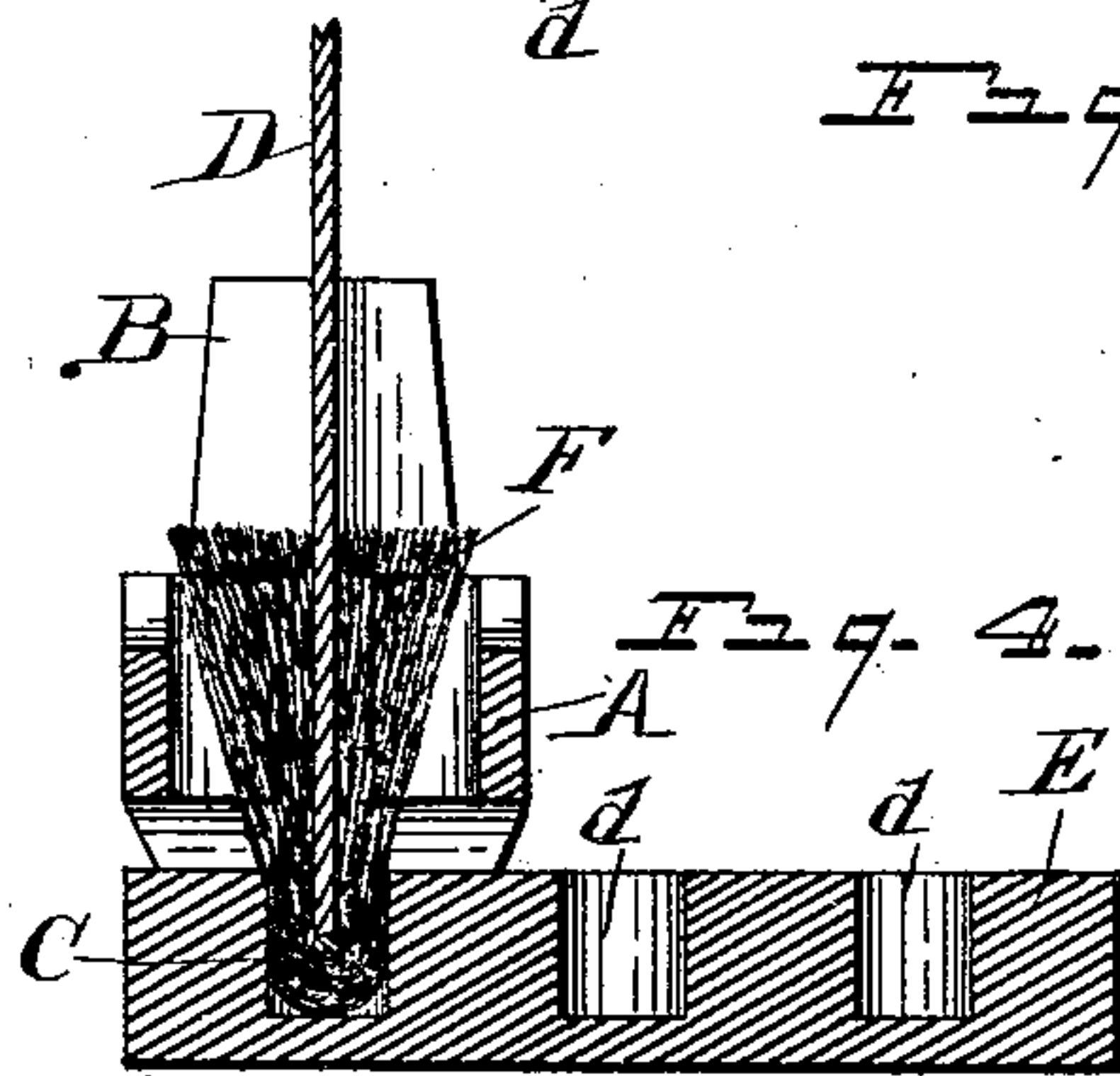
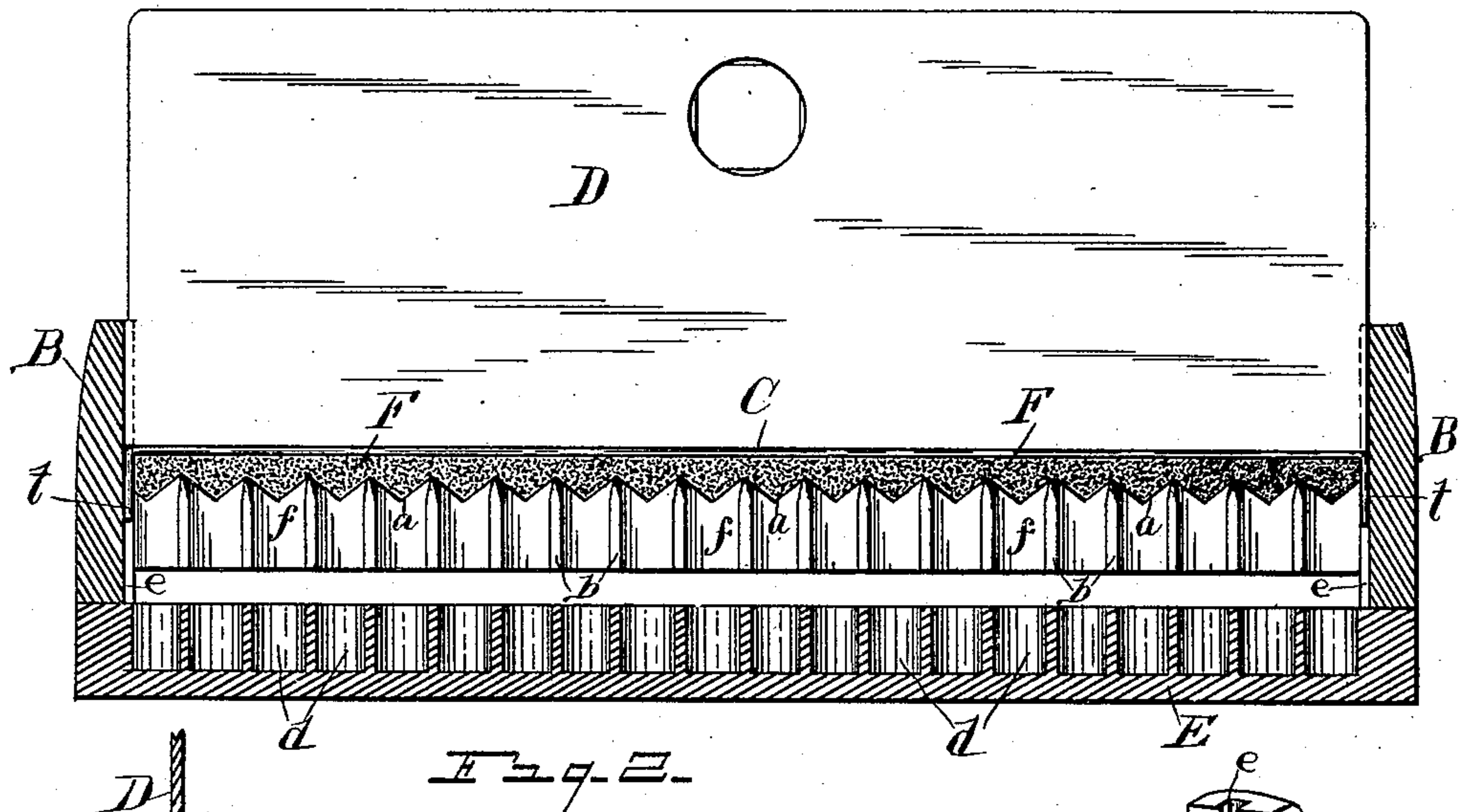
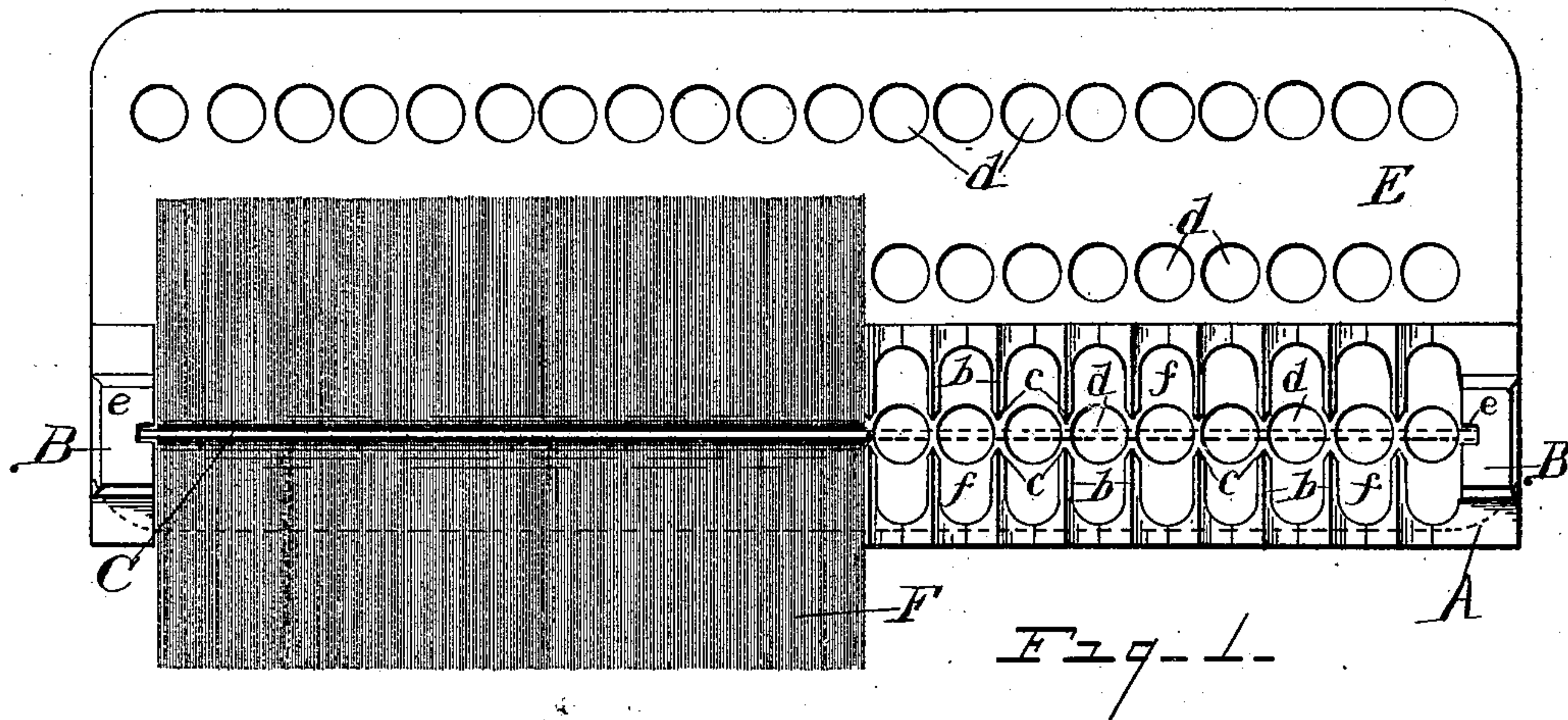


(No Model.)

W. H. GATES.
BRUSH FIBER CLAMP.

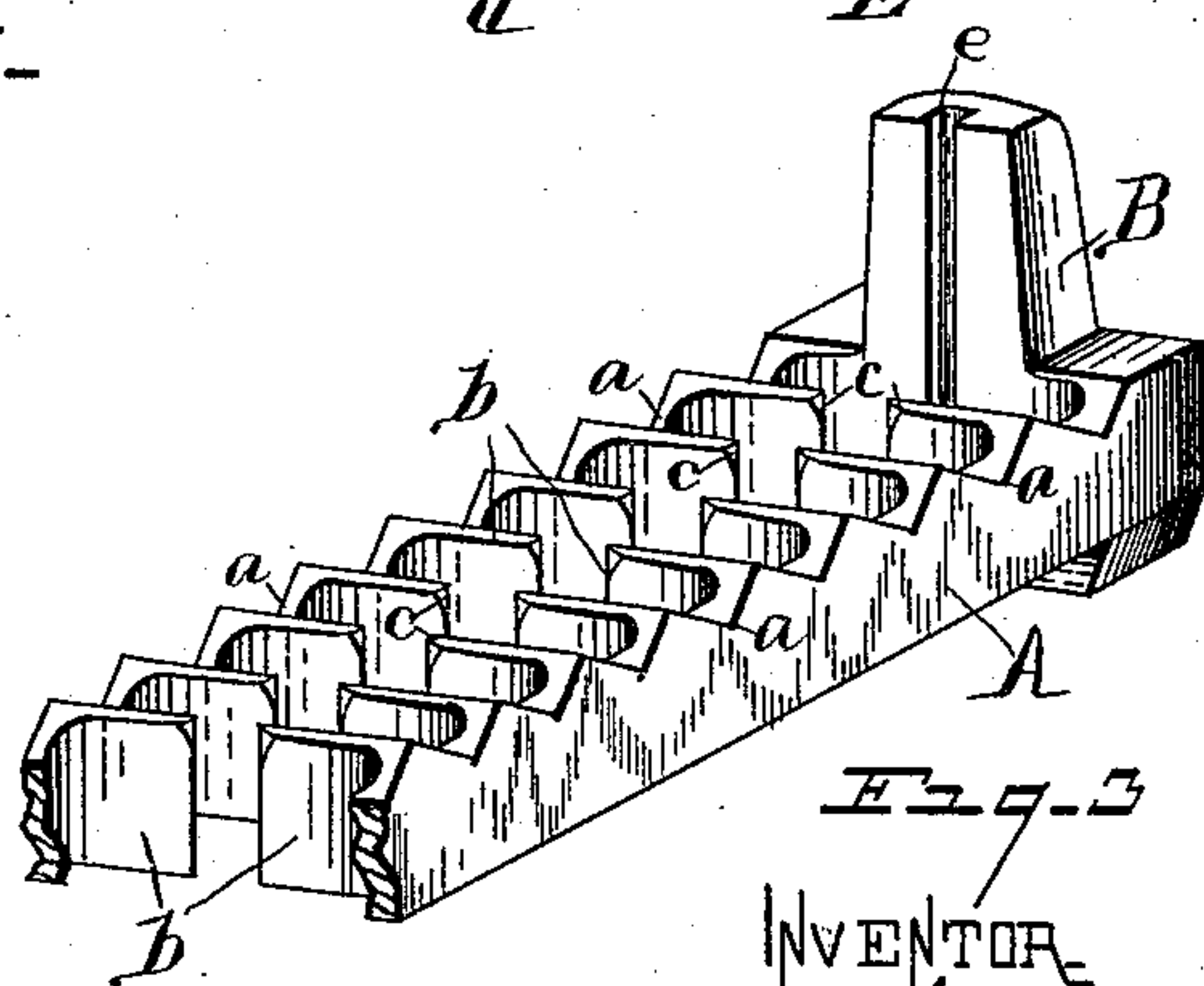
No. 471,606.

Patented Mar. 29, 1892.



WITNESSES.

E. H. Hurler
R. A. Wheeler



INVENTOR
W. H. Gates
By
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att.

UNITED STATES PATENT OFFICE.

WILLIAM H. GATES, OF DETROIT, MICHIGAN.

BRUSH-FIBER CLAMP.

SPECIFICATION forming part of Letters Patent No. 471,606, dated March 29, 1892.

Application filed June 4, 1891. Serial No. 395,013. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GATES, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Brush-Fiber Clamps; 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 the letters of reference marked thereon, which form a part of this specification.

This invention relates to a new and useful improvement in a brush-fiber clamp and separator especially designed for folding and dividing the brush stock or fiber into separate tufts in the operation of securing it in the adjacent circular cells or pockets in the brush block or body, and construction and arrangement of parts, as hereinafter fully set forth, the essential features of which being pointed out particularly in the claims.

The object of the invention is to provide means whereby the brush stock or fiber may be folded or doubled upon itself and divided into separate tufts, enabling a series of adjacent circular cells in the body of the brush to be simultaneously filled therewith. This object is attained by the device illustrated in the accompanying drawings, in which—

Figure 1 is a plan view showing the clamp placed over a series of circular cells in the brush-block, the stock or brush-fiber lying across a portion of the face of the clamp and crossed by the binding-wire, which is partly shown by dotted lines. Fig. 2 is a central longitudinal section through the clamp and brush-block, the upper face of the clamp being covered with the brush-fiber, which appears in cross-section, showing the relative position of parts before forcing the fiber into the clamp to effect the folding and separation thereof preparatory to securing it in the adjacent cells in the brush-block. Fig. 3 is a perspective view of a portion of the clamp, like parts being broken away. Fig. 4 is a transverse section through the clamp and brush-block, showing the folded fiber forced into the cell therein.

Referring to the letters of reference, A designates the clamp, which is made preferably of metal, and is composed of two parallel rails coupled by the vertical end portions B, and having the lateral partitions *b* extending from their inner face. Said partitions are arranged opposite one another, but do not meet, thereby forming an open space through the longitudinal center of the clamp between their inner ends, as clearly shown in Figs. 1 and 3. The upper edges of the sides or rails of the clamp between the partitions *b* are provided with a series of notches or depressions *a*, and the upper edge and inner corner of said partitions are beveled to form a sharp point at said corner, as shown at *c*. The vertical end portions B of the clamp are provided in their inner faces with a groove *e*, that forms a way for the binding-wire C, employed to secure the fiber or stock F in the brush-block, and also for the traveling blade D, by means of which said fiber and wire are forced through the clamp and into said block.

E designates the body or block of the brush, which is provided with a series of adjacent circular cells *d*, located at such distance apart as to register with the pockets *f*, formed between the partitions *b* of the clamp, as clearly shown in Figs. 1 and 2.

To employ this improved clamp for the purpose indicated, the stock or brush-fiber F is placed across the clamp between the uprights B and so that said stock will be equally divided longitudinally and will lie in and above the depressions *a* in the sides of the clamp in sufficient quantity to form the size tufts required to fill the cells *d* in the brush-block, as shown in Figs. 1 and 2. The binding-wire C is then placed across the stock, the right-angle end portions *t* of said wire sliding in the ways *e* in the clamp with the bent ends extending downward, as shown in Fig. 2. Then the follower-blade D is placed upon the wire, its ends sliding in said ways *e*, and by any suitable means for the purpose said blade is depressed, doubling the fiber in the clamp, whereby it is separated by the partitions *b* into independent tufts, which fill the pockets *f* of the clamp, and by means of said follower-blade D are forced down into the corresponding cells *d* of the brush-block, which is placed below said clamp,

the wire C cutting its way through the wood between the cells *d*, and the ends *t* of said wire being forced through and clinched in the back of said block, thereby firmly securing the separated stock in the adjacent cells in the body of the brush, as clearly shown in Fig. 4. The blade D and clamp are then removed, leaving the tufts of fiber fixedly anchored in the block.

The ordinary manner of securing independent tufts of fiber in the adjacent cells in the brush-block has been to string each tuft upon a strand of wire, which is sewed through the back of the block to retain the tuft in the cell, but one cell being filled at a time. With my improved clamp a series of cells may be filled simultaneously, effecting economy in the manufacture of the brush, enabling it to be made more rapidly and producing a brush of superior quality.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A clamp for the purpose specified, composed of the parallel side rails joined at their ends, said rails having the oppositely-arranged

and inwardly-extending partitions forming pockets between their adjacent sides, and an open space between their opposed ends extending longitudinally through the center of the clamp, as set forth.

2. In a clamp, the combination of the parallel side rails, the vertical end portions joining said rails and having a groove or way therein, said rails having the laterally-extending partitions, and the notches or depressions in their upper edges between said partitions, substantially as specified.

3. The combination of the clamp having the parallel rails provided with the lateral partitions, the vertical end portions joining said rails and having the ways therein, and the follower-blade adapted to reciprocate in said ways, by means of which the fiber is folded and separated within the clamp, substantially as specified.

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

WILLIAM H. GATES.

Witnesses:

E. S. WHEELER,
R. B. WHEELER.