

W. S. BECHTOL.
SHEEP SHEARS.

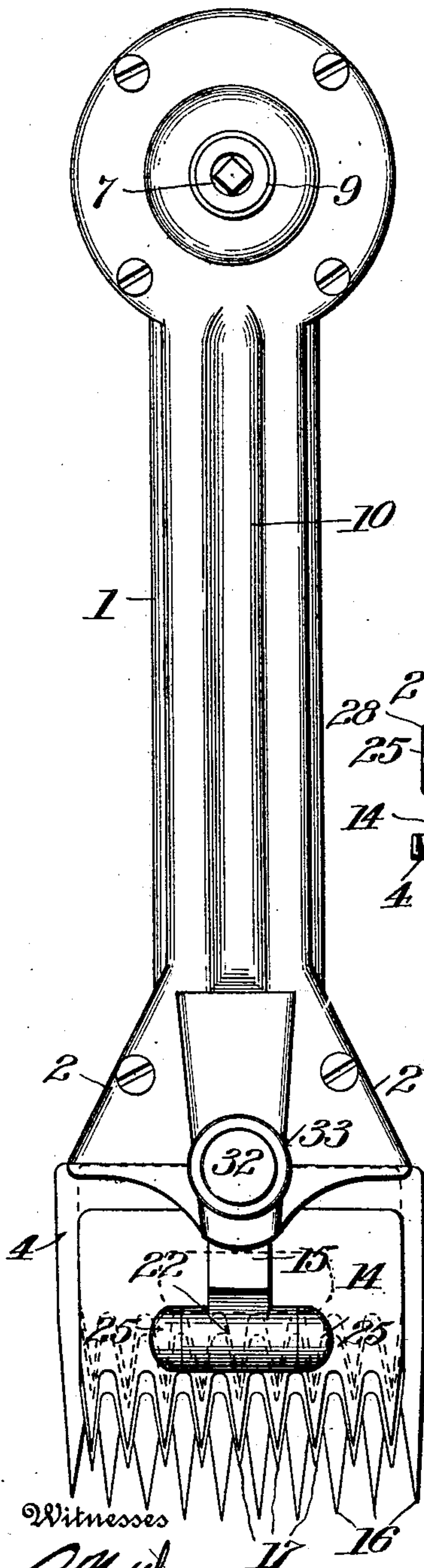
APPLICATION FILED NOV. 23, 1910.

999,145.

Patented July 25, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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Fig. 3.

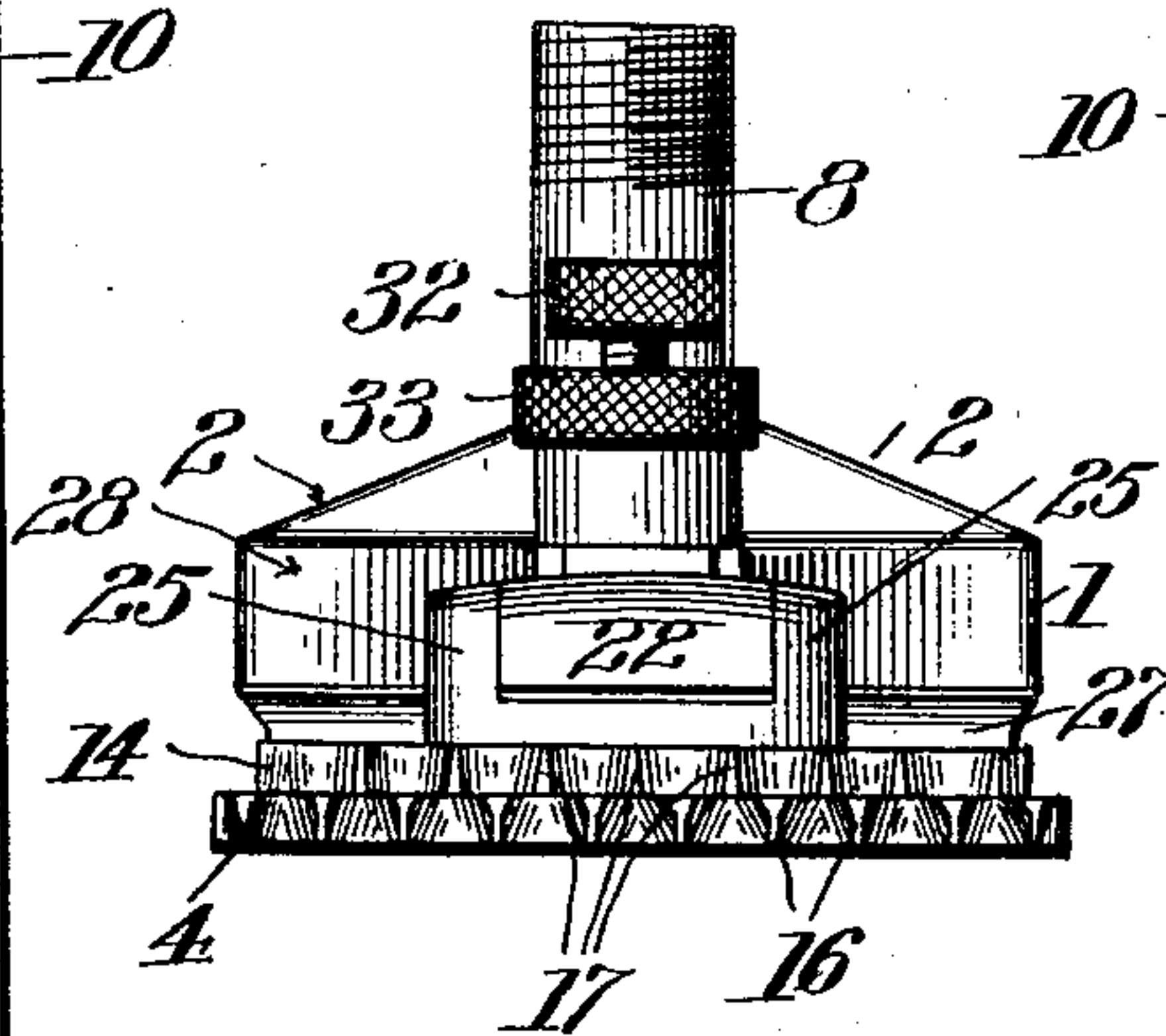


Fig. 2.

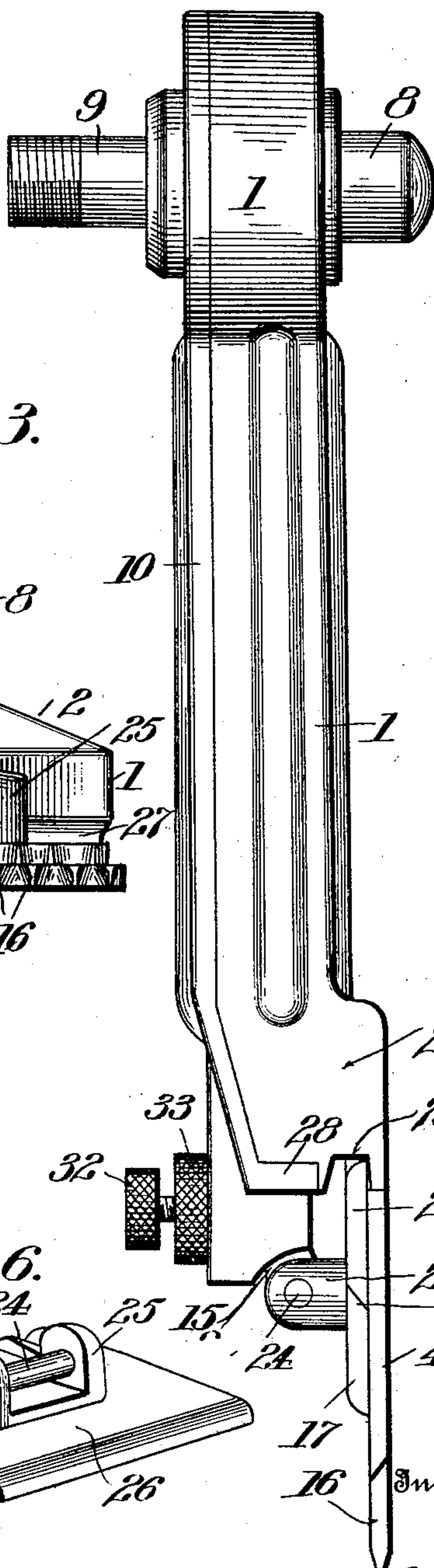
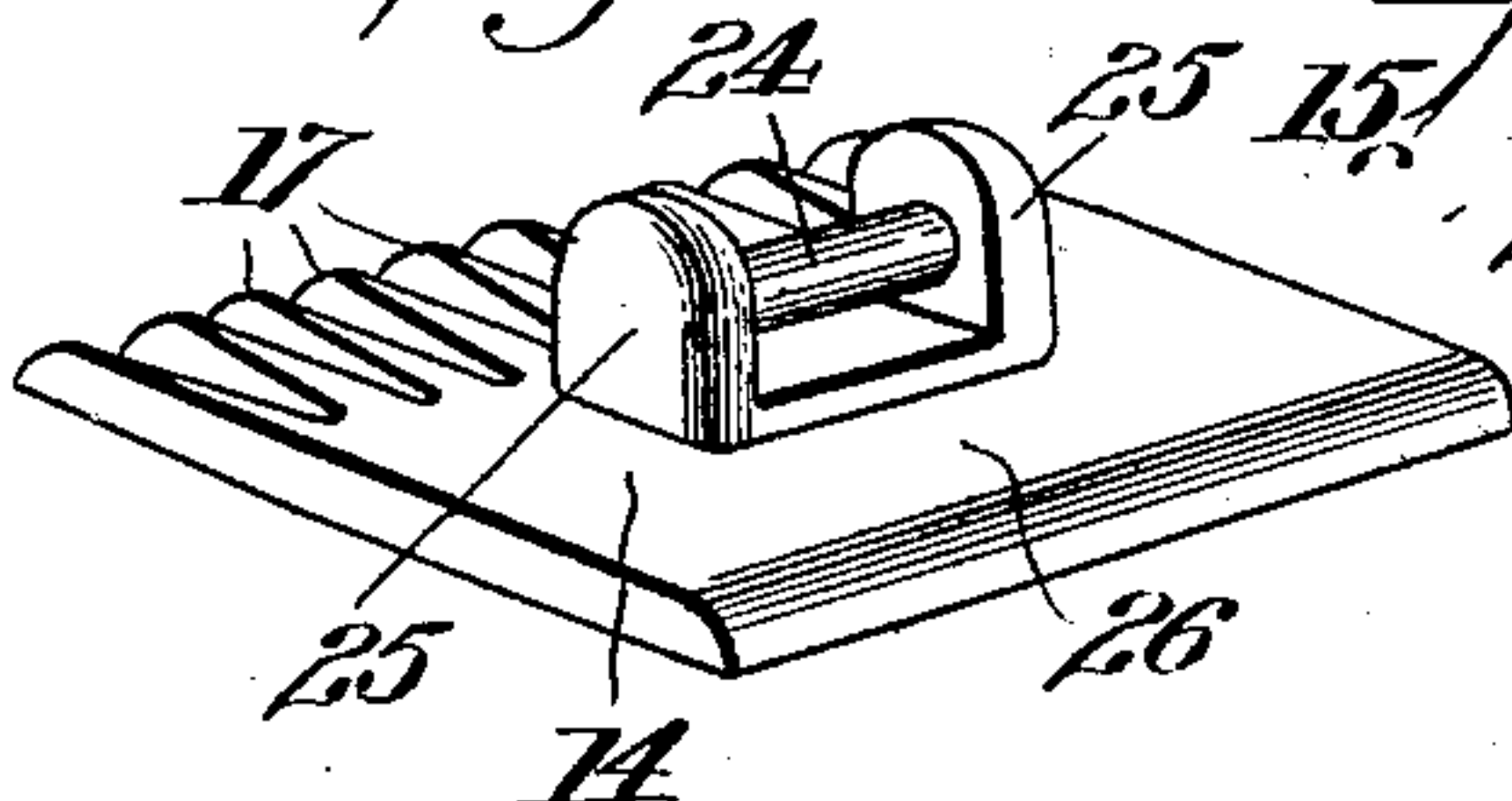


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 4.

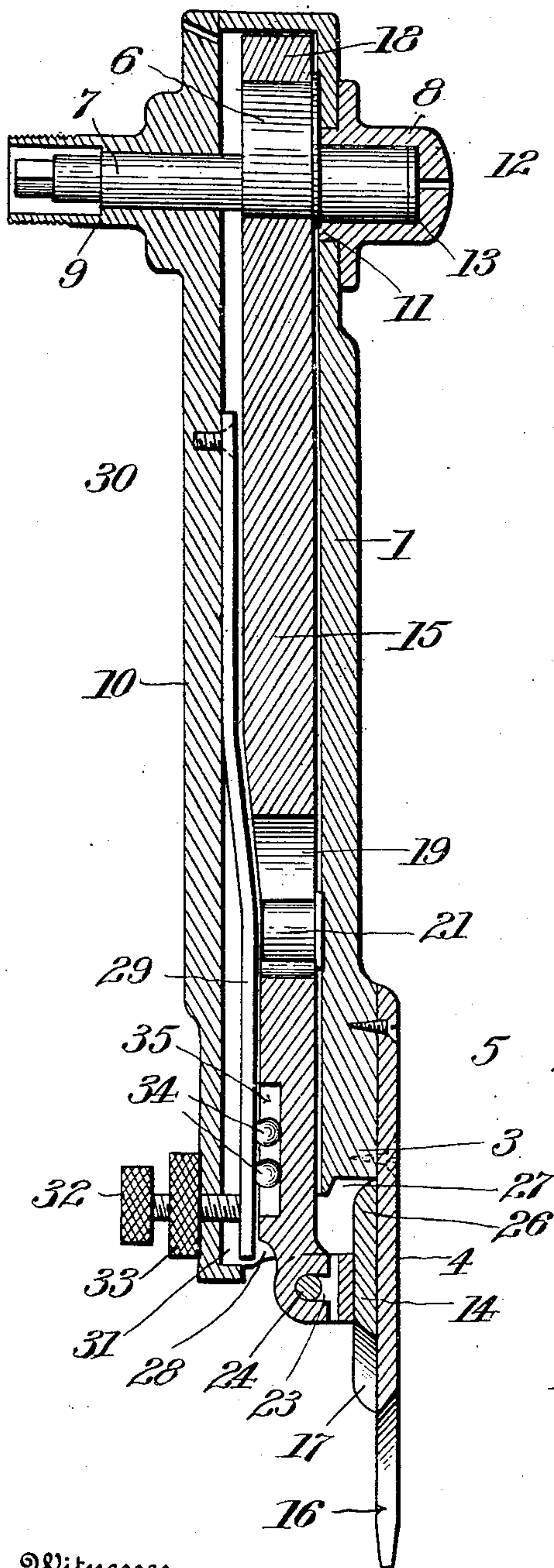
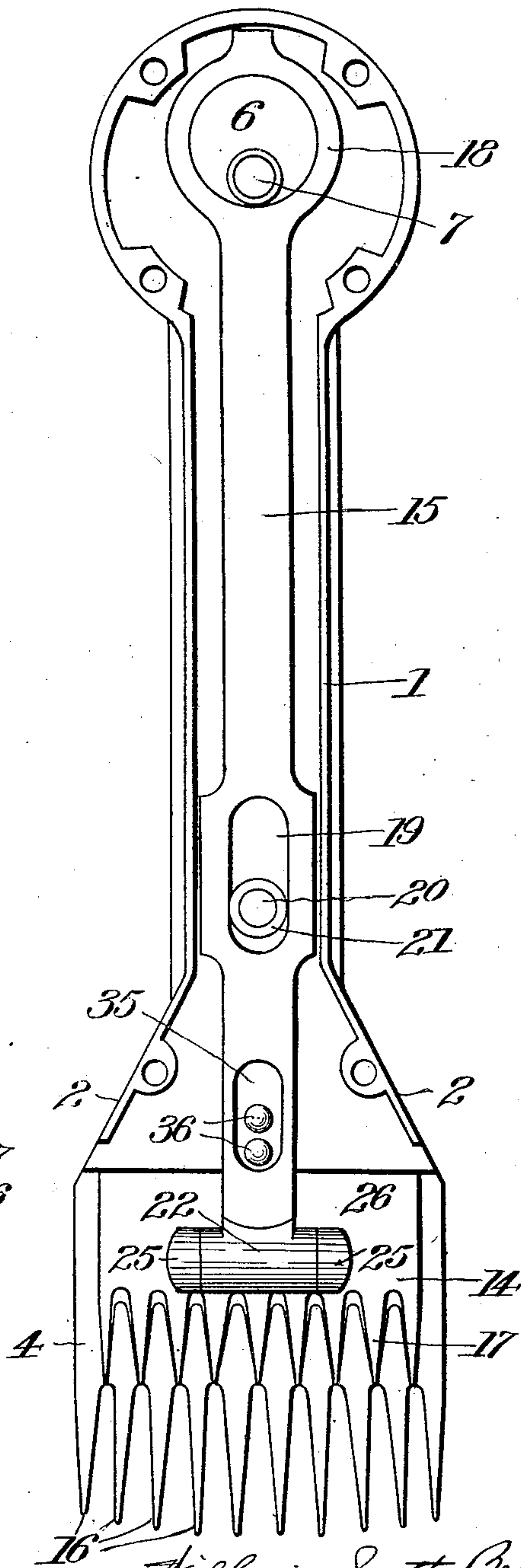


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SHEEP-SHEARS.

999,145.

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To all whom it may concern:

Be it known that I, WILLIAM S. BECHTOL, a citizen of the United States, residing at Goliad, in the county of Goliad and State of Texas, have invented certain new and useful Improvements in Sheep-Shears; 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.

My invention relates to sheep shears of that type in which the movable knife travels in a circular or oval path.

The objects of the invention, among other things, are to improve and simplify the construction of the knives, to exclude dirt and trash from entering the case or shell containing the operating mechanism, to provide a more efficient bearing for the pitman upon the movable knife, to facilitate the disconnection of said movable knife from the pitman for the purpose of sharpening or cleaning the former, and to increase the bearings for the eccentric, which operates the pitman, to the end that the eccentric will operate more smoothly and be more durable.

Other objects will become apparent from the following description.

The invention consists in the features of construction, combinations and arrangements of parts, hereinafter set forth, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a plan view of a device constructed in accordance with my invention, the movable blade being shown in its farthest extended position in solid lines and in its farthest retracted position in dotted lines. Fig. 2 is a side view thereof showing the movable blade in its farthest retracted position. Fig. 3 is a front end view. Fig. 4 is a longitudinal vertical section taken centrally of the device. Fig. 5 is a plan view with the cover of the case or shell removed, and Fig. 6 is a detailed view of the movable knife.

Referring more particularly to the drawings, 1 designates the case or shell which contains the operating mechanism and is adapted to serve as a handle for manipulating the implement. This case is flared, as at 2, at its forward end. Said flared portion preferably projects below the main portion of the shell or case, at 3, and to this down-

ward projection the stationary lower knife 4 is rigidly secured in any suitable manner, such as by one or more screws 5 shown in Fig. 4. The under surface of the downward projection 3 of the case is flat to conform to the blade 4. The rear end of the case is rounded and enlarged to receive the eccentric 6 mounted on the shaft 7 projecting into a tubular extension or socket piece 8 on the bottom of the case and into an open-ended sleeve 9 on the cover 10 of said case. The tubular extension or socket piece 8 is fitted with a bushing 11 which projects above it and supports the eccentric. Said socket piece is further provided with a small opening 12 in its lower end for the admission of a lubricant. A disk 13 covers this opening on the inside of the socket piece for the purpose of retaining the lubricant and feeding it to the shaft. The upper end of the shaft, which extends into the sleeve 9, may be constructed to adapt it for connection with a flexible power shaft (not shown), of any preferred pattern. Said sleeve serves to protect the end of the eccentric shaft and its connection (not shown) with the flexible power shaft.

The movable knife 14 is mounted upon the upper surface of the fixed knife, 4, and is capable of circular movement imparted thereto by the pitman 15 mounted in the case. Both knives are provided with series of cutter teeth 16, 17, each tooth being tapered longitudinally and provided with sharpened side cutting edges to adapt said teeth, when they pass each other, to shear the wool off of the sheep or other animal. Said pitman is looped at one end to fit around the eccentric, as illustrated at 18 in Figs. 4 and 5. At an intermediate point, said pitman has a slot 19 into which extends a guide pin 20 secured to the base of the shell and fitted with a friction roller 21. The outer end of the pitman is T-shaped, the head 22 having a groove 23 in its under surface to fit over a pivot pin 24 mounted between upstanding lugs 25 on the movable knife. The grooved head fits snugly between said lugs 25 so that its movements are imparted to said knife without lost motion.

It will be observed that the movable knife may be readily detached from the pitman by raising the grooved head of the latter and without necessitating the removal of the pivot pin. The importance of this facility for removing the upper blade for sharpen-

ing and cleaning will be readily appreciated by those skilled in the art to which my invention relates.

It will be observed that the upstanding lugs and pivot pin on the movable knife, whereby it is connected to the pitman, are located about midway between the front and rear edges of said blade. In other words, the blade extends well beyond its connection with the pitman in a rearward direction. The rearwardly extending portion 26 of the knife affords the proper leverage for holding the cutter teeth evenly upon the stationary blade during the operation of the implement when the resistance of the wool being cut has a tendency to raise the teeth of the upper knife, especially their outer ends, away from those of the lower knife. The forward edge of the downward projection 3 on the case is provided with a groove 27 to accommodate the rear edge of the upper knife in its farthest retracted position, whereby the implement is made more compact.

The cover 10 has a downwardly extending flange or lip 28 which closes the front end of the case or handle, leaving just space enough for the projecting end of the pitman to work in and excluding dirt and trash from the interior of the case where it would clog the pitman and seriously interfere with the operation of the implement. A pressure spring 29 is secured at one end to the under surface of the cover, as by the screw 30, and has its other end seated in a cavity 31 near the front end of said cover. This front end of the spring is adjustable by means of the thumb screw 32 equipped with a clamping nut 33 and projecting from the outer surface of the cover. The front adjustable end of the spring bears upon one or more ball-bearings 34 confined to a socket or depression 35 in the upper surface of the forward end of the pitman. The adjusting screw and ball-bearings are arranged near the extreme outer ends of the cover and pitman, and in the space in the downwardly extending flange or lip 28 through which the pitman projects. The adjusting device is located in this extreme forward position in order to bring the bearing point as near as possible to the connection of the pitman with the movable knife. The depression or raceway 35 for the ball-bearings extends beyond the rear edge of the movable knife for the same purpose. In this connection, attention is called to the fact that when the upper blade is in its farthest retracted position, as illustrated in Fig. 2, its connection with the pitman is brought into close proximity to the downwardly extending flange or lip which closes the front end of the case. This necessitates the provision of the groove 27 in the downward projection 3 of the case in order to accommodate a rear-

wardly extending portion of the knife of adequate length to secure the necessary leverage on the cutter teeth.

The operation of my invention is as follows: When power is applied to the eccentric shaft, the eccentric is rotated and imparts to the pitman an endwise and reciprocating movement controlled and limited as to lateral or edgewise play by the guide pin which operates in the slot of the pitman. This movement of the pitman is, of course, imparted to the upper knife, the cutter teeth of which are thus caused to follow or describe a curve or oval course, and, as they pass the cutter teeth on the stationary knife, the wool is severed with accuracy and ease. The spring serves to insure the necessary contact between the two knives, and the adjustability of said spring permits compensation to be made for the wear upon the cutting faces of the knives.

I do not confine myself to the exact details herein shown and described, as I am aware that changes and alterations in the form and proportions of the parts, as well as the details of construction, can be made without departing from the spirit or sacrificing the advantages of my invention.

I claim:

1. In an implement of the character described, the combination, with a handle, of a flat knife secured to one end of the handle, a movable knife mounted upon said stationary knife, and means mounted in the handle for actuating said movable knife in a circular path, the handle being provided with a transverse groove just above the stationary knife to receive the rear edge of the movable knife when the latter is in its retracted position.

2. In an implement of the character described, the combination, with a handle having a downward projection at its front end, of a flat knife secured to said projection, a movable knife mounted upon said stationary knife, and means mounted in the handle for actuating said movable knife in a circular path, the downward projection on the handle being provided with a transverse groove just above the stationary knife to receive the rear edge of the movable knife when the latter is in its retracted position.

3. In an implement of the character described, the combination, with a chambered handle, of a stationary knife secured to the end of the handle, a movable knife mounted upon said stationary knife, a pitman mounted in the handle and having one of its ends projecting therefrom and connected to the movable knife, means to actuate said pitman to impart a circular movement to the upper knife, said pitman also having a raceway in its upper surface overlapping the rear edge of the movable knife; a pressure spring mounted in the handle above said

pitman, and ball-bearings mounted in said raceway and interposed between the pitman and spring for the purpose specified.

4. In an implement of the character described, the combination, with a chambered handle, of a stationary knife secured to the end of the handle, a movable knife mounted upon said stationary knife, a pitman mounted in the handle and having one of its ends projecting therefrom and connected to the movable knife, means to actuate said pitman to impart a circular movement to the upper knife, said pitman also having a raceway in its upper surface overlapping the rear edge of the movable knife; a pressure spring mounted in the handle above said pitman, ball-bearings mounted in said raceway and interposed between the pitman and spring and means to regulate the pressure of said spring upon said ball-bearings, said pressure regulating means being arranged immediately above said ball-bearings.

5. In an implement of the character described, the combination, with a chambered handle, of a stationary knife secured to one end thereof, a movable knife mounted upon said stationary knife, a pitman mounted in the handle and having one of its ends projecting therefrom and connected to the movable knife, means to actuate the pitman whereby a circular movement is imparted to the upper blade, the end of the handle being provided with a transverse groove just above the stationary knife to receive the rear edge of the movable blade when the latter is retracted, and means for holding the movable knife in contact with the stationary knife, said holding means being capable of bearing upon the pitman at a point forward of the rear edge of said movable knife.

6. In an implement of the character described, the combination, with a handle, of a stationary blade secured to one end thereof, a movable blade mounted upon the stationary blade and provided with upstanding

lugs with a pivot pin extending between them, a pitman mounted in the handle and having one of its ends projecting therefrom and grooved to fit over said pivot pin and between said upstanding lugs on the movable knife, and means to actuate said pitman whereby the upper knife is caused to move in a circular path.

7. In an implement of the character described, the combination, with a handle of a stationary blade secured to one end thereof, a movable blade mounted upon the stationary blade and provided with upstanding lugs with a pivot pin extending between them, a pitman mounted in said handle and projecting at one end therefrom, the projecting end of said pitman being T-shaped and provided with a groove in the under surface of its head to fit said pivot pin, said head fitting snugly between said upstanding lugs, and means to actuate the pitman whereby the upper blade is caused to move in a circular path.

8. In an implement of the character described, the combination, with a handle, a stationary blade secured to one end of the handle, a movable blade mounted upon said stationary blade, an eccentric mounted in the other end of the handle, a pitman fitted around said eccentric and connected to the movable blade for the purpose specified, a socket piece arranged below the eccentric, a shaft for actuating said eccentric, one end of said shaft being journaled in said socket piece, and a disk interposed between the bottom of the socket pieces and the end of the shaft, said socket piece being provided with a perforation opening upon said disk, all for the purposes specified.

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

WILLIAM SCOTT BECHTOL.

Witnesses:

A. R. FRANKE,
P. L. CAMPBELL.