June 18, 1929. A. A. McGILL 1,717,726

WRENCH

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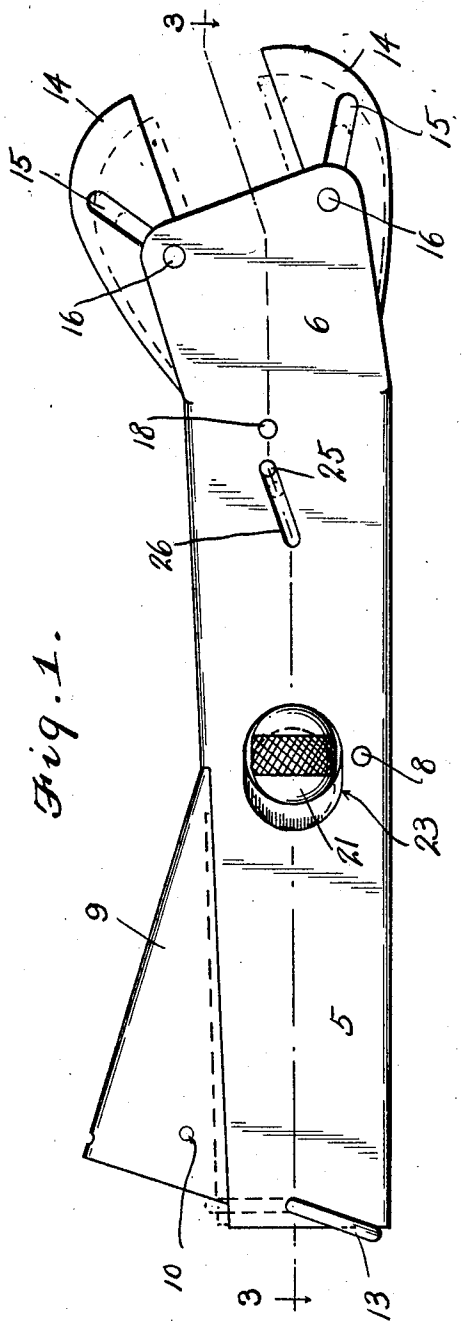


Fig. 1.

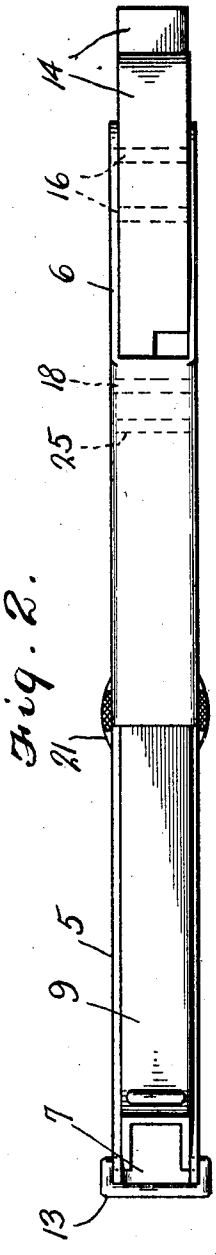


Fig. 2.

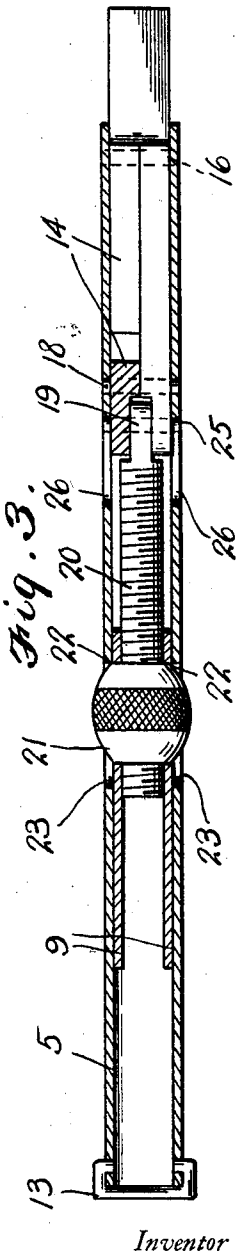


Fig. 3.

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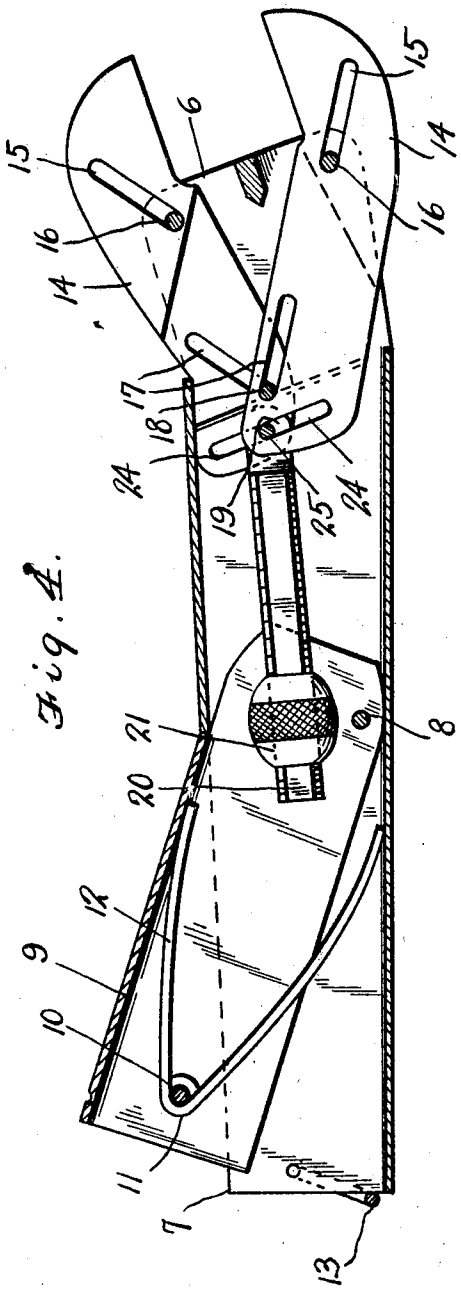


Fig. 4.

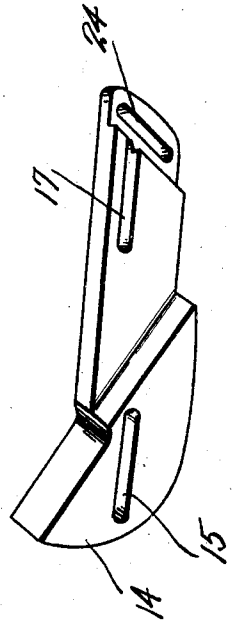


Fig. 6.

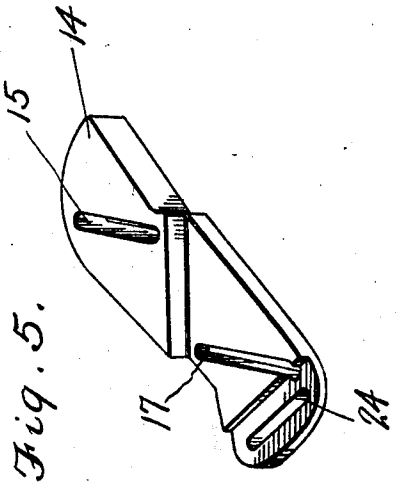


Fig. 5.

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UNITED STATES PATENT OFFICE.

ARTHUR A. McGILL, OF WISNER, NEBRASKA.

WRENCH.

Application filed August 29, 1927. Serial No. 216,222.

This invention relates to new and useful improvements in wrenches of the sliding jaw variety and aims to substantially improve and simplify that type of wrench shown and described in my copending application Serial No. 200,482, filed June 21, 1927.

In carrying out the present invention there is provided a main handle within the forward end of which is longitudinally and laterally slidably mounted a pair of complementary jaws, means being provided whereby the jaws may be rapidly moved to the desired spaced relation with respect to each other, there being further provided a secondary handle pivoted to the main handle and so associated with the jaws as to cause the inward movement of the same when the secondary handle is swung toward the main handle whereby the jaws will be tightly engaged upon the nut so that there will be no slippage of the wrench thereon during the turning of the nut.

The invention further aims to provide a wrench of this character that is extremely simple in construction and inexpensive of manufacture, the same comprising but few parts and these so corelated as to reduce the possibility of disarrangement to a minimum.

With the foregoing and other objects in view as the nature of the invention will be better understood, the same comprises the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the accompanying drawings forming part of this application and in which like numerals indicate like parts:

Figure 1 is a plan view of my improved wrench.

Figure 2 is an edge elevation thereof.

Figure 3 is a detail longitudinal section taken substantially upon the line 3—3 of Figure 1.

Figure 4 is a detail horizontal section, and

Figures 5 and 6 are perspectives of the sliding jaws comprising essential parts of the device.

Now having particular reference to the drawings, 5 designates a flat tubular handle, the side walls of which at one end of the handle are extended beyond the connecting wall to provide a pair of spaced wings 6—6 which wings are arranged obliquely to the longitudinal axis of the handle as clearly indicated in Figures 1 and 4.

At the rear end of this handle one edge wall thereof is cut away to provide a longitudinal slot 7 while pivoted within the handle adjacent the wall opposite from said slot 7 as at 8 is a secondary handle 9. This handle is of suitable sheet metal, and of substantially U-shape in cross section, the connecting portion between the side walls thereof being cut away so that the connecting wall will strike at its forward end against the inner end of the main handle slot 7 for limiting the outward swinging movement of the secondary handle with respect to the main handle, see Figure 4. Arranged horizontally between the side walls of this secondary handle 9 is a pin 10 upon which is arranged the coil portion 11 of a double armed spring 12, the arms of which press outwardly against the opposed walls of the handles 5 and 9 to normally force the handle 9 in an outward direction. In order to maintain this secondary handle in inwardly swung position within the confines of the main handle 5, said main handle 5 is provided at its end with a pivotal bail 13 that is to be swung up into position over the rear end of the secondary handle 9 when the same is closed, as indicated by the dotted lines in Figure 1.

The invention further consists of a pair of generally similarly constructed jaws 14—14 that are arranged between the opposed wings 6—6 at the forward end of the handle 5. These jaws being of reduced thickness at their inner end so as to have overlapping relations as clearly disclosed in Figures 3 and 4. Furthermore the shape of these jaws is such that they will extend in an oblique direction longitudinally of the wings 6—6, the inner faces of the outer ends of these jaws being plane as indicated in Figures 1, 4, 5 and 6 so that the same may be properly disposed upon a nut. Adjacent their outer ends said jaws 14—14 are provided with outwardly converging slots 15—15 through which extend pins 16—16 mounted rigidly between the wings 6—6. Furthermore, adjacent the inner ends of these jaws the same are provided with outwardly converging slots 17—17 through which extends a single pin 18 which is secured within the handle 5 directly at the inner ends of said wings 6—6.

The inner ends of these jaws 14—14 are reduced in thickness and width, while arranged therebetween is the inner reduced end 19 of a threaded stem 20 which stem is threaded through a somewhat spherically shaped adjusting nut 21 loosely mounted within a pair of opposed openings 22—22 in the side

walls of the secondary handle 9, the face of this nut projecting through large opposed openings 23—23 in the side walls of the main handle 5 so that the secondary handle 9 will be free to swing upon its pivot and in order that said nut 21 may be properly turned for moving the pin in an inward or outward direction.

At the point where the reduced end 19 of the stem 20 is disposed between the jaws 14—14 said jaws are provided with cross slots 24—24 through which an opening in the reduced end 19 of said pin is arranged a connecting pin 25, the ends of which pin move in opposed diagonal slots 26—26 at the side walls of the main handle 5. Obviously the movement of the nut 21 causing the longitudinal movement of the pins 20 in reverse direction will move the jaws forwardly or rearwardly and at the same time cause the opening and closing of the same by reason of the particular sliding connections between the jaws and between the handle 5 and the end wings 6. Now when the proper adjustment of the jaws has been made it will only be necessary to dispose the same over a nut, and then grasping the handle 5 at the rear end and squeezing the secondary handle 9 in an inward direction will cause the further slight inward movement of the jaws 14—14 so that the same will be tightly wedged upon the nut, after which the locking bail 13 may be swung over the secondary handle 9 so that the strain will be taken off the hand.

In view of the foregoing description when considered in conjunction with the accompanying drawings it will at once be apparent that I have provided a highly novel, simple and extremely efficient wrench that is well adapted for all the purposes heretofore designated, even though I have herein shown and described the invention as consisting of certain detail structural elements, it is nevertheless to be understood that some changes may be made therein without affecting the spirit and scope of the appended claims.

Having thus described the invention, what I claim as new is:—

1. In a wrench of the character described, a main tubular handle, a pair of wings extending beyond one end of the handle, a pair of complementary jaws slidably arranged between said wings, a secondary handle pivoted at its inner end within the main handle, means normally swinging the secondary handle outwardly with respect to the main handle, means between the inner end of the second handle and the inner ends of the jaws whereby major adjustments of the jaws may be made and whereby the jaws are caused to move slightly inwardly by movement of the secondary handle toward the main handle and means between the jaws and handles whereby the jaws are caused to separate during their outward movement with respect to the handle.

2. In a wrench of the character described, a main tubular handle, a pair of wings extending beyond one end of the handle, a pair of complementary jaws slidably arranged between said wings, a secondary handle pivoted at its inner end within the main handle, means normally swinging the secondary handle outwardly with respect to the main handle, means between the inner end of the second handle and the inner ends of the jaws whereby major adjustments of the jaws may be made and whereby the jaws are caused to move slightly inwardly by movement of the secondary handle toward the main handle and means between the jaws and handles whereby the jaws are caused to separate during their outward movement with respect to the handle, and means consisting of angularly arranged slots within the jaws and pins secured to the main handle and projecting through said slots.

In testimony whereof I affix my signature.

ARTHUR A. McGILL.