

No. 608,272.

Patented Aug. 2, 1898.

J. W. SCHLEICHER.
CUTTER HEAD.

(Application filed Mar. 9, 1898.)

(No Model.)

2 Sheets—Sheet 1.

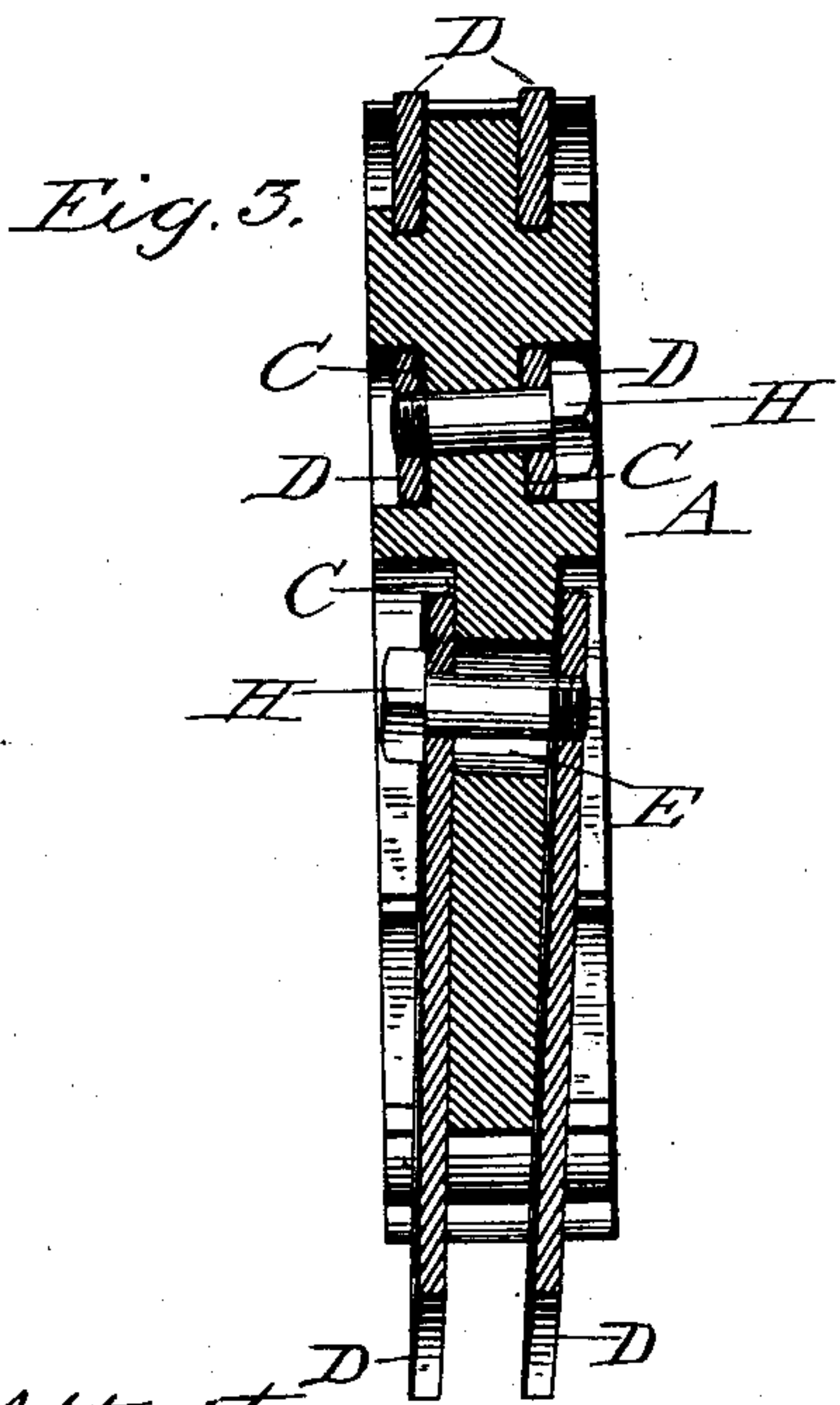
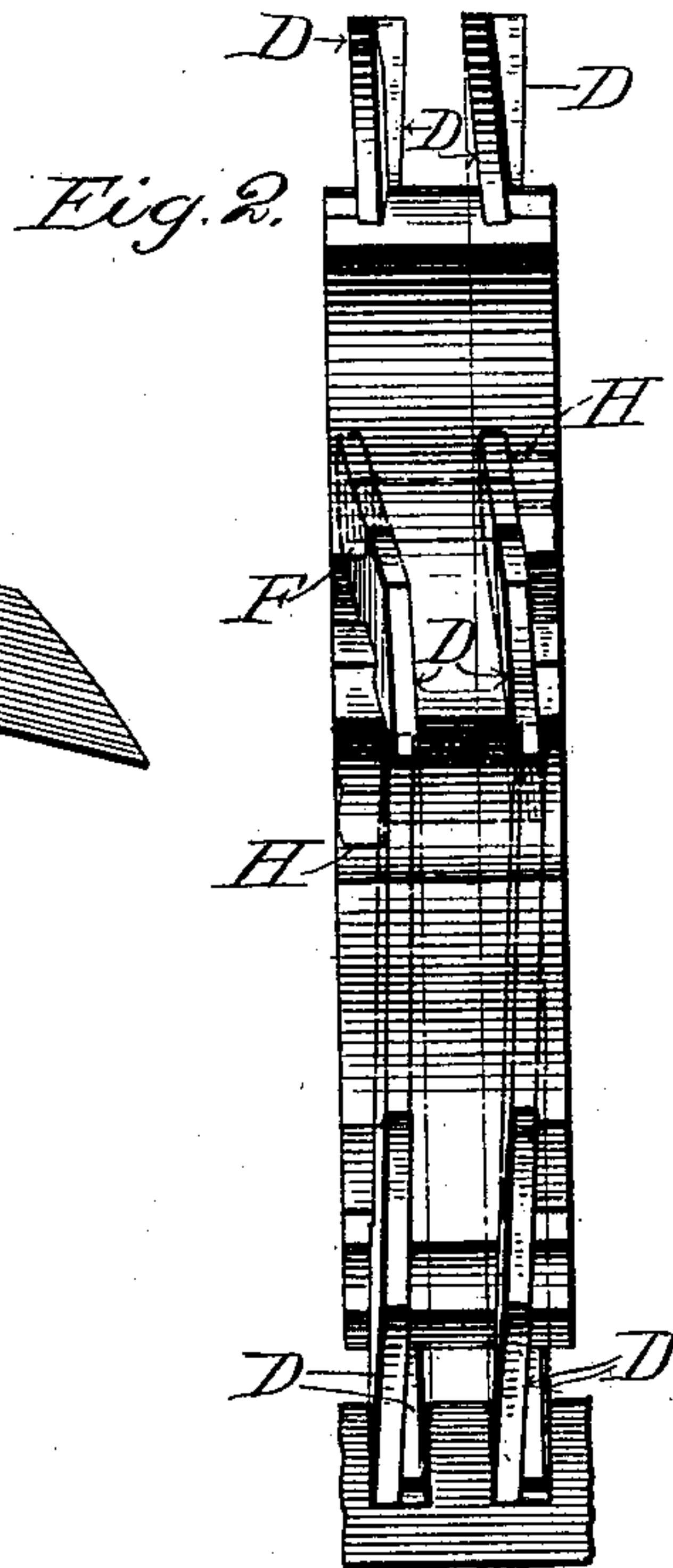
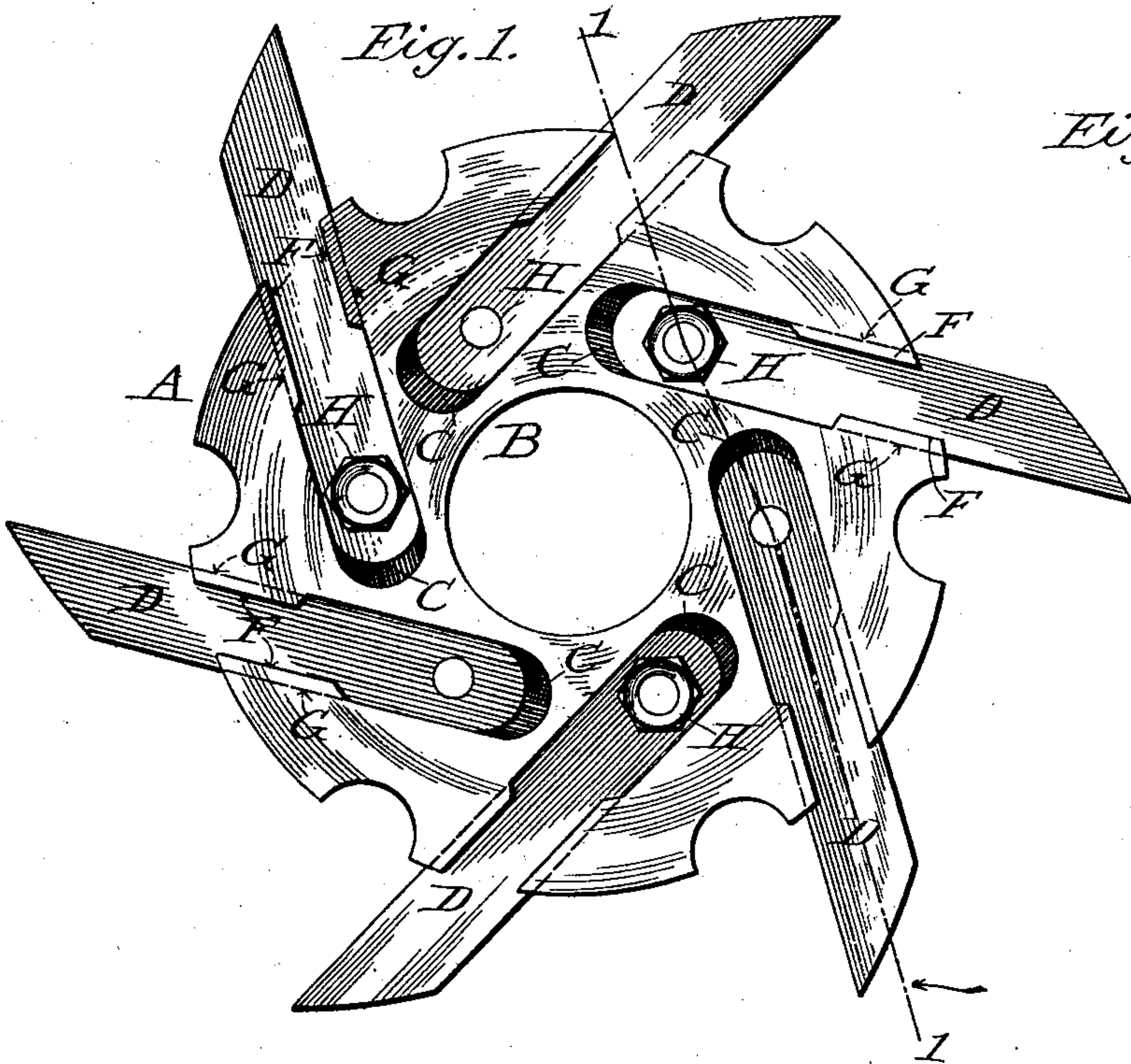
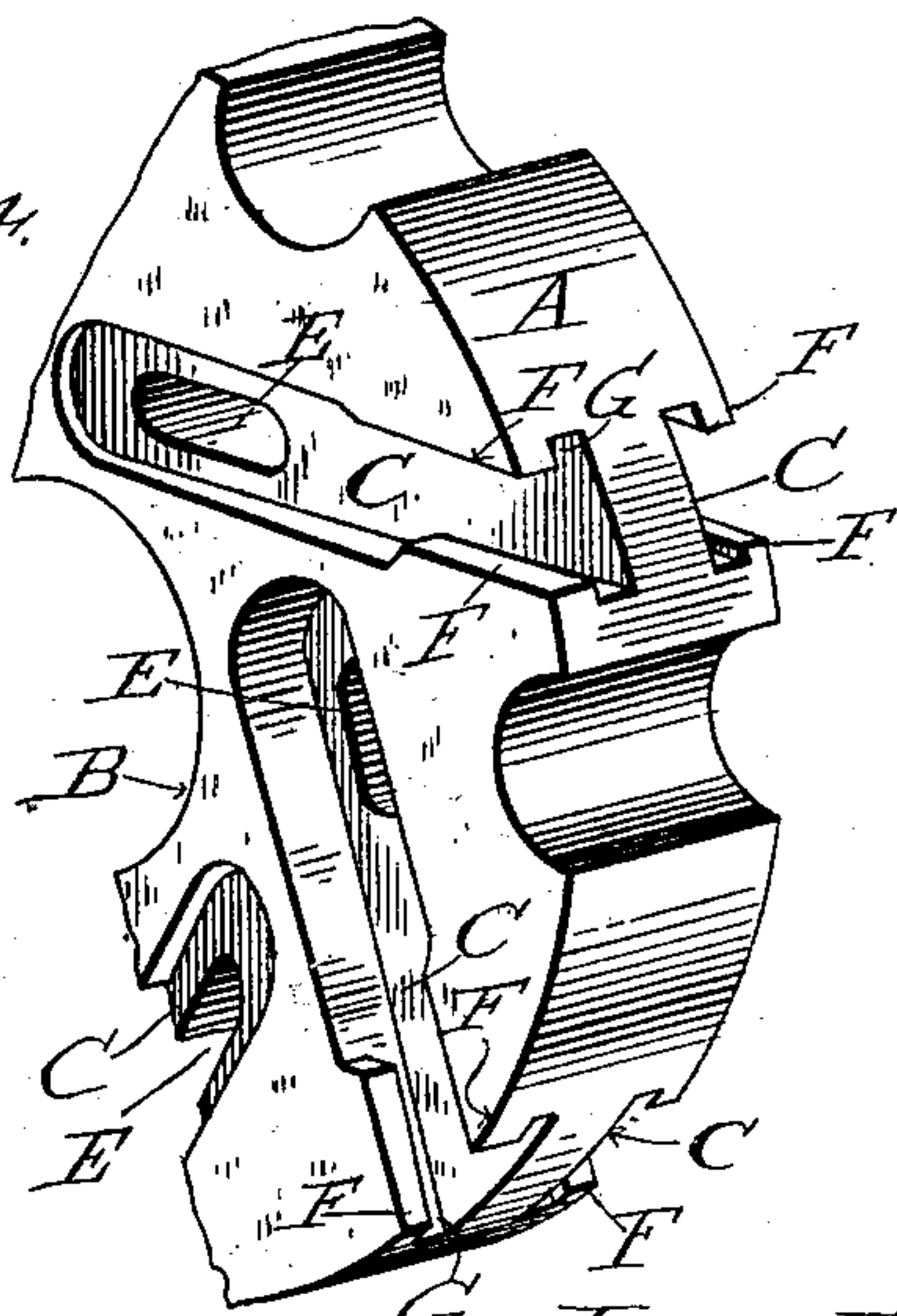


Fig. 4.



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Fig. 5.

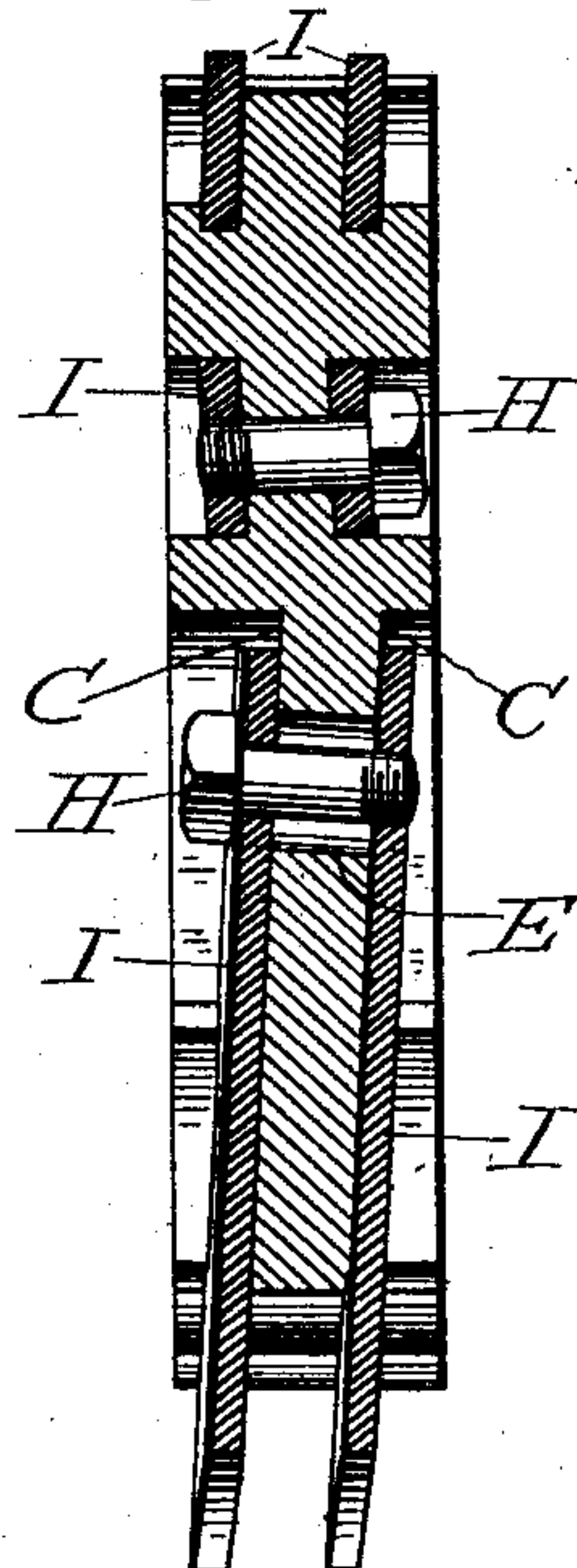
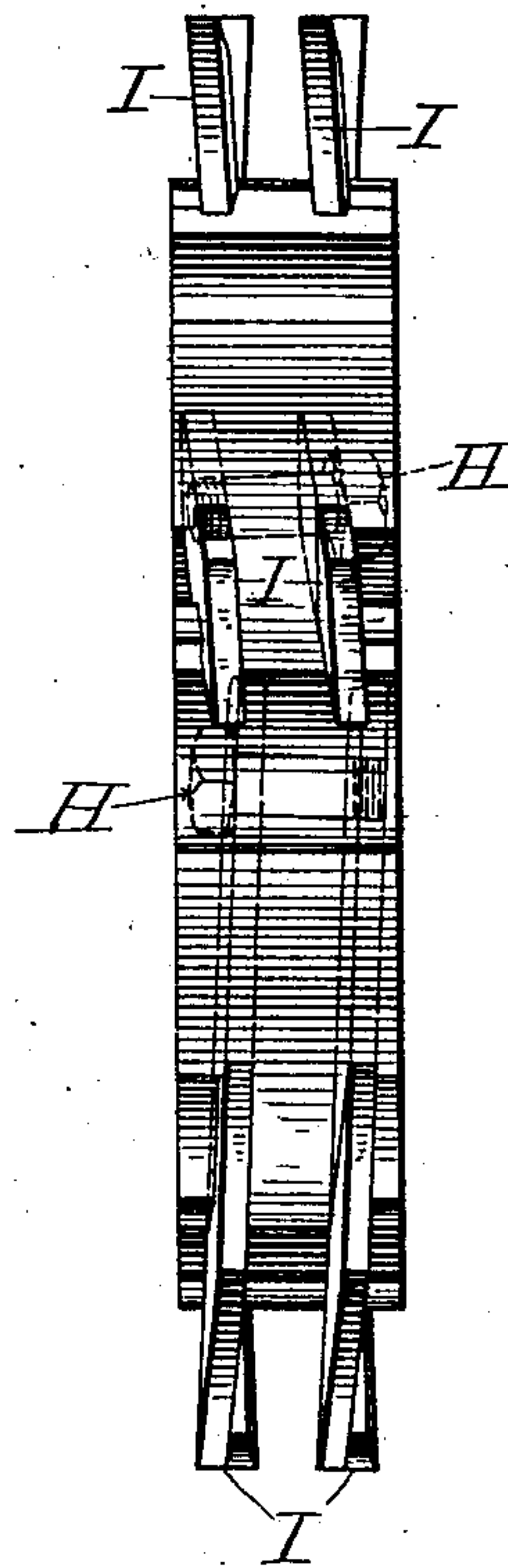


Fig. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN WILLIAM SCHLEICHER, OF LOUISVILLE, KENTUCKY.

CUTTER-HEAD.

SPECIFICATION forming part of Letters Patent No. 608,272, dated August 2, 1898.

Application filed March 9, 1898. Serial No. 673,214. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILLIAM SCHLEICHER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Cutter-Heads, of which the following is a specification.

My present invention pertains to a new and useful cutter-head, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, in which—

Figure 1 is a side elevation of the cutter-head; Fig. 2, an edge view showing the teeth in the position which they occupy in relation to a piece of work; Fig. 3, a sectional view on the line 1 1 of Fig. 1; Fig. 4, a perspective view of a portion of the body of the cutter-head, showing the formation and relation of the seats for the teeth; Fig. 5, a sectional view of a modified form, and Fig. 6 an edge view of the same.

The object of my invention is to produce a cutter-head especially adapted for forming mortise-and-tenon work and one which may be substituted for the separate disk-blades and spacing-washers mounted on a mandrel, as are now commonly employed.

I have found by actual experience that it is very difficult to secure the requisite uniformity in thickness in the disk-blades and washers, the variation being such at times that the work will not match up with that nicety which is desirable in work of this class, more especially so with boxes. Again, the disks and washers, while they may be of the proper thickness, will at times warp, and consequently will not come to their proper position upon the mandrel. Furthermore, the disk-blades are expensive to sharpen. With a cutter-head constructed in accordance with my plan these objections are overcome, while further advantages present themselves in the way of simplicity of adjustment of the teeth, the facility with which they may be sharpened, and the great saving in power used.

Referring to the drawings, A indicates the body of the cutter, provided with a central opening B for the reception of a mandrel. In each side face of the body there is formed a series of seats C for the reception of the cutter blades or knives D, the seats and blades

occupying a position which is tangential to a circle concentric with the axis of the cutter-head. The seats are also inclined in two directions—first, in the direction of their length, and, secondly, with relation to their width. The inclination will be better understood upon reference to Figs. 3 and 4, the seats upon the opposite faces being arranged in pairs and every other pair being oppositely inclined. In the upper pair (shown in Fig. 4) the seat upon the near face extends from a point near the surface at its inner end to a greater depth as it nears the periphery of the body, while the complementary seat upon the opposite face begins deep at its inner end and nears the surface as it extends outward. These seats are not parallel throughout their length in the form shown in Figs. 2, 3, and 4, but are slightly inclined toward each other as they near the periphery. This is indicated most clearly in Fig. 3 and is also shown by the blades in Fig. 2. The seats are also slightly inclined edgewise or in the direction of their width and do not stand at right angles to the axial line of the cutter-head. Each succeeding pair of seats is inclined in the same direction, while the intermediate pairs are inclined in the opposite direction.

Elongated slots or openings E extend through the body near the inner end of each seat, while at the outer end overhanging ears or lugs F are provided, forming channels or grooves G.

Each blade is provided with an opening at its inner end, and when in place a bolt H is passed therethrough and through slot E and fastened, securing the blades in their position. The outer or cutting ends of the blades may be shaped as found best, the form shown having been found to work very satisfactorily.

In practice the blades are put in place, adjusted, and then if need be sharpened, which may be accomplished by rotating the cutter-head and bringing the blades against an emery-wheel or the like.

In Fig. 2 the position of the blades relative to the work is illustrated, wherein it will be seen that two mortises and a tenon of equal width will be formed. One pair of blades is shown in the cuts, from which it will be noted that only the extreme forward outer edge comes into action. The next pair of blades

will make a cut upon the opposite side of the mortise, sufficient clearance for chips, saw-dust, &c., being allowed.

In Figs. 5 and 6 a slightly-modified form is shown, wherein it will be seen that each pair of blades I, instead of converging toward each other at their outer ends, are parallel throughout their entire length. This construction is preferable in certain ways, particularly in that there is less friction in making the cuts.

In practice a number of these cutter-heads are designed to be mounted upon a mandrel.

By the use of the separate teeth they may be tempered independently, and their cost of manufacture is much less than with the disk-blades. So, too, should one tooth-blade become injured it is not necessary to replace the rest, while in the case of a disk the destruction of one tooth necessitates the discarding of the entire disk and at times the removal from the mandrel of a number of others to permit its replacement.

Having thus described my invention, what is claimed as new is—

1. In a cutter-head the combination of a body portion provided with a series of seats upon its opposite faces, arranged tangentially to a circle concentric with the axial line of the cutter; and blades mounted in said seats, the blades of succeeding pairs being inclined in reverse direction relative to a plane perpendicular to the axis of the cutter-head.

2. In a cutter-head, the combination of a body portion provided with a series of seats arranged in pairs upon its opposite faces, and formed tangentially to a circle concentric with the axial line of the cutter, said seats inclining in the direction of their length and

also inclined edgewise with relation to the plane of rotation of the head; and blades mounted in said seats.

3. In a cutter-head, the combination of a body portion provided with a series of seats arranged in pairs upon its opposite faces and occupying a position tangential to a circle concentric with the axial center of the body, said seats inclining in the direction of their length, but so arranged as to be parallel to each other, and also inclined in the direction of their width with relation to the plane of rotation of the head; and blades mounted in said seats.

4. In a cutter-head, the combination of a body portion, provided with a series of seats arranged in pairs upon its opposite faces, with each alternate pair having the same formation with regard to direction of inclination, said seats being inclined in the direction of their length and also inclined from the plane of rotation as regards their width, and each seat of each pair being parallel to the other throughout its length; and blades mounted in the seats.

5. In a cutter-head, the combination of a body portion provided with a series of seats C arranged upon opposite sides in pairs substantially as described, elongated openings E passing through the body portion and opening into said seats; ears F extending into said seats, and blades D mounted in said seats, substantially as described.

In witness whereof I hereunto set my hand in the presence of two witnesses.

JOHN WILLIAM SCHLEICHER.

Witnesses:

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ROBERT SCHLEICHER.