J. DUNNER.

SAFETY TAP AND REAMER WRENCH.

APPLICATION FILED JULY 7, 1915.

1,165,159. Patented Dec. 21, 1915.

Fig. 1.

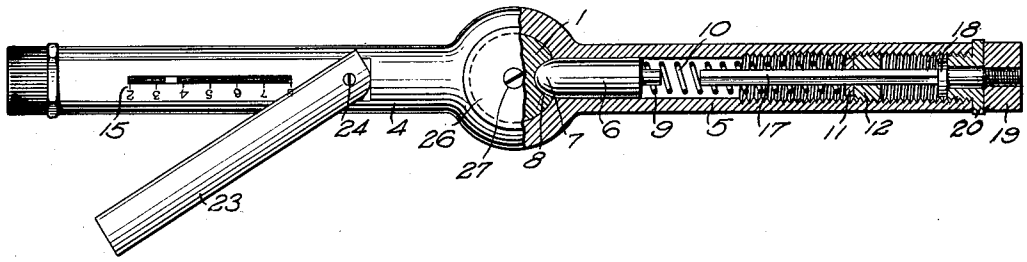
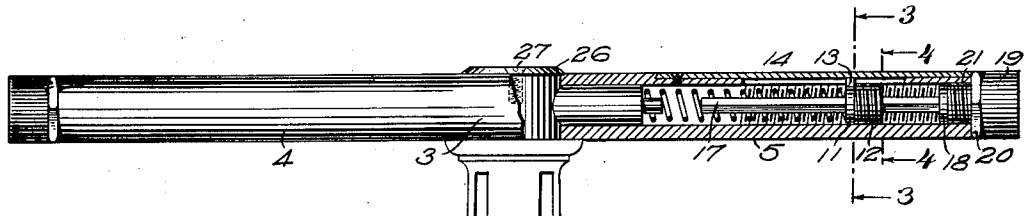


Fig. 2.



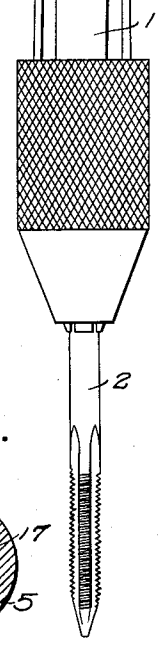


Fig. 3.

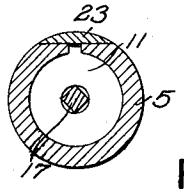


Fig. 4.

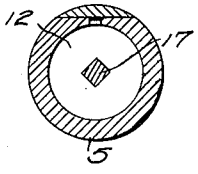
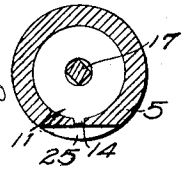


Fig. 5.



WITNESSES

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SAFETY TAP AND REAMER WRENCH.

1,165,159. Specification of Letters Patent. Patented Dec. 21, 1915.

Application filed July 7, 1915. Serial No. 38,593.

To all whom it may concern:

Be it known that I, JULIUS DUNNER, a subject of the Czar of Russia, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Safety Tap and Reamer Wrench, of which the following is a full, clear, and exact description.

This invention relates to tools and particularly to the handle of tools, as for instance, the handle of tap and reamer wrenches, and has for an object the provision of an improved means for connecting the handle with the wrench so as to eliminate the chances of breaking the tool in the wrench.

Another object in view is to provide a wrench with a handle frictionally engaging the wrench, together with means for varying the degree of friction so as to adapt the wrench to tools of different size and strength.

A still further object of the invention is to provide a wrench for a tool which is formed with spring-pressed catches fitting into depressions in the wrench, whereby when more power is exerted on the handle than the tool will stand the catches will move out of the notches so as to allow the handle to rotate without rotating the wrench.

In the accompanying drawings:—Figure 1 is a top plan view of a wrench and handle, with certain parts broken away, the construction shown embodying the invention; Fig. 2 is a side view of the structure shown in Fig. 1, certain parts being broken away; Fig. 3 is an enlarged transverse section through Fig. 2 on line 3—3; Fig. 4 is an enlarged transverse section through Fig. 2 on line 4—4; Fig. 5 is a view similar to Fig. 3 but showing a slightly modified form of the invention.

Referring to the accompanying drawings by numerals, 1 indicates the wrench which may be of any desired construction for receiving a tool 2 which may be a tap, reamer or other tool. Connected with the wrench 1 is a handle 3 which may be provided with arms 4 and 5 is desired, as shown in Figs. 1 and 2, or may be provided with some other shape so as to adapt the same to the face plate of a lathe or an ordinary chuck. Arranged in each of the arms are a number of parts which act for connecting the handle 3 with tool 2. As these parts are duplicate a description of the parts shown in the arm 5 will equally apply to parts in the arm 4.

It will be observed that arranged in the arm 5 is a reciprocating member 6 which may be termed a catch, the same being formed with a rounded end 7 fitting into a correspondingly rounded socket 8 in the end of the tool 2. The member 6 is provided with a reduced extension 9 over which one end of a spring 10 fits. The opposite end of spring 10 to that engaging the reciprocating member 6 is caused to press against a washer 11 which in turn presses against an externally threaded nut 12. The washer 11 is provided with an indicating extension 13 fitting into the slot 14 so as to indicate the position of nut 12 and consequently the degree of tension on spring 10. As shown in Fig. 1, a plurality of graduations 15 are provided for indicating the proper tension for different size tools 2. The idea of providing the graduations 15, spring 10 and associated parts is to allow the friction between the catch 6 and tool 2 to be sufficient for turning the tool 2 for properly operating the same but to be not sufficiently strong to break tool 2. Before tool 2 will be broken the pressure on arms 4 and 5 will cause the reciprocating member 6 to move out of socket 8 and thus allow the handle to be free to rotate without rotating the tool. It is evident that when a small tool is used the compression spring 10 must be very small, while for a large tool the compression may be up to the limit of the spring.

The nut 12 is threaded exteriorly so as to engage the threads 16 arranged interiorly of arm 5. The nut is provided with a square or many-sided aperture through which the shaft 17 passes, said shaft being, of course, of the same shape as the aperture in the nut, the shaft shown in the drawings being square. It is evident that a round shaft could be used with a key or other form of shaft provided the nut 12 could travel during the rotation of shaft 17. Shaft 17 is provided with a stop 18 and a threaded thumb member 19 which is screwed on to the end of the shaft. Nut 20 is provided with a threaded extension or boss 21 which acts as a bar for shaft 17, said shaft having an enlarged portion 22 which rests in the nut 20. When the member 21 is rotated in one direction the nut 12 will be forced toward catch 6 and when rotated in the opposite di-

rection the nut will be forced away from the catch 6, thus regulating the tension.

When the slot 14 is arranged on top as shown in Fig. 1, a covering member 23 is provided which is held in place by a suitable screw or pin 24. However, preferably the slot 14 is arranged on the under surface of the handle and the cut-away portion 25 is left uncovered or bare. Wrench 1 may be of any desired construction but preferably the upper end is solid so as to provide ample material in which the sockets 8 are formed. A washer 26 is arranged at the upper end of wrench 1 and is held in place by a suitable screw 27, said washer overlapping part of the handle 3 so that the handle cannot be moved off of the wrench until the washer 26 has been removed.

What I claim is:

1. In a device of the character described, the combination with a tool, of a handle therefor provided with a catch frictionally engaging said tool, a spring pressing against said catch, an exteriorly threaded sleeve arranged in said handle, said handle being formed with a threaded portion for receiving said sleeve, said sleeve having an opening therein, and a rotatable bar fitting in said opening, said opening being of such shape as to cause said sleeve to rotate when the bar is rotated and to slide along the bar, the adjustment of said sleeve being for varying the tension of said spring.

2. In a device of the character described, the combination with a tool provided with rounded depressions, a handle for said tool, said handle having a portion surrounding part of said tool, a reciprocating catch formed with a rounded end, an arm projecting into said rounded depression whereby the catch may be forced from the depression when sufficient side pressure is applied thereto, a spring acting on said catch for holding the same in said depression, a traveling member for varying the tension of said spring, and a fixed rotating member engaging said traveling member for rotating the same.

3. In a device of the character described, the combination with a tool, of a handle therefor, a catch arranged in said handle, said catch frictionally engaging said tool, a spring pressing against said catch, said handle having a threaded portion, an interiorly threaded sleeve arranged in said threaded portion and pressing against said spring, said sleeve being formed with a square opening, a shaft extending through said squared opening, and means arranged for rotatingly supporting said shaft, whereby when said shaft is manually rotated said sleeve will be moved and the tension of said spring will be varied.

4. In a device of the character described, the combination with a tool, of a handle therefor, a catch frictionally engaging said tool, a spring pressing against said catch, said handle being formed with a slot, a washer engaging the end of said spring, said washer being formed with a projection extending into said slot and indicating the position of said spring, and means arranged in said handle for varying the compression of said spring, said means moving said washer.

5. In a device of the character described, the combination with a tool holding member provided with a depression, a handle mounted on said tool holding member, a reciprocating pin adapted to be forced into said depression, said reciprocating pin moving radially of said tool holding member, a spring for normally holding said reciprocating member in said depression, said spring being arranged in said handle, a traveling member arranged in said handle for varying the tension of said spring, and a rotatable member engaging said traveling member, said rotatable member having a thumb portion at the end of said handle whereby when said thumb portion is rotated said traveling member will be moved for varying the tension of said spring.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JULIUS DUNNER.

Witnesses:
A. L. KITCHIN,
PHILIP D. ROLLHAUS.