

(No Model.)

F. E. KOHLER.
Horse Rake.

No. 234,988.

Patented Nov. 30, 1880.

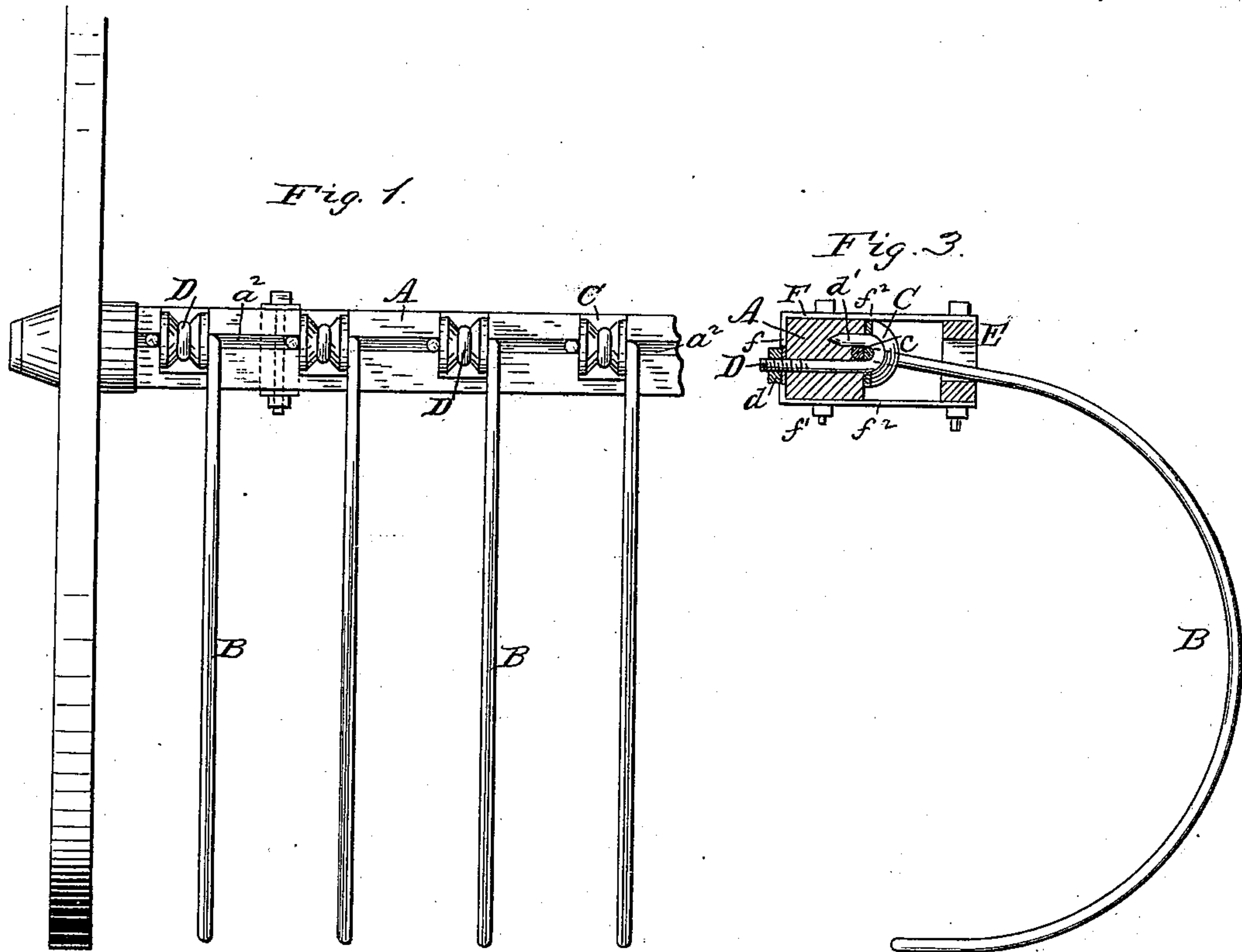


Fig. 2.

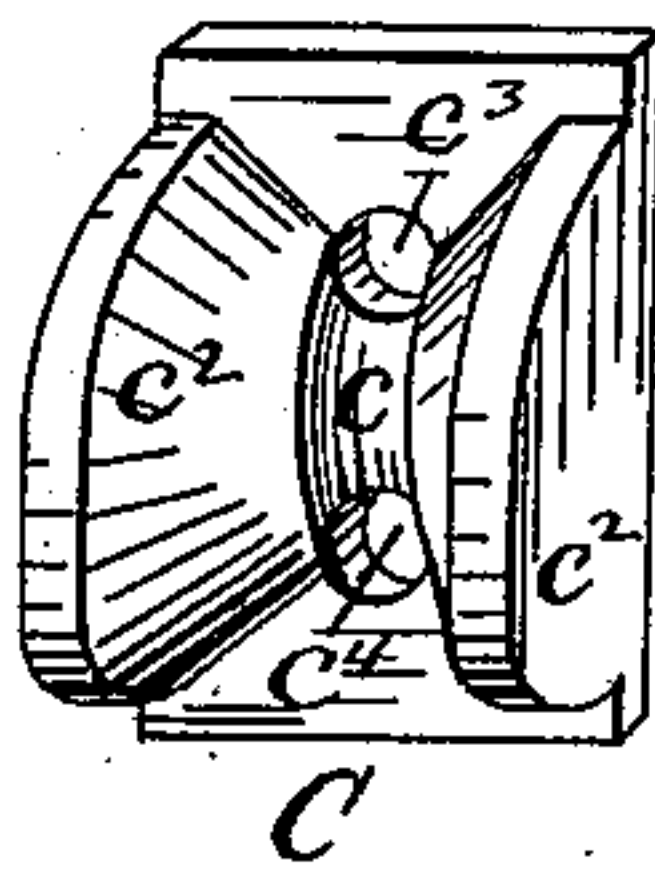
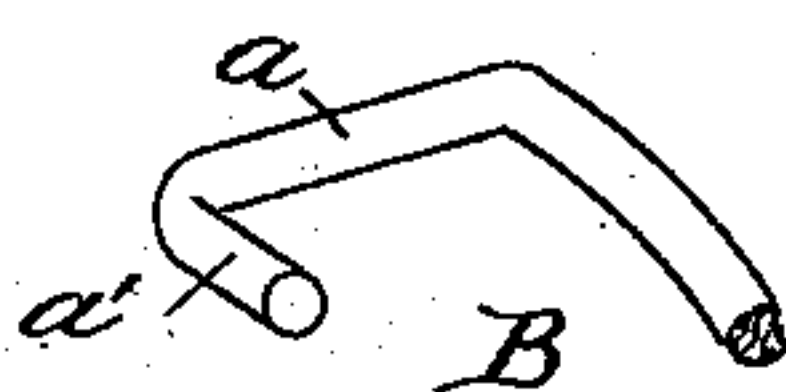


Fig. 4.



Witnesses:

H. A. Low

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UNITED STATES PATENT OFFICE.

FREDERICK E. KOHLER, OF CANTON, OHIO.

HORSE-RAKE.

SPECIFICATION forming part of Letters Patent No. 234,988, dated November 30, 1880.

Application filed September 10, 1880. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK E. KOHLER, a citizen of United States of America, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Horse-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.

This invention relates to improvements in horse-rakes, said improvements being especially applicable to rakes of the character shown in Patent No. 225,290, granted me March 9, 1880.

Figure 1 is a rear view of the rake-head and the teeth, the supporting-bar being detached. Fig. 2 is a perspective of the tooth-clamp. Fig. 3 is a cross-section of the rake-head and the supporting-bar. Fig. 4 is a perspective of the inner or heel end of the tooth.

In the drawings, the rake-head is represented by A, which is mounted in the usual manner in the driving-wheels of the rake, and which may be rotated by any desired mechanism adapted to raise it when the load is to be dropped.

B B represent the rake-teeth, which are substantially of the character of that shown and described in my aforesaid patent, each tooth being (near its heel or rear end) bent to form an arm, *a*, substantially at right angles to the plane occupied by the body of the tooth. The arm *a* is bent to form a shorter arm, *a'*, in a line substantially parallel to the body of the rake-tooth.

In the machine described in my former patent the rake-tooth was held in position against the rake-head by means of a clamp having a recess formed in its rear face.

One of the objects of this invention is to avoid the expense and trouble incident to the manufacture of a clamp of that character; and it consists in combining with a clamp having a smooth inner face a rake-head having a groove formed longitudinally in the rear

side and a staple-bolt passing through the rake-head and engaging with the clamp.

C represents the improved clamp, it being formed with a longitudinal rib, *c*, and with lateral walls *c*² *c*². *c*³ is a hole in the upper part, and *c*⁴ a hole in the lower part, of the clamp, for the reception of a staple-bolt, D, which is passed through the rake-head, and is arranged to so engage with the clamp as to prevent any lateral or vertical motion. *a*² is a groove formed longitudinally in the rear side of the rake-head A.

When the tooth is to be clamped in position the part *a* is placed in the groove *a*² and the clamp D placed between the body of the tooth and the part *a'*. The staple-bolt D is then passed through the clamp and the rake-head and secured in position by the nut *d*, the shorter part, *d'*, of the bolt passing back through the clamp into the rake-head to lock the clamp. By these devices the tooth is effectually held in position, and yet can be readily detached at any time.

E represents the supporting-bar provided with slots for the reception and guidance of the teeth, in substantially the ordinary manner.

In the construction shown in my aforesaid patent the supporting-bar was held upon the rake-head by means of braces having horizontal projecting arms and a vertical connecting part all formed from one piece of metal, the vertical connecting part being secured against the rear side of the rake-head. I have succeeded in providing a stronger attachment for the braces and a better support for the bar E by forming and attaching the braces as shown in Fig. 3.

The braces F are made to surround the rake-head in such manner as to bring the vertical connecting part *f* on the front side of the rake-head. By means of the bolt *f'* passing through the horizontal parts *f*² *f*² the brace is securely held in position. This provides a strong fastening for the brace and a more rigid support for the bar E. The horizontal parts *f*² *f*² and the vertical part *f* of the brace are formed from one piece of metal.

What I claim is—

1. The combination, with the rake-head and the slotted supporting-bar E, of the braces F, formed of the horizontal arms *f*² *f*² and the

vertical part f , when attached to the rake-head, to have the vertical part f on the front side of said head and the horizontal parts respectively above and below the same, substantially
5 as set forth.

2. The combination, with the rake-head A, having the longitudinal slot a^2 , the tooth B, bent to form the parts a and a' , and the clamp C, provided with two through-apertures, c^3 c^4 ,
10 of the staple-bolt D, which passes through the

rake-head and the clamp C, and is bent to form the part d' , which passes back through the clamp C into the rake-head, substantially as set forth.

In testimony whereof I affix my signature 15
in presence of two witnesses.

FREDERICK E. KOHLER.

Witnesses:

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H. W. HARTER.