T. C. HOOKER.

Harrow.

No. { 1,560, / 32,564. }

Patented June 18, 1861.

Fig. 1.

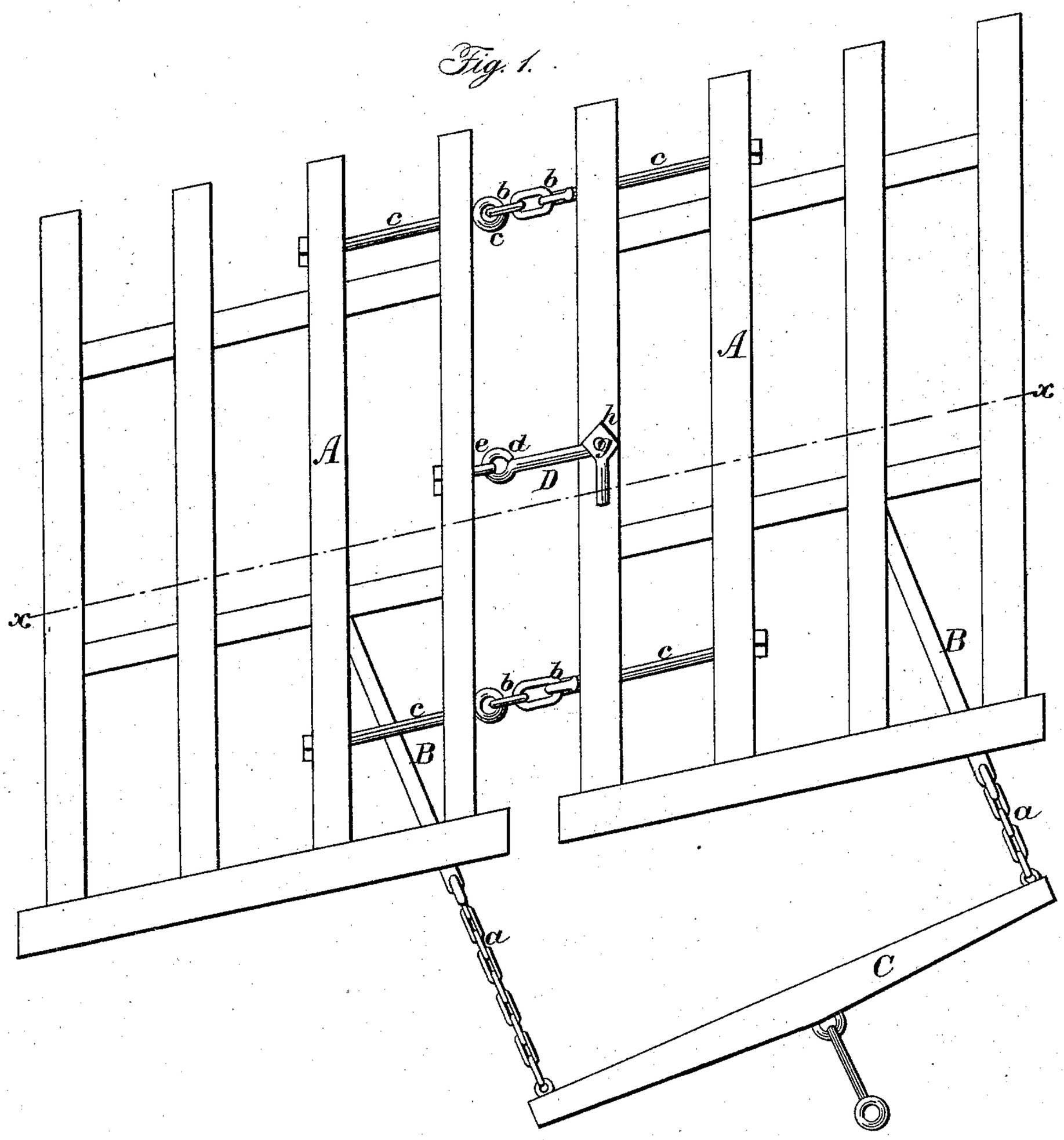
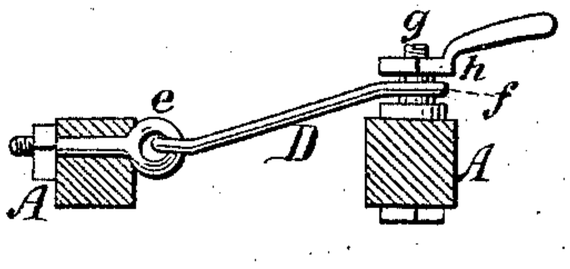


Fig. 2.



Witnesses:

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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

T. C. HOOKER, OF KENDALL, NEW YORK.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **32,564**, dated June 18, 1861.

To all whom it may concern:

Be it known that I, T. C. HOOKER, of Kendall, in the county of Orleans and State of New York, have invented a new and Improved Harrow; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of my invention. Fig. 2 is a cross-section of a portion of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to an improvement in that class of harrows which are formed of two or more parts connected by joints or hinges, and which are generally termed "flexible" harrows.

The object of the within-described invention is to give, by a very simple means, a harrow of the class described a greater degree of flexibility than usual, so that the parts may not only rise and fall to conform to the irregularities of the surface of the ground, but also have a general or universal movement to a certain extent, and the parts of the harrow at the same time kept in a proper relative position with each other at all times.

To enable all those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A A represent two parts which compose the harrow. These parts are each constructed of a rhomboidal wood frame, provided with ordinary teeth. Each frame A has a bar, B, attached angularly to it, and a bar, C, is connected to these bars by chains *a a*, as shown clearly in Fig. 1. The double-tree is attached to this bar C. The two frames A A are connected near their ends by links *b b*, which are fitted in the eyes of bolts *c* in the frames, as shown clearly in Fig. 1. The links *b b*, at each end of the frames, are of equal length. The frames A A, midway between the links *b b*, are connected by what may be termed a "hasp," D. This hasp is simply a metal rod connected at one end by an eye and bolt, *d e*, to one frame A, and connected at its opposite end to the other frame A by an eye, *f*, fitting on an upright bolt, *g*. (See Fig. 2.) The eye F of the rod or hasp D is prevented from slipping off the bolt *g* by means of a nut, *h*; but the bolt *g* is sufficiently long to admit of a certain degree of play of the eye *f* of the hasp on the bolt. This play of the eye on the bolt, in connection with links *b b*, admits of a vertical bodily play of the parts A A, and this is consequently quite different from an ordinary hinge attachment. The rod or hasp D is longer than the links *b b*, which connect the frames near their ends as the bolt *g* passes vertically through the side piece of its frame A, and the eye *f* of the bolt projects over on said side piece. This difference in the length of the hasp and links constitutes a very important feature of the invention. The hasp, in consequence of being longer than the links, will not admit of the frames A A coming in contact. A certain degree of longitudinal play, therefore, is only allowed the frames, but sufficient to aid materially in pulverizing the soil; but while the longitudinal play is checked beyond a certain degree the harrows are allowed a twisting movement from the hasp as a center. In fact, the links and hasp admit of a universal movement of the parts A A, so that they may conform perfectly to the inequalities of the ground over which they pass.

If the longitudinal play of the parts A A were not checked and the parts allowed to come in contact, the harrow would be comparatively quite inefficient, as each part, when meeting an obstacle, would have its movement checked and its fellow would be drawn forward, thereby rendering the draft very unequal and tedious for the draft-animals. The vertical movement of the parts A A would also be materially interfered with.

I do not claim, broadly, the forming of a harrow of two parts connected by joints or hinges; but

I do claim as new and desire to secure by Letters Patent—

Connecting the two parts A A of a harrow together by means of the links *b b* and the rod or hasp D when the latter is of a greater length than the former, and all arranged substantially as and for the purpose set forth.

T. C. HOOKER.

Witnesses:

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