I. CUNNINGHAM.

WRENCH.

APPLICATION FILED FEB. 26, 1915.

1,167,275. Patented Jan. 4, 1916.

Fig. 1.

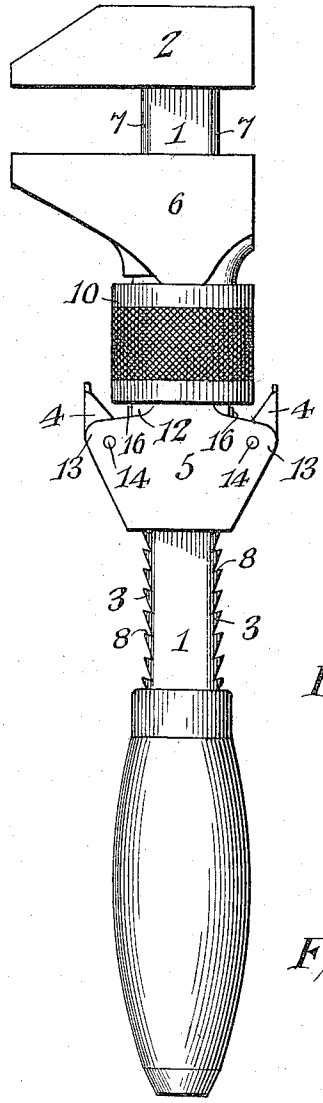


Fig. 2.

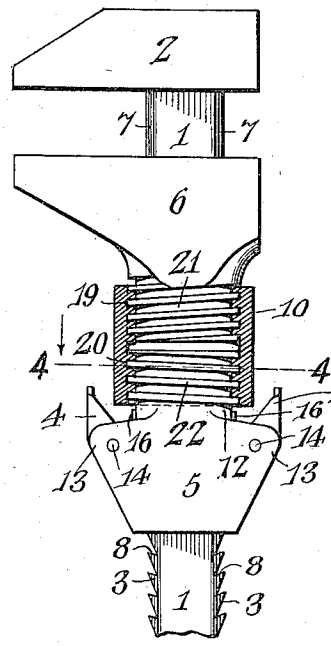


Fig. 3.

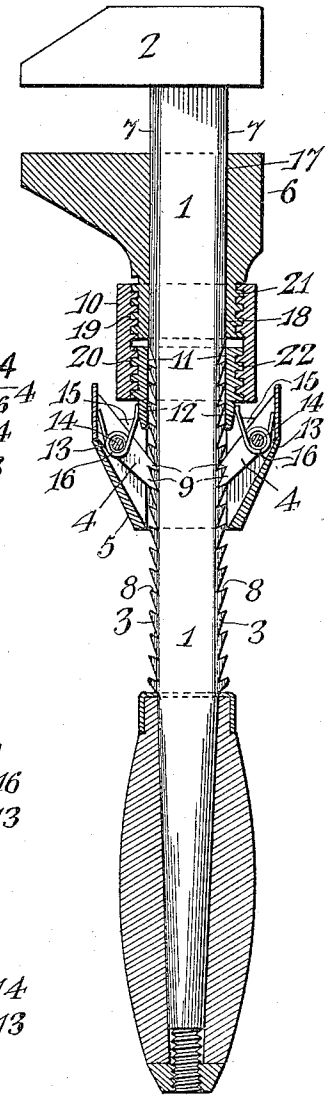


Fig. 4.

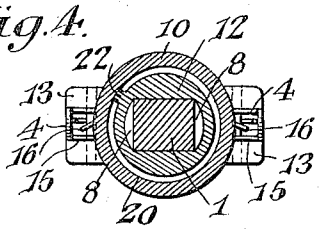


Fig. 5.

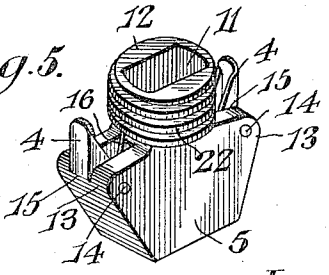
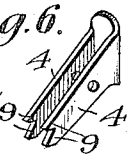


Fig. 6.



WITNESSES

Jas. K. McCathran

H. F. Riley

Ira Cunningham,
INVENTOR

BY E. G. Siggers

ATTORNEY

UNITED STATES PATENT OFFICE.

IRA CUNNINGHAM, OF GRAND SALINE, TEXAS.

WRENCH.

1,167,275. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed February 26, 1915. Serial No. 10,780.

To all whom it may concern:

Be it known that I, IRA CUNNINGHAM, a citizen of the United States, residing at Grand Saline, in the county of Van Zandt and State of Texas, have invented a new and useful Wrench, of which the following is a specification.

The invention relates to improvements in wrenches.

The object of the present invention is to improve the construction of that type of wrenches provided with means for permitting an instantaneous initial or preliminary adjustment to fit any size object within its capacity, and a final adjustment to engage the object firmly and securely and to provide a simple, practical, and efficient wrench of strong and durable construction, and equipped with ratchet mechanism for affording a quick adjustment of a sliding jaw and a threaded connection between the sliding jaw and the movable part of the ratchet mechanism, the threaded connection being adapted to afford a final adjustment of the wrench, and at the same time, maintain dogs or pawls of the ratchet mechanism securely in their engaging position, whereby the sliding jaw is effectually prevented from becoming accidentally released.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claim hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing: Figure 1 is a side elevation of a wrench constructed in accordance with this invention. Fig. 2 is a similar view, the adjusting nut being in section. Fig. 3 is a central longitudinal sectional view of the wrench. Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 2. Fig. 5 is a detail perspective view of the slidable sleeve or casing. Fig. 6 is a detail perspective view of one of the pawls or dogs.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing, in which is illustrated the preferred embodiment of the invention, 1 designates a straight shank having a rigid jaw 2 at its outer end and provided at its front and rear edges with ratchet teeth 3, shouldered at their outer ends and adapted to be engaged by oppositely disposed pivoted pawls or dogs 4 of a sleeve or casing 5, which is slidable along the shank to effect an instantaneous preliminary adjustment of a sliding jaw 6. The shank 1 has flat side faces and rounded front and rear edges 7, in which the teeth 3 are formed, and the shoulders 8 of the teeth are arranged at an inclination to interlock with teeth 9 of the pawls or dogs, whereby when pressure is applied to the sliding jaw by an adjusting nut 10, the pawls or dogs will be maintained rigidly in interlocked relation with the shank and effectually prevented from accidentally jumping out of engagement with the teeth of the shank when strain is applied to the wrench in the use thereof.

The sliding sleeve or casing, which has a central opening 11 conforming to the configuration of the shank, is provided at the top or outer end with a cylindrical extension 12, and is provided at opposite sides with lateral extensions 13, in which the pawls or dogs 4 are pivotally mounted on pins or rivets 14. The lateral extensions 13 are provided at the top or outer end of the casing with apertures 15, through which the pawls or dogs pass, and the outer projecting portions of the pawls or dogs are located at opposite sides of the cylindrical extension in spaced relation with the same to provide an intervening space to receive the inner portion of the adjusting nut, as shown. Each pawl or dog is preferably stamped or otherwise formed from a single piece of sheet metal or other suitable material, and is composed of spaced sides and a connecting portion, each side being provided with a pair of the said teeth 9, as clearly shown in Fig. 6. The pins or rivets 14 pierce the sides at points intermediate of the ends thereof, and the pawls or dogs are maintained in engagement with the teeth 3 of the shank 1 by springs 16, consisting of coils and projecting inner and outer arms, the coils being arranged on the pins or rivets 14 between the sides of the pawls or dogs. The outer arms of the springs bear against the connecting portions of the pawls or dogs and the inner arms fit against the sleeve or casing at the inner end of the cylindrical extension 12.

The sliding jaw 6 has an opening 17 con-

forming to the configuration of the shank 1, and the said jaw 6 is also provided at its inner end with a cylindrical extension 18. The adjusting nut 10 is equipped at its inner portion with right and left hand threads 19 and 20, and the cylindrical extensions of the sliding jaw and the sleeve or casing have corresponding right and left hand threads 21 and 22 which are engaged by the threads of the adjusting nut. The adjusting nut is adapted to be rotated to produce a relative sliding movement of the jaw 6 and the sleeve, and when the adjusting nut is at the limit of its inward movement, as shown in the drawing, it extends between the outer operating portions of the pawls or dogs, which are adapted to be readily compressed to slide the sleeve or casing and the movable jaw 6 along the shank to effect a preliminary adjustment of the wrench, and the nut is in convenient position to be immediately operated as soon as the pawls or dogs are released, without necessitating any material change in the position of the nut. When pressure is applied to the nut in the final operation of the wrench, the pawls or dogs are locked in engagement with the shank, and it is impossible for the same to accidentally move out of such interlocked position.

What is claimed is:

A wrench including a shank having a fixed jaw, and provided at its opposite edges with ratchet teeth having shoulders arranged at an inclination, a sliding jaw mounted on the shank and provided at its inner end with a cylindrical extension, a sliding sleeve or casing also mounted on the shank and provided at its outer end with a cylindrical extension, spring actuated pawls or dogs carried by the sleeve or casing and provided with inner portions arranged to engage the teeth of the shank, the outer portions of the pawls or dogs being extended beyond the sleeve or casing and arranged in spaced relation with the cylindrical extension of the sleeve or casing, and an adjusting nut having right and left hand screw threads and arranged on the said cylindrical extensions, the latter being correspondingly right and left hand threaded to engage with the threads of the nut.

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

IRA CUNNINGHAM.

Witnesses:
W. H. ROBERSON,
A. L. TAYLOR.