

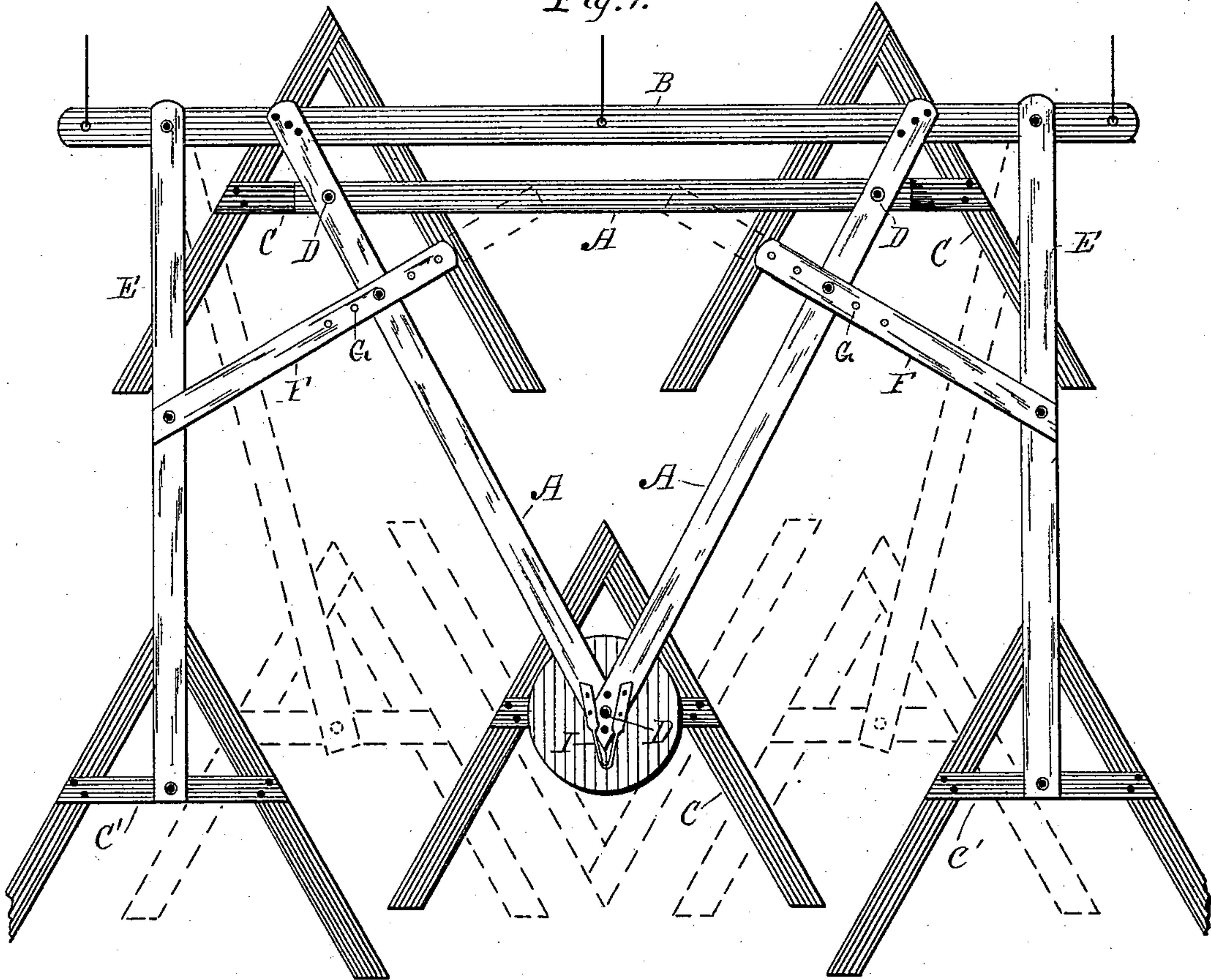
(No Model.)

A. A. WERTS.  
HARROW.

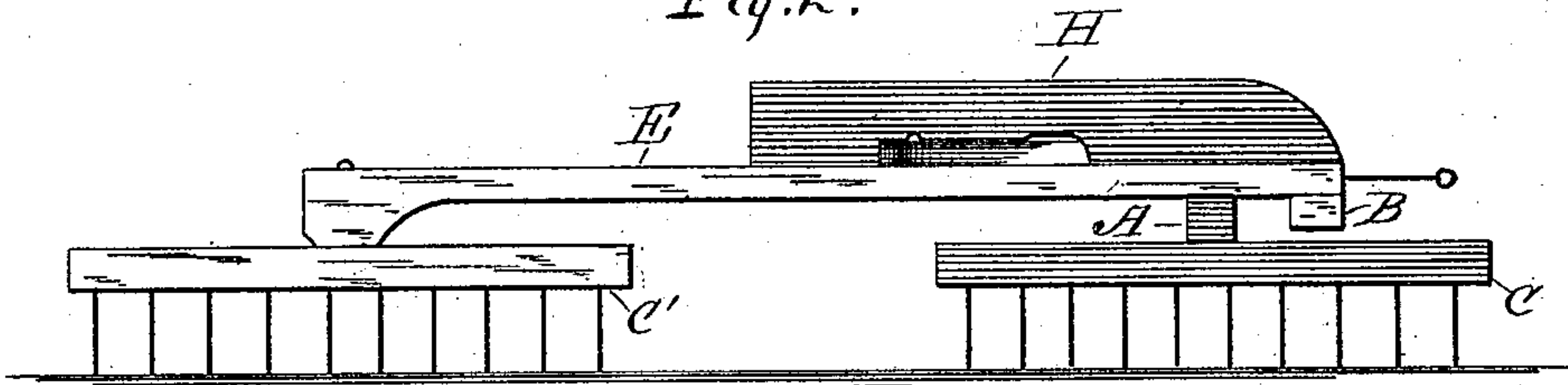
No. 287,353.

Patented Oct. 23, 1883.

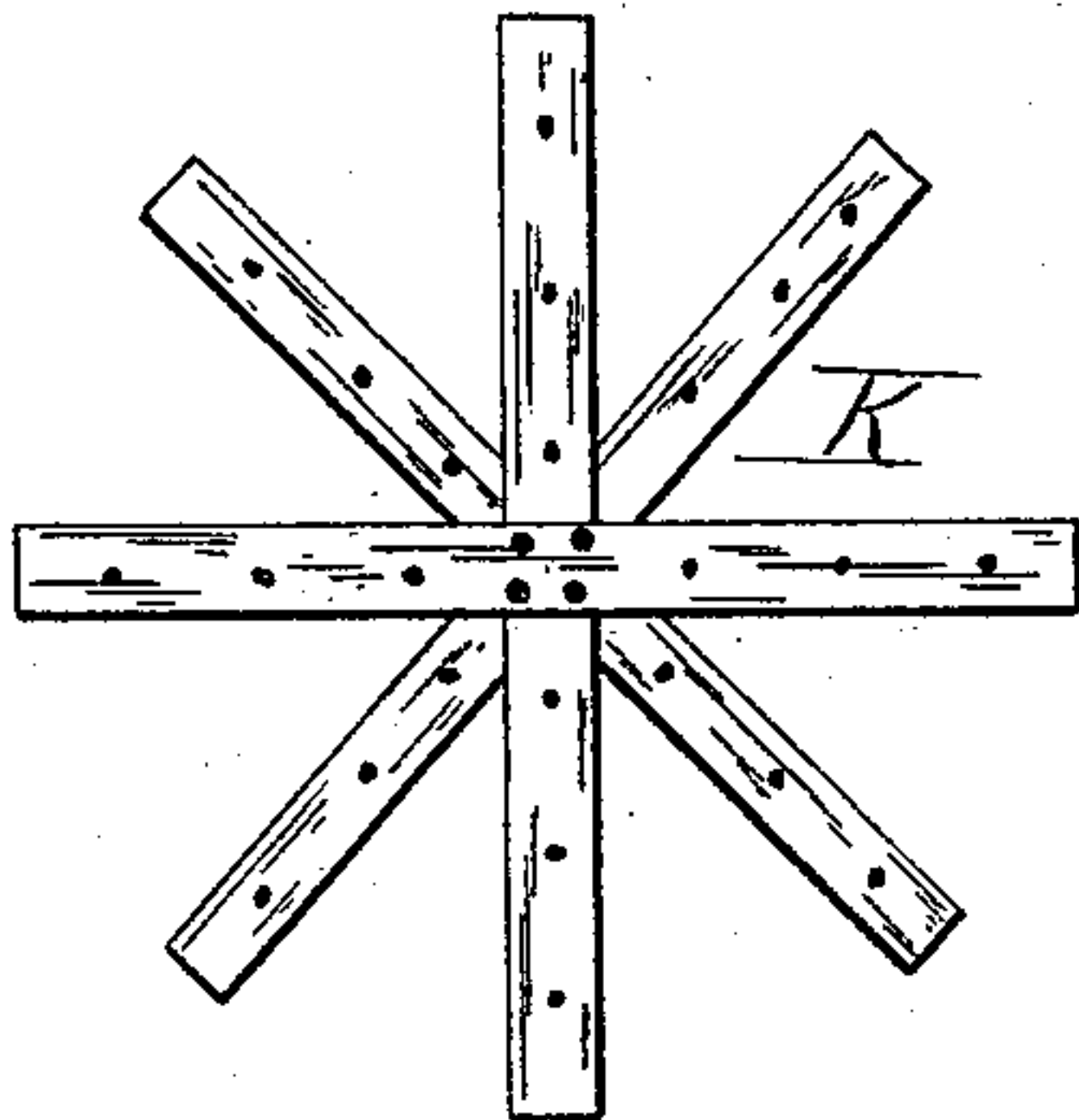
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALEXANDER A. WERTS, OF BIG CREEK, SOUTH CAROLINA.

## HARROW.

SPECIFICATION forming part of Letters Patent No. 287,353, dated October 23, 1883.

Application filed July 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER A. WERTS, of Big Creek, in the county of Edgefield and State of South Carolina, have invented a new and useful Improvement in Harrows, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, forming part of this specification.

This invention relates to adjustable and revolving harrows; and the invention consists of the novel construction hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of my improved harrow. Fig. 2 is a side elevation of the same, and Fig. 3 is a modification.

A is a triangular frame, and B is a draft-bar bolted to two corners of the same. Under the three corners of the frame A are arranged three A-shaped harrows, C, which are pivoted thereto by long bolts D, which also serve to secure said frame together. Near the ends of the draft-bar B are pivoted two rearwardly-extending bars, E, which are connected to the triangular frame A by adjustable bars F, which have a series of perforations, G, through any one of which a bolt is to be inserted, to hold the bars E nearer to or farther from the said frame. At the rear ends of the bars E are pivoted A-shaped harrows C'. The harrows C C' are pivoted at their cross-bars, which are located in front of the center, in order that the draft shall cause the point or apex to go foremost, except when oscillated by obstacles in the soil. The harrows will turn on their pivot-bolts, to pass around an obstruction, and then return to their normal position. The dotted lines in Fig. 1 show the position of the rearmost harrows when folded

for convenient transportation. When so folded the entire device is to be turned upside down and supported on the runners H, (shown in Fig. 2.)

As the bars E and F are made removable, they, with the harrows C', may be detached, leaving a light two-horse harrow having the three harrows C. In this case the draft-bar B, which is intended to be used when three horses are hitched abreast, is to be detached also, and by attaching a double-tree to the loop I at the rear end of the triangular frame A and drawing the frame thereby the harrows C will turn on their pivot-bolts, to bring their apexes toward the team.

To use the light two-horse harrow as a cultivator, it is only necessary to detach the harrow C under the loop I, and support the forward end of the frame A on a pair of wheels, and an axle which is to be removably secured to the under side of said frame. The wheels and two harrows thus left will stride the drill or row being cultivated.

Instead of using the A-shaped harrow, I may use sometimes a star-shaped harrow, K, as shown in Fig. 3.

What I claim is—

The combination of the triangular frame A, draft-bar B, bars E, and adjustable bars F, and the pivoted A-shaped harrows C C', substantially as shown and described, the said parts being made detachable, as and for the purpose specified.

ALEXANDER A. WERTS.

Witnesses:

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