

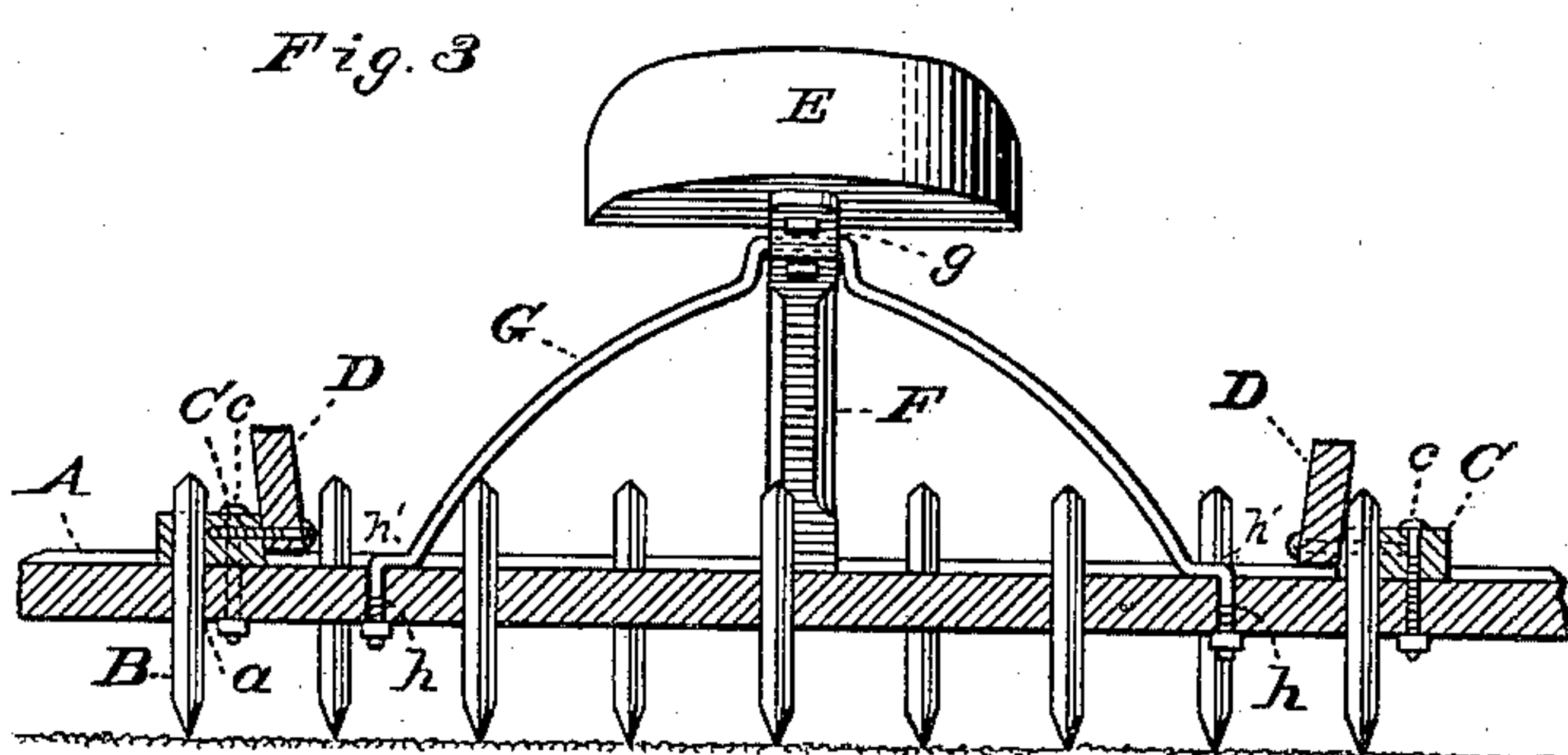
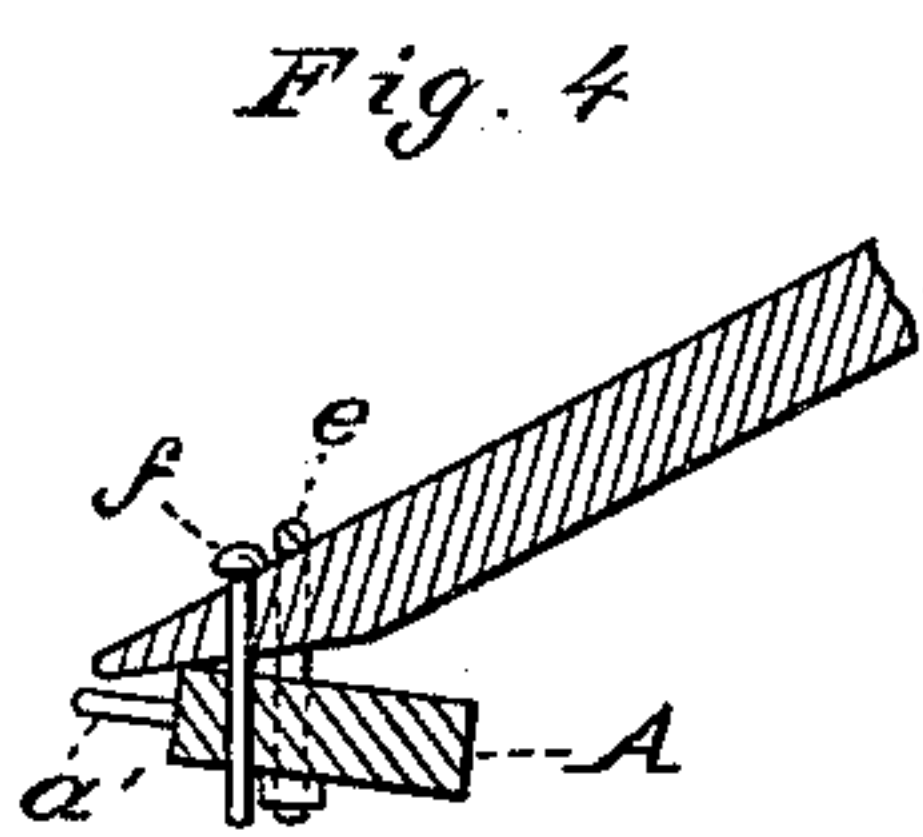
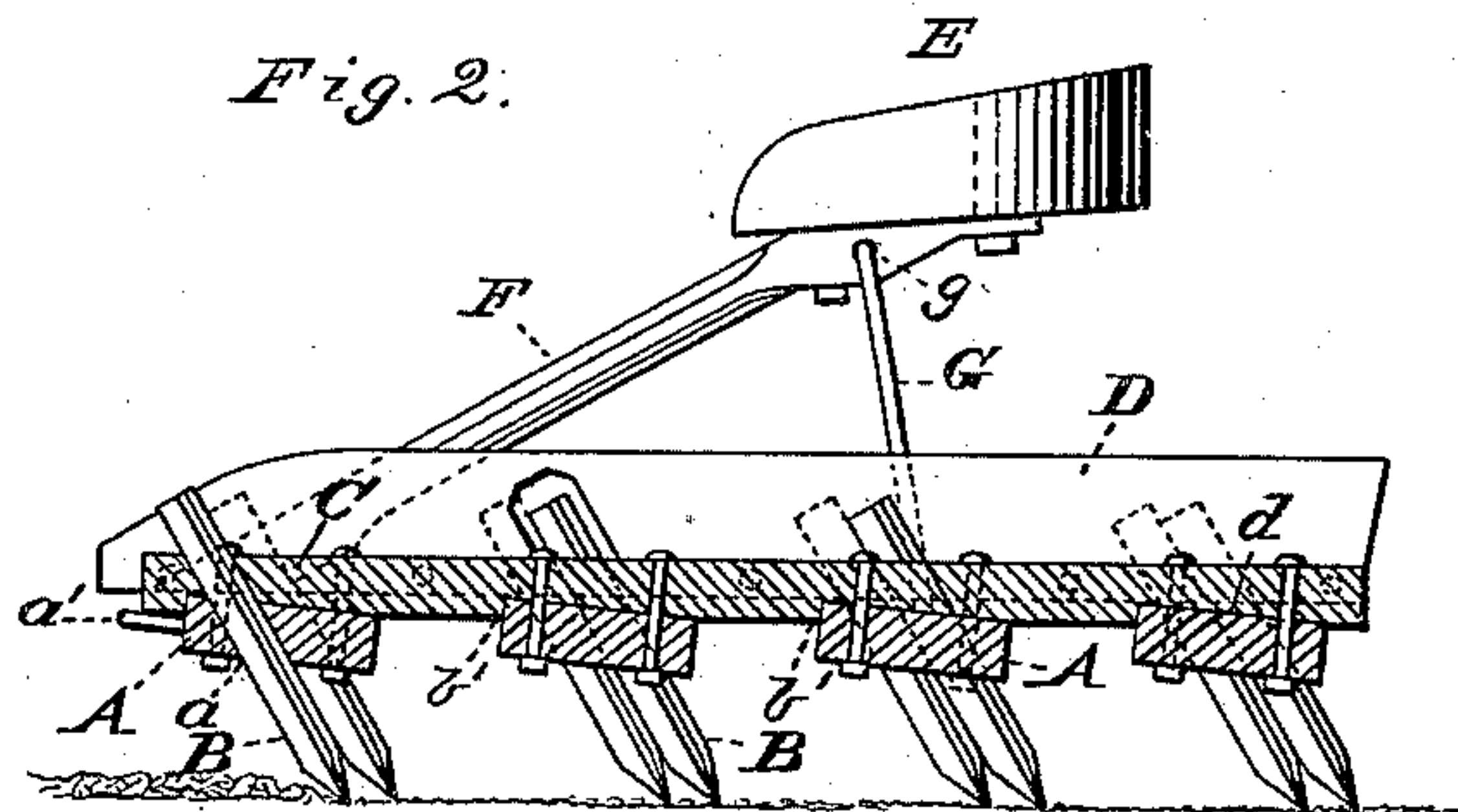
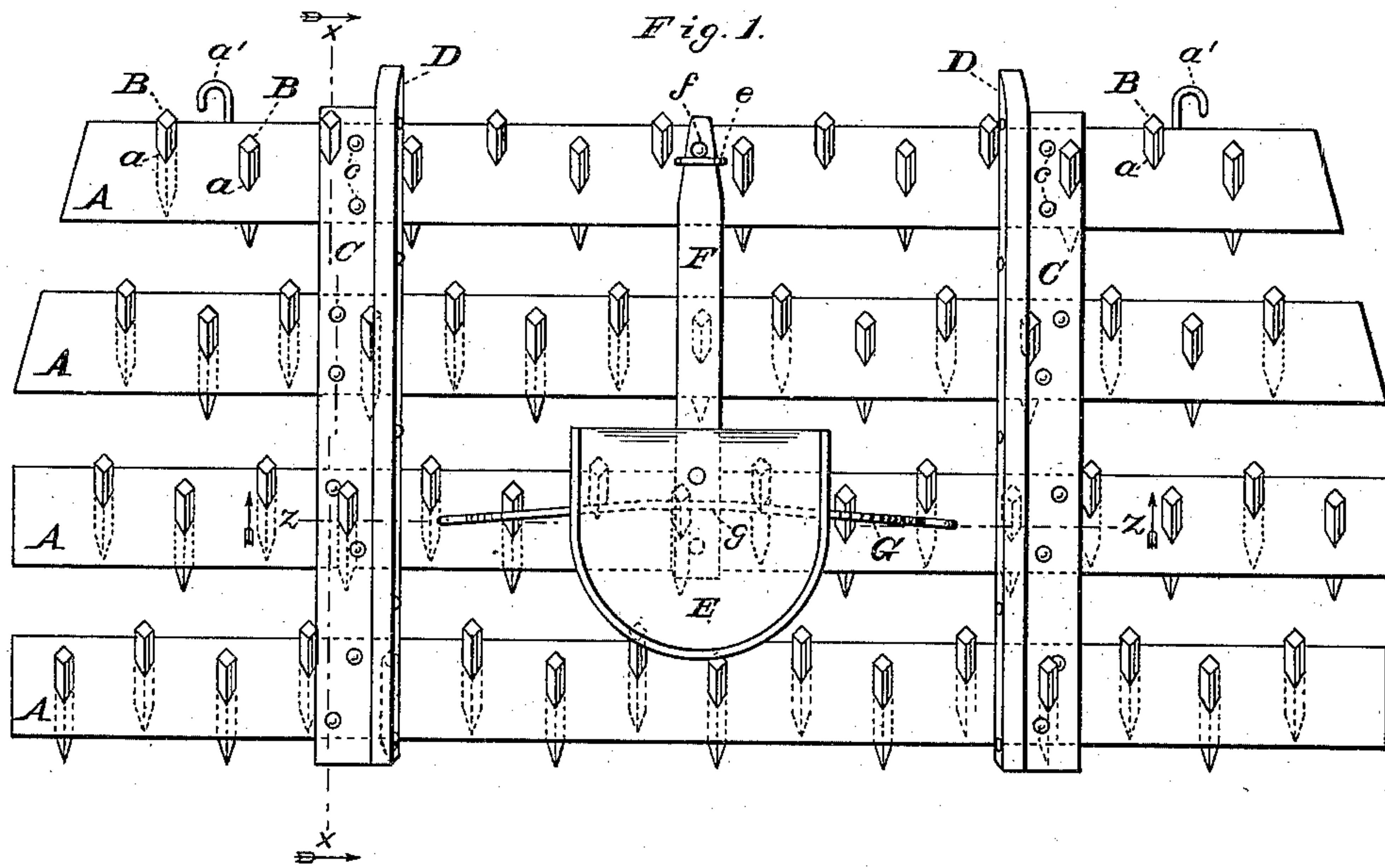
(No Model.)

P. C. KING

HARROW.

No. 383,305.

Patented May 22, 1888.



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UNITED STATES PATENT OFFICE.

PETER C. KING, OF SYCAMORE, OHIO.

HARROW.

SPECIFICATION forming part of Letters Patent No. 383,305, dated May 22, 1888.

Application filed November 12, 1887. Serial No. 255,008. (No model.)

To all whom it may concern:

Be it known that I, PETER C. KING, a citizen of the United States, and a resident of Sycamore, in the county of Wyandot and State of Ohio, have invented certain new and useful Improvements in Harrows; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of this invention, and is a top view. Fig. 2 is a cross-section taken where the broken line x is marked on Fig. 1. Fig. 3 is a vertical section taken where the broken line z is marked on Fig. 1. Fig. 4 is a detail.

The invention relates to improvements in harrows; and it consists in the construction and novel combination of parts, hereinafter described, illustrated in the drawings, and pointed out in the claim.

Referring by letter to the drawings, A represents the parallel beams of a harrow, usually four in number, having an open space between them of about four inches.

The beams A are designed to carry the teeth B, and for that purpose are provided with openings a , placed in two series parallel with the edges of the beams, the members of each series being equidistant, and the members of one series alternating with the other. The openings a incline downward and rearward through the beams. The beams A have a slight downward pitch toward the rear of the harrow. The teeth B are preferably made diamond-shaped, and are tightly fitted in the openings a , which gives them the rearward pitch necessary for the purpose hereinafter specified. The teeth B are made sufficiently long to project above and below the beams A, the upper projection, b , allowing the teeth to be driven down as the lower end or point, b' , becomes worn. Hooks or staples a' are fastened in the usual manner to the outer edge of the front beam for the reception of the draft-chain.

C are cross-pieces rigidly bolted, as shown

at c , to the beams A at points equidistant from their ends. The cross-pieces C have beveled portions d on their lower face corresponding to the pitch of the beams, the shoulders b' abutting against the front edges of the beams. This construction of the cross-pieces relieves the bolts c from considerable strain. Runners D, having the rounded front ends, are bolted to the inner edges of the cross-pieces C. The runners project above the level of the upper projecting portion of the teeth, and are designed for the convenience of drawing the harrow from one field to another, it being only necessary to reverse or turn the harrow upside down and draw the harrow in the manner of a sled.

In heavy ground it is often necessary to weight the harrow, and as the weight of the driver may be sufficient the removable seat E is provided, secured to the downward and forward projecting standard F. The outer end of the standard F is inserted in an iron clip, e , passing through the front beam near its edge. A pin, f is inserted through an opening in the standard and beam forward of the clip e , which prevents the standard from being accidentally detached.

Below the seat E a downwardly-curved spring-bar, G, is provided, the central portion of which passes through the transverse opening in the standard F. The outer ends of the curved spring-bar are provided with the shoulder portion h' , turned vertically downward, and enter sockets h in one of the beams. The seat being removable, allows the harrow to be reversed, for the purpose before described.

The beams A and teeth B, as before stated, are placed on a bevel or incline, and by being so arranged the ground is completely broken, pulverized, and cultivated.

A harrow constructed as above described is very durable, cheap, and easily transported from field to field.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

In a harrow, the combination, with the beams having the runners secured thereon, of the seat having the end of its standard inserted in a clip, e , and secured by a pin, f , passing

through an opening in the standard and beam forward of the clip, and the downwardly-curved spring-bar G, engaging centrally with the standard below the seat and having its
5 ends provided with the shoulder portion *h'*, and turned centrally downward to enter the sockets *h* in the beam, the seat thus being rendered removable, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

PETER C. KING.

Witnesses:

GEORGE HAYMAN,
A. E. BENNINGTON.