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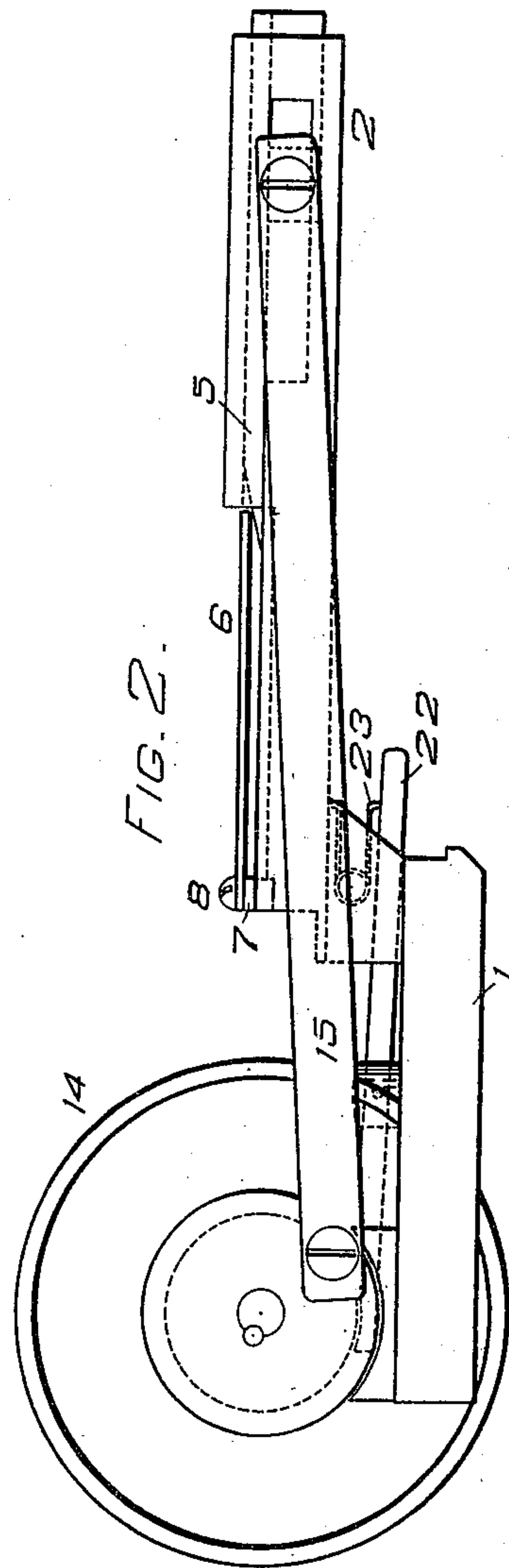
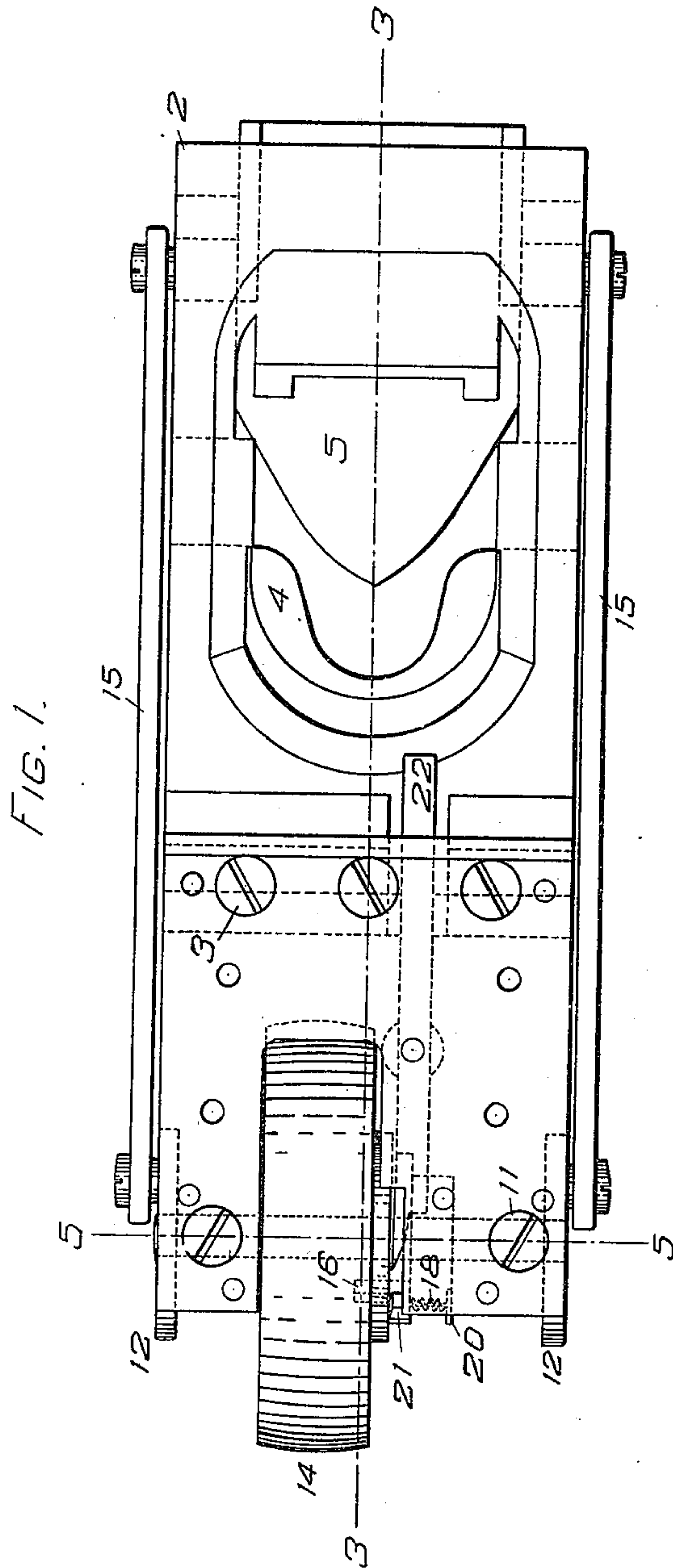
Patented Jan. 22, 1901.

O. PAQUETTE.  
TOE TRIMMING MACHINE.

(Application filed Aug. 20, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES  
Edward S. Day  
Fred C. Fish

INVENTOR  
Octave Paquette  
PER  
Benjamin Phillips  
ATTORNEY

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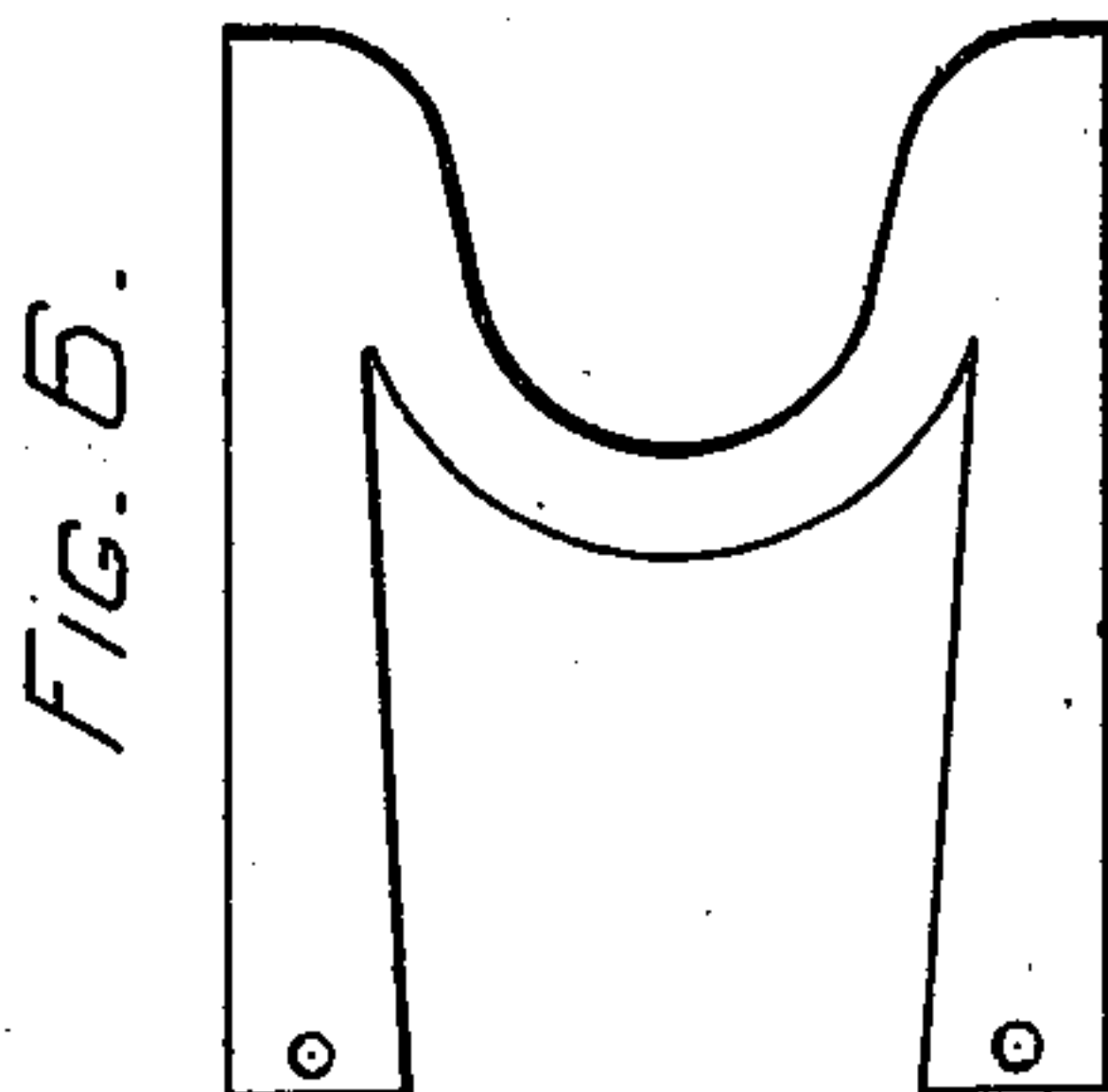
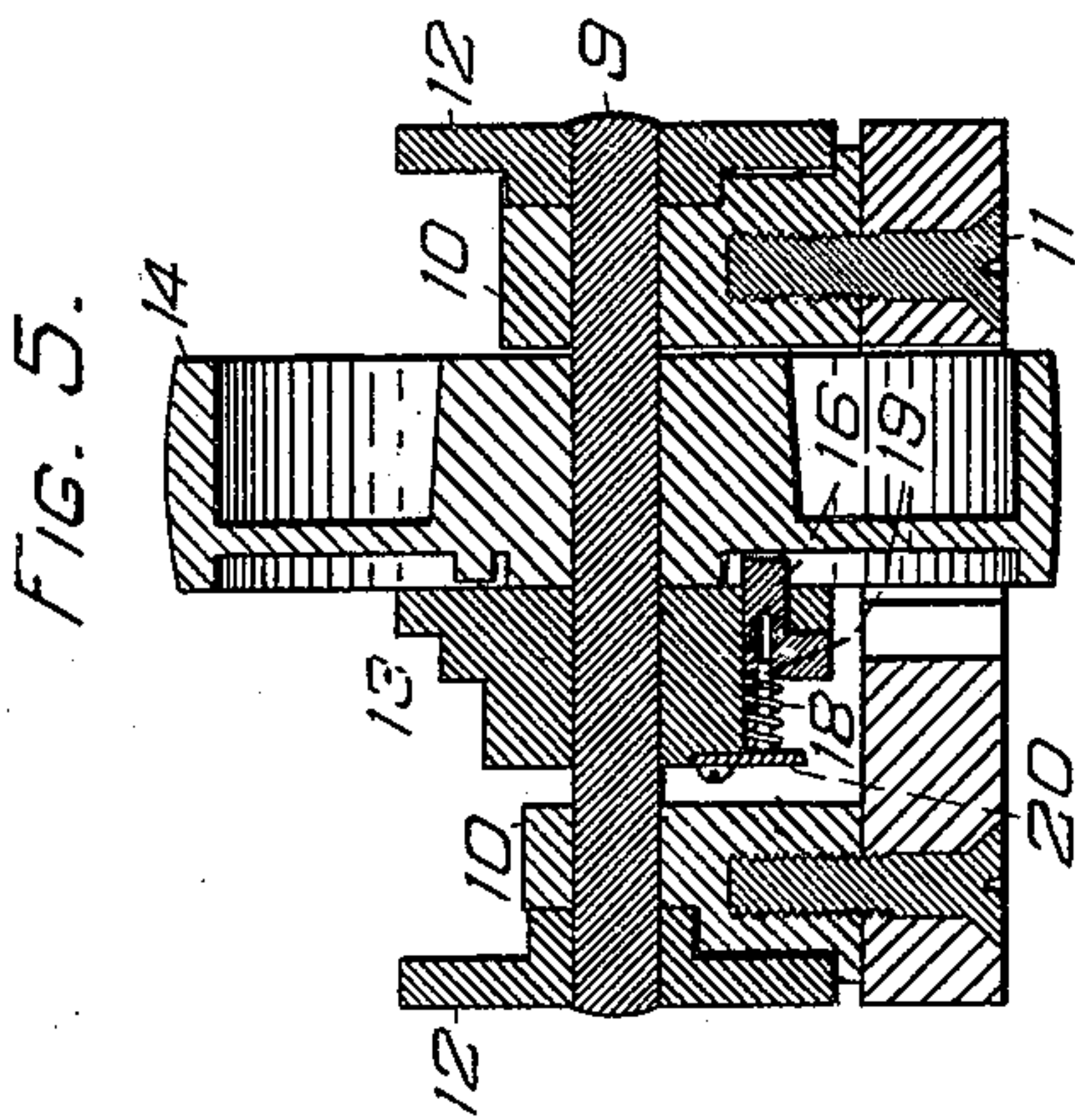
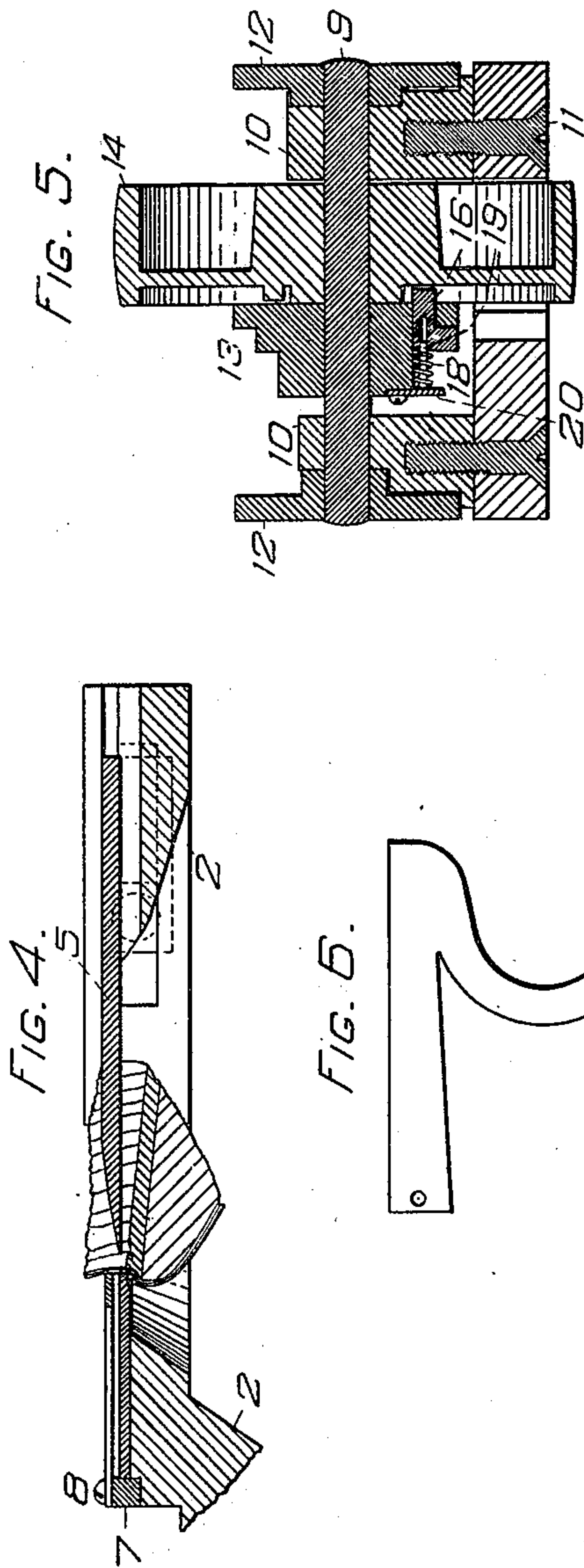
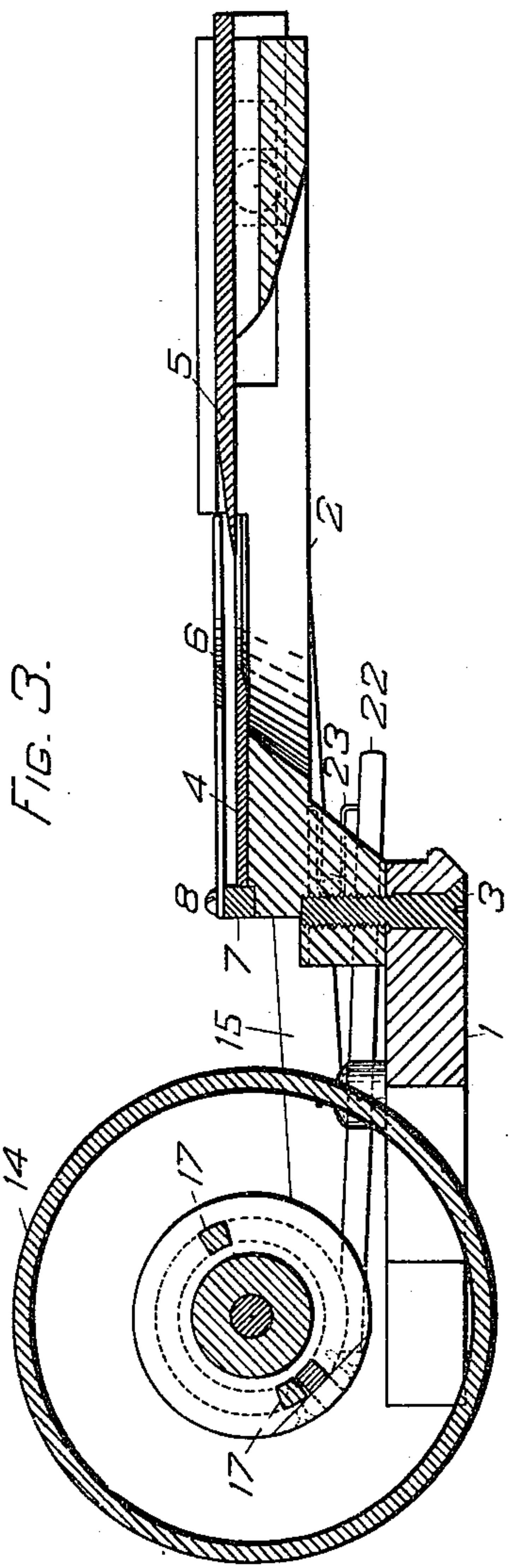
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WITNESSES

Edward S. Ray

Fred C. Fish

INVENTOR  
Octave Paquette  
PER  
Benjamin Phillips  
ATTORNEY



# UNITED STATES PATENT OFFICE.

OCTAVE PAQUETTE, OF HAVERHILL, MASSACHUSETTS.

## TOE-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 666,282, dated January 22, 1901.

Application filed August 20, 1900. Serial No. 27,398. (No model.)

*To all whom it may concern:*

Be it known that I, OCTAVE PAQUETTE, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Toe-Trimming Machines; and I do hereby 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.

This invention relates to a toe-trimming machine for trimming off the projecting edges of the upper and lining at the toe portion of a lasted shoe.

In the manufacture of boots and shoes, and especially in welted work, it is necessary to trim off the projecting edges of the upper and lining at the toe portion after the shoe has been lasted and prior to the sewing operation in order to prevent these edges interfering with the operation of certain parts of the sewing mechanism, and especially of the looper and thread-finger. Heretofore, so far as I am advised, this operation has always been performed by hand. Such operation, in addition to being slow, has the disadvantage of producing non-uniform work, in some cases not enough of the material being trimmed off to accomplish the desired result and in others the material being trimmed so close to the sole that sufficient material is not left to form a strong seam or to support the inner edge of the welt.

The object of my invention is to provide a machine for performing this operation, whereby the projecting edges of the lining and upper can be trimmed off rapidly and in a perfectly uniform manner; and with this object in view my invention consists in a knife for trimming the edge of the upper at the toe portion of a shoe and an upper-support of substantially the shape of the toe of a shoe arranged to support the toe portion of the upper against the cut of the knife.

My invention also consists in the devices and combinations of devices hereinafter described and claimed.

In the specific embodiment of my invention, hereinafter described in detail, I provide an upper-supporting plate provided with a recess of substantially the shape of the toe portion

of a shoe, the lower edge of which forms a gage against which the toe portion of the last is pressed to bring the projecting edges of the lining and upper into position to be trimmed off, and a reciprocating knife cooperating with the upper edge of said plate to trim off such edges. To hold the upper and lining up to the reciprocating knife, I also preferably provide an upper-support above the plate above mentioned, between which and the said plate the knife passes in cutting the material.

In the accompanying drawings, which illustrate a preferred form of my invention, Figure 1 is a bottom plan view of a machine embodying the same. Figure 2 is a view in side elevation of the machine shown in Fig. 1. Figure 3 is a longitudinal sectional view on the line 3 3, Fig. 1. Figure 4 is a detail sectional view of the parts concerned in the trimming operation with a shoe in position for trimming. Figure 5 is a transverse sectional view on the line 5 5, Fig. 1, showing the actuating mechanism for the trimming-knife; and Figure 6 is a plan view of one of the upper-supporting plates detached.

Referring to the drawings, in which like characters of reference indicate like parts, the frame of the machine, which may be of any suitable construction, comprises two parts 1 and 2, the part 1 being adapted to be secured to any suitable support or standard and the part 2 being secured to the part 1 by screws 3 and extending horizontally therefrom. The part 2 of the frame is provided with an opening extending therethrough, the lower edges of which are beveled, as shown in Figs. 3 and 4, to allow a lasted shoe to be readily inserted therein and the toe portion to be placed in position to be operated upon by the trimming-knife.

4 designates a plate secured to the top of the part 2 of the frame and projecting inwardly over the opening therein. The plate 4 is provided with a recess of substantially the shape of the toe portion of a shoe and is adapted to form a rest or seat for receiving the toe portion of a shoe, with the edges of the upper and lining projecting above the plate and supported thereby against the action of the knife. The lower edge of the plate 4 is beveled off, as is clearly shown in Figs. 3 and 4, to form a surface against which the toe of



the lasted shoe is pressed, the edge of the plate forming a gage for insuring the placing of the shoe in position to be properly trimmed.

5 The machine illustrated is particularly adapted for operation upon shoes in which the upper is held at the toe portion of the last by means of a lasting wire or tape, the wire or tape engaging the lower edge of the  
10 plate 4, as is shown in Fig. 4, and the thickness of the plate determining how close to the wire the upper is to be trimmed. The upper edge of the plate 4 constitutes a stationary knife-edge, and cooperating with this  
15 knife-edge is a knife 5, mounted to reciprocate in suitable guideways formed in the part 2 of the frame. The cutting edge of this knife is V-shaped, as shown in Fig. 1, the shape being such that the material is first engaged by the knife at the sides of the recess  
20 in the plate 4, then at the central portion of the recess, and finally at the intervening portions. By this construction the material is not displaced and is cut by a shearing action. As has been stated, the plate 4 forms  
25 a support for the upper and holds it against the action of the knife, and this plate may be relied upon alone to accomplish this result. To prevent the material being crowded over  
30 the upper edge of the plate 4 without being cut or to prevent the material being cut on more or less of a bevel, I prefer, however, to provide a support for the upper above the plate 4, between which and the plate the  
35 knife 5 passes, such support being shown as a plate 6, secured to a spacing-block 7, fastened to the part 2 of the frame at the rear of the plate 4. The plate 6 is shown detached  
40 in Fig. 6, in which it will be seen that the forward end of the plate is provided with a recess similar in shape to that of the recess of the plate 4. The body portion of the plate is cut away, leaving a strip at each side extending rearwardly from the front portion,  
45 and the plate is secured to the block 7 by screws 8, passing through holes in the ends of these strips. The front portion of the plate 6 is thus held yieldingly in position and can be set close to the plate 4 without interfering with the action of the knife 5, which  
50 forces the plate 6 upwardly in passing between it and the plate 4.

The knife 5 is adapted to make one complete reciprocation each time the machine is  
55 thrown into operation and to stop at the limit of its backward movement. The mechanism for so actuating the knife is conveniently constructed as follows: Referring to Fig. 5, 9 designates a driving-shaft journaled in  
60 blocks 10, secured to the part 1 of the frame by screws 11 and having rigidly secured thereto crank-disks 12 and clutch-disk 13 and loosely mounted thereon the driving-pulley 14. Rods or links 15 connect the crank-disks  
65 12 with the knife 5, being pivoted at one end on crank-pins secured to the disks and at the other to pins projecting from the sides of the

knife through slots in part 2 of the frame. For clutching the disk 13 to the pulley 14 the disk is provided with a block 16, adapted to  
70 engage one of two projecting lugs 17 on the hub of the pulley. The block is pressed into the path of the lugs by a spring 18, surrounding a pin 19, projecting horizontally from a  
75 plate 20, secured to the hub of the disk, the pin entering a hole in the block 16, and the spring 18 being seated between the plate 20 and the end of the block. The block 16 is provided with a projecting lug 21, adapted  
80 to be engaged by the wedge-shaped end of a lever 22, pivoted on the upper side of the part 1 of the frame and extending through an opening in said part to the under side of the part  
85 2 of the frame. The lever 22 is held in position to engage the projection 21 of the block 16 and remove the block from the path of the lugs 17 at the end of a complete revolution  
90 of the shaft by a spring 23. (See Fig. 2.)

The operation of the machine above described is as follows: The knife 5 being in its  
95 backward position and the shaft 9 held from rotation by the engagement of the end of the lever 22 with the lug 21 of the block 16, a lasted shoe is inserted in the opening in the  
100 part 2 of the frame from below and placed in the position shown in Fig. 4, the toe portion fitting the recess in the plate 4, the lasting-wire engaging the lower edge of the plate and the edges of the upper and lining projecting  
105 above the upper-support. When the shoe has been placed in the proper position, the operator presses upon the end of the lever 22, which extends within convenient reach of the  
110 forefinger of the hand grasping the shoe, thereby rocking the lever on its pivot and removing the other end of the lever from engagement with the lug 21 of the block 16,  
115 which is forced into the path of the lugs 17 and engaged by one of them in the rotation of the pulley 14. The shaft 9 now makes a complete revolution when the lug 21 is engaged by the wedge-shaped end of the lever  
120 22 and the block 16 removed from the path of the lugs 17 and the shaft 9 stopped in its initial position. During the revolution of the shaft 9 the knife 5 is actuated to trim off the projecting edges of the lining and upper  
125 through the crank-disks 12 and links 15 and stopped at the limit of its backward movement. During the cutting action of the knife the material is supported at each side of the  
130 knife by the edges of the plates 4 and 6 and a clean cut at right angles to the surface of the material insured.

In the machine above described it will be  
135 noted that the trimming-knife acts from the inside of the upper and lining outward, and thus the lining is engaged first by the knife and is supported by the upper while being cut. This arrangement of the knife I consider the  
140 best, as the lining is thereby cut in a more satisfactory manner; but it is to be understood that my invention is not limited to this arrangement, but that an arrangement in



which the knife acted from the outside inward would be within the scope of my invention. It is also to be understood that the machine herein illustrated and described exemplifies but a single embodiment of my present invention, which, while the same is the best now known to me, may be modified in many ways in its construction and organization without any departure from my present invention, which involves generic features not limited to details of construction. I would also say that in so far as specific features are claimed they involve marked advantages over any other construction known to me.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A toe-trimming machine, having, in combination, a knife cutting in a plane substantially parallel with the bottom of the last, actuating means for the knife, and an upper-support of substantially the shape of the toe of a shoe arranged to support the toe portion of the upper above the bottom of the last against the cut of the knife, substantially as described.

2. A toe-trimming machine, having, in combination, a knife, actuating means for the knife, and upper-supports on both sides of the knife, of substantially the shape of the

toe of a shoe arranged to support the toe portion of the upper against the cut of the knife, substantially as described.

3. A toe-trimming machine, having, in combination, an upper-support shaped to surround the toe portion of the upper, a reciprocating knife arranged to cut from within the edge of the upper outward, and means to actuate the knife, substantially as described.

4. A toe-trimming machine, having, in combination, a knife, actuating means for the knife, a combined gage and upper-support of substantially the shape of the toe of a shoe arranged to support the toe portion of the upper and form a rest for the toe portion of the last, substantially as described.

5. A toe-trimming machine, having, in combination, a knife, actuating means for the knife, upper-supports on both sides of the knife, one of which is yieldingly mounted, said supports being of substantially the shape of the toe of a shoe, and arranged to support the toe portion of the upper against the cut of the knife, substantially as described.

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

OCTAVE PAQUETTE.

Witnesses:

FRED O. FISH,

CHRISTIANA KITCHING.