

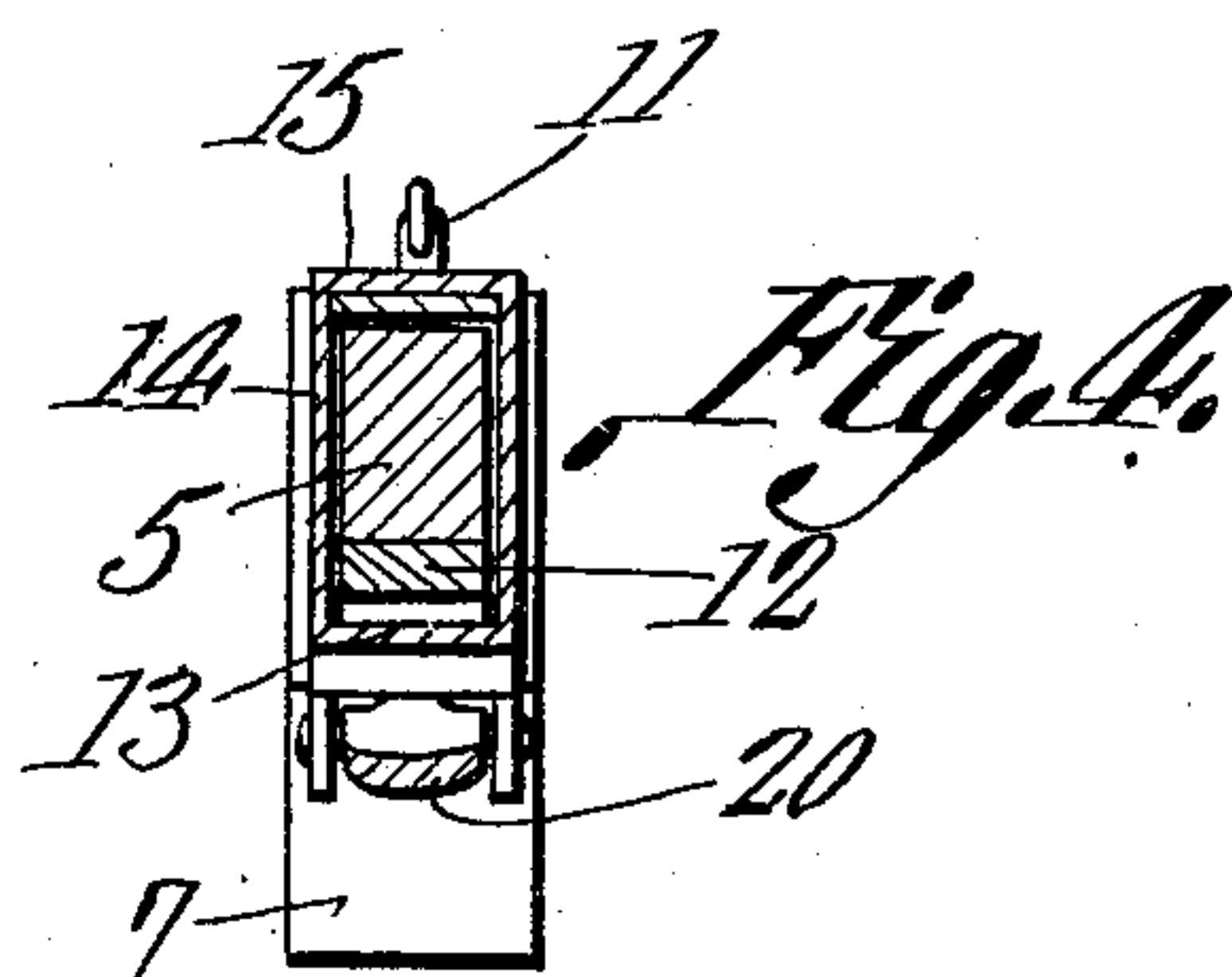
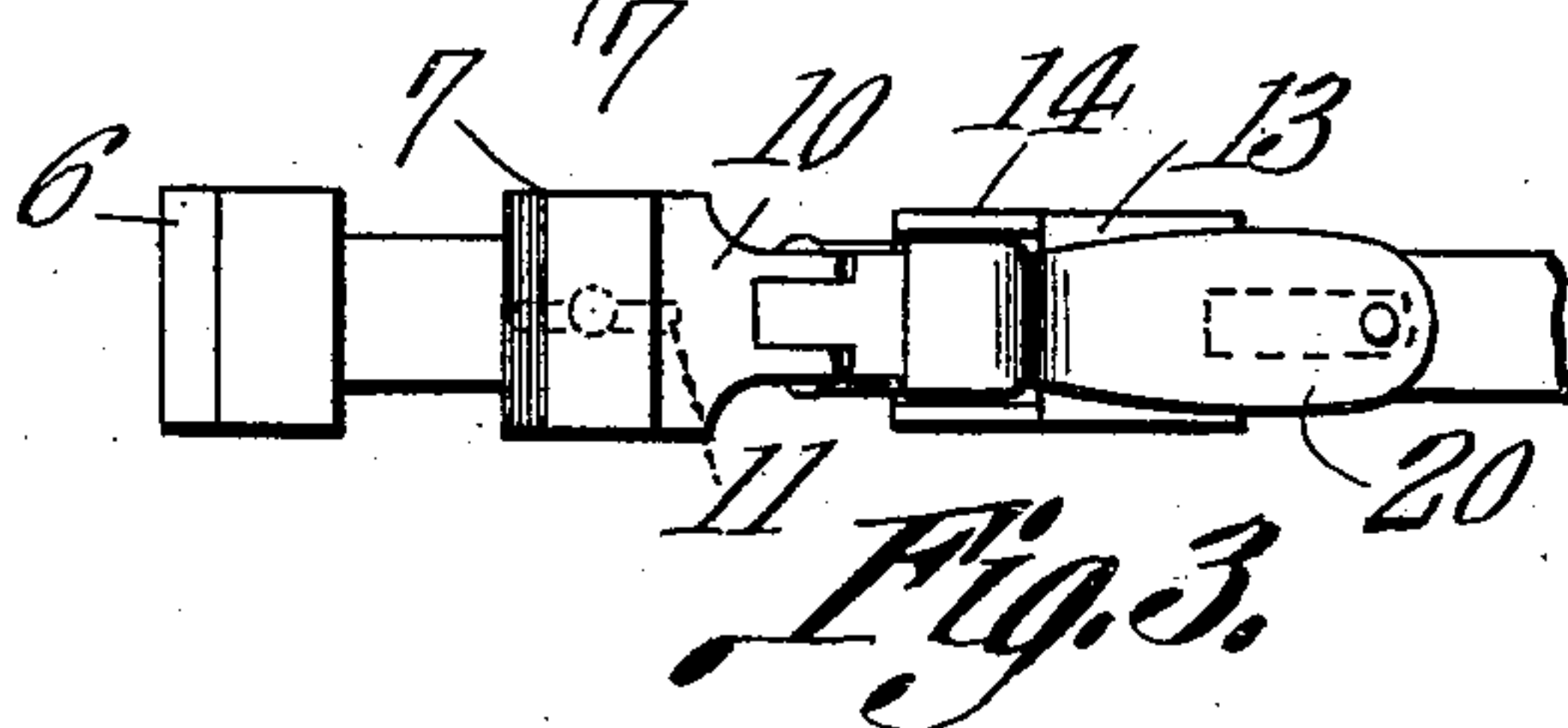
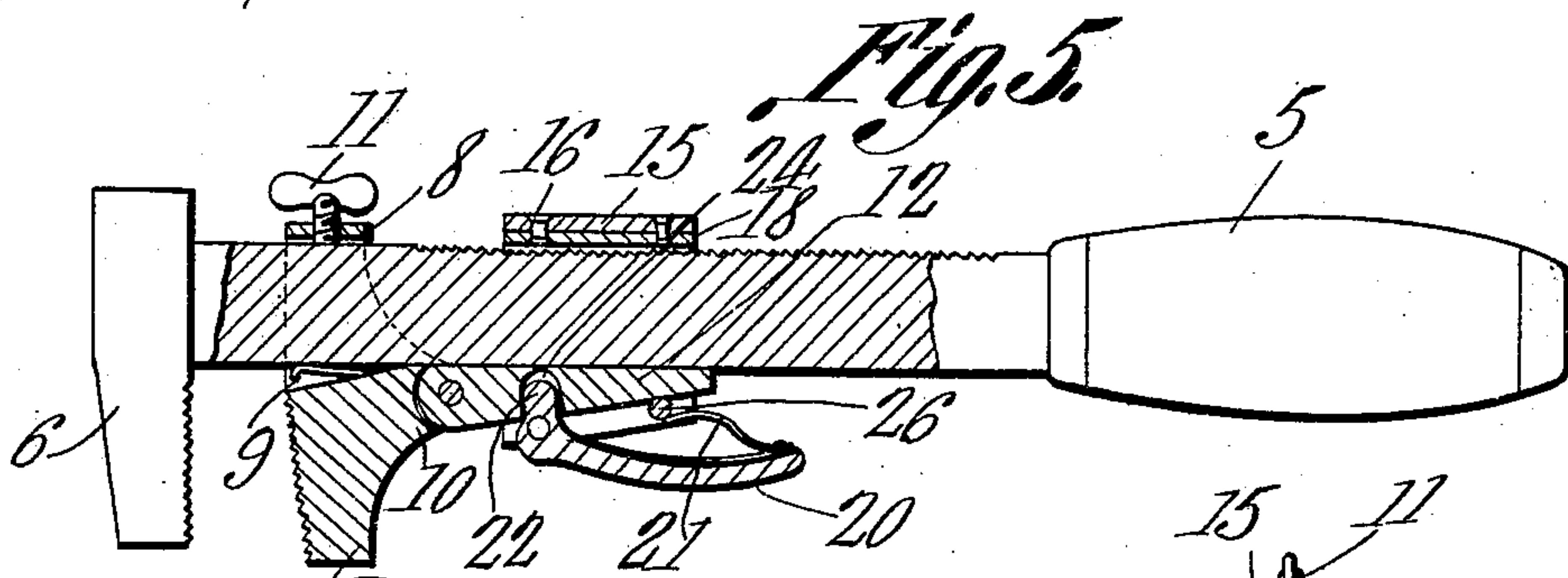
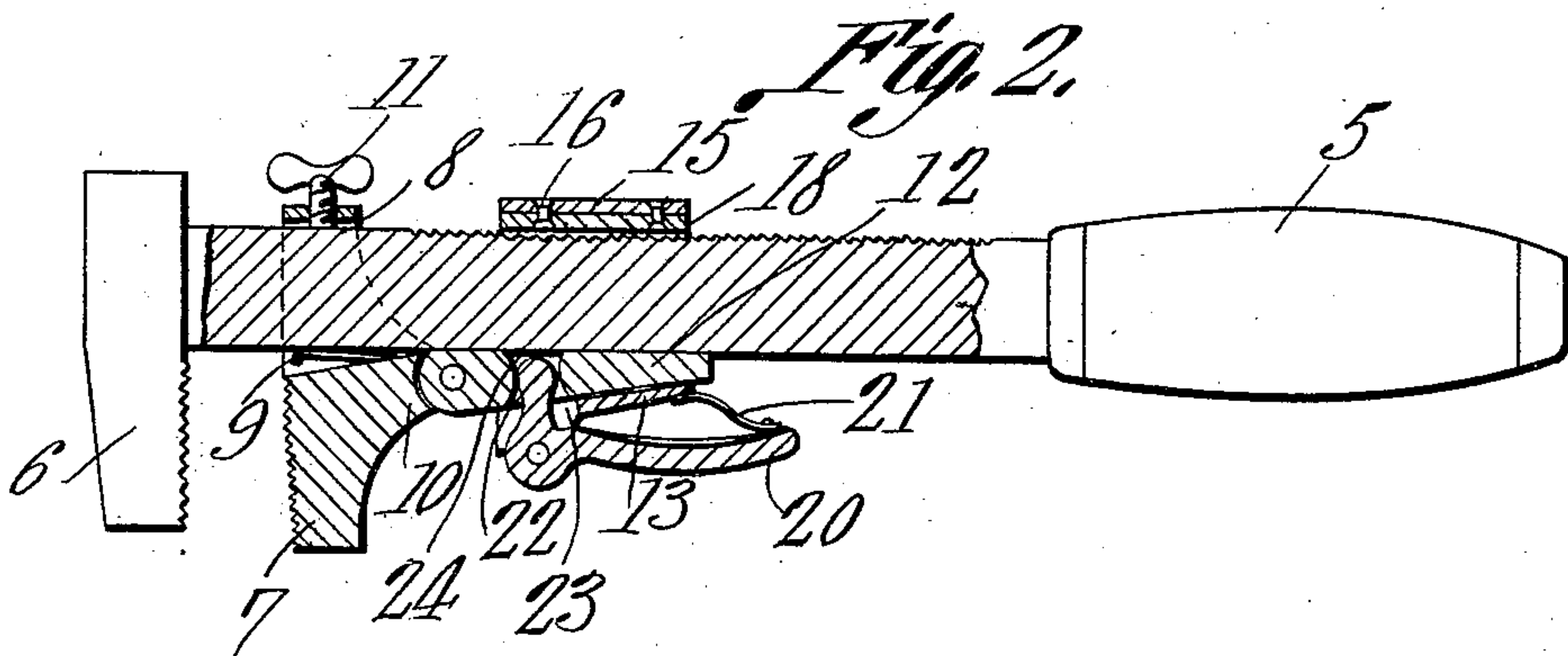
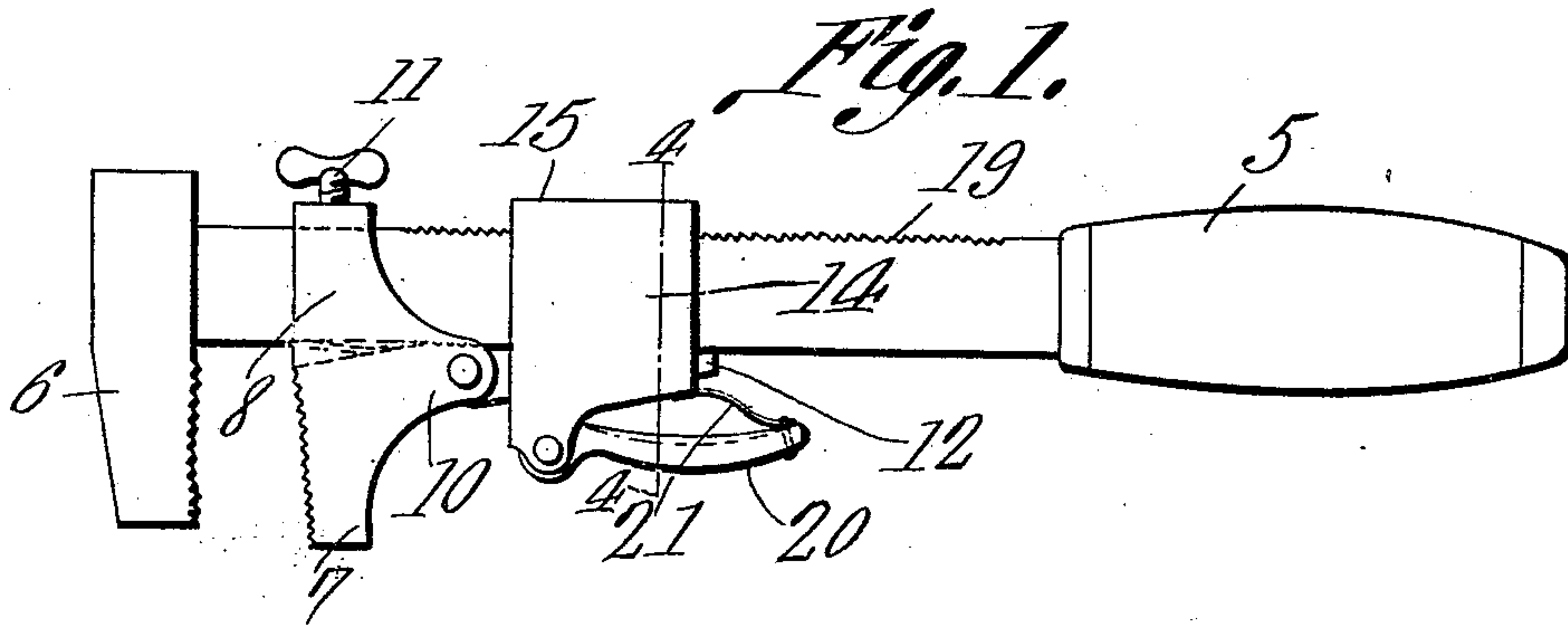
F. C. BRADLEY.

WRENCH.

APPLICATION FILED AUG. 16, 1910.

991,602.

Patented May 9, 1911.



Witnesses

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UNITED STATES PATENT OFFICE.

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WRENCH.

991,602.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed August 16, 1910. Serial No. 577,409.

To all whom it may concern:

Be it known that I, FRANCOIS C. BRADLEY, a citizen of the United States, residing at McHenry, in the county of Harrison and State of Mississippi, have invented a new and useful Wrench, of which the following is a specification.

It is the object of the present invention to provide a construction of wrench and one aim of the invention is to provide a wrench which may be quickly adjusted to nuts or other elements of this kind of various sizes and which may be quickly disengaged from such elements after they have been properly turned.

A further aim of the invention is to provide a wrench, which, while it may be easily applied to and disengaged from an element to be turned, may have its movable or adjustable jaw rigidly held at any desired adjustment so that repeated adjustment of the jaw will be rendered unnecessary where a number of like elements are to be rotated.

A still further aim of the invention is to provide a wrench particularly well adapted to be used as a small vise, rapid adjustment of the movable jaw of the wrench being possible and a firm holding of this jaw in place after adjustment being also provided for.

With the above and other objects in view, the invention consists in the general construction and arrangement of parts shown in the accompanying drawing, in which,

Figure 1 is a view in side elevation of the device embodying the present invention. Fig. 2 is a vertical longitudinal sectional view therethrough. Fig. 3 is an edge view of the wrench shown in Figs. 1 and 2. Fig. 4 is a vertical transverse sectional view on the line 4—4 of Fig. 1. Fig. 5 is a view similar to Fig. 2 illustrating a slight modification of the invention.

In the drawings, the handle or stock of the wrench is indicated by the numeral 5 and at one end is formed or provided with a fixed jaw indicated by the numeral 6. The movable jaw of the wrench is indicated by the numeral 7 and embodies a yoke 8 which embraces the stock 5 and is slidably adjustable thereon. For a purpose to be presently explained, the yoke while of the same width interiorly as the stock 5, is of a height greater than the distance between the upper and lower edges of the stock as clearly shown in Figs. 2 and 4 of the drawings. A leaf spring indicated by the numeral 9 is secured

to the upper edge of a shank portion 10 of the jaw 7 and bears against the under edge of the stock 5 and the resiliency of this spring acts to hold the jaw (it being pivoted at the end of its shank 10 as will presently be explained) with the connecting portion or top of the yoke 8 in juxtaposition to the upper edge of the stock 5. A set screw 11 is threaded through the said connecting portion or top of the yoke 8 and bears against the said upper edge of the stock and it will be readily understood that by adjusting this set screw 11, the angular relation of the jaw with respect to the stock may be varied and consequently the angular relation of the jaw with respect to the fixed jaw may also be varied. The purpose of providing for such an adjustment of the parts will presently be specifically explained.

As stated above the shank portion 10 of the jaw 7 is pivoted and the element to which this portion of the said jaw is pivoted is in the nature of a wedge block indicated by the numeral 12 and confined between the under edge of the stock 5 and a connecting wall 13 extending between the cheek pieces 14 of a yoke 15 which is slidably fitted upon the said stock 5. The wall 13 above referred to is angularly disposed with respect to the said under edge of the stock and to such degree as to properly receive between it and the said edge of the stock, the wedge block 12. The connecting portion of the yoke 15 is indicated specifically by the numeral 16 and, riveted or otherwise secured to the under face of this portion, is a plate of soft copper or other like material 18.

The upper edge of the stock 5 of the wrench is serrated as at 19 and as a consequence, when the wedge block 12 is wedged firmly between the wall 13 of the yoke 15 and the under edge of the stock 5, the soft metal plate 18 will be caused to bear firmly against the serrated edge of the stock and the serrations of this edge will bite into the plate and hold the yoke against sliding movement upon the stock. At this point it will be understood that inasmuch as such wedging action of the block will occur when pressure is exerted against the jaw 7 in a direction toward the handle end of the stock 5, the engagement of the wrench with a nut and movement of the wrench as if to turn the nut will result in pressure being exerted against the jaw 7 in the direction stated and in a firm binding of the parts upon the stock.

In order that such action may be assured, it is desirable that means be provided for normally tending to move the wedge block 12 to wedging position between the wall 13 and the stock 5 and this means is preferably embodied in a pivoted finger piece 20 mounted between the cheek pieces 14 of the yoke 15 and having its free end normally pressed downwardly or in other words in a direction away from the under edge of the stock 5, by a leaf spring 21 secured at one end to the connecting wall 13 of the yoke and bearing at its free end frictionally against the said finger piece. A stud 22 projects from the upper face of the finger piece 21 and through a slot 23 in the connecting wall 13 of the yoke and into an opening 24 formed in the wedge block 12. Inasmuch as the spring 21 exerts downward pressure against the free end of the finger piece 20, the stud 22 is normally yieldably held toward the right in Fig. 2 of the drawings and consequently there is a normal tendency for the block 12 to move in a corresponding direction.

It will be understood at this point that when it is desired to adjust the yoke 15 and consequently adjust the movable jaw 7, upon the stock of the wrench, pressure is exerted against the free end of the finger piece 20 thereby shoving the wedge block 12 toward that end of the stock at which the fixed jaw is located. Such movement of the wedge block leaves the yoke free to be moved along the stock to any desired point and after the proper adjustment is secured, the finger piece is merely released whereupon the wedge block will be slid into wedging relation with respect to the stock and engagement of the wrench with the element to be turned will then result in frictional binding of the parts to hold the movable jaw in its adjusted position. It will at this point also be readily understood that should it be desired to loosen or tighten a number of nuts of the same size and not be desired to repeatedly adjust the movable jaw of the wrench, this jaw may be initially adjusted in the manner above stated and the set screw 11 then tightened so as to draw the upper edge of the body of the jaw firmly against the under edge of the stock whereupon the wrench may be employed in the manner stated. Also it will be understood that by providing the set screw 11 and arranging the set screw in the manner illustrated in the

drawings, the wrench is particularly well adapted for use as a small vise. With the set screw 11 loosened, the working face of the movable jaw is angularly disposed with respect to the corresponding face of the fixed jaw but when the set screw is tightened so as to bring the upper side of the body of the movable jaw firmly against the stock of the wrench, the working face of the said movable jaw will assume a position parallel or substantially parallel to the corresponding face of the fixed jaw. The jaw having been properly adjusted, such manipulation of the set screw 11 to bring the working face of the movable jaw parallel to the working face of the fixed jaw will cause the movable jaw to bind against any element disposed between the jaws and in such element being firmly held.

In the form of the invention shown in Fig. 5, the web 13 is omitted and in place of this web there is provided a pin which is indicated by the numeral 26 and is secured at its end in the sides of the yoke 15 and cooperate with the pivot pin for the finger lever, in holding the wedge block in place against the under side of the shank of the wrench. In this form of the invention, the spring 21 bears against the pins 26.

What is claimed is:—

In a wrench, a stock having a fixed jaw, a yoke slidably fitted upon the stock, a jaw slidably fitted upon the stock and adapted to have angular movement thereon, the yoke including cheek pieces and a connecting portion, a wedge pivoted to the slidable jaw and fitting between the connecting portion of the yoke and one face of the stock, a finger lever pivoted between the cheek pieces and having a portion in positive engagement with the wedge, a spring arranged between the finger lever and the connecting portion of the yoke and normally holding the finger lever in position to frictionally bind the wedge in engagement between the said portion of the yoke and the said face of the stock, and means for angularly adjusting the slidable jaw upon the stock.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANCOIS C. BRADLEY.

Witnesses:

J. F. BENNETT,
W. P. RUBLE.