

(No Model.)

M. J. ROWLINGSON.
ROTARY CUTTER.

No. 584,562.

Patented June 15, 1897.

Fig. 1.

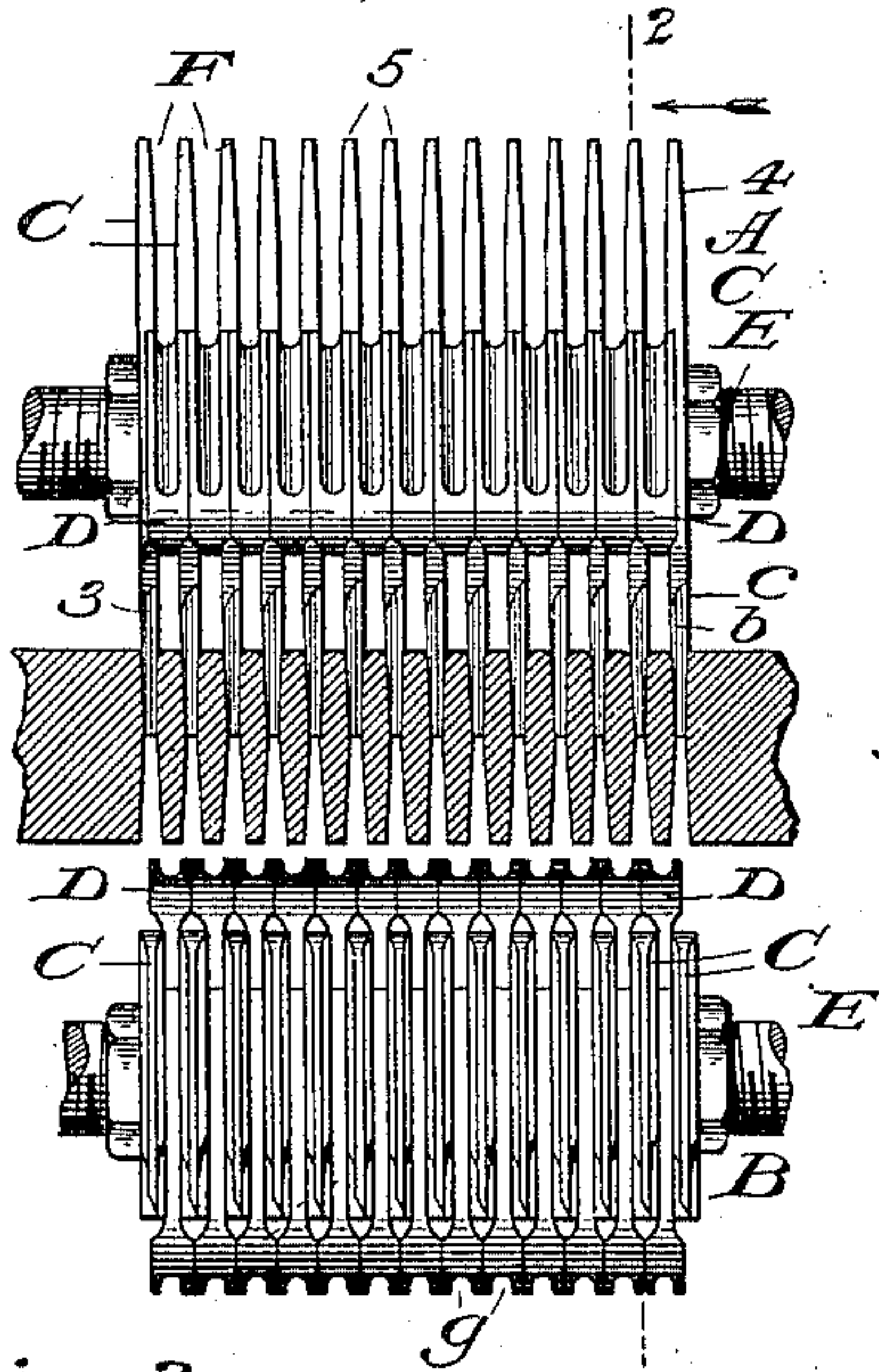


Fig. 2.

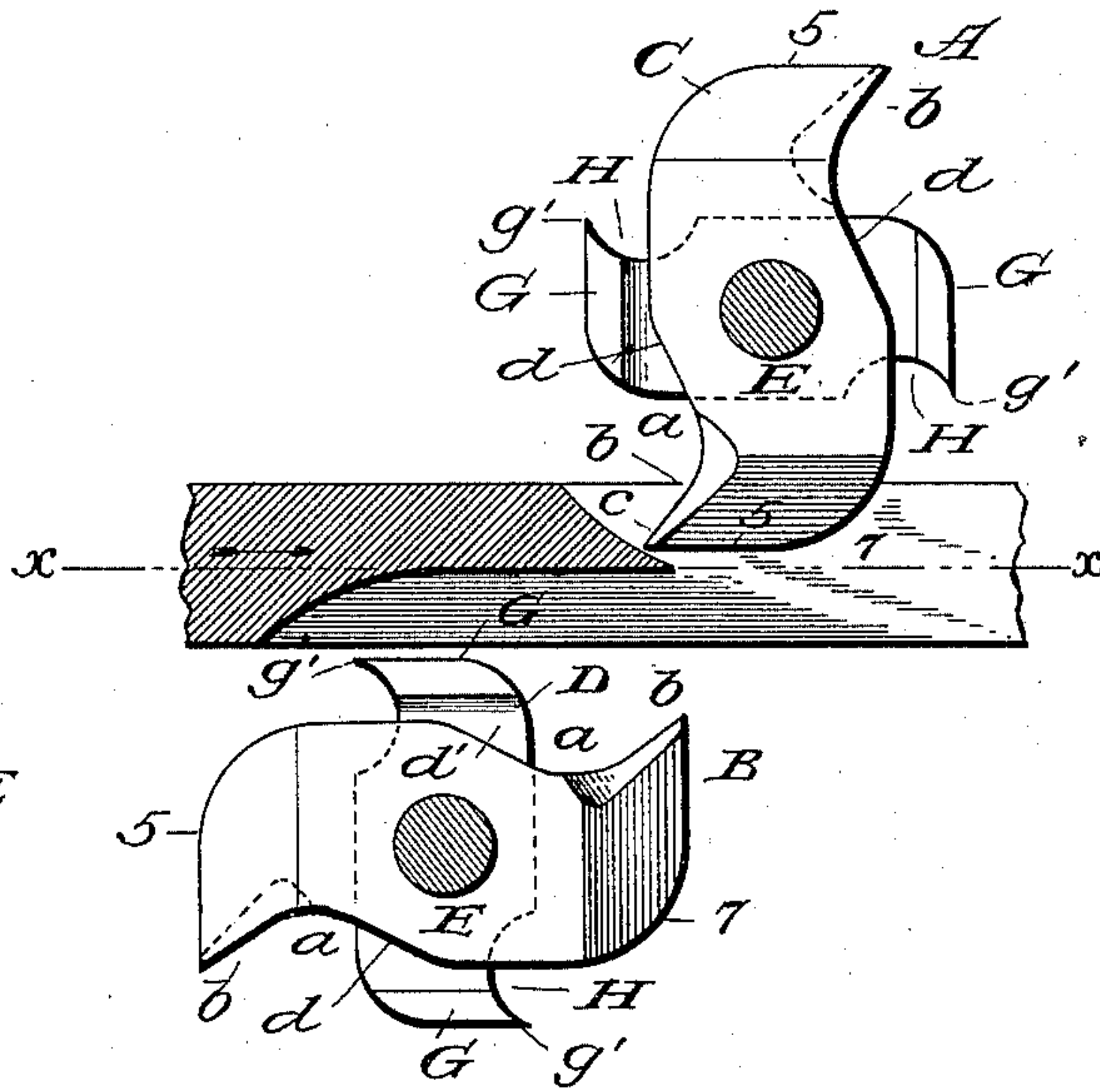


Fig. 3.

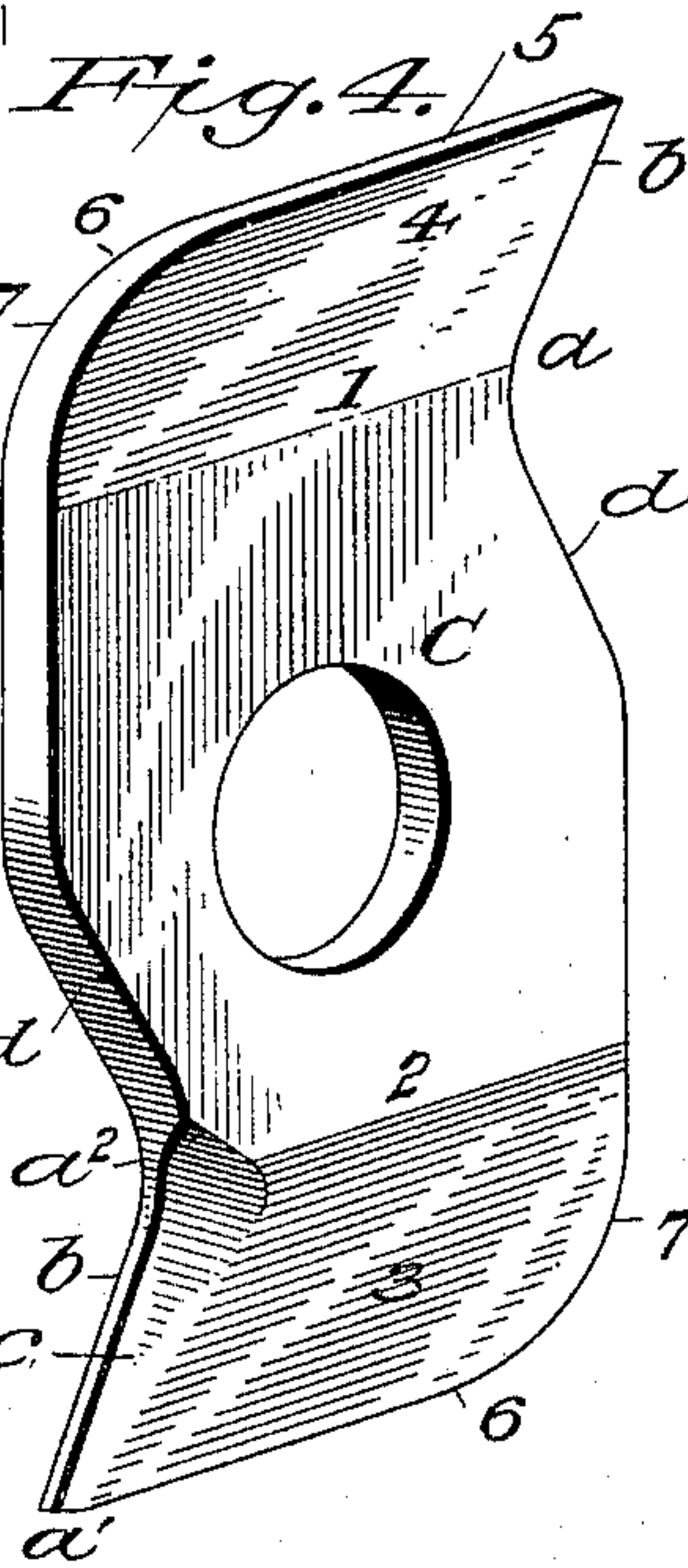
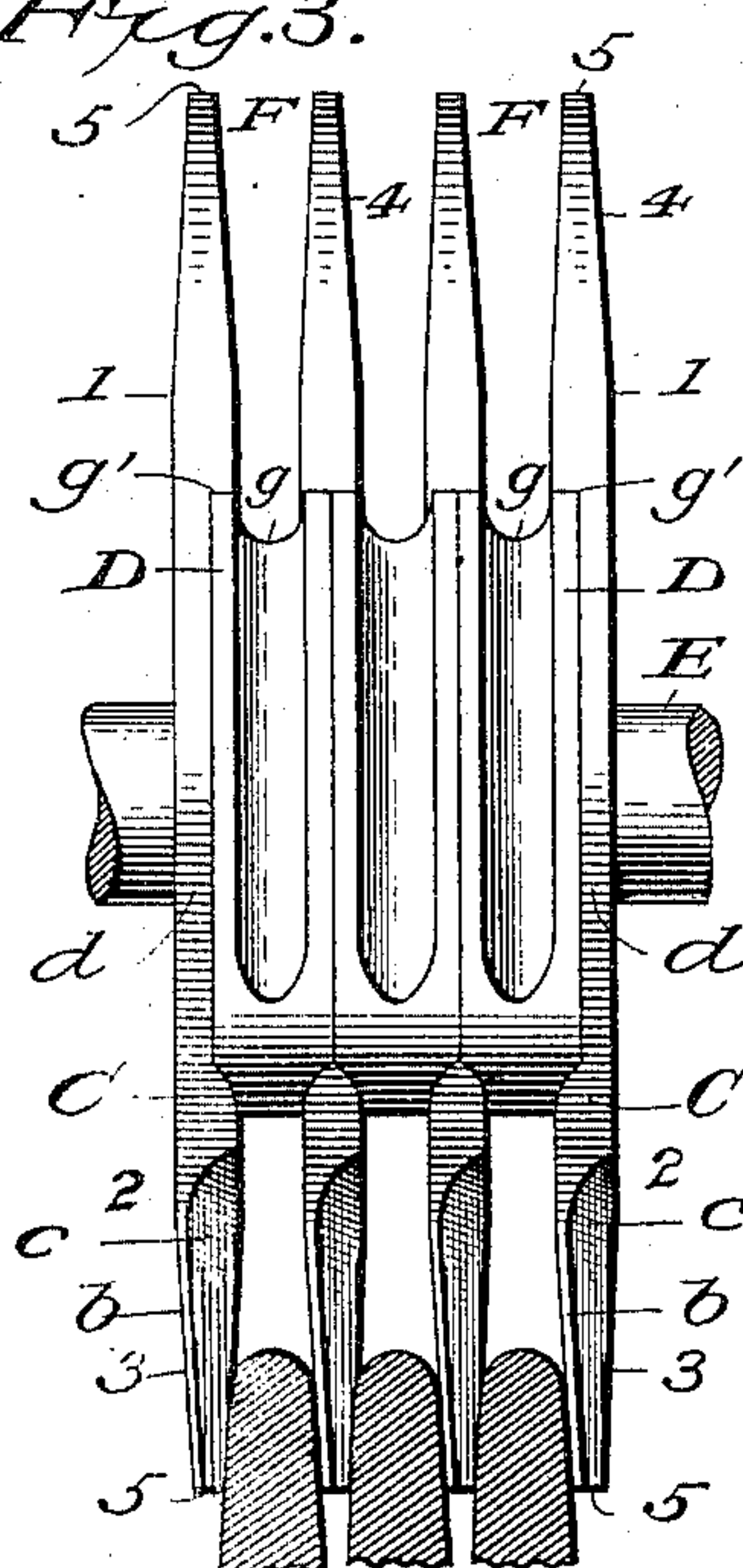
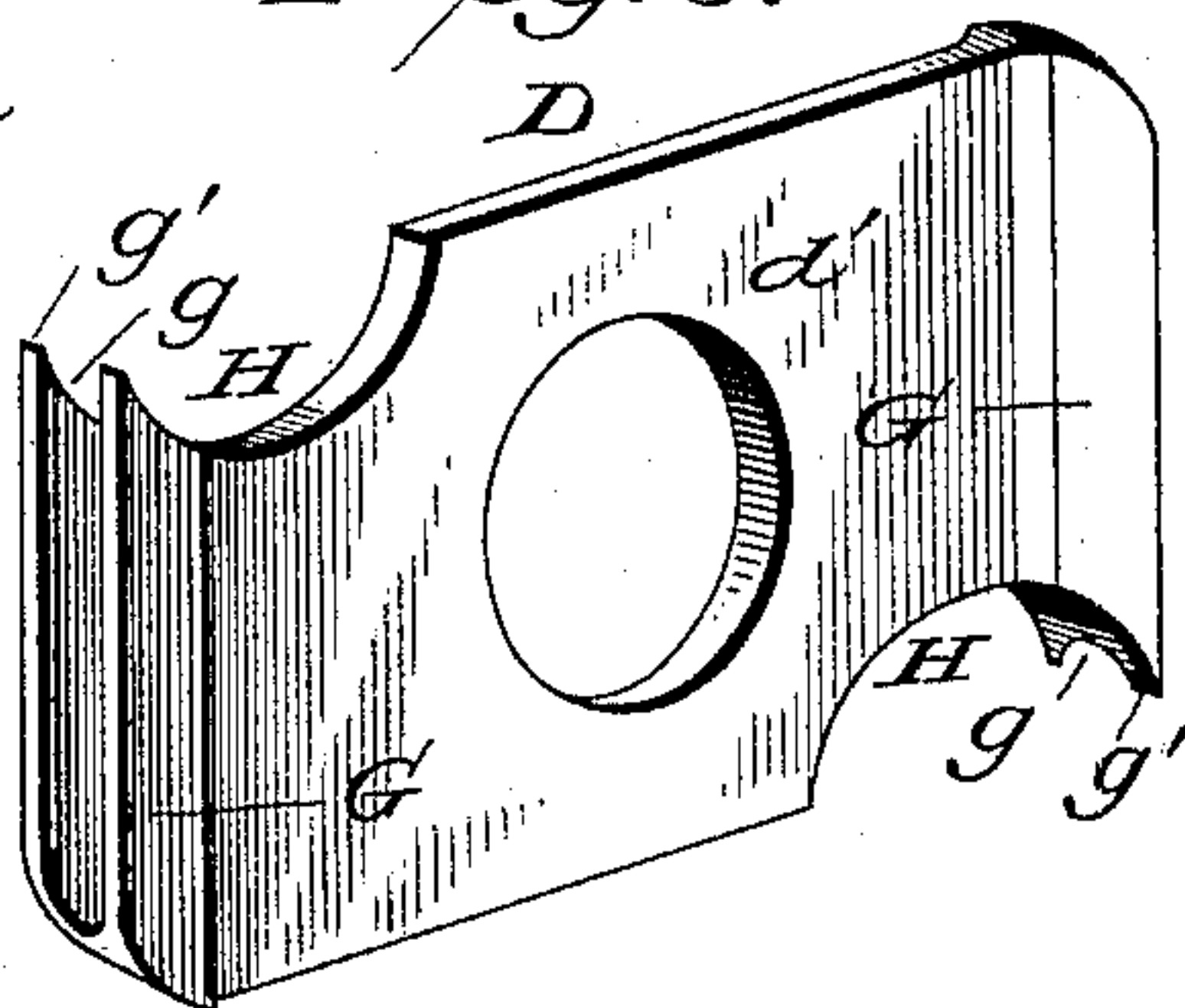


Fig. 5.



WITNESSES:

L. S. Elliott.
C. A. Balloch.

INVENTOR :

Morillo J. Rowlingson,
By his Attorneys,
Padden, Danderson & Wright.

UNITED STATES PATENT OFFICE.

MORILLO J. ROWLINGSON, OF OSWEGO, NEW YORK, ASSIGNOR TO THOMSON
KINGSFORD, OF SAME PLACE.

ROTARY CUTTER.

SPECIFICATION forming part of Letters Patent No. 584,562, dated June 15, 1897.

Original application filed December 31, 1895, Serial No. 573,932. Divided and this application filed April 12, 1897. Serial No. 631,698. (No model.)

To all whom it may concern:

Be it known that I, MORILLO J. ROWLINGSON, a citizen of the United States, residing at Oswego, in the county of Oswego and State of New York, have invented certain new and useful Improvements in Rotary Cutters, of which the following is a specification.

My invention relates to that class of wood-working-machines in which window-blind slats, curtain-slats, and other articles are formed from a board or block by one continuous operation of rotary cutters.

The object of my invention is to make such articles from rough or undressed lumber by one continuous operation of simple and effective machinery. These ends I attain by the use of blades of novel construction for cutting the slats from the board or block, in connection with blades of novel construction for trimming the edges of the slats thus severed from the boards.

The accompanying drawings show so much of my improved mechanism as is necessary to illustrate the subject-matter herein claimed.

Figure 1 shows a front elevation of two gangs of my improved cutters, illustrating their operation in forming blind-slats; and Fig. 2 is a vertical longitudinal section there-through on the line 2 2 thereof, looking to the left, as indicated by the arrow. Fig. 3 shows a front view, on an enlarged scale, of a gang of the cutters. Fig. 4 is a perspective view of one of the cutting or slitting blades which form the side of the slat, and Fig. 5 is a similar view of one of the edge-trimming blades or cutters.

Two gangs of cutters are shown, the upper one A working slightly in advance of the lower one B to prevent interference. The corresponding cutters of each gang work in the same vertical plane, each cutting slightly beyond the center line x of the board being cut, so as to sever it longitudinally as the strips are formed therefrom. Each gang may comprise any desired number of blades C and D, but at least two blades C to form the side and one interposed blade D to trim the edge of the slat must be used in each gang. I preferably employ a series of blades C and D, arranged alternately side by side on an arbor

or mandrel E. The interposed blades D under this organization not only serve to preserve the proper distance between the slitting-blades C, but trim the edges of the slats before being severed from the board out of which they are formed. These blades are of peculiar but simple construction. The cutting or slitting blades C are preferably S-shaped, having their cutting ends diametrically opposite each other and oppositely beveled or inclined. Each blade-body is thin and flat with parallel sides between the lines 1 and 2. The working portions 3 and 4 are beveled, as shown, to give side clearance and also to give proper shape to the article produced, while the periphery 5 of each blade is blunt but inclined at 6 and rounded at 7, so that the point projects farther from the axis than the portions 6 and 7 to give the necessary clearance to avoid friction.

The front of the working portion of the blade is formed with a cutting edge b and a recess a . The cutting edge b is preferably, as shown, tangential to a circle drawn from the axis of the arbor or mandrel E as a center. Thus a point will be first presented to the board and a shearing cut will be effected. Each cutting edge is made sharp by the bevel c , extending from the point a' , from one side of the blade to the other, inwardly past the point a'' , of the recess a .

The central portion d of the edge of the blade is blunt. (See Fig. 4.) It will be observed, however, that the cutting edges lie on opposite sides of each blade, so as to permit each to act on its proper adjacent slat or that part of the board from which such slats are formed, while the bevel is such as not only to form a properly-shaped edge, but also to permit the chips readily to escape. Such escape is still further facilitated by the opening or space F between the blades, which are held a proper distance apart by the interposed edge-trimming blades D. These latter blades are shown as somewhat shorter than the slitting-blades C, but, like them, have cutting edges at opposite ends of their body portions d' , which are flat and have parallel sides fitting between the blades C. Each end of each blade D is shown as having an enlarged or

widened rim G, provided with an edge groove *g*. The edges of this rim preferably overlap the adjacent slitting-cutters C, and thus insure a clean cut and the removal of the chips or surplus material. A recess H in each end of each blade extends to the outer edge of the rim, forming a cutting edge *g'* transverse to the cutting edge *b* of the blade C. In the particular construction shown the edge *g'* is semi-circular in contour to give a convex edge to the slats, as shown in Fig. 3. As before remarked, these cutting edges form the rounded edges of the slats or the finished edges of the articles cut, and are preferably placed midway of the cutting edges of the slitting-cutters C. They are so shaped as to afford the required clearance and to permit the escape of chips. The working end of each blade C is formed in such manner as to produce not only the necessary edge clearance, but also the requisite side clearance and to properly shape the article.

The blades may be strung on the mandrels and held rigidly thereon in any suitable way. In Fig. 1 I have shown clamping-nuts X X, which may be used for this purpose.

It will be seen that by my improvements I am enabled to cut from undressed lumber various articles, such as slats, curtain-sticks, &c., smoothly finished throughout, requiring no further manipulation, and that such articles may also be cut from dressed lumber and from remnants of timber left from making boxes or similar articles.

I do not herein claim separately the characteristic novel features of the slitting-blade particularly shown in Fig. 4, as these are claimed in my application for patent, Serial No. 573,932, filed December 31, 1895, of which this application is a division.

I claim as my invention—

1. A rotary cutter comprising a pair of slitting-blades having side clearance and edge clearance, and having beveled cutting edges, and an edge-cutter interposed between the slitting-blades and having rims extending beyond the side edges thereof.

2. A rotary cutter comprising a pair of slitting-blades having beveled cutting edges, and an edge-cutter interposed between the slitting-blades serving to hold them apart and having a widened outer edge overlapping the slitting-blades but arranged at a shorter distance from the center of rotation than the outer or working edges of the slitting-blades.

3. A rotary cutter comprising a pair of S-shaped slitting-blades having oppositely-in-

clined, straight, flat sides at opposite ends, and a single cutting edge at each working end, the working portion of the blade at each end between the cutting edge and the heel having straight, flat beveled sides, and interposed edge-cutting blades having at each opposite end enlarged edge portions having front cutting edges transverse to the cutting edges of the slitting-blades, and having also grooved peripheries.

4. A rotary cutter comprising a pair of S-shaped slitting-blades having advancing cutting edges extending from the periphery of the blade inwardly, and an S-shaped edge-cutter interposed between the slitting-blades extending beyond the side edges thereof serving to hold them at a proper distance apart, and having one or more enlarged grooved and beveled rims.

5. The combination of a mandrel, a series of slitting-blades thereon, each comprising a flat body having at opposite ends front tangentially-arranged cutting edges on opposite sides of the blade, a series of edge-trimming blades interposed between the slitting-blades provided with widened rims, and a second mandrel having a similar series of edge-trimming and slitting blades, the edge-trimming blades in the front series being arranged in the same vertical planes with the corresponding blades in the other series, and the slitting-blades in one series being correspondingly arranged with those in the other series, the blades of each series being held in lateral contact.

6. A rotary cutter comprising a pair of slitting-blades having tangentially-arranged cutting edges and an edge-cutter interposed between the slitting-blades, serving to hold them a proper distance apart, extending beyond the side edges thereof and having one or more enlarged grooved and beveled rims.

7. A rotary cutter comprising a pair of slitting-blades having tangentially-arranged cutting edges, and an edge-cutter interposed between the slitting-blades, serving to hold them apart and having widened outer edges overlapping the slitting-blades, but arranged at a shorter distance from the center of rotation than the outer edges of the slitting-blades.

In testimony whereof I have hereunto subscribed my name.

MORILLO J. ROWLINGSON.

Witnesses:

H. L. HOWE,
WM. V. BURR.