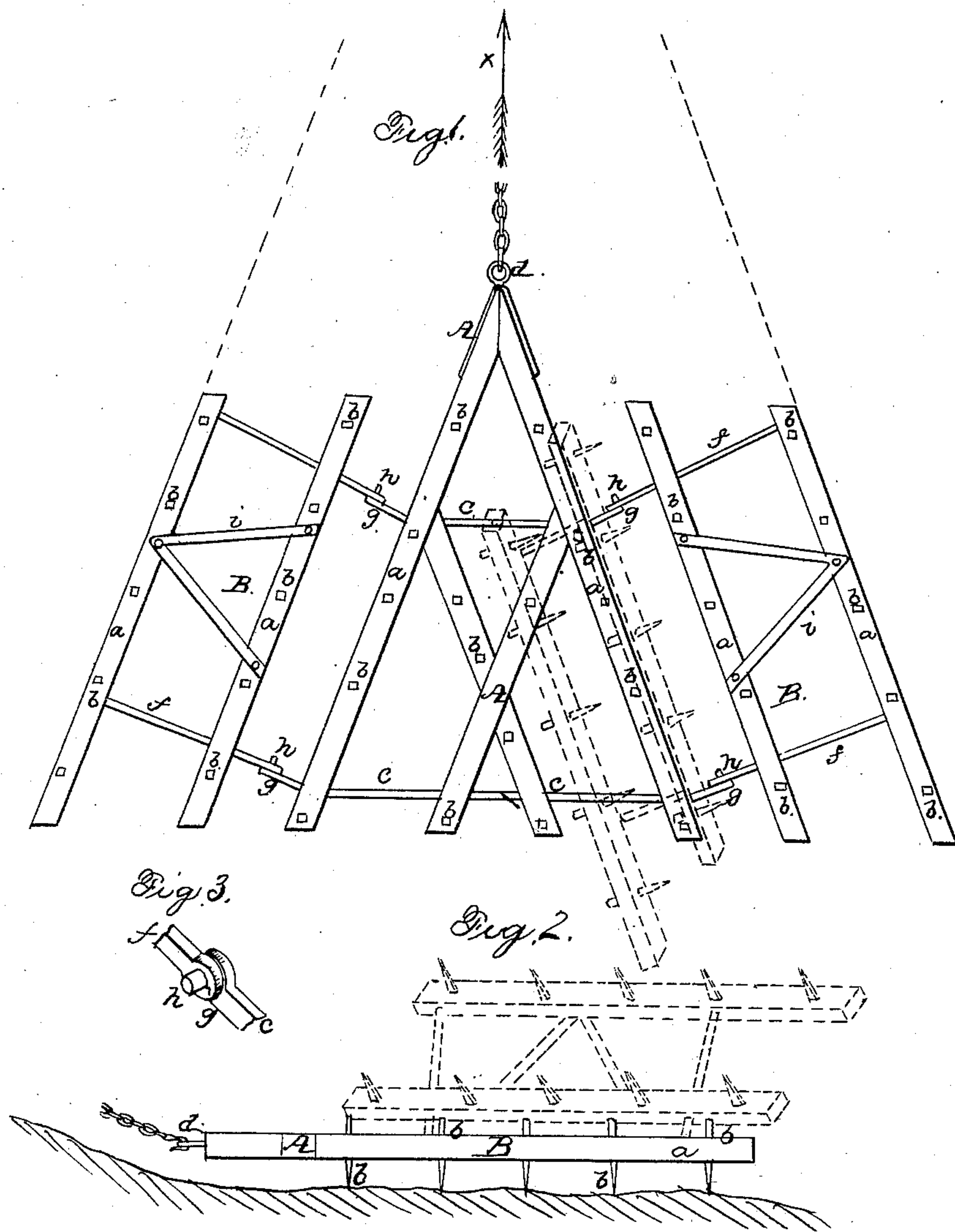


E. BRADLEY

Harrow.

No. 57,851.

Patented Sept. 11, 1866.



WITNESSES:
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UNITED STATES PATENT OFFICE.

EVERAL BRADLEY, OF CLYDE, NEW YORK.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. 57,851, dated September 11, 1866.

To all whom it may concern:

Be it known that I, EVERAL BRADLEY, of Clyde, in the county of Wayne and State of New York, have invented a new and useful Improvement in Harrows; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a plan of my improved harrow; Fig. 2, a side elevation thereof; Fig. 3, perspective view of one of the joints between the wings and center.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists, essentially, in the combination of hinged wings with the ordinary triangular harrow, so arranged that the bars or timbers containing the teeth shall converge forward toward the line of motion, so as to pass easily over a mound or elevation without veering to one side, and so arranged that said wings may be turned up over the central harrow, for the purpose of lessening the draft and increasing the weight of the latter, or removed from said center at pleasure.

As represented in the drawings, A is a central harrow, and B B the wings, these parts being composed of bars or timbers *a a*, with teeth *b b* set therein, as usual. The central harrow, A, is made in the usual triangular form. Its bars or timbers rest on iron rods or bars *c c*, and to its forward end is attached the ordinary clevis *d*.

The wings B B have their bars parallel with the sides of A, in which position they converge toward a center forward of the harrow, as indicated by the red lines in Fig. 1. These bars rest on rods *f f*, which hinge with *c c* by means of eyes *g g*, fitting over bearings *h h*, pointing forward parallel with the bars. The bars forming the wings are retained in position at all times by V-shaped braces *i i*, as clearly shown in Fig. 1.

Thus arranged, it will be seen that I retain the usual triangular form of the central harrow, A, which is the easiest of draft, and the most effective in pulverizing the soil, as the apex of the harrow always points forward in the direction of motion. And it will also be seen that I arrange the wings B B parallel to the sides of the central harrow, thereby pointing forward in the same way. All these

parts, therefore, converge forward toward a central point.

The advantage of this arrangement is that, in passing a mound or elevation of the soil, the harrow does not run around it, or veer to one side, but passes directly over.

A set of square harrows have before been hinged or jointed together so as to form a compound harrow; but in all such cases with which I am acquainted the teeth all run in one direction and at one angle to the line of motion, and in striking an elevation of the soil they veer to one side around it. In such cases, also, the draft is greatly increased, with no corresponding improved result. In lightness of draft, with efficiency of action, my arrangement presents special advantages.

In addition to the above it will be seen that I am enabled to turn the wings up over the central harrow, as shown in red lines, thereby not only lessening the draft at any time, but also weighting the central harrow whenever it is desirable to cut deep; or, if desirable, the wings can be detached from the central harrow by simply slipping the eyes *g* forward from off the bearings *h*, when the central harrow may be used alone.

I am aware of no compound harrow in which the wings on opposite sides can be turned over the central harrow to weight the same as in this manner.

It will be seen that any ordinary triangular harrow may be adapted to receive the wings by simply securing the bearings *h h* to its sides.

I do not claim, broadly, a compound harrow, as I am aware that such is not new; but

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

The combination, with the triangular central harrow, A, of parallel wings B B, converging forward in the direction of motion, the connection of said parts being made by the hinges *g h* in such a manner that the wings can be detached at any time or turned up over the center to weight the same, the whole arranged and operating as and for the purpose herein specified.

EVERAL BRADLEY.

Witnesses:

C. C. GINCKELBAUGH,
ALMON HARPER.