E. VANDAWATER.

Harrow.

No. 208,129. Patented Sept. 17, 1878.

Fig. 1.

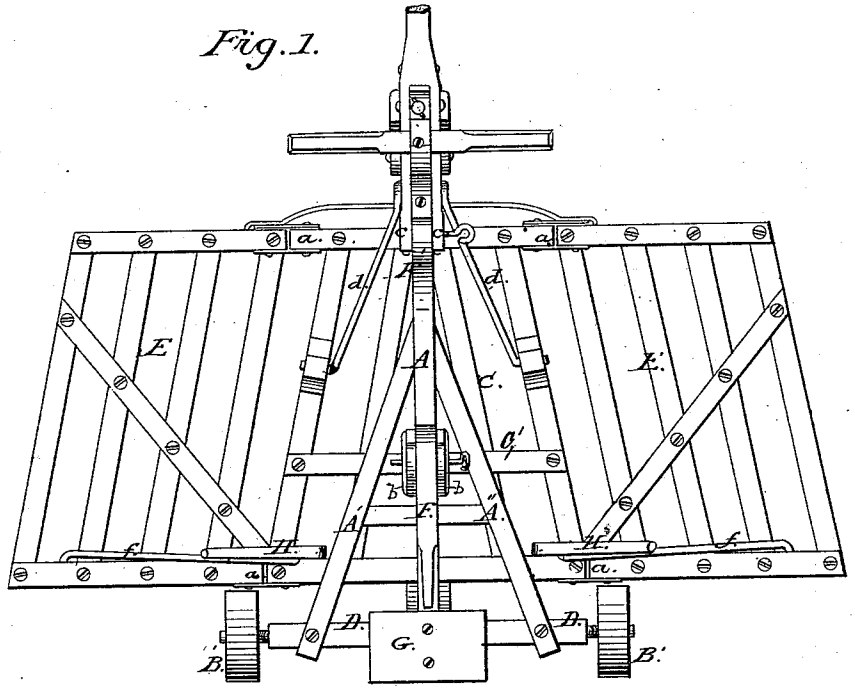


Fig. 2.

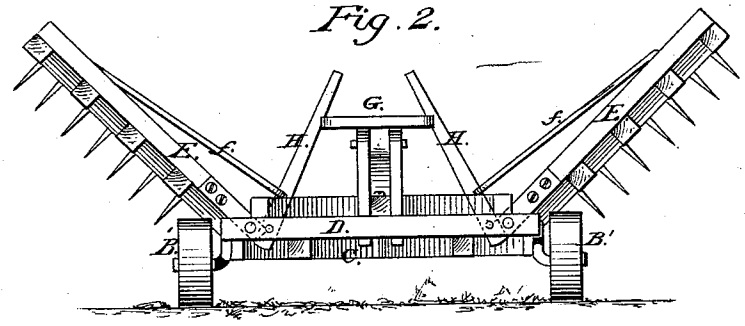
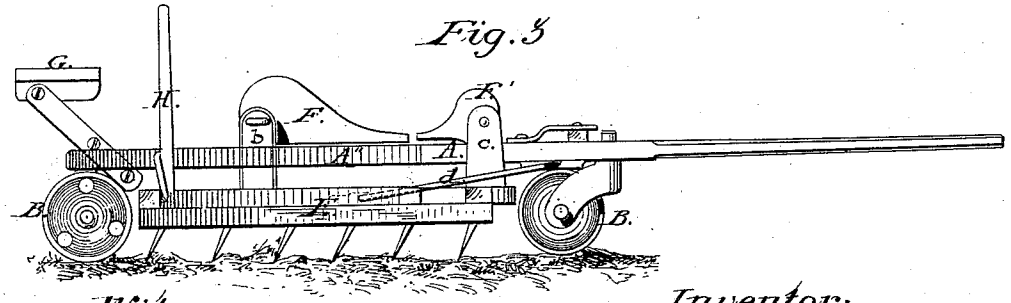


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

ELIAS VANDAWATER, OF MANTENO, ILLINOIS.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **208,129**, dated September 17, 1878; application filed April 8, 1878.

To all whom it may concern:

Be it known that I, ELIAS VANDAWATER, of Manteno, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Harrows; and I do hereby declare that the following is a full, clear, and exact description of my invention, which 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 of reference marked thereon, which form a part of this specification, and in which—

Figure 1 represents a top-plan view of my improved invention, and Fig. 2 a vertical longitudinal section taken on the line *x x* of Fig. 1.

Similar letters of reference occurring on the several figures indicate like parts.

My invention relates to improvements in flexible harrows, and is designed more particularly as an improvement upon the flexible harrow for which Letters Patent of the United States were granted to me under date of August 14, 1877, and numbered 194,196, in which two or more sections are hinged together, capable of being elevated to clear them of clogging matter, and provided with suitable wheels for conveniently transporting the same from one place to another; and the present invention consists of improved means for raising and lowering the sections, as also in the simplification of the details of construction and general arrangement of parts, all as will be hereinafter more fully described, and pointed out in the claims.

Referring to the drawings, A A′ A″ represent the main or carrying frame, secured at the rear to the axle D, and provided at the front with a pivoted wheel, B, said axle D being also provided with suitable wheels B′ B′. C represents the main or central section of the harrow, and E E the outer sections or wings, which are pivoted at *a* to the central section.

At or about the center of the section C is arranged a beam, C′, and to which are mortised the standards *b b*, between which passes the central beam, A, of the carrying-frame. At the upper part of the standards *b b*, and between the same, is pivoted the cam-lever F, as shown.

To the front beam of the section C are also mortised two standards, *c c*, which pass up, one on each side of the central beam, A, of the carrying-frame, and having a small cam-lever, F′, pivoted in the upper part thereof. The central section, C, is also hung or pivoted to the front part of the beam A of the carrying-frame by means of the rods *d d*, arranged as shown in Fig. 1.

To the rear frame of the section C are pivoted levers H H, one on each side of the carrying-frame. To these levers, near the center, are attached one end of the rods *f f*, the opposite ends of said rods being attached to the outer rear part of the wings or sections E, as shown in Fig. 1.

An adjustable pivoted seat, G, is attached to the beam A of the carrying-frame, to enable the operator to properly manipulate and control the movements of the harrow.

The construction of my invention being as described, it will be observed that in the operation of the same the harrows or sections can be raised or lowered at will, so as to harrow deep or shallow, by means of the cam-lever F, which raises or lowers the central section, C, and the levers H H, which raise and lower the outer wings or sections, E.

It will also be observed that the harrows may be raised and held in that position, the central one, C, by the small cam-lever F at the front, and the outer wings or sections, E, by passing or catching the end of one of the levers H under the loop or brace G on the end of the opposite lever H, thereby enabling the easy transportation of the harrows from one place to another when not in use.

By means of my present improvements the harrows can be operated by one man, who occupies the seat G at the rear, and who can readily manipulate the cam-lever F and levers H H, to elevate or lower the harrows while working, or raise either or all of the sections, to get rid of clogging matter without having to change his position or interfering with the management of his team.

Having thus described my invention, what I claim as new and useful is—

1. In a harrow, the combination of the beams A A′ A″, axle D, having wheels B′ B′, and pivoted wheel B, forming the carrying-frame, with the central section, C, having standards *b b* and *c c*, provided with cam-levers F F′ and

rods *d d*, and having the outer wings or sections, E E, pivoted thereto, and operated by the levers H H and rods *f f*, substantially as and for the purpose specified.

2. In a harrow, the combination of the outer wings, E E, and central section, C, constructed as described, with the central beam, A, of the carrying-frame, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

ELIAS VANDAWATER.

Witnesses:
JOS. E. LABRIE, Jr.,
ANATOLE LABRIE.