

(No Model.)

J. MILLER.

COMBINED HARROW AND CRUSHER.

No. 272,074.

Patented Feb. 13, 1883.

Fig. 1.

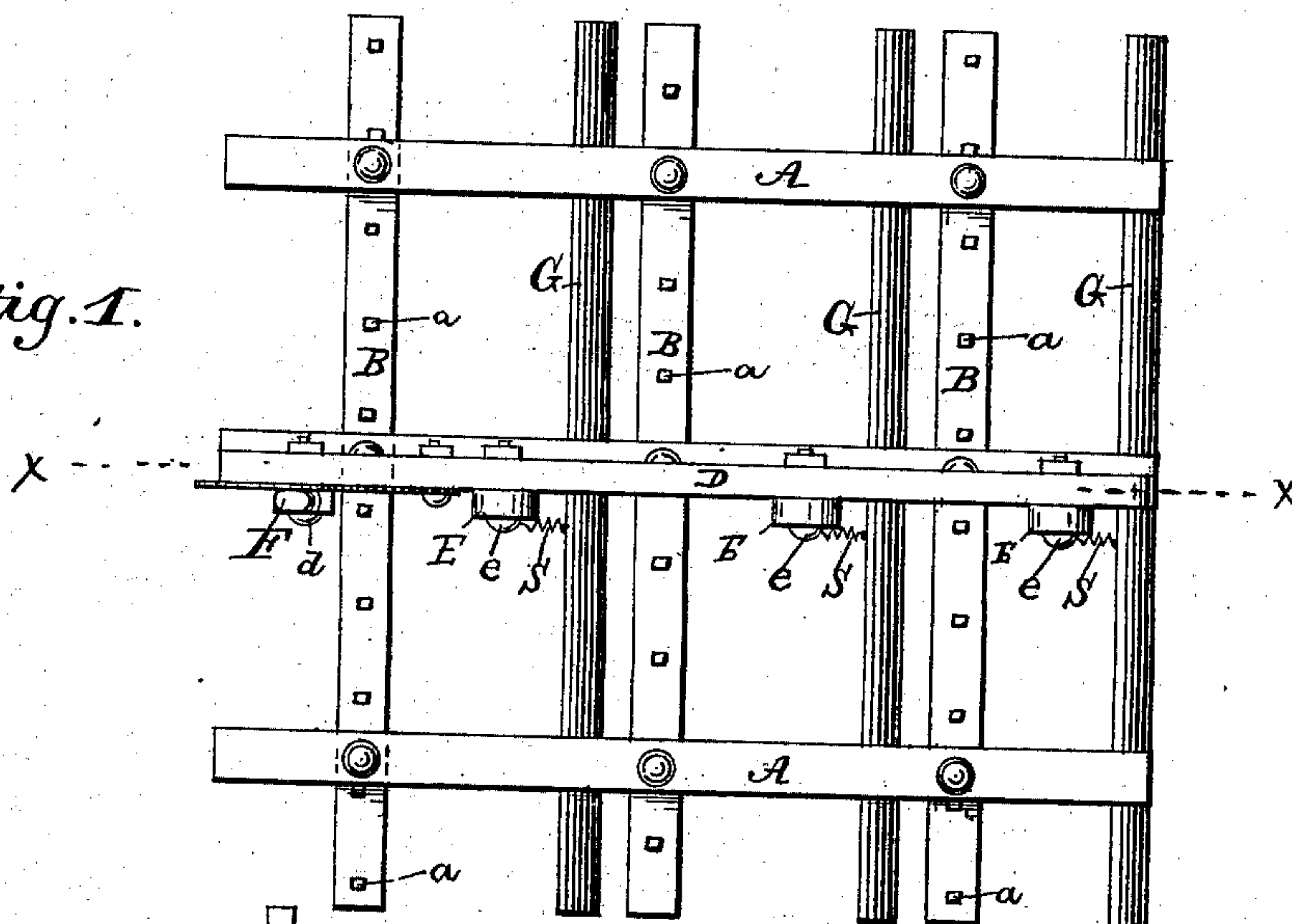


Fig. 2.

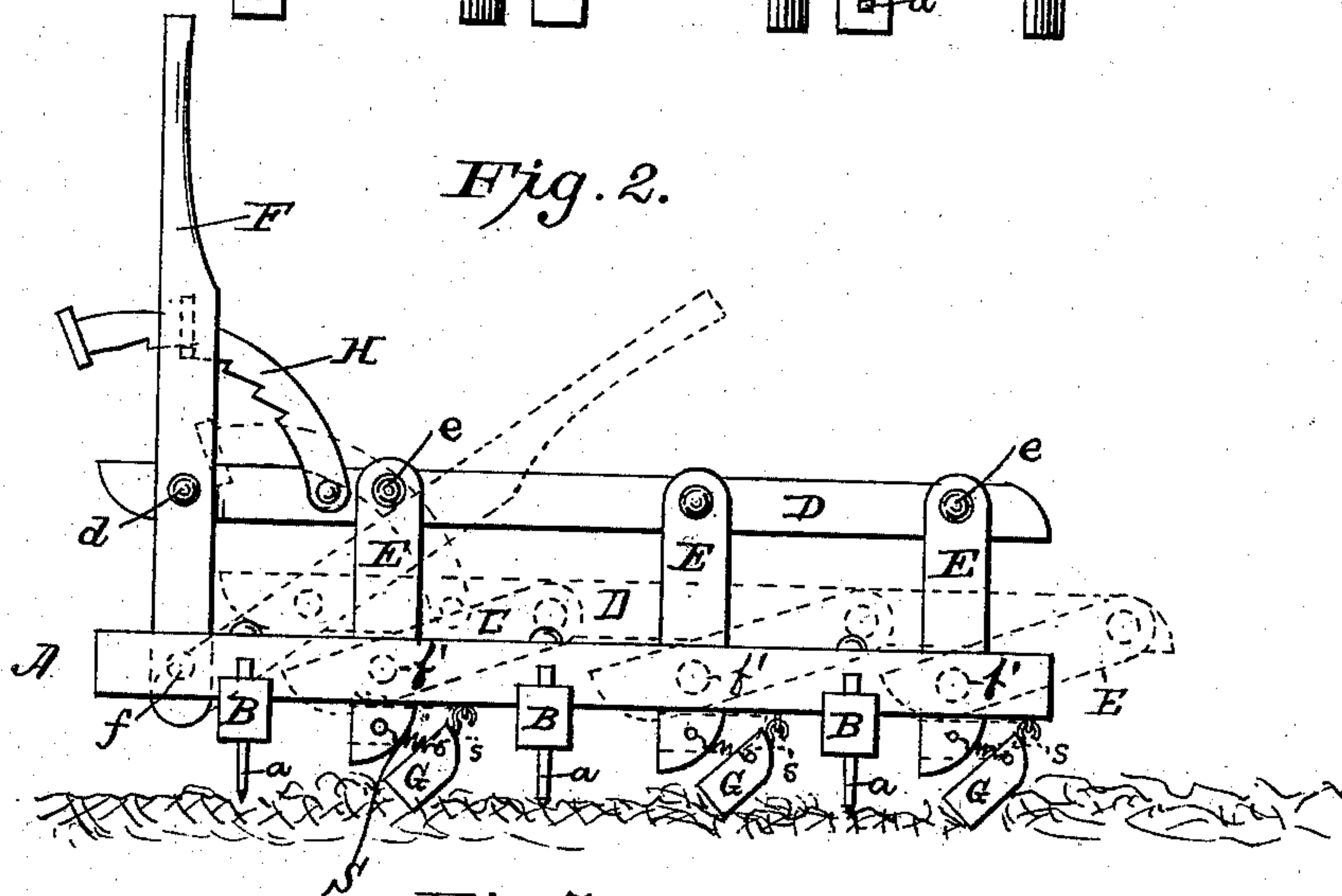
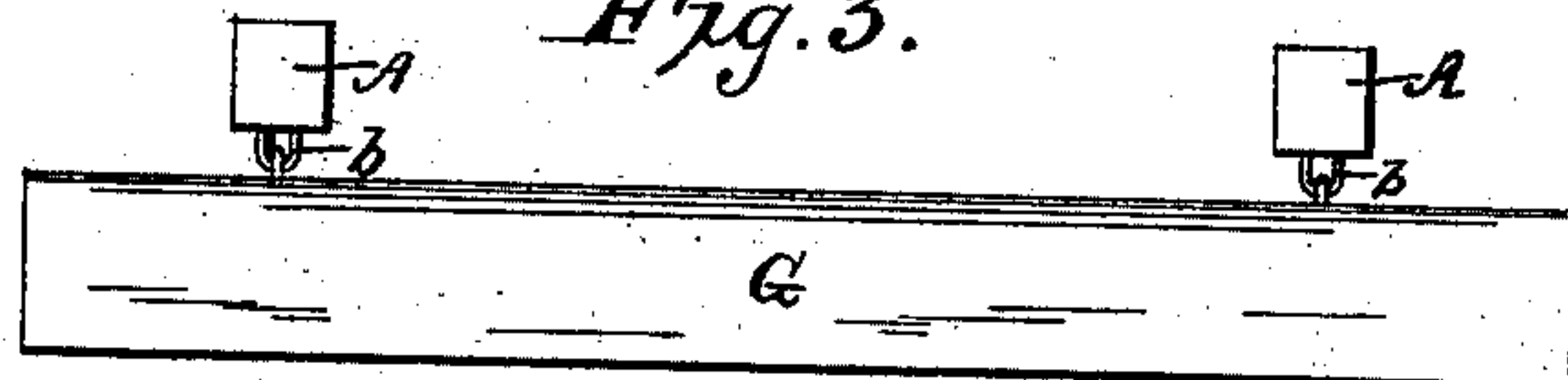


Fig. 3.



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# UNITED STATES PATENT OFFICE.

JESSE MILLER, OF SOUTHPORT, INDIANA.

## COMBINED HARROW AND CRUSHER.

SPECIFICATION forming part of Letters Patent No. 272,074, dated February 13, 1883.

Application filed December 6, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE MILLER, a citizen of the United States, residing at Southport, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in a Combined Harrow and Crusher, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to harrows; and it consists in certain details of construction and arrangement of the several parts, as will be hereinafter more fully set forth in the specification and pointed out in the accompanying drawings, in which—

Figure 1 is a plan view of my device; Fig. 2, a side view, and Fig. 3 an elevation of one of the crushers.

Referring more particularly to the drawings, it will be seen that the harrow-frame consists of a series of transverse bars, B, placed at right angles to the longitudinal bars A and secured together by suitable bolts. The lower bars, B, are the teeth-carrying bars, and are provided with suitable teeth, *a*. Attached to the bars A by a hook and staple are three crushers, G, each being a solid piece of hard wood in length about equal to the distance between the two outside rows or lines of harrow-teeth. The upper front edge of each crusher G is beveled off, as shown in Fig. 2, and on this beveled edge are placed hooks which enter the staples or eyes *b*, and by this means each crusher is hung in front of and parallel with a harrow-tooth bar. The distance of the crusher in front of the teeth can be regulated according to the ground to be harrowed by having one or more eyes *b* on the bars A. Three crusher-regulators, E, are pivotally secured to a movable bar, D, and to the central bar, A, by bolts or pins *f'*, for regulating the distance the crushers can be forced back by the earth or clods. Each crusher G is secured to the regulator in rear by a spring, *s*.

The regulators are placed about midway between the tooth-bars. A lever, F, having a suitable pawl to catch in the ratchet-bar H, is pivotally secured to the central bar, A, by the bolt or pin *f* and to the movable bar D by the bolt or pin *d*. This lever actuates the bar D and the regulators E, secured thereto in a vertical plane. Suppose the regulators E to be in a vertical position, as shown in full lines, Fig. 2, and held in such position by means of the pawl and ratchet just described. The crushers G can only move back a slight distance, and therefore act to crush and pulverize, as the small clods must come in close contact with them. If, however, the lever is thrown forward, as shown in dotted lines, Fig. 2, then the crushers can be thrown back against the bars A. The springs *s* prevent the regulators from being thrown forward against the bars B in front. The lever F can be adjusted to any desired angle, and the crushers therefore regulated to any kind of ground.

What I claim is—

1. In a harrow, the combination of the bars A, tooth-bars B, and crushers G, the latter pivotally secured to the bars A, and secured to regulators E by spring-connections *s*, substantially as shown and described, and for the purpose set forth.

2. In a harrow, the combination of the regulators E and crushers G, pivotally secured to the harrow-frame, as shown, with the bar D, lever F, provided with a suitable pawl, and the ratchet H, the lever being pivotally secured to the harrow-frame and bar D, substantially as shown and described, and for the purpose set forth.

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

JESSE MILLER.

Witnesses:

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