

(No Model.)

J. C. VOSS.
CUTTING APPARATUS.

No. 379,881.

Patented Mar. 20, 1888.

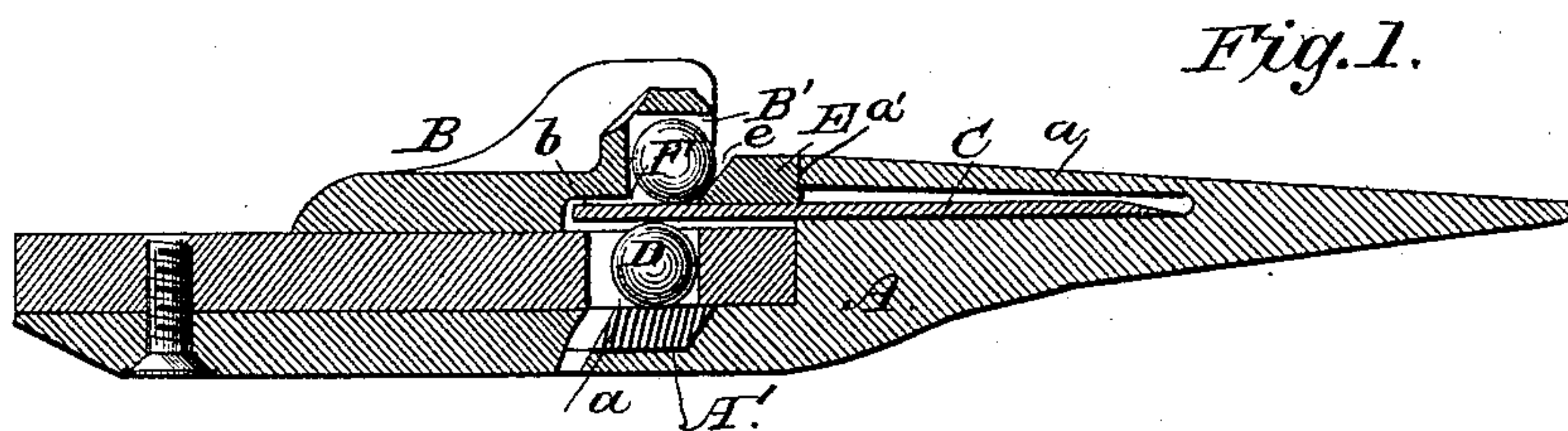


Fig. 1.

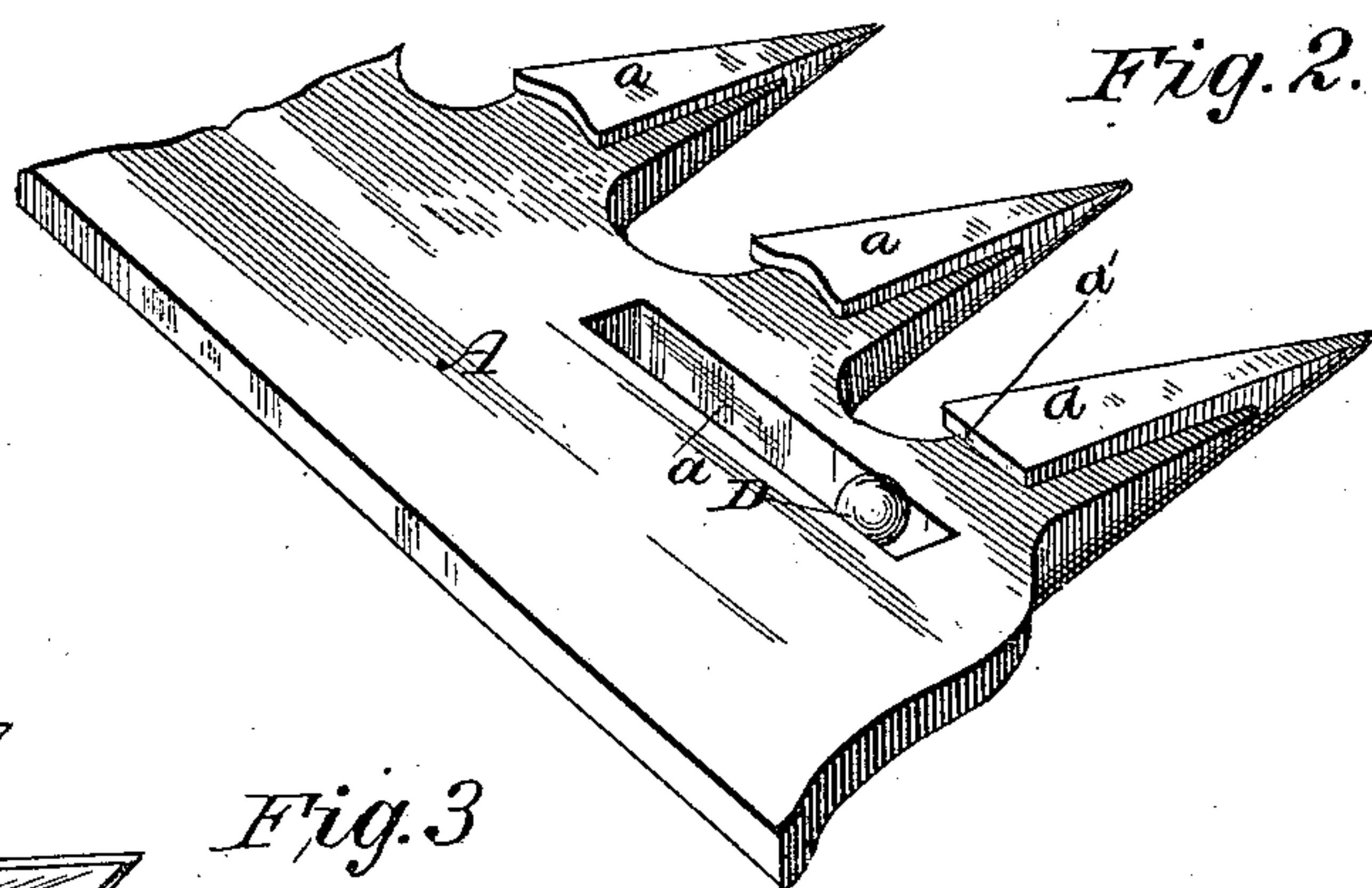


Fig. 2.

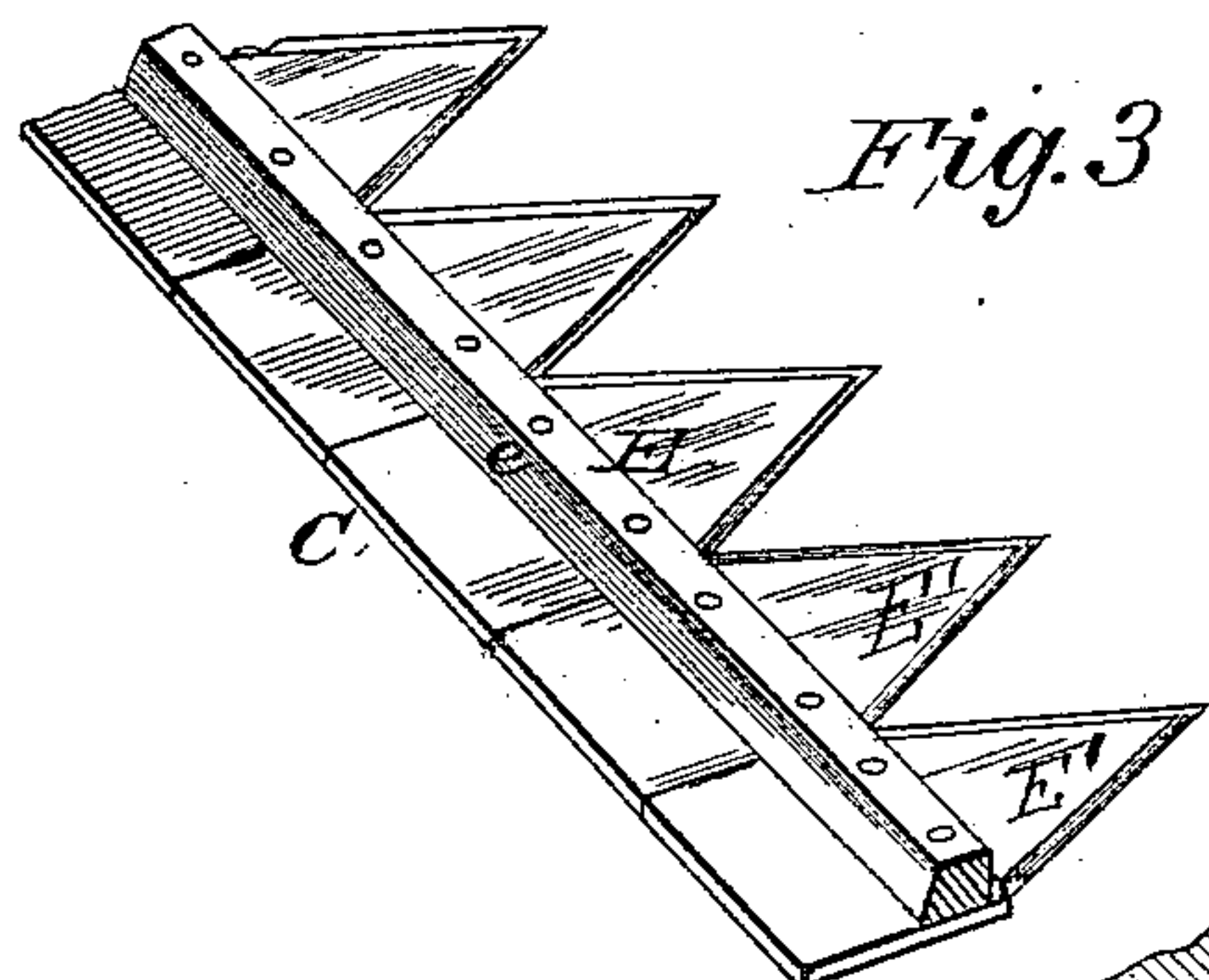


Fig. 3.

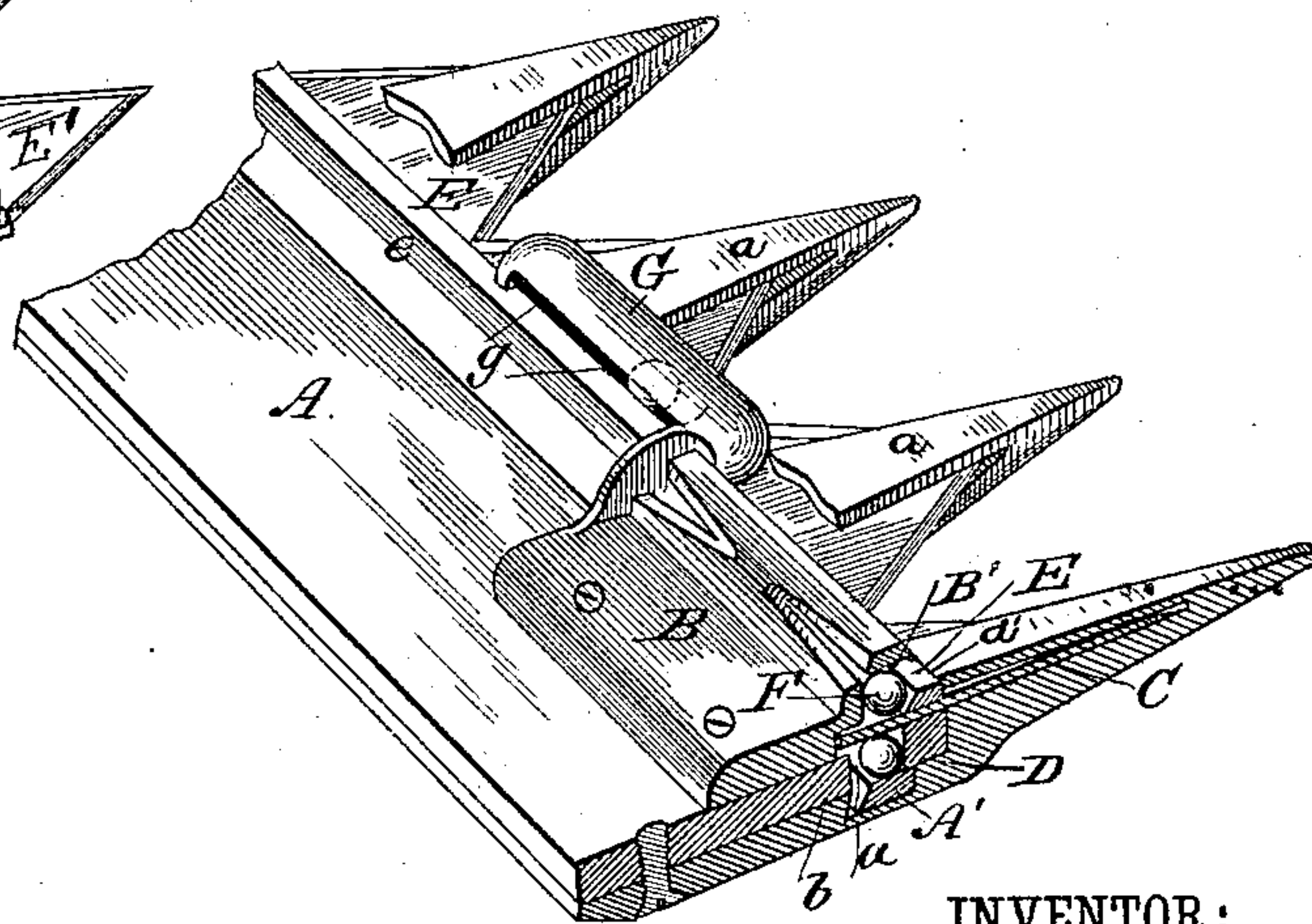


Fig. 4.

WITNESSES:

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JOHN CLEMENT VOSS, OF BEDFORD, INDIANA.

CUTTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 379,881, dated March 20, 1888.

Application filed September 30, 1885. Renewed August 24, 1887. Serial No. 247,742. (No model.)

To all whom it may concern:

Be it known that I, JOHN CLEMENT VOSS, of Bedford, in the county of Lawrence and State of Indiana, have invented a new and useful Improvement in Cutting Apparatus, of which the following is a description.

My invention is an improvement in cutting apparatus for mowers and reapers; and it consists in certain novel constructions, combinations, and arrangements of parts, as will be described and claimed.

In the drawings, Figure 1 is a vertical transverse section of the cutting apparatus. Fig. 2 is a detail perspective view of the support, the top or overlapping portion thereof being removed. Fig. 3 is a perspective view of the cutter-bar, and Fig. 4 is a perspective view of the cutting apparatus.

The finger-bar A may be provided with guard-fingers, as shown, or with knives or cutters. The top section, *a*, of two or more of the guard-fingers may be extended rearward, as shown at *a'*, Fig. 2, to bear against the front edge of the rib E, as will be understood from Figs. 1 and 4. It is provided with grooves *a* in the upper side of its main portion, and with an overlapping portion, B, which projects forward, forming a way, *b*, for the cutter-bar, and has its front edge grooved at B'. This portion B may consist of a number of sections or lengths, such as shown in Fig. 4, arranged at proper intervals along the bar A, or may be a single construction extended the desired length, as may be most convenient in the manufacture of the improvement. It is preferred to extend the grooves entirely through the bar A and cover their lower ends by a strip, A', which may be of hardened steel, and will furnish a lower bearing for the balls, presently described.

The complete cutter or knife-bar C, comprising rib E and blades E', is movable reciprocally in the way *b* and rests on balls D, placed in and projecting slightly upward out of the grooves *a*. These balls form rolling bearings between the supporting-bar and the cutter-bar and ease the movements of the latter, as will be seen.

The rib E is secured or formed on the upper side of the blades E' and has its rear edge or face, *e*, beveled rearwardly from its upper to

its lower side. This rib E projects to or slightly into the open side of the groove B', and balls F are placed and bear between the beveled face *e* and the back and upper walls of the groove B'.

By the described construction it will be seen that the beveled face *e*, engaging under the rollers F, will depress the cutter-bar and press it downward, so that it will reciprocate close to the top of the finger-bar, causing it to cut close to the blades or fingers of the said finger-bar.

The complete cutter-bar usually comprises a number of cutters E' and a rib or bar E, secured to their upper sides, as shown most clearly in Fig. 3. It will be noticed that the edge of the bar E and the wall of the overlapping portion B form bearings for the interposed balls, and one of such bearings, preferably the rib, as shown, being beveled, the cutter-bar is consequently pressed firmly downward, as is desired.

It is manifest that the rollers F operate as stops and that other forms of bearings—such as a plain smooth surface—might be substituted therefor without departing from the broad principles of my invention.

It will be understood that instead of forming the main and overlapping portions of the support separate and securing them together they may be integrally formed without departing from my invention.

By means of the rolling bearings above and below the cutter-bar the latter, when forced downward by backward pressure of its beveled portion against the upper balls, will be prevented by the lower balls from binding in the supports and from any great friction, such as would otherwise occur.

It will be understood that instead of spherical bearings, as shown, cylindrical rollers or journaled rolling bearings might be employed; but I prefer the construction as shown and before described. The box G (shown in one of the sections) is adapted to receive balls *g*, which bear on the front edge of the rib E and resist any forward thrust or tendency which may be given the cutter by the operation of its pitman. Such a box may be secured on each of the overlapping portions.

Manifestly the boxes G may be cast with

parts B or otherwise suitably formed and supported.

It will be understood that this bearing is not necessary in power or other machines wherein the cutter-bar is driven by a pitman or other device operating laterally in line with the direction of motion of the cutter-bar.

Having thus described my invention, what I claim as new is—

10 1. The combination of the finger-bar, the cutter-bar having a beveled face or edge, *e*, and a stop arranged to engage said face, substantially as set forth.

15 2. The combination, with the finger-bar provided with a way for the cutter-bar, of a grooved overlapping portion projected forward above said way, the cutter-bar having a beveled rib on its upper side, and roller-bearings interposed between the said beveled rib
20 and the overlapping portion of the finger-bar, substantially as set forth.

3. The improvement in cutting apparatus

substantially as herein described and shown, consisting of the finger-bar having grooves in its upper side and provided with a way for the cutter-bar, and with a grooved overlapping portion projected forward above said way, the cutter-bar having a beveled rib on its upper side, and balls placed in the grooves in the upper side of the finger-bar and between the overlapping portion of the latter and the beveled rib of the cutter-bar, substantially as and for the purposes set forth. 25 30

4. The combination of the finger-bar having an overlapping portion, the cutter-bar having a rib or bar on its upper side, the edge of said rib and the wall of said overlapping portions forming bearings, one of which is beveled, and balls interposed between said bearings, substantially as set forth. 35

JOHN CLEMENT VOSS.

Witnesses:

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ELMER E. TODD.