

J. H. FERGUSON.

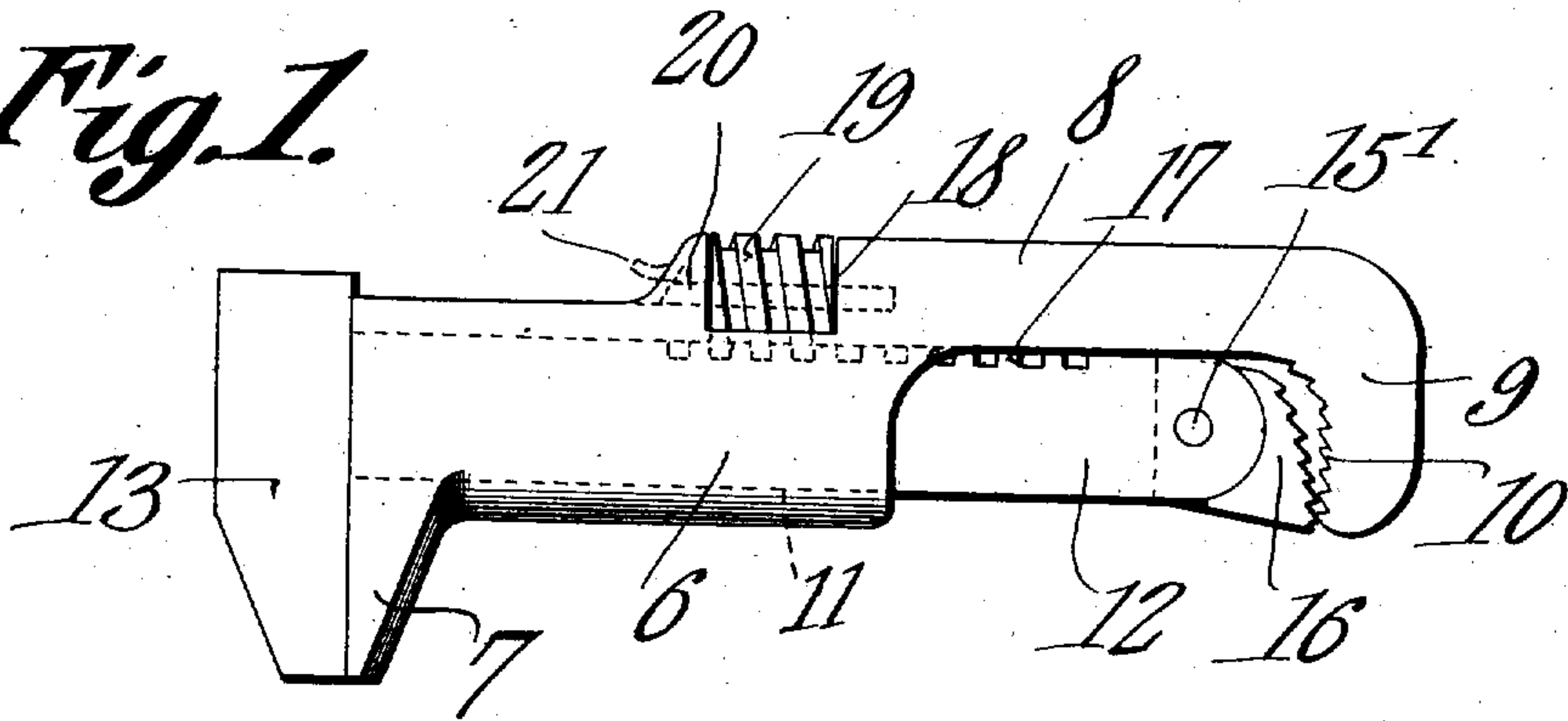
WRENCH.

APPLICATION FILED FEB. 26, 1910.

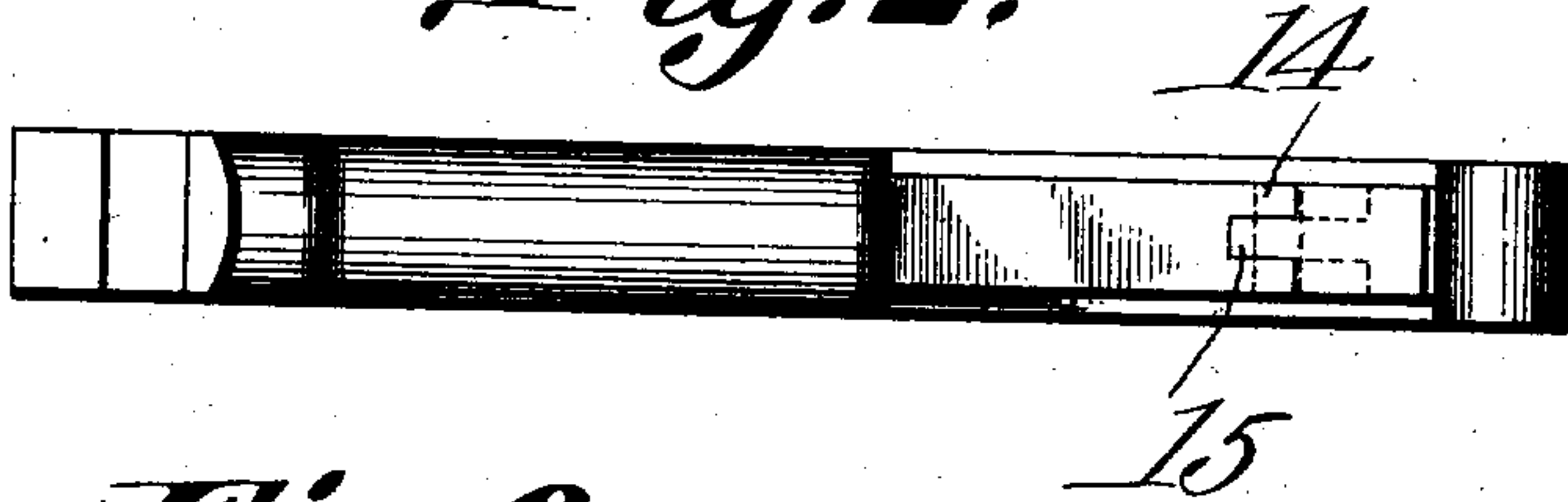
975,609.

Patented Nov. 15, 1910.

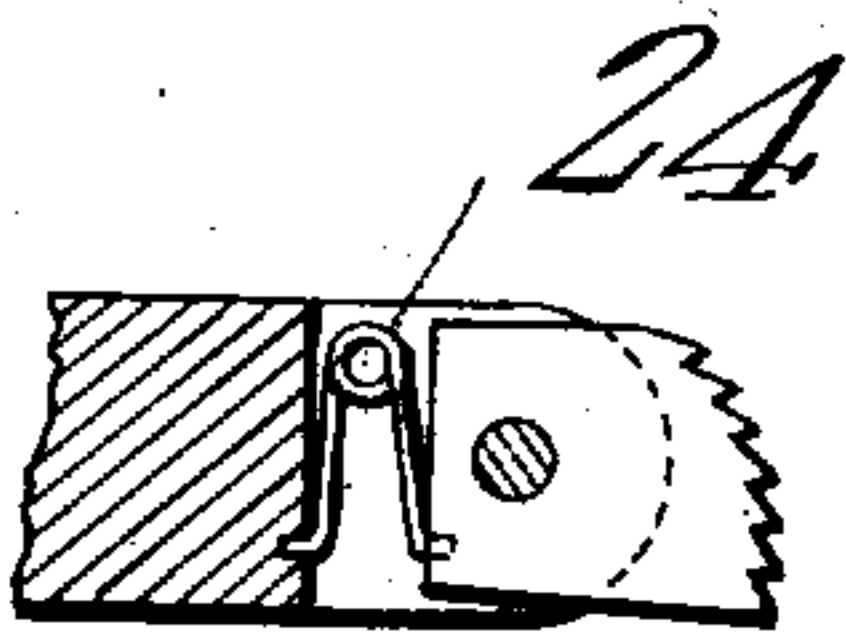
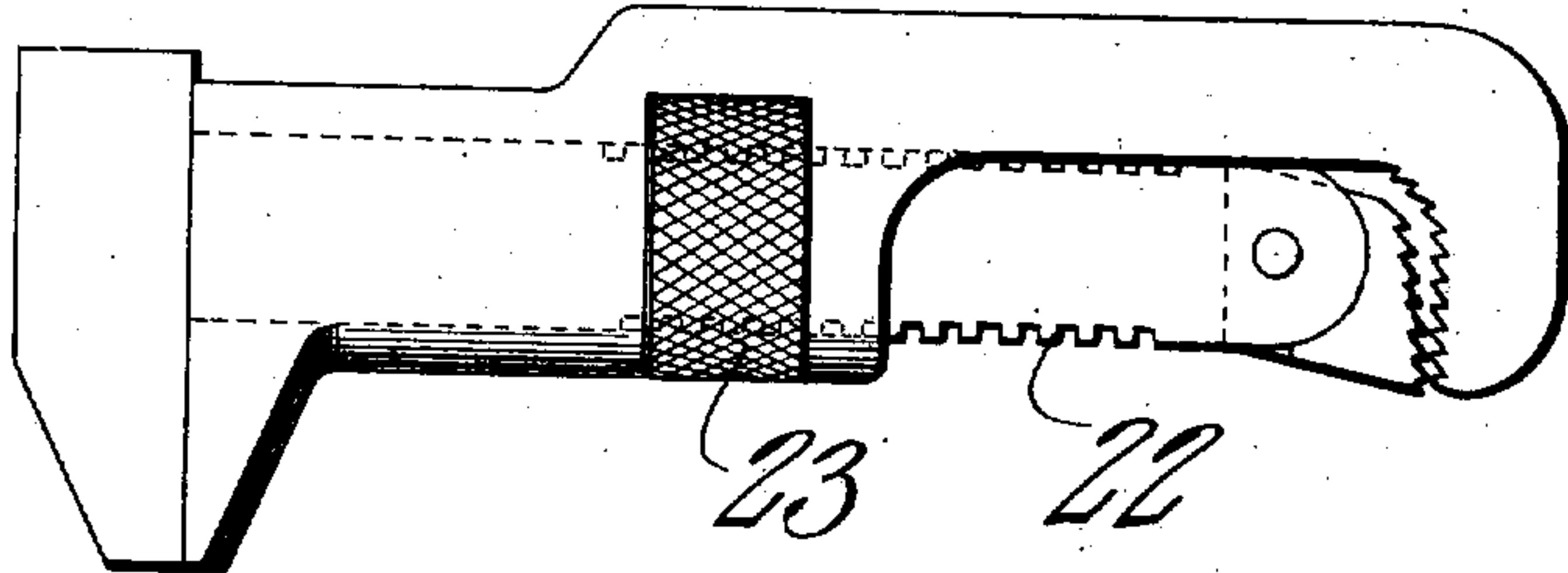
*Fig. 1.*



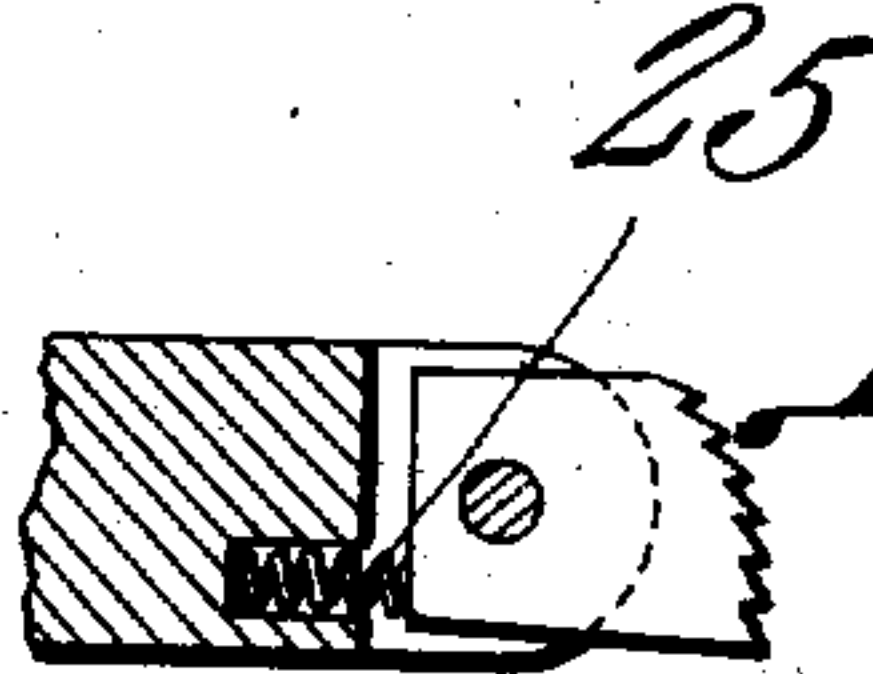
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Fig. 5.*

Witnesses

*E. J. Kline*  
*J. G. Smith*

Inventor  
*John H. Ferguson.*

By *C. A. Snow & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

JOHN H. FERGUSON, OF DAYTON, OHIO.

## WRENCH.

975,609.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed February 26, 1910. Serial No. 546,059.

*To all whom it may concern:*

Be it known that I, JOHN H. FERGUSON, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Wrench, of which the following is a specification.

It is the object of the present invention to provide an improved wrench, and the invention aims primarily to provide an improved construction of combined nut and pipe wrench.

A further object of the invention is to provide a compact and simple construction of wrench of this type and to so house the adjusting nut for the wrench that it will not be liable to be injured.

In the accompanying drawings,—Figure 1 is a side elevation of the preferred embodiment of the invention. Fig. 2 is a front edge view thereof. Fig. 3 is a view similar to Fig. 1 showing a slight modification. Fig. 4 is a sectional view showing a modified form of jaw, and Fig. 5 is a similar view showing a further modification.

In the drawings, the wrench is illustrated as embodying a stock 6 which is comparatively broad throughout substantially one half its length and at the outer extremity of its said broad portion is formed with a nut-engaging jaw 7. The remaining portion of the length of the stock is slightly off-set with respect to the broad portion 6, as indicated by the numeral 8, and terminates in a pipe-engaging jaw 9. It will be observed from the drawings that the jaw 7 projects beyond the lower edge of the stock, but that while the jaw 9 projects downwardly beyond the lower edge of the portion 8 of the stock, its extremity does not lie beyond the line of the lower edge of the portion 6 of the stock. It will be observed that the jaw 9 is serrated in its jaw-engaging face, as indicated by the numeral 10.

The portion 6 of the stock of the wrench is formed with a longitudinally extending rectangular bore 11 and the top wall of this bore is in a plane with the under edge of the off-set portion 8 of the said stock, and fitted for sliding adjustment in the said bore is a shank, indicated by the numeral 12, and at one extremity this shank carries a nut-engaging jaw 13 which is designed to cooperate with the jaw 7 in the manner illustrated in Fig. 1 of the drawings. The

opposite end of the shank is bifurcated, as at 14, and between the furcations is received and secured, by means of a pin 15', the tang 15 of a pipe-engaging jaw 16 which jaw is designed to cooperate with the jaw 9, as shown in the said Fig. 1.

The upper edge of the shank 12 is of rack formation, as indicated by the numeral 17. The stock has its portion 6 recessed in its upper side, as indicated by the numeral 18, and fitted in this recess is the usual threaded nut 19 which is in mesh with the rack 17 and is rotated to adjust the said rack. The nut 19 is mounted to rotate upon a pin 20 inserted therethrough and seated at its ends in openings formed in the said stock through opposed walls of the said recess. This pin is preferably held in place by forming the stock at the outer end of one of the openings with a surplus amount of material, shown in dotted lines in Fig. 1 of the drawings, and indicated by the numeral 21, which surplus material is struck down after the insertion of the pin. As stated, a pin 15' is the means employed for securing the jaw 16 in place upon the shank 12 and it will be observed that the jaw is cut at an angle so that its lower edge will project below the plane of the lower edge of the shank 12. As a consequence the shank 12 will be prevented from being accidentally removed from the bore of the stock.

In the form of the invention shown in Fig. 3 of the drawings, the stock of the wrench is recessed in its under side and both edges of the shank 12 are of rack formation, as at 22. In this form of the invention, an internally threaded adjusting nut 23 is fitted upon the shank.

Whereas the jaw 16 of the wrench is rigid in the two forms previously described, in the form of the invention shown in Fig. 4 of the drawings, it is pivoted and a bowed spring 24 is fitted between it and the bottom of the bifurcation in the said shank 12. This spring may be so positioned as to either tend to hold the jaw open or closed, although it is here illustrated as holding the same closed. Where it is not desired to employ a bowed spring, as illustrated in Fig. 4, a helical spring 25 may be employed, as illustrated in Fig. 5 of the drawings.

What is claimed is—

A wrench comprising a stock comparatively broad throughout a portion of its length and formed at the outer end of its

broad portion with a jaw, the stock having  
the remaining portion of its length off-set  
with respect to the broad portion, the said  
broad portion being formed with a slot and  
5 the off-set portion being formed at its outer  
end with a jaw, the inner edge of the off-set  
portion being in alinement with the adja-  
cent edge of the slot in the broad portion of  
the stock, the said stock being recessed at  
10 the point of juncture of its broad and off-set  
portions, a shank slidably fitted through the  
slot in the broadened portion of the stock  
and having that edge which is presented  
toward the edge of the off-set portion of the  
15 stock of rack formation, a jaw carried at  
one end of the said shank and coöperating  
with the first mentioned jaw, a jaw carried

at the other end of the shank and coöperat-  
ing with the last mentioned jaw of the stock,  
and an adjusting nut mounted for rotation 20  
in the recess and coöperating with the rack  
edge of the shank, the last mentioned jaw  
upon the shank being off-set in a direction  
away from the said inner edge of the off-set  
portion of the stock whereby to prevent 25  
withdrawal of the shank from the slot in  
the broadened portion of the stock.

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

JOHN H. FERGUSON.

Witnesses:

JAMES L. COFFIELD,  
HOWARD S. SMITH.