(No Model.)

M. P. MIGHELL & A. J. HULL.

RIDING HARROW.

No. 272,454. Patented Feb. 20, 1883.

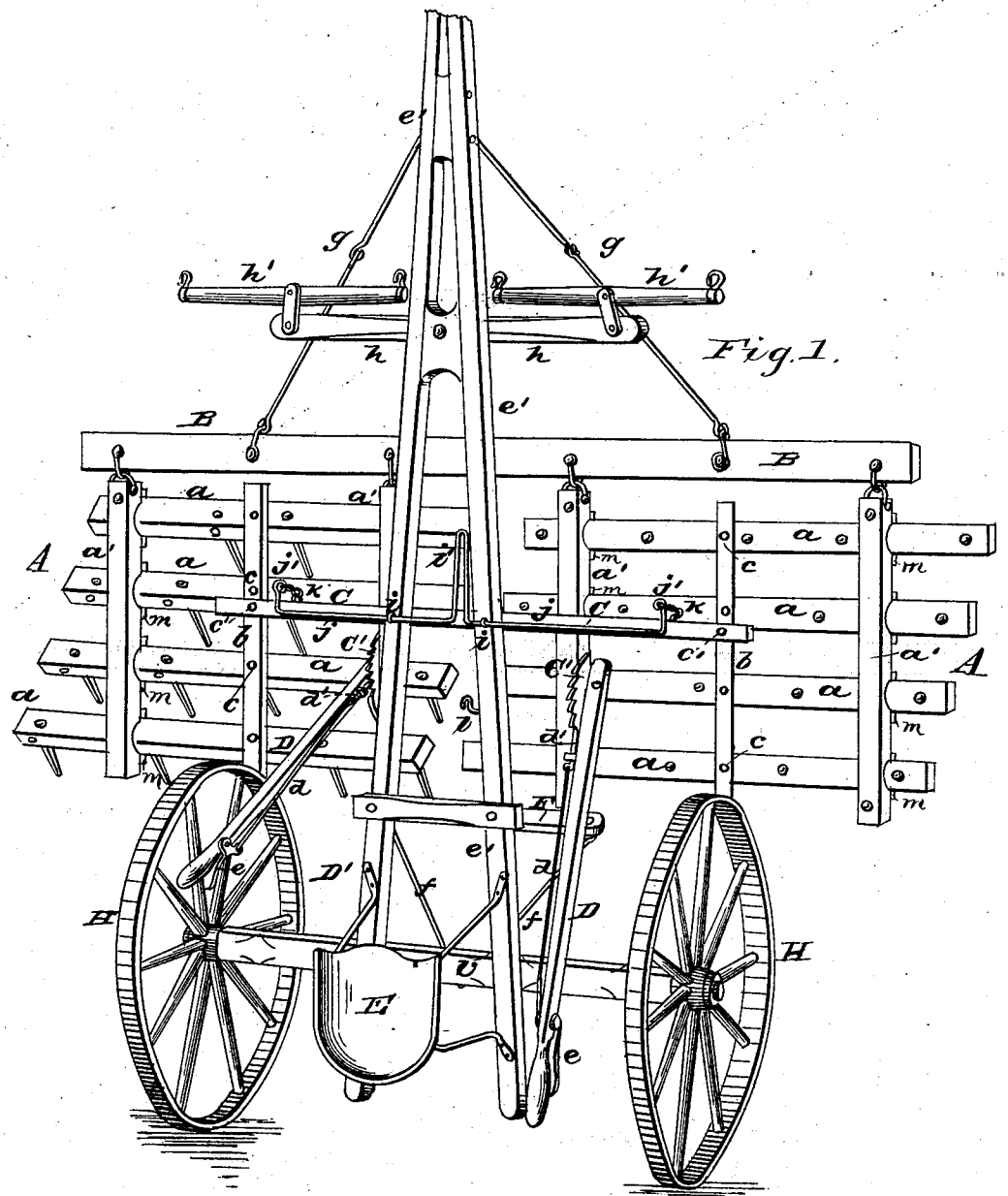


Fig. 1.

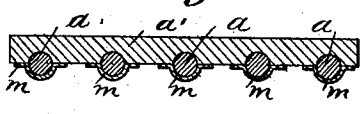


Fig. 2.

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UNITED STATES PATENT OFFICE.

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RIDING-HARROW.

SPECIFICATION forming part of Letters Patent No. 272,454, dated February 20, 1883.

Application filed February 17, 1882. (No model.)

To all whom it may concern:

Be it known that we, MONTRAVILLE P. MIGHELL and AARON J. HULL, citizens of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Riding-Harrows; and we 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.

Our invention relates to that class of harrows which are swung beneath a frame and carried by two wheels, which, unlike those harrows now in use, follow behind the harrow proper, the frame being provided with a seat to carry the driver, from which seat the driver can operate the harrow, so as to have the teeth aslant or perpendicular, as desired.

In the drawings, Figure 1 is an oblique view of a riding-harrow embodying my invention. Fig. 2 is a longitudinal section of one of the cross-beams with tooth-bars attached.

A A are sections of a harrow, each section formed of the beams *a a a a* and the cross-beams *a' a'*, connected or attached in any suitable manner to the evener B.

B is an evener in front of and connecting the two sections A. Each section of the harrow is provided with the top brace, *b*, loosely attached to each of the beams *a* by the eyebolts *c c c c*. At the center of each of the braces *b* is loosely attached by the eyebolts *e' e'* bar C. On the inner cross-beam of each section, and near the end thereof, is a ratchet-segment, C', and to one of the beams *a* is attached the set-lever D, provided with the rod *d*, pawl *d'*, and catch *e*, the pawl *d'* operating in the ratchet-segment C'.

D' is a sulky-frame, composed of the axle *v* and tongue *e'*, the tongue *e'* being composed of two pieces, joined together at the front end thereof and widening out as it approaches the axle, into the top of which it is let. On top of the tongue thus formed, and immediately over the axle *v*, we place the seat E. The two parts of the tongue are braced together at intervals, as desired. The sulky-frame D' is mounted upon the wheels H. On the under surface of the axle *v*, and at its center, are attached the chains or rods *f f*, the other ends of which chains are connected to the rear side and at opposite ends of the short evener F, which evener is at each end thereof attached to the rear end of the inner cross-beams, *a'*, of the sections A of the harrow.

To the front of the evener B, and at a point thereon opposite the center of the line of draft of each of the sections A, we attach the chains or rods *g g*, the outer ends of such chains or rods being brought together and attached to the under side of the tongue *e'* at any point forward of the double-trees desired. By means of these chains *f f* and *g g* the harrow is swung to the sulky-frame D'. At the proper distance between the point of the tongue and the harrow we attach the double-trees *h* and whiffle-trees *h' h'*. At a point on top of the tongue immediately over the longitudinal center of the harrow we place in each of the sections of the tongue the eyebolts *i i*, through which we pass the bent rod *j*. This rod is bent at or near its center, so as to form a loop, *i'*, and on each end of the rod *j* we, by bending the rod *j*, form the loops *j' j'*. In these loops *j' j'* we hang the short chains *k k*, which at their other ends are attached to eyebolts in the bar C. This leaves the long bend or loop *i'* parallel with the tongue when the harrow is in operation. When it is desired to withdraw the harrow from its contact with the ground the direction of this loop *i'* is reversed by the operator and held down by the hook *l* on one side of the tongue and immediately at the foot of the operator.

The beams *a* of the harrow are not rigidly attached to the cross-beams *a'*, but the latter are half rounded out at proper intervals on their lower surfaces, and the beams *a* having at their point of contact with such cross-beams *a'* been shaped to conform to such rounded-out surface of the cross-beams *a'*, and being held in position by the half journal-box *m*, which is fastened to the lower face of the cross-beams *a'*. The cutting away of the cross-beams *a'* and the use of the half journal-box *m* forms a journal in which the beams *a* revolve.

In our invention the use of the whiffletrees on the tongue can be dispensed with and the harrow be drawn directly by the evener B by hitching directly to the evener B at its center.

The driver from his seat has full control over the operation of the harrow. The length of the chains by which the harrow is swung to the frame is just sufficient to permit the harrow-teeth to enter the soil to the proper depth. The chains, being composed of links, can be lengthened or shortened at the will of the operator. When the set-levers D are drawn clear back against the axle and held in position by the pawl *d'* and ratchet-segment C', the teeth of the harrow are held rigidly in a perpendicular position. The set-levers D, when moved forward, partially revolve the beams *a*, to which they are fastened, and this movement is imparted to the other beams *a* by the top brace, *b*, which is attached to each of the beams *a*, as hereinbefore described, and the moving forward, as aforesaid, of the set-lever D slants the harrow-teeth backward in proportion to the forward movement of said lever D, and by means of the ratchet-segment C' and pawl *d'* the teeth are held in any desired position, even to lying almost horizontal with the ground, thus rendering the harrow easily convertible from a straight to a slanting tooth. Should the harrow become clogged by stocks, sod, or stone, either section can be made to at once clean itself by throwing the lever forward without interfering with the operation of the other section.

When it is desired to move the harrow from one field to another, or to carry it along the highway, the harrow is lifted from the ground by means of the bent rod J, as hereinbefore described.

What we claim as new, and desire to secure by Letters Patent of the United States, is—

1. The harrow-sections A A, the evener B, suitably connected to the front of the sections A A, and further connected to the tongue by means of the chains or rods *g g*, the evener F, suitably connected to the rear of each of the sections A A, and further connected by means of the chains or rods *f f* to the axle *v*, by means whereof the said harrow-sections are swung flexibly to the sulky-frame D, substantially as shown, and for the purpose mentioned.

2. The sulky-frame D', harrow-sections A A, top brace, *b*, bar C, and rod J, chains *f f* and *g g*, eveners B and F, all in combination, and arranged substantially as shown, and for the purpose specified.

3. The frame D', wheels H, chains *f f* and *g g*, eveners B and F, sections A A, segment C', and set-levers D, top brace, *d*, bar C, short chains *k k*, rod *j*, and hook *l*, all in combination, substantially as shown, and for the purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

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AARON J. HULL.

Witnesses:
W. S. WINDOM,
A. L. WISNER.