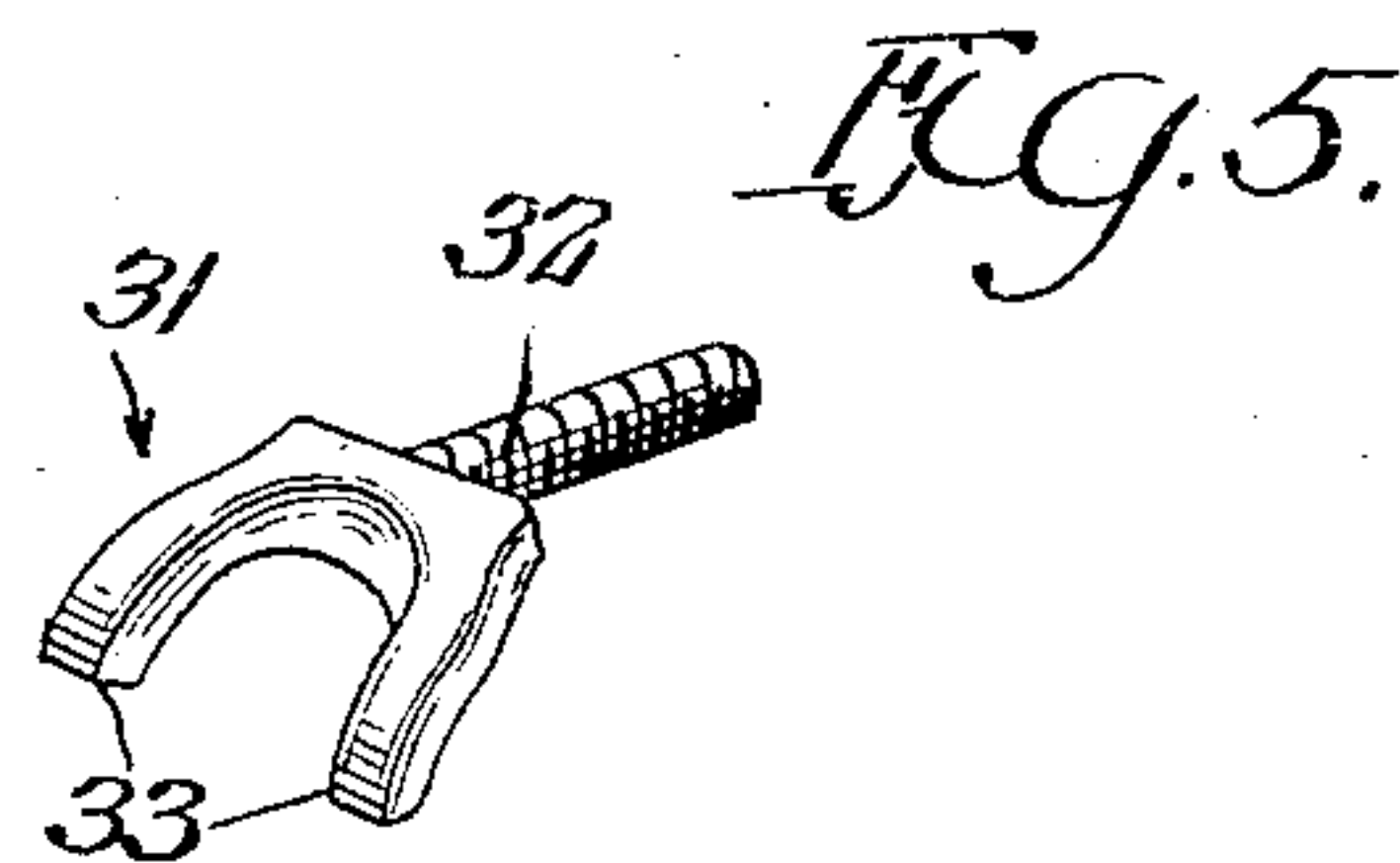
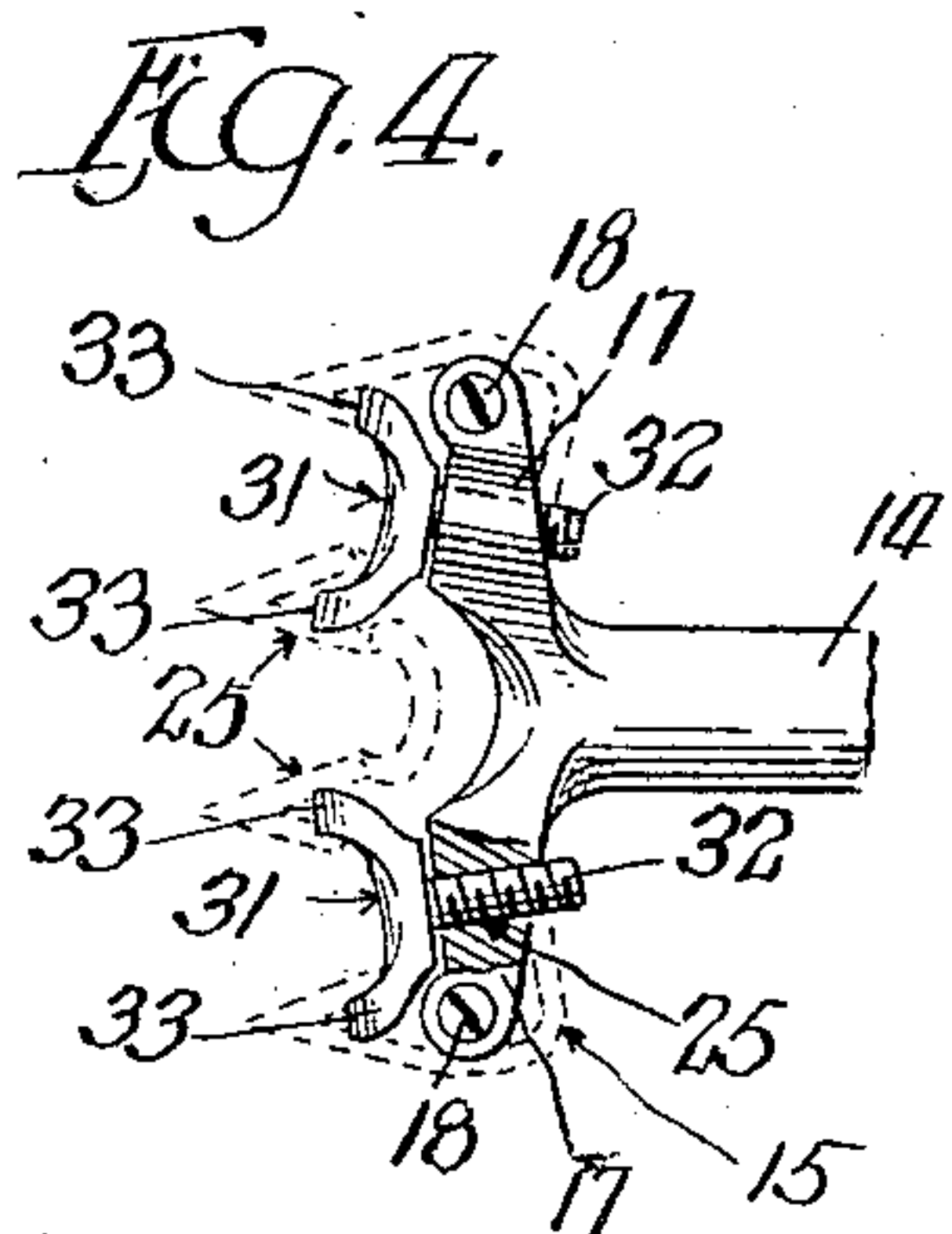
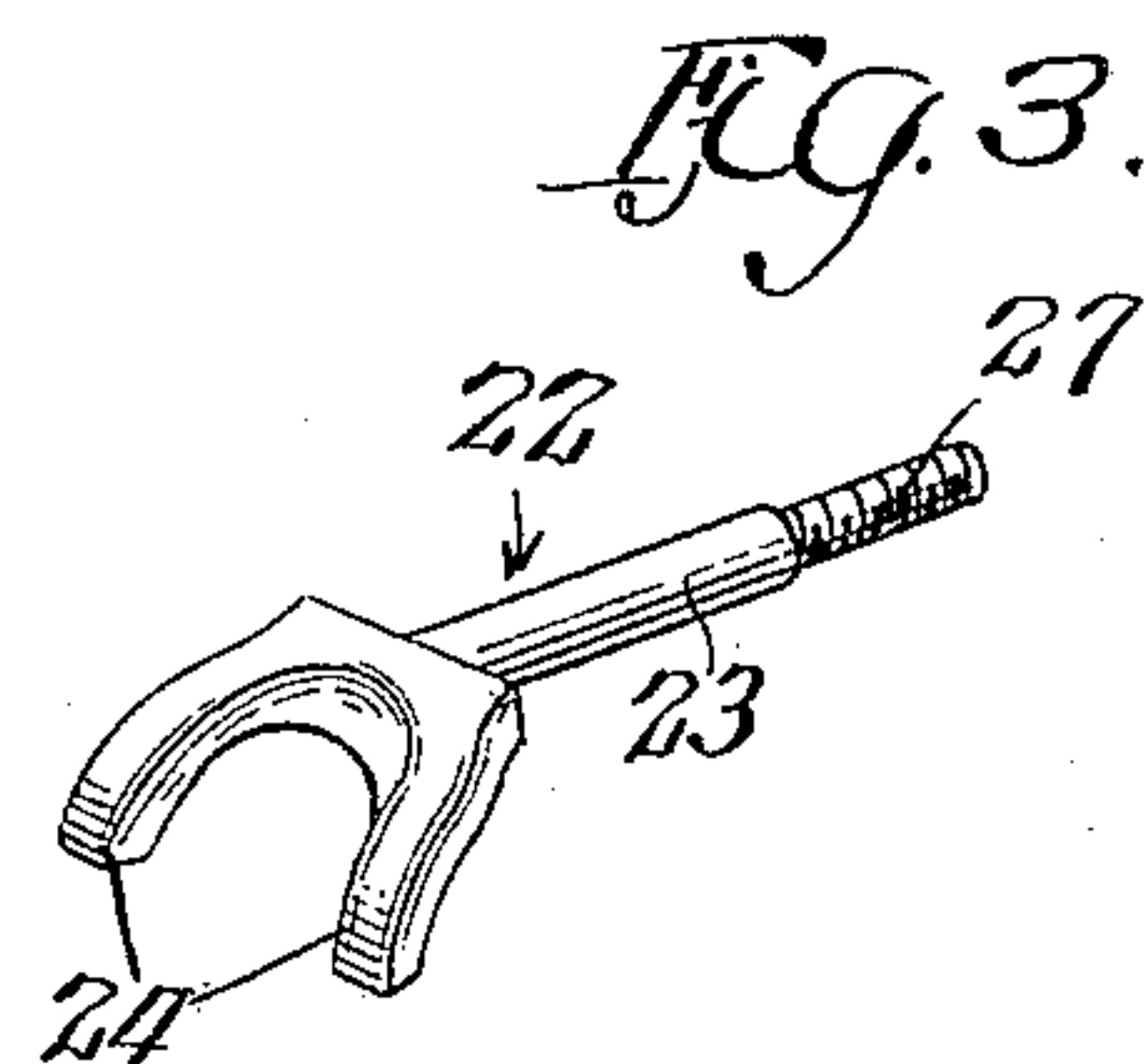
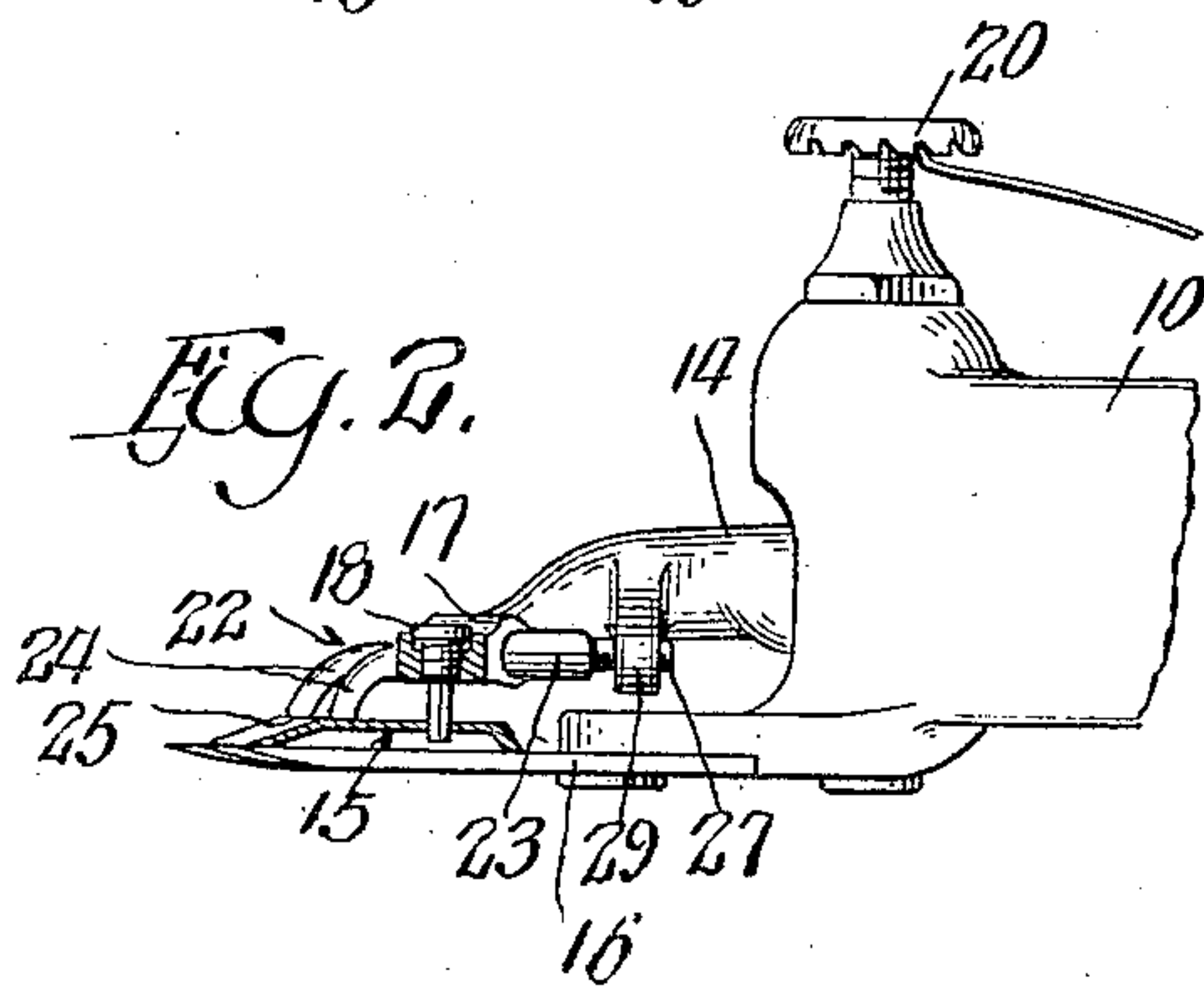
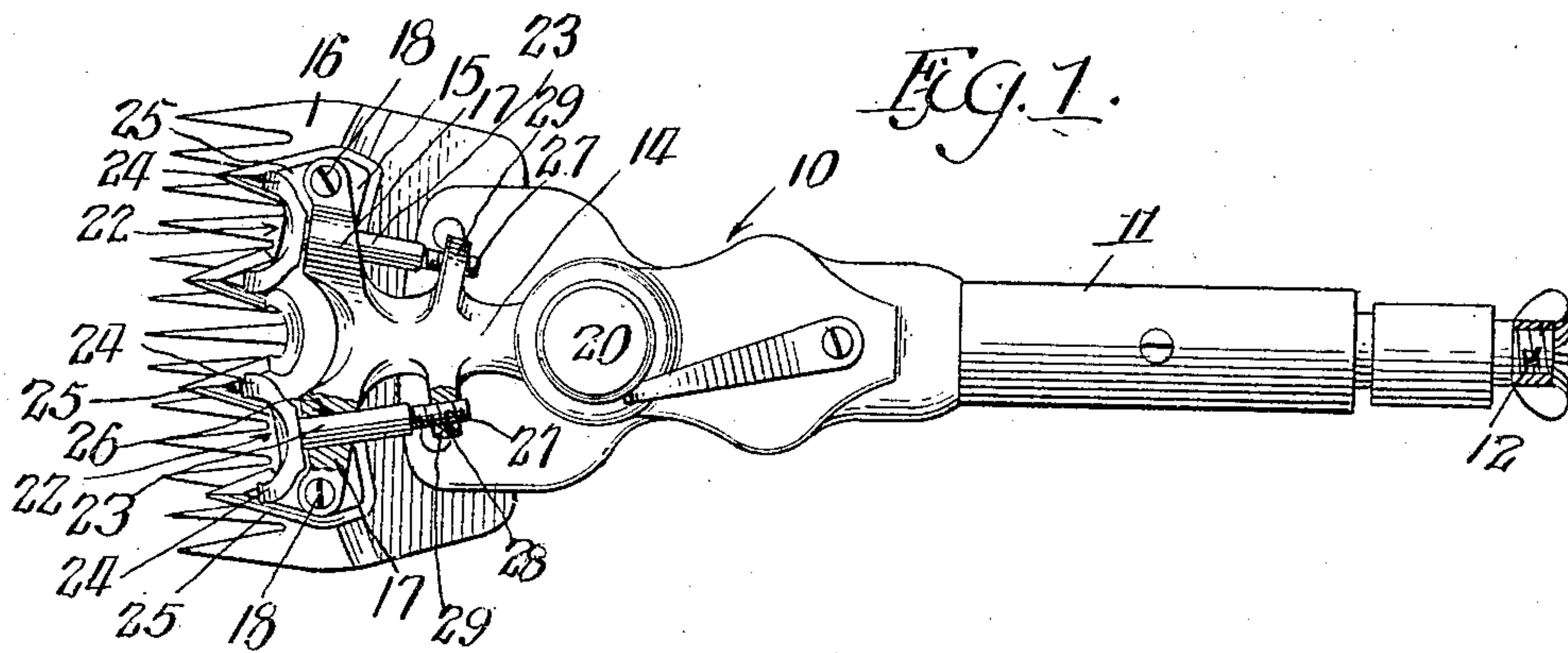


C. M. PALMER.  
SHEARING MACHINE.  
APPLICATION FILED JULY 27, 1908.

931,141.

Patented Aug. 17, 1909.



Witnesses:  
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Attys



# UNITED STATES PATENT OFFICE.

CHESTER M. PALMER, OF MONTGOMERY, ILLINOIS.

## SHEARING-MACHINE.

No. 931,141.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed July 27, 1908. Serial No. 445,470.

*To all whom it may concern:*

Be it known that I, CHESTER M. PALMER, a citizen of the United States, and a resident of Montgomery, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Shearing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to improvements in shearing machines and the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

The object of the invention is to provide an improved construction for clamping the cutting knife on the comb, so arranged as to adjust the clamping pressure toward and from the points of the cutter teeth to properly apply the tension pressure to cutter teeth of different lengths and to teeth, the lower or cutting edges of which vary from a straight line contact with the comb.

In the drawings:—Figure 1 is a plan view of a shearing machine made in accordance with my invention. Fig. 2 is a side elevation of the front end of the machine, showing parts in section. Fig. 3 is a perspective view of one of the clamping devices carried by the fork which transmits the tension pressure to the cutting knife. Fig. 4 is a fragmentary plan view, partially in section, of another form of operating fork or lever, showing a modified form of clamping device carried thereby. Fig. 5 is a perspective view of the clamping device shown in Fig. 4.

As shown in the drawings, 10 designates the frame or casing of the shearing machine, and 11 a tube attached to the rear end thereof and constituting a bearing for the driving shaft 12.

14 designates a horizontally vibratory cutter lever which is pivotally mounted on the machine in the usual manner, and to the forward end of which is connected the cutter 15 which reciprocates on the usual comb 16 attached to the frame or casing.

The foregoing parts of the machine may be made of any suitable or preferred construction so far as my invention is concerned, with the exception that the front end of the vibratory cutter lever shall be designed to receive the clamping devices to which the

present invention relates. The said cutter lever is shown as formed at its forward end to provide the usual fork arms 17, 17 which are located over the body of the cutter. Said fork arms are connected with the cutter by means of screw studs 18, 18 which extend downwardly through openings in the ends of said fork arms and have screw-threaded engagement with said arms. The said screw studs extend downwardly beyond said arms for engagement with openings in the body of the cutter. The fork end of the cutter lever is pressed toward the cutter by a tension device mounted in the casing or frame, which embraces a tension screw 20, said tension screw acting upon the lever to press the forward or forked end of the same toward the cutter.

Referring now to the clamping devices by which the pressure of the tension device acting on the cutter lever is transmitted to the cutter, and the manner of mounting the same on the fork of the operating lever, said parts are made as follows: Said tension devices, which are designated as a whole by 22, each embraces a shank portion 23 and laterally separated presser fingers 24, 24, there being two of such fingers, as herein shown, arranged symmetrically with respect to said shank. Said presser fingers bear upon the upper faces of the teeth 25 of the cutter, there being two of such clamping devices and the cutter having four teeth. The shanks of said clamping devices extend rearwardly through horizontal, rearwardly extending apertures 26 near the outer ends of the fork arms. The said clamping devices are adapted for adjustment on the fork arms to move the presser finger 24 toward and from the fork arms, and to thus apply the pressure transmitted through the presser fingers at the proper points in the length of the cutter teeth. As herein shown, the adjustment of the clamping devices is effected by providing the rearwardly-extending shanks thereof with screw-threaded portions 27 which engage screw-threaded apertures formed in the operating lever. As shown in Figs. 1 to 3, inclusive, the said shanks 23 are elongated and extend rearwardly through screw-threaded apertures 28 formed in lugs 29, 29 which extend laterally from the operating lever in rear of the fork arms 17. The screw-threaded portion of said shanks are made of such length as to permit the proper range of adjustment of the clamping



devices longitudinally of the outer lever. When it is desired to adjust the clamping devices to move the same forwardly or rearwardly on the cutter teeth, the tension device is released so as to permit the cutter lever to be raised upwardly a sufficient distance to allow the presser fingers of the clamping devices to be rotated free of the comb. After the desired adjustment has been effected and the presser fingers are clamped upon the cutter teeth, the said clamping devices are held or locked from rotation in their positions of adjustment.

In the construction shown in Figs. 4 and 5, the clamping devices, designated therein as 31, are provided with shorter shanks 32 which are screw-threaded throughout their length, and the openings in the fork arms 17 rearwardly through which the said shanks extend are screw-threaded so that said clamping devices have direct screw-threaded connection with the fork arms themselves. The presser fingers 33 or the clamping devices, shown in Figs. 4 and 5, bear upon the teeth of the cutter in the same manner as do the presser fingers of the clamping devices before described.

The purpose of providing the adjustment for said clamping devices is to enable the pressure transmitted to the cutter through the presser fingers to be applied to the cutter teeth at the proper points in the length thereof, notwithstanding the shortening of the teeth due to wear and regrinding; it being evident that as the cutter teeth are shortened by reason of such wear and grinding, it is desirable to apply the tension pressure nearer to the base of the teeth. It is also found that the cutting edges of the teeth which contact with the comb vary from a straight line under certain conditions of grinding the teeth to sharpen the same. That is to say, the grinding face of a grinding stone may be of such curvature as to give a longitudinal concave line to the cutting edges of the teeth. In this event it is desirable that the pressure be applied to such points on the teeth as to flatten the teeth against the comb throughout the length thereof, and the device herein shown is adapted to produce such adjustment of the teeth.

The structural details of the invention herein shown may be varied within the spirit of my invention, and I do not limit the invention to the illustrated details except as hereinafter made the subject of specific claims.

It will be observed that the clamping devices are capable of a rocking motion relatively to the lever whereby the tension pressure on the cutter may be equalized.

I claim as my invention:—

1. In a shearing machine, the combination with a comb and a cutter arranged to vibrate

thereon, of a tension device for pressing the cutter to the comb embracing means for adjusting the pressure of the tension device to different points in the length of the cutter teeth.

2. In a shearing machine, the combination with a vibratory cutter lever, clamping devices carried thereby for engagement with the teeth of a cutter, and means for adjusting the clamping devices longitudinally of the cutter lever.

3. In a shearing machine, the combination with a cutter lever and clamping devices carried thereby adapted for engagement with the cutter and having screw-threaded connection with the said lever, permitting adjustment of the clamping devices longitudinally of the vibratory lever.

4. In a shearing machine, the combination with a comb, a cutter movable on the comb and a vibratory cutter lever, of clamping devices carried by the cutter lever and adapted for engagement with the teeth of the cutter, and means for adjusting said clamping devices longitudinally of the teeth of the cutter.

5. In a shearing machine, the combination with a comb, a cutter movable on the comb, and a vibratory cutter lever interlocked with the cutter for reciprocating the latter, of a clamping device carried by the cutter lever embracing a shank portion having screw-threaded connection with the cutter lever, and presser fingers adapted for engagement with the teeth of the cutter at longitudinally separated points on the teeth.

6. In a shearing machine, the combination with a comb, a cutter movable on the comb, and a vibratory cutter lever provided with fork arms which are interlocked with the cutter, of clamping devices comprising shanks which extend rearwardly through apertures in said fork arms and having screw-threaded engagement with said cutter lever, and provided at their forward ends with presser fingers adapted for contact with the teeth of the cutter at longitudinally separated points on the teeth.

7. In a shearing machine, the combination with a comb, a cutter movable on the comb, and a vibratory cutter lever provided with fork arms, said fork arms being provided with studs which interlock with the cutter, of clamping devices carried by the lever for engagement with the cutter teeth and adjustable on the lever relatively to the cutter.

8. In a shearing machine, the combination with a comb, a cutter movable on the comb and a vibratory cutter lever, of clamping devices carried by the cutter lever and adapted for engagement with the teeth of the cutter and capable of a rocking motion relatively to the lever, and means for adjusting said clamping devices longitudinally of the teeth of the cutter.

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9. In a shearing machine, the combination  
with a comb and a cutter arranged to vibrate  
thereon, of a tension device for pressing the  
cutter upon the comb, embracing means for  
5 exerting the tension pressure at different  
points in the length of the teeth and con-  
structed to equalize the pressure on the cut-  
ter from side to side thereof.

In testimony, that I claim the foregoing  
as my invention I affix my signature in the 10  
presence of two witnesses, this 24th day of  
July A. D. 1908.

CHESTER M. PALMER.

Witnesses:

WILLIAM L. HALL,  
GEORGE R. WILKINS.