

(No Model.)

P. C. LOVELAND.
HARROW.

No. 400,861.

Patented Apr. 2, 1889.

Fig. 1.

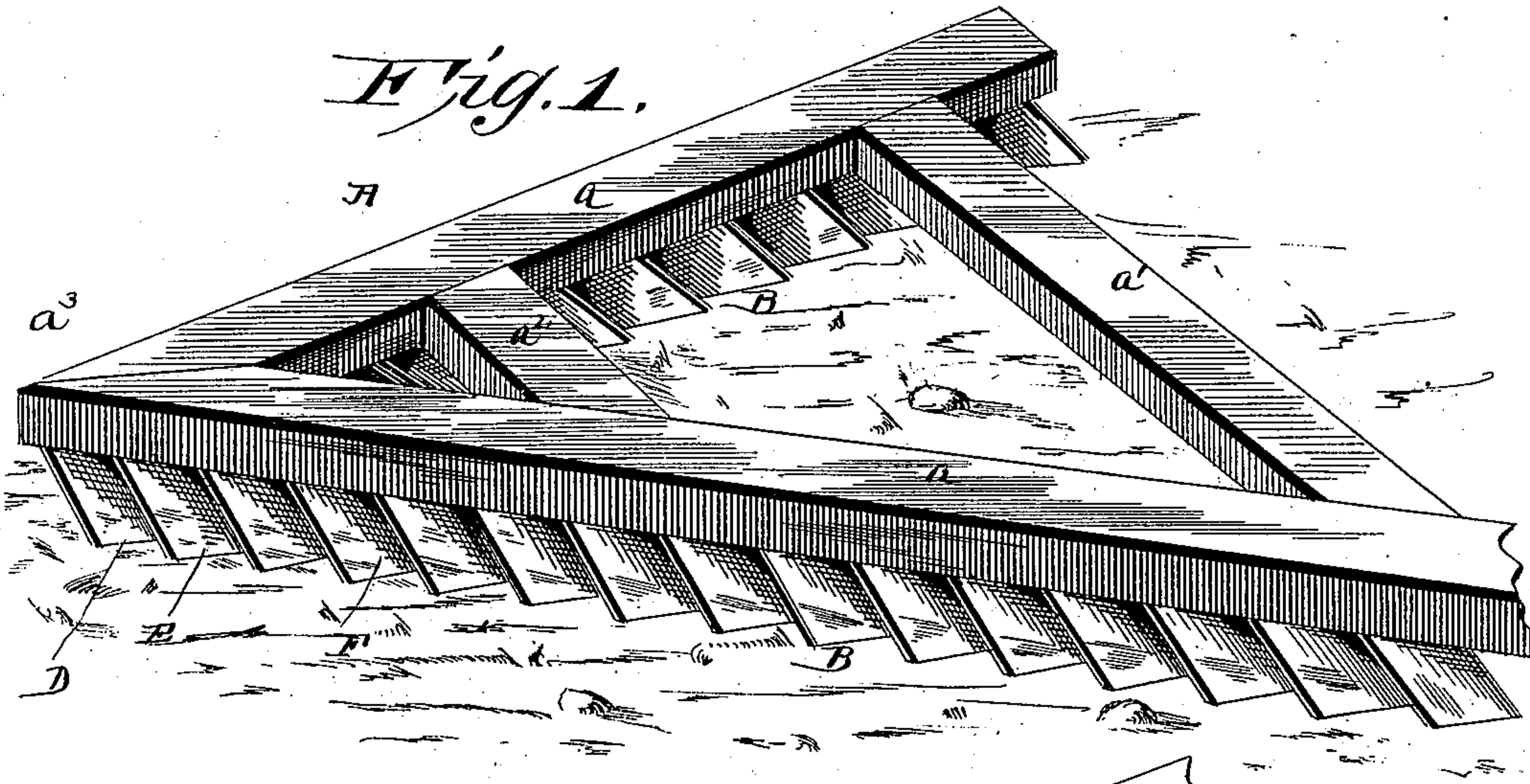


Fig. 2.

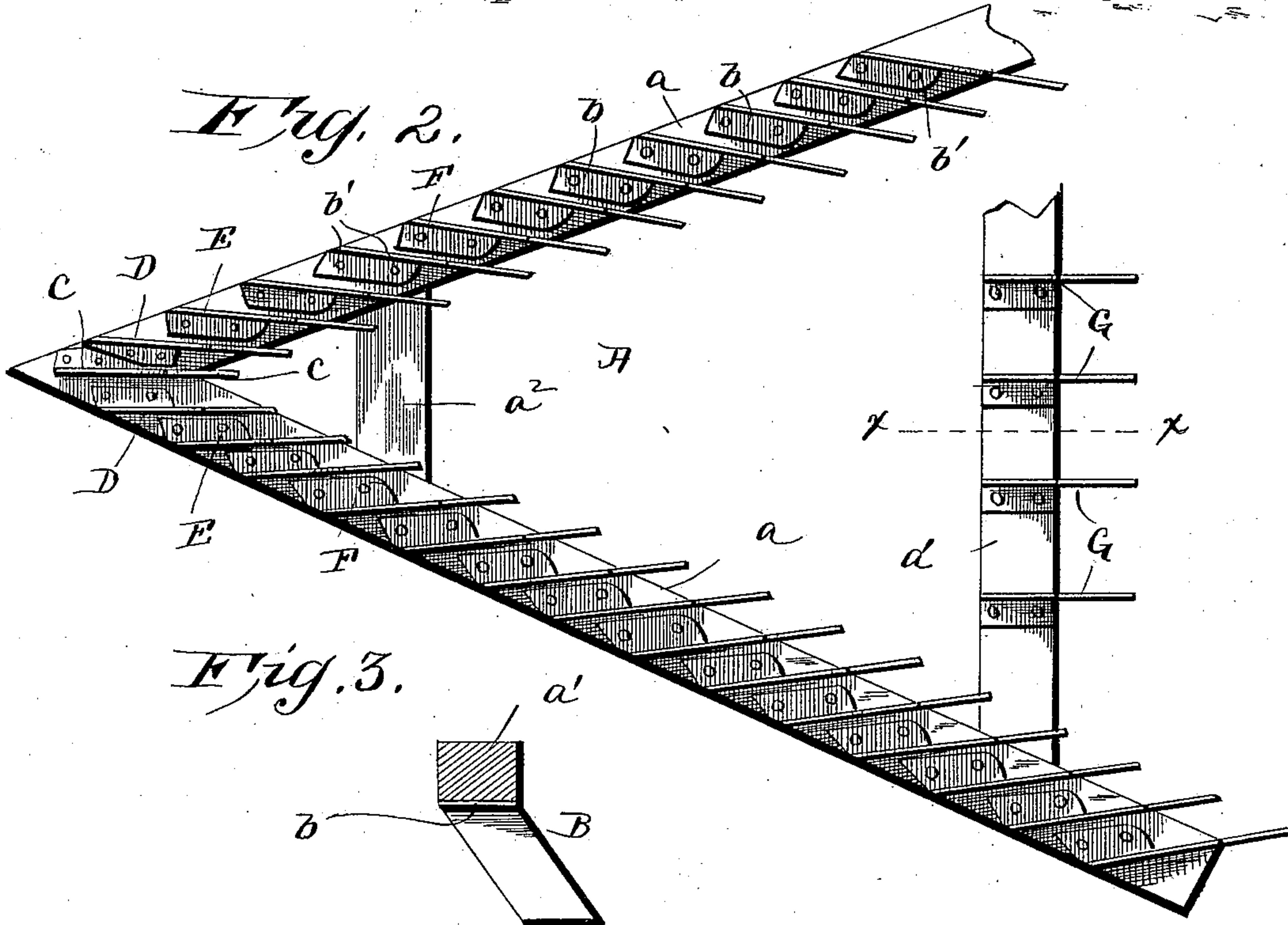
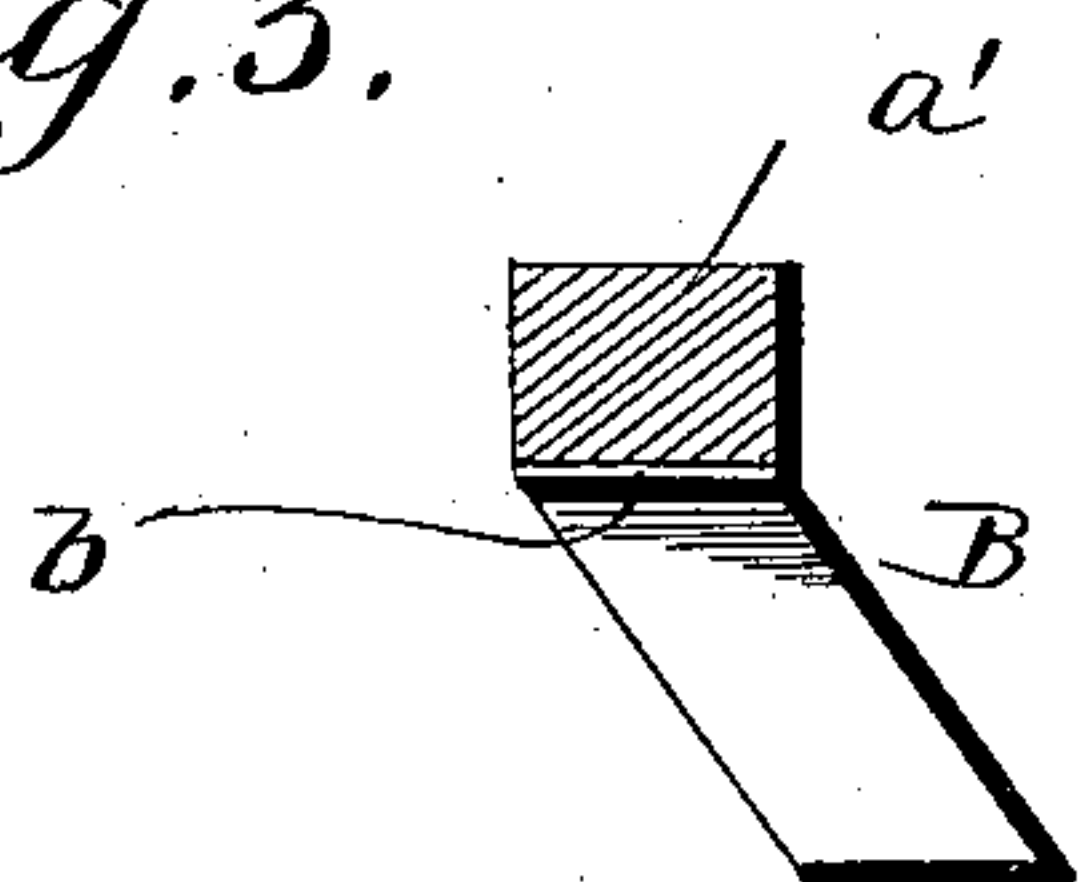


Fig. 3.



Witnesses

Wm. S. Ober.

C. E. Doyle.

Philander C. Loveland. Inventor.

By *his* Attorneys

C. A. Snowden

UNITED STATES PATENT OFFICE.

PHILANDER COOK LOVELAND, OF FAIRFIELD, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOHN A. MOFFITT AND W. P. BUNCH, OF SAME PLACE.

HARROW.

SPECIFICATION forming part of Letters Patent No. 400,861, dated April 2, 1889.

Application filed October 16, 1888. Serial No. 288,200. (No model.)

To all whom it may concern:

Be it known that I, PHILANDER COOK LOVELAND, a citizen of the United States, residing at Fairfield, in the county of Wayne and State of Illinois, have invented a new and useful Improvement in Harrows, of which the following is a specification.

The invention relates to improvements in harrows; and it consists in the construction and novel combination of parts, that will be more fully hereinafter described, illustrated in the accompanying drawings, and pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of a harrow embodying the invention. Fig. 2 is a reversed plan thereof. Fig. 3 is a transverse section on line xx of Fig. 2, showing one of the teeth in elevation.

Referring to the drawings by letter, A designates the frame of the harrow, triangular in shape, which comprises the side rails, a , the rear transverse rail, a' , connecting the rear ends of the side rails and the front transverse connecting-rail, a^2 . The said side rails meet in front at the apex a^3 .

The teeth B are composed of parallelogrammic steel plates having their upper edges, b , bent horizontally inward, and secured to the lower surfaces of the side rails by bolts b' , as shown. The said teeth incline downward and rearward, and have their front and lower edges sharpened. The bolt-holes in the teeth are equally spaced, and therefore the teeth may be interchanged, if desired or necessary. The central front tooth, C, has its

lower edge, c , coincident with the line of draft of the harrow, and the teeth D D on each side of and adjacent to the middle tooth have their lower edges inclined inward slightly toward their rear ends. The teeth E E, next rearwardly, have their lower edges turned or inclined a little more inward than the teeth D, and the teeth F in rear of the teeth E are set in such manner that each will make a furrow about one inch wider in the soil than the tooth just preceding. The rear rail, a' , is supplied with a set of similar teeth, G, the said teeth being set about four inches apart. The lower edges of all the teeth B G are horizontal and at equal distances below the frame of the harrow.

Having described my invention, I claim—

In a harrow, the combination of the triangular frame A, having the rearwardly-divergent side bars, a , the parallelogram-shaped teeth B B, affixed to the side bars and having their horizontal lower edges in the same plane, each succeeding tooth being inclined inward more than the preceding tooth, whereby the lower edges of all the teeth converge toward a common center on the line of draft in rear of the harrow, substantially as specified.

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

PHILANDER COOK LOVELAND.

Witnesses:

C. C. ENGLISH,
J. P. WALTERS.