D. P. SHARP.

HORSE-RAKE.

No. 183,712. Patented Oct. 24, 1876.

Fig. 1.

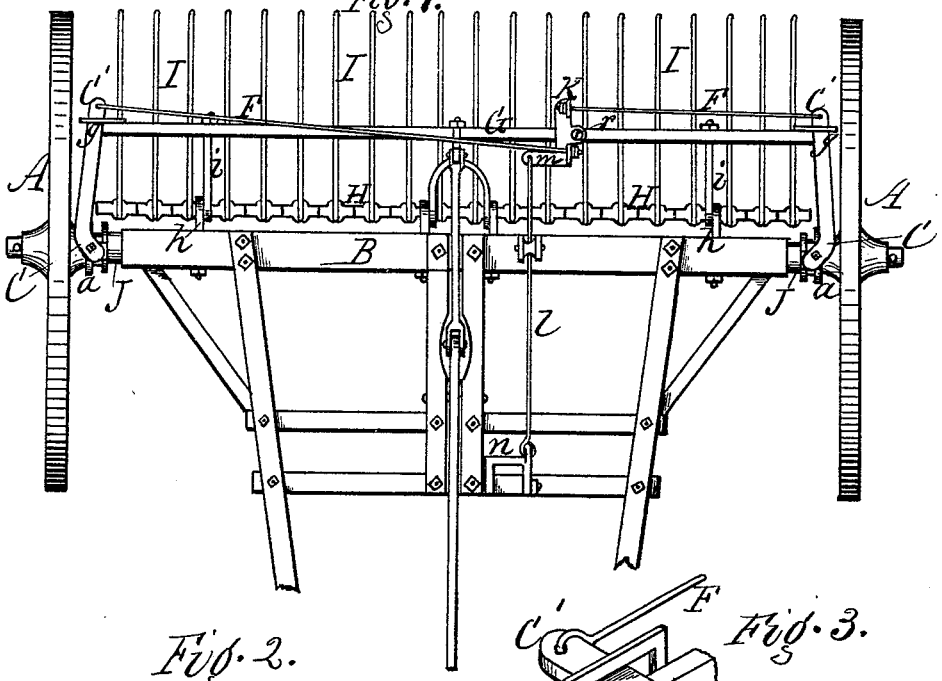


Fig. 2.

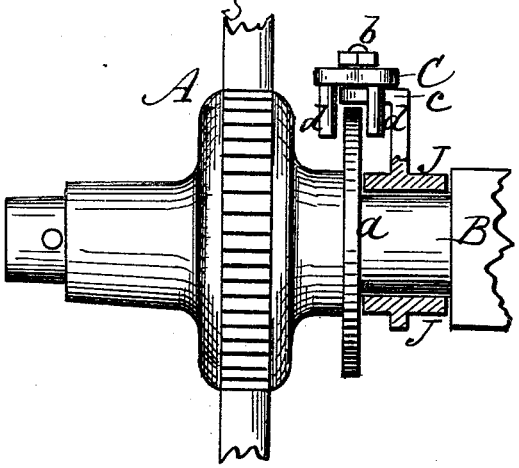


Fig. 3.

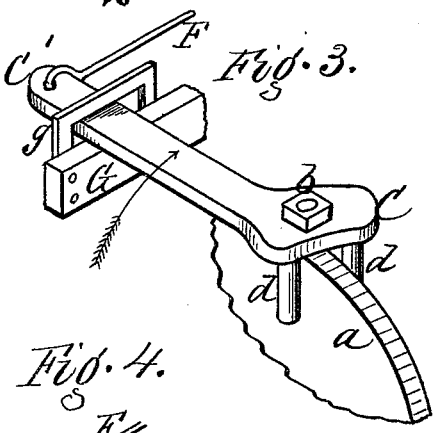
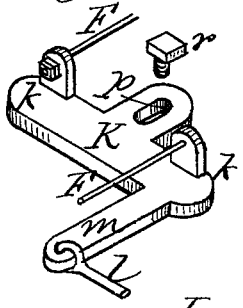


Fig. 4.



Witnesses.
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R. E. White.

Inventor.
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per R. F. Osgood.
Atty.

UNITED STATES PATENT OFFICE.

DENNIS P. SHARP, OF ITHACA, NEW YORK.

IMPROVEMENT IN HORSE-RAKES.

Specification forming part of Letters Patent No. **183,712**, dated October 24, 1876; application filed August 22, 1876.

To all whom it may concern:

Be it known that I, DENNIS P. SHARP, of Ithaca, in the county of Tompkins and State of New York, have invented a certain new and useful Improvement 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 is a plan of a horse-rake provided with my improvement. Fig. 2 is a sectional elevation of one of the hubs on an enlarged scale, showing the turning-collar and its connecting parts. Fig. 3 is a perspective view of one of the clamping-rockers and its connecting parts. Fig. 4 is a similar view of the crank-elbow for operating the clamps.

My invention relates to mounted horse-rakes. It is an improvement on my patent of February 22, 1876. In that patent the teeth are mounted directly upon the axle, and the rockers, having the downwardly-projecting lugs embracing the rims of the hubs, are also mounted permanently upon the axle. In my present case I design to adapt the same invention to a horse-rake having the teeth mounted on an axis or rod in the rear of and independent of the axle. To render the friction devices operative under such conditions various modifications are necessary, which form the subject of my present invention.

A A are the wheels, and B is the axle. The wheels fit loosely on the axle, and the hub of each wheel on the inner side is provided with a circular flange or rim, *a*, which revolves with it. C is a rocker, pivoted at *b* to a bearing, *c*, which forms a part of a collar, J. This collar turns freely on the axle, as shown in Fig. 2. The rocker is provided with two downwardly-projecting pins or lugs, *d d*, which embrace the rim *a* on opposite sides, as clearly shown in Figs. 2 and 3. As the rocker is turned, these two pins cramp or bind on the opposite sides of the rim, and thereby engage the rocker with the wheels so that it turns up to dump the load. One of these rockers is used on each end of the axle. Each rocker has an arm, C′, which forms a lever; and this lever extends back through an elongated loop, *g*, which is attached to the end of the bar G. The bar G extends across the machine, and has staples on its under side to hold the teeth. H is the axis or rod to which the teeth I I are attached. It is situated a little distance back from the axle, and is permanently attached thereto by stiff arms *h h*. The bar G is connected with the rod H by jointed arms *i i*, which allow the bar and the teeth to turn up to dump the load. K is a crank-elbow, pivoted to turn upon the bar G. F F are connecting-rods attached at one end to the opposite arms *k k* of the elbow, and at the other to the ends of the levers C′ C′. *l* is a cord or chain, connecting an arm, *m*, of the elbow with a foot-treadle, *n*. By pressing upon this treadle the rockers C C will be made to bind upon the rims *a a*, in the manner before described. *p* is a slot formed in the crank-elbow, through which passes the pivot *r*. This slot allows movement of the crank-elbow laterally upon its pivot, so that the elbow, in addition to serving as a lever to draw up the connecting-rods F F to tighten the clamps, also serves as an equalizer to apply power upon the clamps evenly and uniformly at both ends of the machine. This it does by moving bodily upon its pivot in one direction or the other, according as the strain is greater on one side or the other. It is frequently the case, owing to the looseness or end play of the wheels, or to passing over uneven ground, that the clamp on one side will apply before it does on the other, in which case all the strain comes at one end of the machine. By the use of the device above described the elbow adjusts itself on the pivot so as to apply the power to both ends equally. This forms an important feature of the invention.

It will be seen that when the clamps are brought to bear upon the rims *a a* of the wheels, the levers C′ C′ will be locked to the wheels, and will be turned around with them. The bar G, and consequently the teeth I I, will also be raised by reason of the ends of said levers resting in the open loops *g g*. The rock-levers C′ C′ therefore serve the double purpose of a clamp to bind upon the rim *a* and a lever to raise the bar G. As the bar G turns up with the wheel, the collar J, which forms its fulcrum, turns forward upon the axle to prevent binding of the parts and allow the proper action.

Having thus described my invention, what I claim herein as new is—

1. In a horse-rake, the combination, with the rim *a* and tooth-supporting bar G, of the rocker C, provided with the pins *d d*, embracing the rim, and an arm, C′, extending through a loop or bearing of the bar, the whole so arranged that the rocker serves the double purpose of clamping the rim and elevating the bar, as herein shown and described.

2. In a horse-rake, the combination, with the rim *a* and rocker C, of the collar J, serving as the bearing for the rocker and turning loosely on the axle to prevent cramping or binding, as herein shown and described.

3. In a horse-rake, the combination, with the rim *a* and tooth-supporting bar G, of the rocker C C′ and turning collar J, as and for the purpose specified.

4. In a horse-rake, the combination, with the rockers C′ C′ and connecting-rods F F, of the crank-elbow K, provided with the slot *p* for allowing lateral adjustment of the elbow on its pivot to equalize the clamping action on both sides, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

DENNIS P. SHARP.

Witnesses:

R. F. OSGOOD,

EDWIN SCOTT.