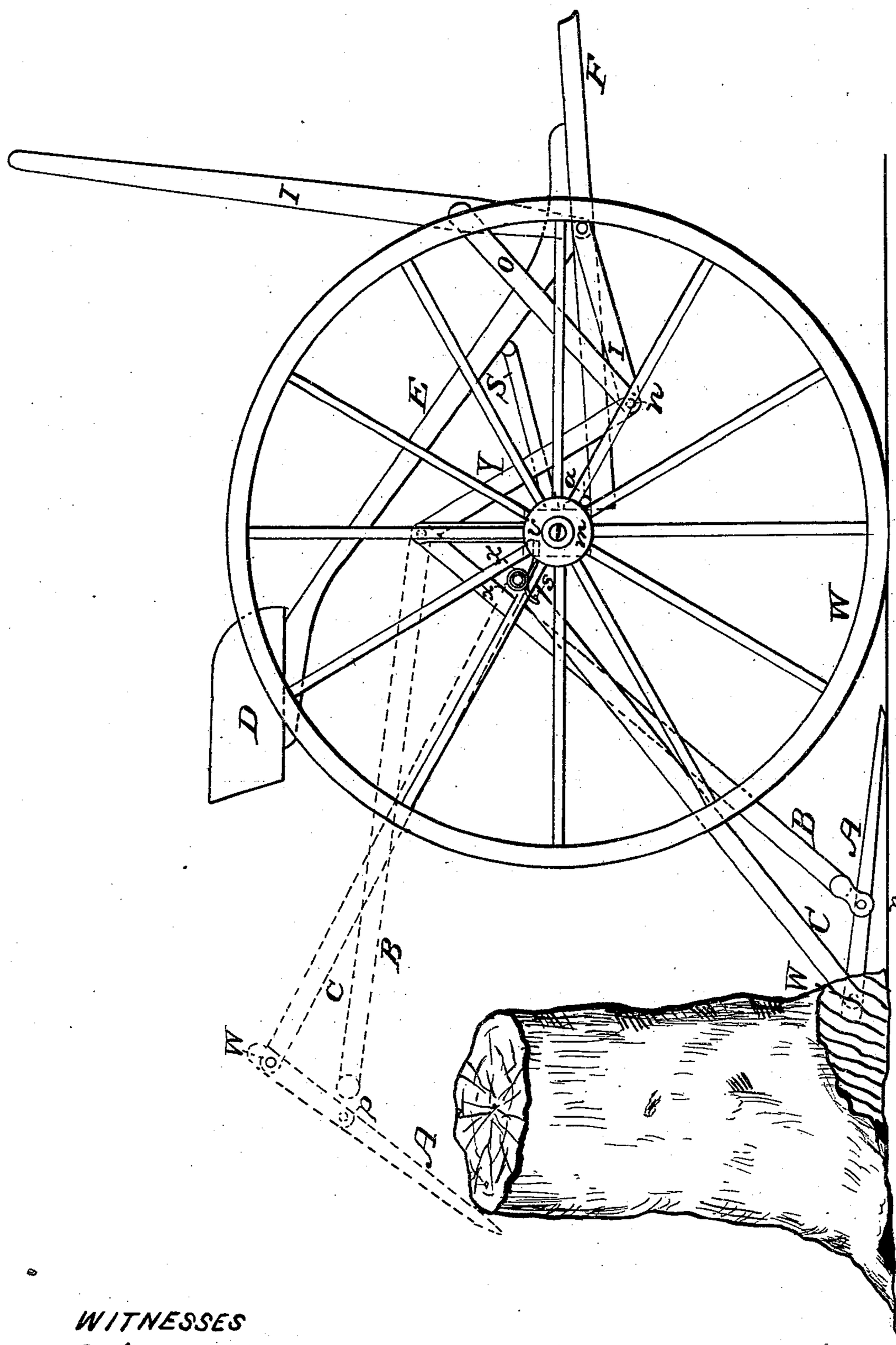
G. E. BURT.

Horse Rake.

No. 85,275. Patented Dec. 29, 1868.



WITNESSES

E. A. Hildreth

S. R. Hildreth

INVENTOR

George E. Burt

United States Patent Office.

GEORGE E. BURT, OF HARVARD, MASSACHUSETTS.

Letters Patent No. 85,275, *dated December* 29, 1868.

IMPROVEMENT IN HORSE-RAKES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE E. BURT, of Harvard, in the county of Worcester, in the State of Massachusetts, have invented a new and useful Improvement in Horse-Rakes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

It is well known that wooden teeth for hay-rakes are much more desirable than wire, as the wooden teeth collect the hay in better condition, and do not catch the grass-roots, or gather the dust and foul material, like the wire teeth; but the great obstacle to their general use, in this section, is the liability of breaking the teeth, by their coming in contact with high, abrupt obstacles.

The nature of my invention consists in constructing and arranging the teeth and arms to wooden independent-acting rake-teeth, in such a manner that they may pass high, abrupt obstacles freely, without any liability of injury to either the teeth or the arms.

Also, in constructing and combining independent-acting wooden teeth with springs and a lever, so arranged that the operator may hold the teeth down in heavy hay, and yet leave each tooth free to spring up.

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

In the accompanying drawings—

W is the wheel.

F is the shaft.

m, the axle.

D, the seat.

E, the seat-springs, which are firmly attached to the shafts F.

L is a hand-lever, pivoted to the shaft F, by pivot *n*.

S is a foot-treadle, secured to the axle *m*.

I and Y are connecting-arms, that connect the lever L with the rod *y*.

V is an upright standard, that supports the rod *y*.

O is a brace to the lever L and arm I.

a is a hinge, that connects the shaft F to the axle *m*.

B and C are independent arms, pivoted to the tooth A by pivots *p* and *w*.

The arm C is pivoted to the axle *m*, by the rod *x* and spring *v*.

The arm B is pivoted, by the rod *y* and standard V, to the axle *m*.

The springs *v* and standards V are firmly fixed to the axle, and act as arms to support the rods *x* and *y*, which pass through holes in the upper ends of the arms C and B.

The arm B is pivoted to the tooth A, below the arm C, at the lower end, and to the standard V at a point above the arm C, at the upper end, in such a manner that the arm C and arm B cross each other above the tooth, thus forming a brace for the tooth, and holding it firmly in position to operate.

Operation.

When the rake is put into operation in the field, the teeth gather the hay substantially in the same manner as any of the independent-tooth rakes now in use, but when any high or abrupt obstacle comes in contact with the teeth, they give back, turning on the four pivoted points, viz, *w* and *p* and the rods *x* and *y*.

The arm C forms an angle with the tooth A, the point of which is pressed backward by the onward movement of the rake, and the angle of the tooth with the arm C is increased by the action of the arm B, as the arms are elevated by the backward pressure of the tooth against an obstacle.

It will be seen by the position of the arms and tooth, in the dotted lines representing a tooth passing an abrupt obstacle, that by this arrangement the tooth will easily yield to any obstacle that will pass under the axle, without any injury to the tooth or to any part of the rake.

The springs *v* tend to hold the teeth down in heavy hay, but if the arms are made of sufficient weight, the weight will operate to the same end.

When the rake is full, it may be discharged by the operator pressing the foot-lever down with his foot, or by drawing the hand-lever towards him. By either device the power applied acts substantially the same, viz, to turn the axle over forward on the hinges *a* upon the shafts, and the rake is tilted up and discharged.

If the crop is very heavy, the operator may press down the points of the teeth, by pressing the lever L forward. The force thus exerted acts on the arms I and Y, which form a toggle-joint between the pivots *n* on the shaft and the rod *y*, which act powerfully to turn the axle over backward, and press down on all the points of the teeth by means of the springs *v*.

By the above arrangement and construction of parts, a very cheap independent wooden-tooth rake is constructed, which will pass high, abrupt obstacles without injury, having a tooth sufficiently firm to gather the hay, but which will yield to fixed obstacles.

This arrangement also enables the operator to hold down the rake-teeth in heavy grass.

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

1. The tooth A, when pivoted to and held in position by two independent arms, B and C, substantially as described for the purpose set forth.

2. The arrangement of the tooth A, bars B and C, and springs *v*, the whole operating in the manner and for the purpose described.

GEORGE E. BURT.

Witnesses:

E. A. HILDRETH,

S. B. HILDRETH.