

(No Model.)

2 Sheets—Sheet 1.

E. W. ALLEN.
HARROW AND CULTIVATOR.

No. 303,102.

Patented Aug. 5, 1884.

Fig-1-

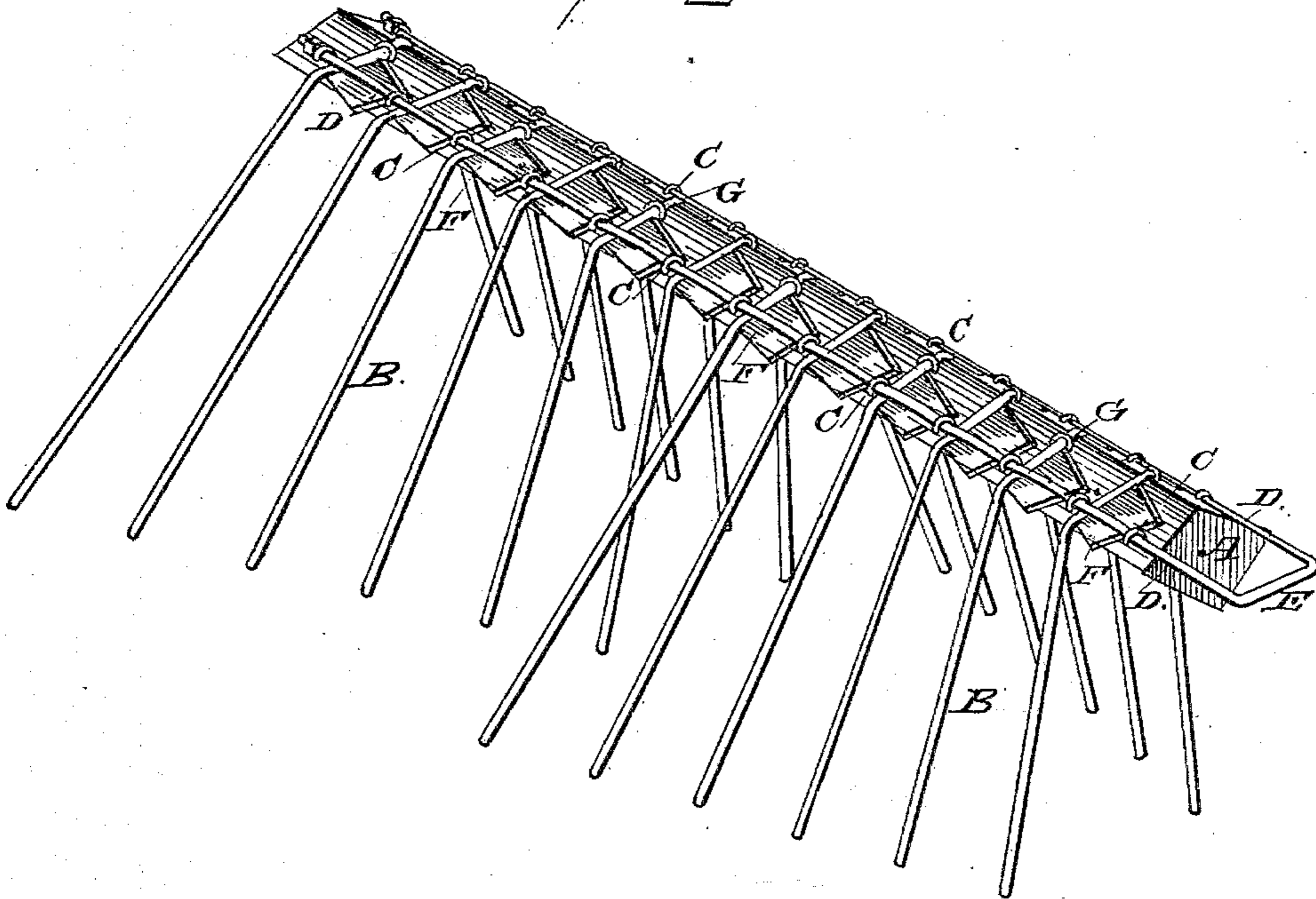
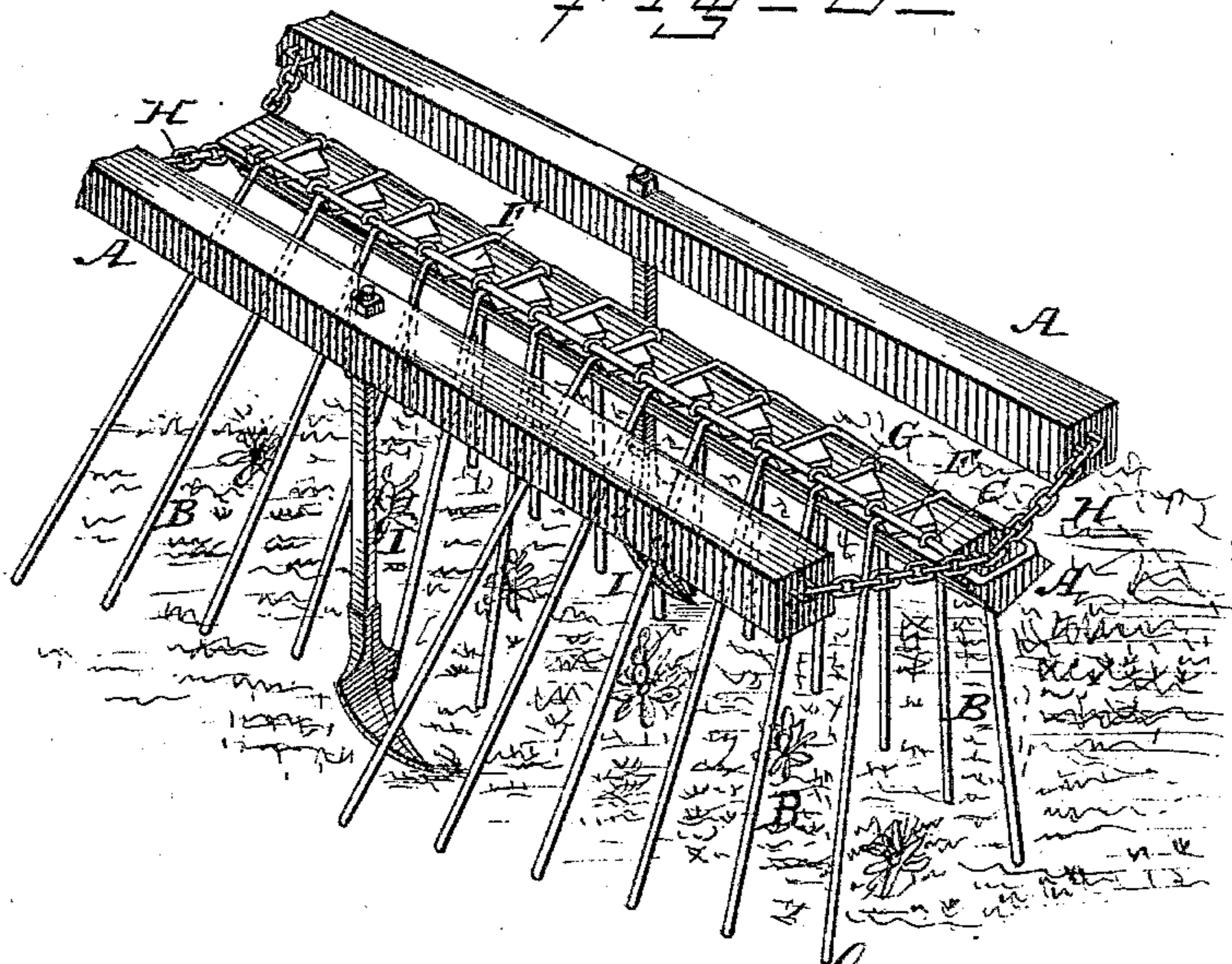


Fig-2-



WITNESSES:

Med. S. Dietrich
W. J. Fecher

Erasmus W. Allen
INVENTOR.

By *Louis Bagger & Co.*
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

E. W. ALLEN.
HARROW AND CULTIVATOR.

No. 303,102.

Patented Aug. 5, 1884.

Fig. 3—

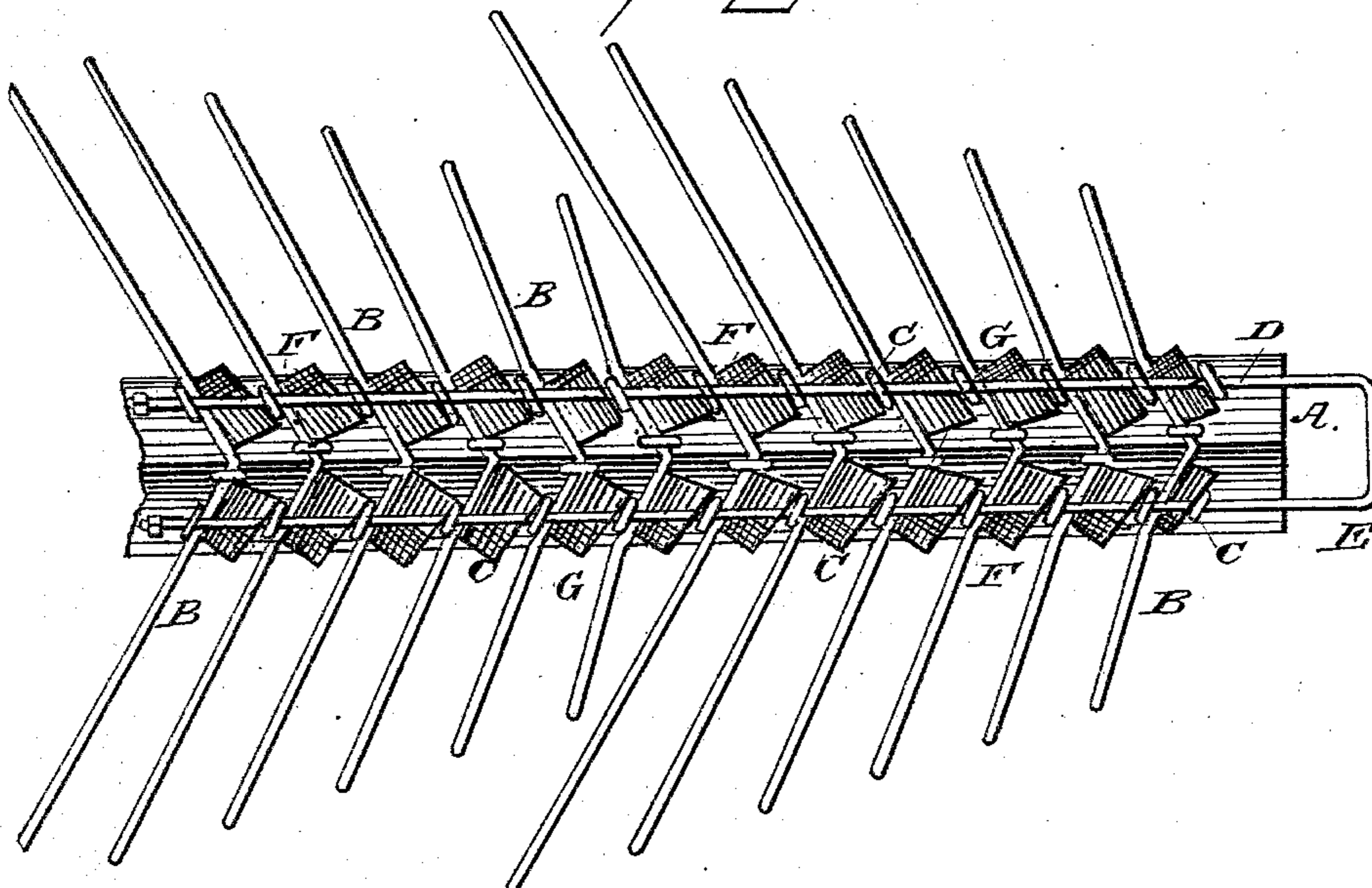
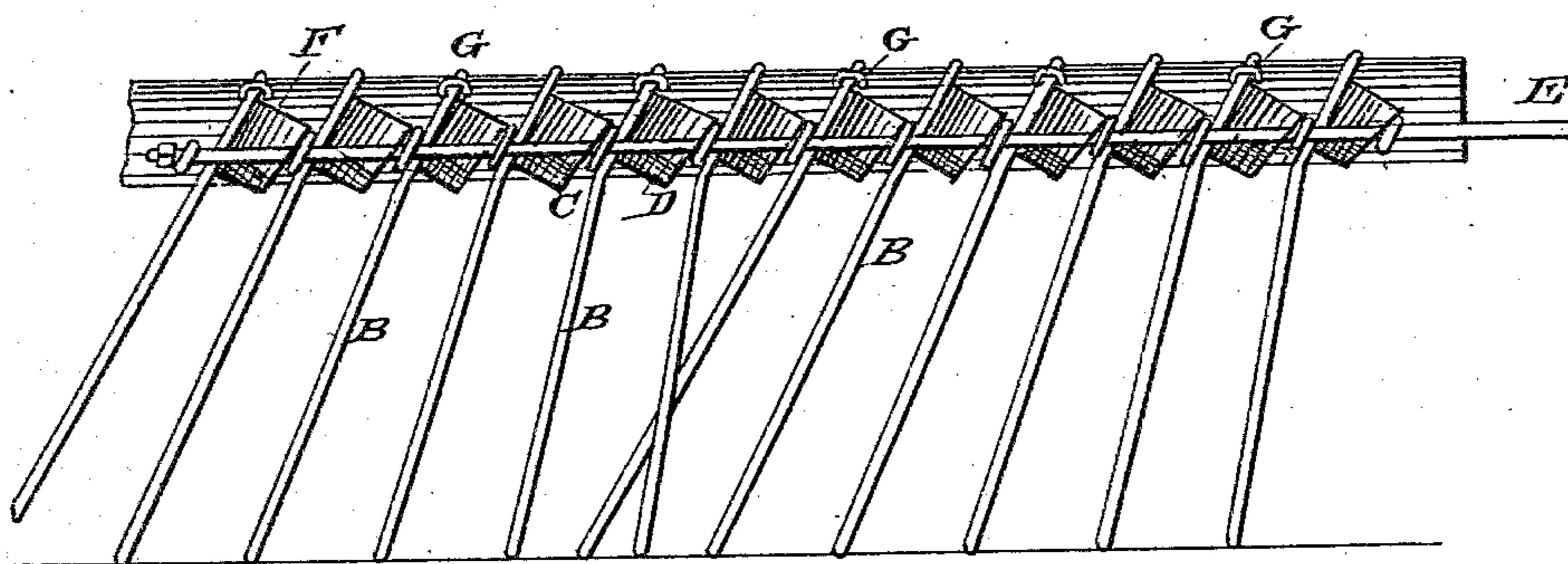


Fig. 4—



WITNESSES:

Fred. G. Dietrich
J. H. Fischer

Erasmus W. Allen
INVENTOR.

By *Louis Bagger & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ERASMUS W. ALLEN, OF SENECA, KANSAS.

HARROW AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 303,102, dated August 5, 1884.

Application filed March 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, ERASMUS W. ALLEN, a citizen of the United States, and a resident of Seneca, in the county of Nehama and State of Kansas, have invented certain new and useful Improvements in Harrows and Cultivators; and I do hereby declare that the following is a full, clear, and exact description of the 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, which form a part of this specification, and in which—

Figure 1 is a perspective view of a beam of my improved harrow. Fig. 2 is a similar view of the same, showing it used as a fender for cultivators, the cultivator-shovels and a portion of the frame of the cultivator being shown. Fig. 3 is a top view of a portion of the beam and the teeth, and Fig. 4 is a side view of the same.

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

My invention relates to an improvement in harrows, which also may be used as a fender for cultivators; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates a beam, which may be square or triangular in cross-section, one edge facing upward in both cases; and B indicates the teeth, which are formed in V shape, straddling the upturned edge of the beam. These teeth may be made of any desired material, but rod iron or steel bent into the desired shape is preferable. The apices of the teeth rest upon the upturned edge of the beam, and the divergent legs of the teeth bear upon the sides of the beam, having, preferably, an inclination toward the rear end of the beam, and the sides of the beam are provided with a number of staples, C, one staple between each pair of adjoining teeth, through which staples pass two rods, D, running parallel with the edge of the beam and passing over the upper portions of the teeth, holding them down upon the sides of the beam. These rods are preferably formed by one rod bent at its middle, forming an eye,

E, at the forward end of the beam, by which the beam is attached to the draft, the rearwardly-extending ends forming the rods. Wedges F are inserted between the staples and the teeth, serving to adjust the inclination of the teeth and holding the teeth in place. The apices of the teeth are held in place by means of staples G, secured in the beam on alternate sides of the upper edge near the same, through which staples the teeth pass. When the teeth are used in a harrow or pulverizer, one or more beams may be attached with their forward ends to the draft, and the rear ends of the beams may be provided with chains H or handles, by means of which the beams may be raised to clear them of accumulated rubbish, which chains may be attached to suitable handles or levers if a wheel-frame is used. When the teeth are used as fenders in a cultivator, they are of a sufficient height to clear the plants, which they straddle, the shovels, which in Fig. 2 of the drawings are indicated at I, running upon both sides of the row, and the teeth are of different lengths and of different width from each other at their lower ends, as shown in the drawings, where it will be seen that the foremost teeth are shorter and diverge least at their lower end, the length and angle of divergence increasing toward the rear for a number of teeth—say four or five—whereupon the teeth again are shorter and closer to each other at their lower ends, at the points where the shovels are, when they again diverge, the foremost teeth thus moving rubbish and clods and similar obstructions away from the shovels, preventing them from throwing the obstructions upon the plants; and the rearmost teeth likewise throw all obstructions toward the middle of the row after they have been broken up by the shovels, thus fending all obstructions off from the plants, and at the same time pulverizing the soil.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of a beam having its edge facing upward, and provided with an alternating row of staples upon its sides, near its upper edge, and with a row of staples upon its sides corresponding in number to the number

of teeth, as described, longitudinal rods passing through the staples upon the sides of the beam, V-shaped teeth passing through the staples near the upper edge, resting with the upper ends of their divergent legs upon the sides of the beam, and passing under the longitudinal rods, and wedges fitting under the rods between the staples and the teeth upon the sides of the beam, as and for the purpose shown and set forth.

2. The combination of cultivator-shovels running upon both sides of the row of plants, with the described harrow adapted to operate as a fender, and having a number of divergent teeth, the foremost teeth running before the

shovels being of increasing length and gradually diverging more, the teeth at the shovels again decreasing in length and being closer to each other at their lower ends, and the teeth behind the shovels again increasing in length and gradually diverging more at their ends, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ERASMUS W. ALLEN.

Witnesses:

C. C. K. SCOVILLE,
E. A. KIBBE.