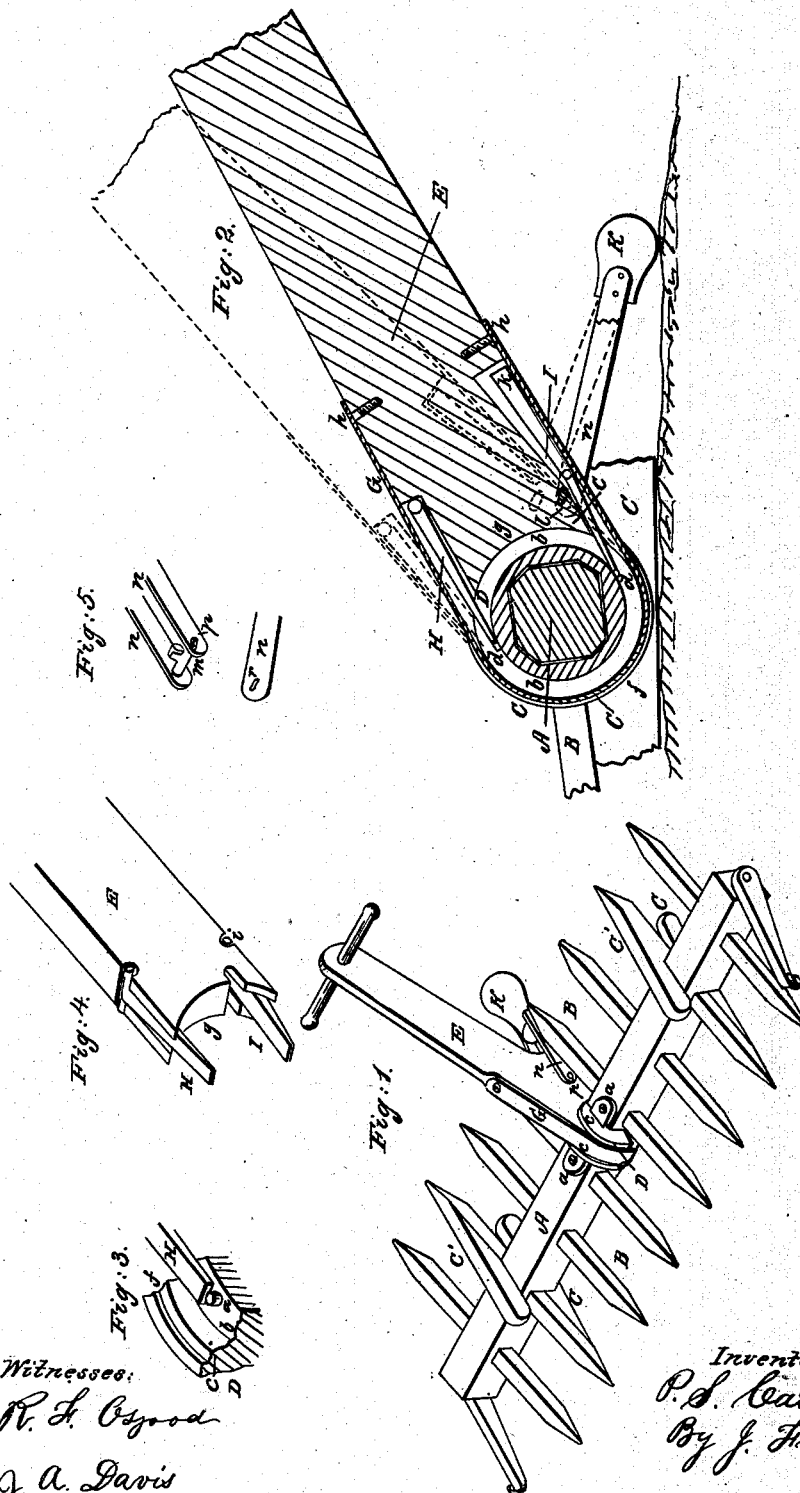


P. S. CARVER.

Horse Rake.

No. 47,519.

Patented May 2, 1865.



Witnesses:
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UNITED STATES PATENT OFFICE.

P. S. CARVER, OF HONEOYE FALLS, NEW YORK.

IMPROVEMENT IN HORSE-RAKES.

Specification forming part of Letters Patent No. 47,519, dated May 2, 1865.

To all whom it may concern:

Be it known that I, P. S. CARVER, of Honeoye Falls, in the county of Monroe and State of New York, have invented a new and useful Improvement in Hay-Rakes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a perspective view of a hay-rake with my improvement applied thereto; Fig. 2, a central vertical section of the joint-rim and a portion of the handle, showing more particularly the arrangement of the operating parts for holding and releasing the rake-head in turning; Fig. 3, a perspective view of a portion of the joint-rim and the upper pawl that connects therewith; Fig. 4, perspective view of the end of the handle that operates with the joint-rim and the pawls connected therewith; Fig. 5, views of the cam that operates the lower pawl and the ends of the bearings in which it rests.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists, essentially, in an arrangement of parts whereby the pawls that hold and release the rake-head are inclosed, so as to be removed from danger of clogging by hay, and whereby the rake-head is released to revolve by merely raising the handle above the ordinary position necessary in ordinary use.

The rake-head A and teeth B are the same as those employed in ordinary rakes of this class, which have a half-revolution at crossing each windrow. On opposite sides of the rake-head, at each end, are situated shoes C C' C C', so arranged as to support the rake-head a little distance above the surface of the ground. Midway of the rake-head, and rigidly secured thereto, is situated a circular rim or wheel, D, similar in form to a pulley, which I denominate the "joint-rim," since it forms, with the end of the handle, the joint by which the rake-head turns. This rim is most conveniently made of iron, in two parts, secured to the rake-head by means of flanges a a, through which pass screws. Centrally around the joint-rim is made a groove or channel, b, of considerable depth, to allow the pawls to play, as will be presently described, thus leaving flanges or walls c c on each side. In this groove, on opposite sides, are secured pins or stops d d, pro-

jecting a little distance, as shown clearly in Figs. 2 and 3. The joint-rim is also provided with a larger groove or depression, f, outside of the first and of less depth.

The lower end of the handle E is made concave, as shown at g, Figs. 2 and 4, and this concave fits against the joint-rim in the outer groove or depression, f, while a metallic strap, G, secured to the handle at the points h h, also passes around the joint-rim in the same groove, thus producing a joint that allows the head to turn freely, but still retains the parts firmly together.

In the concave end of the handle are situated two pawls, H I, turning on axes i i, and projecting forward into the central groove, b, in such a manner as to rest behind and engage with the stops d d, as clearly represented in Fig. 2. These pawls are preferably kept in engagement with the stops by their own weight, the upper one turning on its rear end, while the lower one has a projection, k, at the rear of sufficient preponderance to overbalance the front end. If desired, however, suitable springs, of rubber or other material, may be employed for the purpose of reacting on the pawls.

It will be seen that when the rake-head turns, the stop, in passing under, will raise the upper pawls, which then falls behind it. Its action is thus automatic; but as the action at the under side is the opposite of this, it is necessary to operate the lower pawl in a positive manner. To accomplish this I secure above the pawl, in front of its axis, a cam, l, whose axis or shaft m rests in bearings n n, that extend backward a suitable distance, and are secured to a weight, K, that drags upon the ground. The position of the cam is such that when the handle E is held at the ordinary height in raking said cam will rest above the pawl, so as not to act on it, as indicated by black lines, Fig. 2; but if the handle is raised a little above the ordinary position, the cam will be turned down, so as to depress the pawl, and thereby disengage it from the stop d, as indicated by red lines. This action is accomplished by the weight still remaining upon the ground while the handle is raised.

I form the ends p p of the axis or shaft of the cam into hook shape, as indicated in Fig. 5, and these hooks fit in through slots r r, of corresponding outline shape, in the ends of the

bearings *nn*. In the act of applying the hooks one is first inserted by a turning motion of the axis, and when the latter is brought in line the other passes through, and the bearings *nn* are then attached to the drag-weight. When the axis is thus fixed in place it cannot turn, and the simplicity and cheapness with which it is applied forms its chief value.

There are several advantages in the employment of the devices above described. The pawls are covered and perfectly inclosed by the straps *G*, so that they are not only protected from the weather and from breakage and disarrangement; but, also, most important, they cannot become clogged by hay or any other impediment. This I regard as the most prominent advantage of my invention. In all other devices with which I am acquainted the pawls project outside the handle, and when opened to allow the rake-head to turn, they become obstructed with hay in such a degree as to cause much difficulty, requiring the frequent stopping of the team to free them. I obviate all difficulty of this kind. The inclosing of the pawls also obviates the danger of

breakage by coming in contact with stones or other obstructions. At the same time that the strap *G* thus protects the pawls, it forms with the concave end of the handle a perfect joint to allow the rake-head to revolve; and holds the parts securely together. Most rakes are provided with a double handle or frame, which is operated in an entirely different manner from the single one. My device is specially adapted to a single central handle.

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

Inclosing the pawls *H I* in the groove *b* of the joint-rim *D* by means of the strap *G* in such a manner as to prevent obstruction, said strap also serving to form the joint and retain the parts together, and used in connection with a single handle, *E*, the whole arranged, combined, and operating substantially as and for the purpose herein set forth.

P. S. CARVER.

Witnesses:

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