially as and for the purposes described.

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Witnesses:

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