

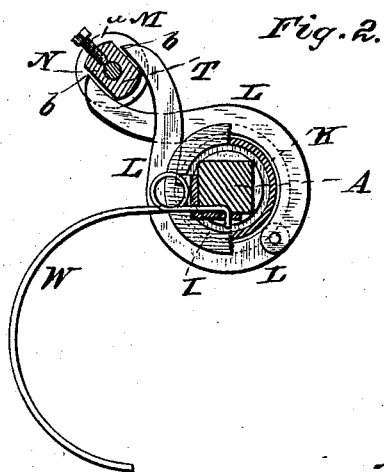
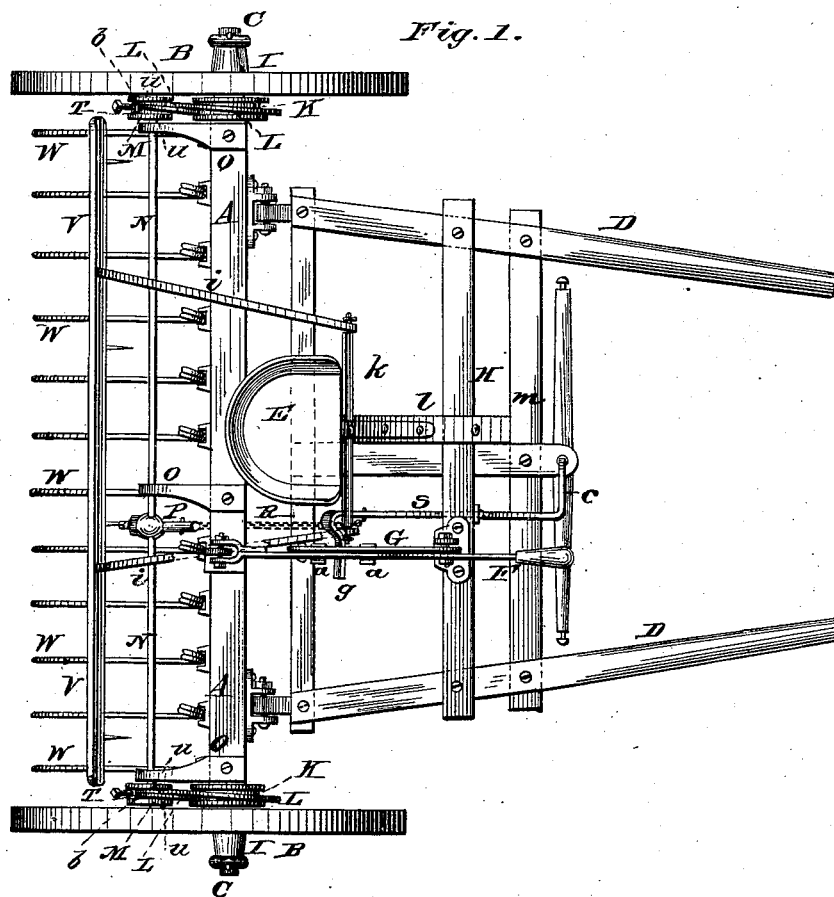
(Model.)

2 Sheets—Sheet 1.

W. F. GOELLER.
HORSE HAY RAKE.

No. 261,545.

Patented July 25, 1882.



WITNESSES

Wm. L. Dieterich,
Wm. L. Dieterich.

INVENTOR

Wm. F. Goeller.

per.
Manahan Ward, Attorneys

(Model.)

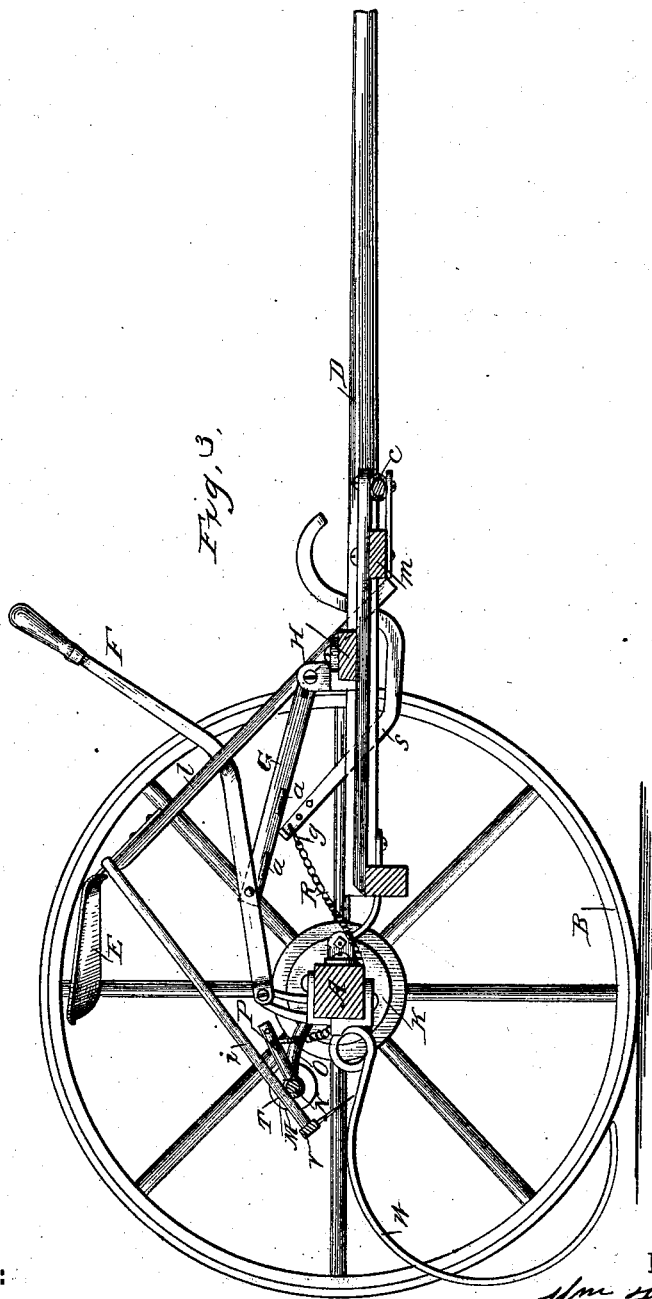
2 Sheets—Sheet 2

W. F. GOELLER.

HORSE HAY RAKE.

No. 261,545.

Patented July 25, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM F. GOELLER, OF ROCK FALLS, ASSIGNOR TO THOMAS A. GALT
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HORSE HAY-RAKE.

SPECIFICATION forming part of Letters Patent No. 261,545, dated July 25, 1882.

Application filed December 10, 1881. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM F. GOELLER, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, 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 invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention belongs to that class of horse hay-rakes usually termed "self-dumps," in which the draft of the horse is utilized in lifting the rake-head to discharge the hay.

My improvements consist, first, of a novel and efficient means for clamping the rake-head to the hubs of the carrying-wheels, so that the onward revolution of the latter will rotate and thus lift the rake-head sufficiently to discharge the hay; and, second, in providing a rest for the teeth-cleaner, so that the same will not be affected by the miscellaneous shaking and lifting of the several rake-teeth.

In the drawings, Figure 1 is an oblique plan view of a machine embodying my invention. Fig. 2 is an enlarged detached view of the devices used for uniting the rake-head to the carrying-wheels. Fig. 3, Sheet 2, is a cross-sectional view of the rake in a vertical plane, showing the location and operation of the system of levers.

A is the rake-head, and also the axle of the carrying-wheels B B, which revolve on the spindles C C, attached to the opposite ends of the rake-head A.

D D are the ordinary thills.

E is the driver's seat.

F is a hand-lever, hinged at its rear end on the axle or rake-head A, and pivoted to the rear end of the movable fulcrum G, which latter is hinged at its front end on the cross-beam H of the thills D D. The lever F and fulcrum G are so located relatively to the cross-beam H and rake-head A that when such lever and fulcrum are on the same plane—that is, on a line between their respective hinged ends—the rake-teeth W are held down rigidly to their

work, and it is impossible for the rake-head A to rotate in any degree.

Clips *a a* on the under side of the fulcrum G extend laterally under the lever F, and afford a stop and a rest for the latter when in the same plane, as aforesaid, with the fulcrum G.

On the inner ends of the hubs I I of the carrying-wheels B B are formed the annular recesses or grooves K K.

Short cross-levers L L, used in pairs, as shown, Fig. 2, having their lower ends hinged together, and having that portion of their length between their point of crossing each other and their hinge aforesaid bent outwardly to conform to the convexity of the grooves K, cross each other above the hubs I, and have their upper ends loosely resting in the grooves *b b* of the interposed wheels M M, rigidly fixed to each end of the transverse rod N.

The rod N is journaled in the upper ends of the short brackets O O O, which are fastened on the upper side of the rake-head A, and thus the rod N is supported slightly above and behind the axle A and parallel therewith.

The outward crook of each pair of levers L L traverses and closely encircles the grooves K K, and owing to the fact that such levers are hinged together below the hub I, and cross or pass each other above the hub I, as shown, it is obvious that any widening or separating of their upper ends will cause such portions of the levers as lie in the grooves K K to approach each other, and thereby clamp the hub I. This separation I accomplish as follows: A short lever, P, is rigidly attached to the rod N, extending forward in a nearly horizontal position. To the front end of the lever P is attached the chain R, which passes down behind and under the rake-head A, and is attached forward to the rear end of a foot-lever, S, which latter is fulcrumed, as shown, under the cross-beam H.

The wheels M M of the rod N consist each of two plates, *u u*, circular or otherwise, fastened to each side of a head, T, the whole being rigidly affixed to the rod N. As the said plates have a greater diameter than the head T, there results between the plates *u u* an annular recess, which I have called the "grooves," *b b*. The head T is made with its greater diameter on a line with the upper ends of the levers L L,

so that by the partial rotation of the rod N the head T forces the upper ends of the levers L L apart. The front end of the lever S is placed within convenient reach of the driver's foot and provided with the treadle *c*, and by pressing thereon the rear end of such lever is elevated, and through the medium of the chain R the lever P drawn downward. By this means the rod N and its fixed head T are rotated forward, and the head T, acting as a double cam, widens the upper ends of the levers L L and clamps the lower ends of such levers upon the hubs I of the carrying-wheels B so tightly that the onward revolutions of the hubs I I carry with them the rake-head A. When the rake-head A has been lifted sufficiently high to discharge the hay the driver withdraws his foot and the rake-head drops back to a working position by its own gravity.

It will be understood that the lifting mechanism described is applied to both carrying-wheels B B simultaneously.

In order to permit the rake-head A to rise, it is essential that the lock of the lever F and its fulcrum G be broken at the same time. This I accomplish by forming a lateral extension, *g*, to the rear end of the lever S, which extends under the lever F at or near the point of its fulcrum, and the pressing downward of the front end of the lever S before mentioned to lock the rake-head to the hubs I I has the effect of raising the rear end of such lever, and with it the lever L and its fulcrum G, thus unlocking the latter at the same time that the levers I L are locked to the hubs I I, as aforesaid. When in the rotating of the rake-head A the lever F has reached its perpendicular, it, in connection with its fulcrum G, prevents any further rotation of the rake-head A.

In rakes as formerly made the cleaner V has usually been arranged to rest on the back of the rake-teeth W, and as each tooth has its own separate action the cleaner is kept in the condition of continually clattering upon the backs of the teeth, which is not only unpleasant to hear, but results in racking and injuring the cleaner. To avoid this I attach the hounds *i i* of the cleaner V pivotally to the outer ends, respectively, of the cross-head *k*, the latter being fastened to the front side and near the top of the standard *l* of the driver's seat E. By this arrangement the hounds *i i*, when the rake is at work, rest upon the transverse rod N and support the cleaner V so far above the rake-teeth W that none of the latter, in their vertical spring, can strike the cleaner. When the rake-head A is raised the cleaner passes down the outside of the teeth W in the usual way.

In order that the driver's weight may assist

in raising the rake-head, I place the standard *l* of the driver's seat forward on the cross-beam *m* of the thills D D and hinge the rear ends of the thills D D to the front side of the axle or rake-head A, so that the weight of the driver at the rear end of the thills presses down upon the axle A forward of its center of motion, and serves in a measure to offset the like pressure of the rake-teeth back of such center of motion.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The levers L L, hinged together at their lower ends and crossed above their outward bow, the hub I, and the rod N, provided with the grooved wheels M M, the latter containing each the cam-shaped head T, constructed and operating as and for the purpose described.

2. The wheels B B, having hubs I I, provided with the annular grooves K K, the levers L L, the rod N, provided with the lever P and heads T T, the chain R, and foot-lever S, in combination substantially as shown, and for the purpose mentioned.

3. The rake-head A, the rod N, having the plates *u* and heads T and lever P, the levers L L, wheels B, having the annular recesses K, and the foot-lever S, in combination as shown, substantially, and for the purpose specified.

4. In a horse hay-rake, the levers L L, operated in pairs by having their lower ends hinged together, and shaped to conform to the convexity of the hubs I, and being crossed upon each other above the hub I, and having their upper ends extending above the point of their mutual crossing, in combination with interposed means whereby the levers can be locked or clamped upon the hubs I, substantially as shown, and for the purpose described.

5. The combination of the lever S, provided with the lateral extensions *g*, the chain R, the lever P, rod N, provided with the wheels M M, the levers L L, and the carrying-wheels B B, having the annular recesses K in the hubs thereof, substantially as shown, and for the purpose mentioned.

6. The combination of the hounds *i i*, cross-head *k*, standard *l*, rod N, journaled in the upper ends of backwardly-extended brackets O O, rigidly attached to axle A, and cleaner V, whereby the cleaner is positively held clear of the rake-teeth until the dumping mechanism is set in operation, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM F. GOELLER.

Witnesses:

WM. L. WINDOM,
WILLIAM MANAHAN.