

W. M. WHITE.  
Metallic Rake-Teeth.

No. 220,511.

Patented Oct. 14, 1879.

FIG. 1.

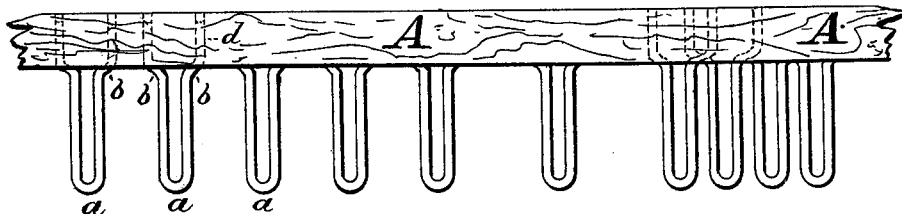


FIG. 2.

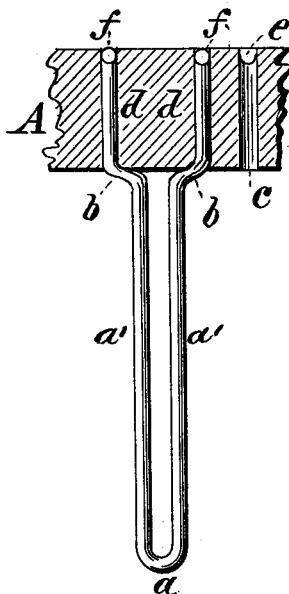
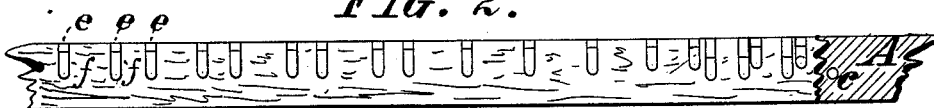


FIG. 3.

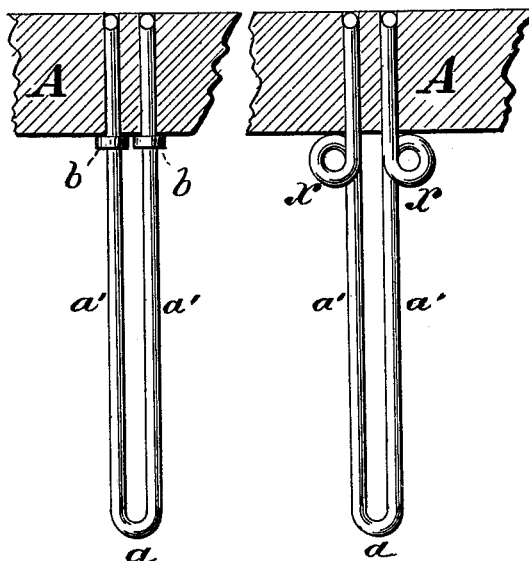


FIG. 4.

Witnesses:

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# UNITED STATES PATENT OFFICE.

WILLIAM M. WHITE, OF MILFORD, MICHIGAN.

## IMPROVEMENT IN METALLIC RAKE-TEETH.

Specification forming part of Letters Patent No. **220,511**, dated October 14, 1879; application filed September 3, 1879.

*To all whom it may concern:*

Be it known that I, WILLIAM M. WHITE, of Milford, in the county of Oakland and State of Michigan, have invented certain new and useful Improvements on Metallic Rake-Teeth; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to improvements on hand-rakes; and it consists in the peculiar construction and combination of parts, as hereinafter first fully set forth and described, and then pointed out in the claim.

In the drawings already referred to, Figure 1 is a front elevation of a rake-head provided with my improved teeth. Fig. 2 is a plan. Fig. 3 is an elevation of a separate tooth. Fig. 4 are modified forms of my rake-teeth.

This tooth I propose to construct of a single piece of wire, (steel wire being preferred,) as shown in Fig. 3, said wire being bent upon itself in the middle at *a*, and having near both extremities offsets *b*.

The rake-head *A*, I provide with a proper number of apertures *c*, for the passage of the shanks *d* of said wire teeth, and with grooves *e*, wherein the clinched ends *f* of said shanks *e* are embedded, so as to leave the top surface of the rake-head smooth and even.

The teeth are inserted into the rake-head from its under side, so that the shoulders *b* on the teeth rest against the wood and prevent the teeth from being drawn farther into the head than necessary, and the shanks *d* are made a sufficient length to protrude the head *A*, after which they are bent or clinched into the grooves *e*.

It will be observed that the teeth may be constructed to stand any desired distance apart, the space between the teeth being arranged to suit the various or any special requirements. If the teeth are to stand very close together, so that the shanks *d d* would interfere with one another, I arrange the holes in the head in a staggering manner, as

shown in dotted lines in Fig. 1, which will thus allow the teeth to pass each other, and thereby accomplish the desired object in an expedient manner.

The usefulness of this invention is apparent to every rake-user. The space between the wire teeth may be made so narrow that the finest hay can be nicely gathered. The tooth is firmly set, and will stand far more pressure than the usual wooden teeth, and there is no breaking teeth, which is always annoying to the farmer and others.

It is self-evident that the teeth may be made long or short, as occasion requires, and that the parts *a' a'* may be spread farther apart or brought close together. So may a shoulder be formed on the wire by fastening washers or other projecting flanges on the parts *a' a'*, or by twisting eyes on them, as shown at *X X*, Fig. 4, without altering the nature of my invention.

Heretofore wire rake-teeth have been made of one piece of wire bent to form a double tooth, and such teeth have been provided with shoulders, usually produced by turning or twisting eyes in the wires, which eyes were adapted to rest on or bear against the under side of the rake-head. I do, therefore, not claim such as my invention.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent—

A hand-rake consisting of the head *A*, pierced with a series of apertures, *c*, and provided with grooves *e*, said head being fitted with teeth formed of a single piece of wire, bent as specified, and provided with shoulders *b*, the shanks *d* of said teeth being passed through the head and clinched into the grooves *e*, substantially as and for the object stated.

In testimony that I claim the foregoing as my invention I have hereto set my hand and affixed my seal in the presence of two subscribing witnesses.

WM. M. WHITE. [L. S.]

Attest:

GEO. W. BUTTON,  
H. PINNEY.