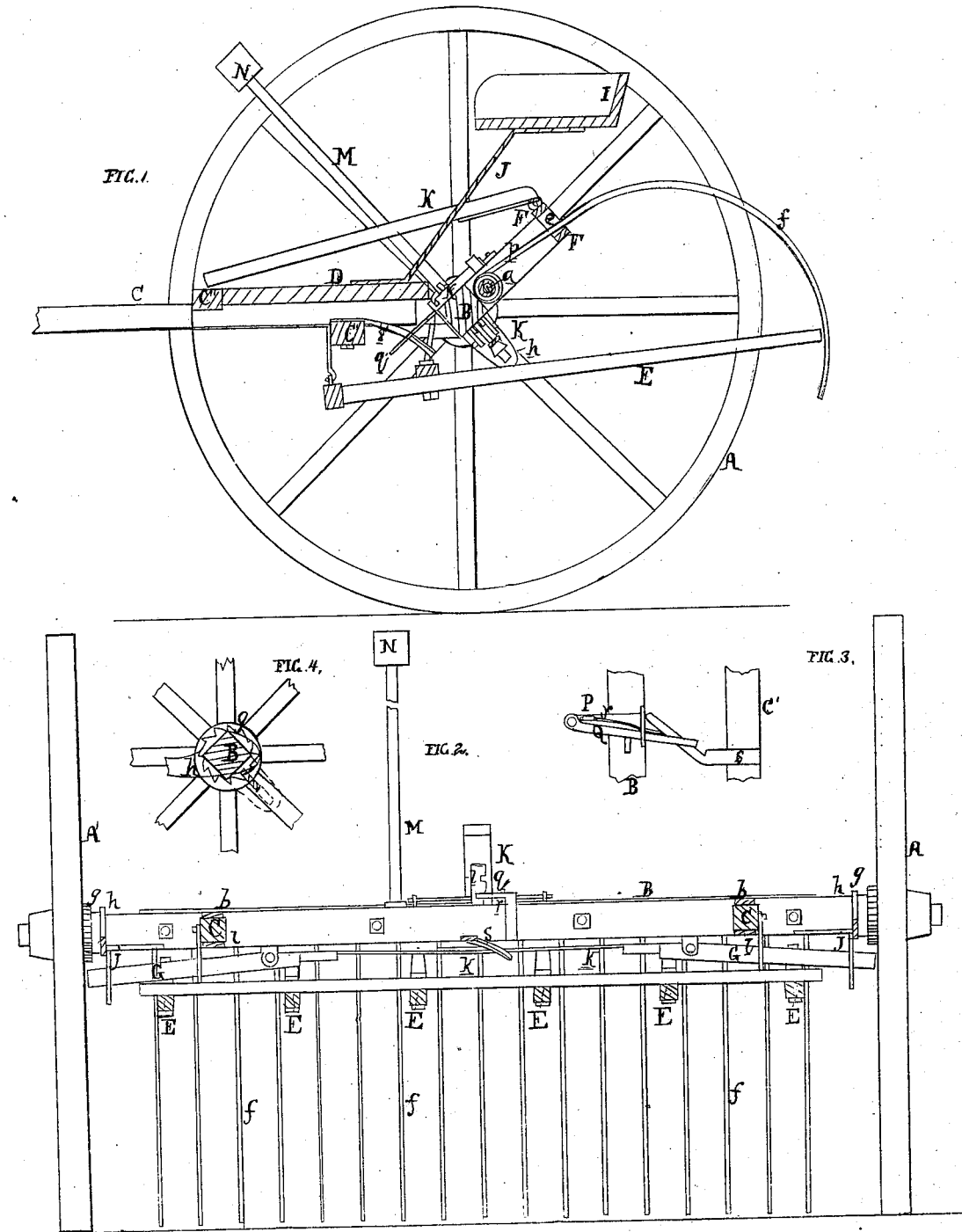


*J. Pennyhacker,
Horse Rake.*

No. 16583.

Patented Feb. 28, 1865



Witnesses { *Wm. A. H. Steel,*
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UNITED STATES PATENT OFFICE.

JOHN PENNYPACKER, OF CHARLESTOWN, PENNSYLVANIA.

IMPROVEMENT IN HORSE-RAKES.

Specification forming part of Letters Patent No. **46,583**, dated February 28, 1865.

To all whom it may concern:

Be it known that I, J. PENNYPACKER, of Charlestown, Chester county, Pennsylvania, have invented certain Improvements in Horse-Rakes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of certain improvements, fully described hereinafter, in horse-rakes, whereby the teeth of the rake may be readily raised and lowered, so as to discharge the contents at any desired spot.

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

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a longitudinal sectional elevation of my improved horse-rake; Fig. 2, a transverse sectional elevation, and Figs. 3 and 4 detached views of parts of the machine.

Similar letters refer to similar parts throughout the several views.

A and A' are the wheels and B the axle of the rake, to a rod, *a*, at the rear of which are hung the usual curved rods or teeth, *f*, each of the latter passing through a vertical slot, *e*, in a strip, F', which is secured to the ends of arms F, projecting from the rear side of the axle. A portion of the axle near each end is cut to a cylindrical form to receive a strap, *b*, by which the shafts C are connected to the same, and to the said shafts are secured cross-pieces C' C'', on which rest the usual foot-board, D. From the shafts is suspended a frame, to which are attached a number of bars, E, the latter projecting toward the rear of the machine and between the teeth *f*.

On the inside of each wheel A, next to the hub, is a ratchet-wheel, *g*, and to each end of the axle, opposite the ratchet-wheel, is secured a cam-plate, *h*. To the under side of the axle, near each end, is hung a lever, G, the outer end of which passes through a slot in a guide-plate, *j*, the upper edge, *x*, of the end of the lever being beveled, as shown in Fig. 4.

To the inner arm of each lever G is secured a spring-plate, *k*, the end of one plate lapping a short distance over the other, and having attached to its upper side a plate, *l*, which projects upward through an opening in the axle,

and in the side of which is a notch, *q*, for a purpose described hereinafter.

On the upper side of the axle is a plate, P, to the outer end of which is hinged one end of a lever, Q, the latter being caused to bear against the notched side of the plate *l* by a spring, *r*', and to the cross-piece C' is secured one end of an inclined plate, *s*, which projects both downward and toward the axle.

A seat, I, is secured to the upper end of a spring-plate, J, which is attached to the foot-board, and to the strip F' is hinged one end of a lever, K, the latter projecting over the foot-board and bearing upon the upper end of the plate *l*.

From the upper side of the axle projects a rod, M, on which is an adjustable weight, N, for a purpose described hereinafter.

When the rake has gathered up sufficient quantity of grain and the driver wishes to discharge the same, he presses with his foot upon the lever K, and thereby forces downward the plate *l*, the ends of the levers G being thus caused to engage with the teeth of the ratchet-wheels *g*, and the plate *l* being retained in its position by the lever Q, which is thrown into the notch *q* by the action of the spring *r*'. As the wheels A revolve, the straight edges of the teeth of the ratchet-wheels *g*, bearing against the sides of the lever G, cause the axle to turn with the wheels and raise the rake to the position shown in Fig. 1, the contents of the same being brought against the under side of the bars E, and thus removed from the teeth of the rake, after which they fall to the ground. As the axle continues to revolve the upper edges of the levers G are brought against the edges of the cam-plates *h*, which force them from contact with the teeth of the ratchet-wheels, when the axle will again be brought to its first position by the weight of the rake, the teeth of which again rest upon the ground. As the rake approaches the limit of its upward motion the end of the lever Q is brought against the edge of the inclined plate *s*, and is pushed to one side, so as to move it from the notch of the plate *l*, the latter being immediately forced upward to its first position by the action of the spring-plate to which it is attached.

It will be seen that by the above arrangement the teeth of the rake may be quickly elevated and the contents discharged without any

other exertion on the part of the driver than that necessary to depress the lever K. As there are two ratchet-wheels, *g*, and two levers, G, the rake may be raised while the machine is in the act of turning, and when one wheel is stationary, or turning backward, so that the contents may be discharged at the corner of a field or the end of a row as readily as any other spot. Should the machine be moved back while the ends of the lever G are engaged with the teeth of the ratchet-wheels, the inclined edges of the latter are brought in contact with the inclined edges *a* of the lever, so that as the wheels revolve the ends of the levers slip readily from one tooth to another.

In order to prevent the teeth from being injured when they fall, after being released, the weight N is so adjusted as to nearly counterbalance the weight of the rake and prevent the too rapid descent of the latter.

It will be apparent that a machine of the character above described is comparatively cheap and simple in its construction, not liable to get out of order, and is efficient in its operation.

I claim as my invention and desire to secure by Letters Patent—

1. The cams *h*, constructed and arranged in respect to the levers G and ratchets *g* substantially as and for the purpose specified.

2. The notched plate *l*, lever Q, and plate *s*, in combination with the levers G, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN PENNYPACKER.

Witnesses:

CHARLES E. FOSTER,
JOHN WHITE.