Jan. 20, 1925. 1,523,808

J. KROPACZ

WRENCH

Filed Jan. 29, 1924 2 Sheets-Sheet 1

Fig. 1.

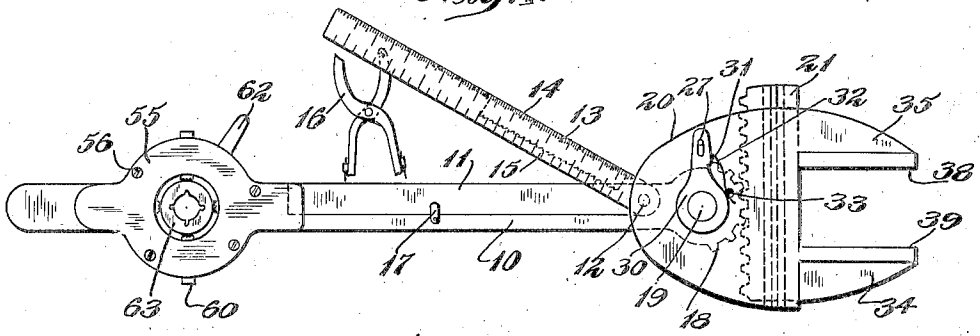


Fig. 2.

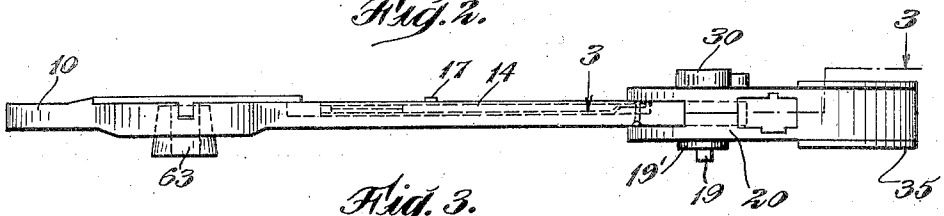


Fig. 3.

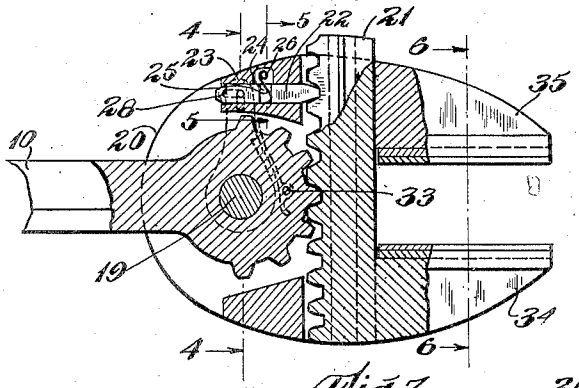
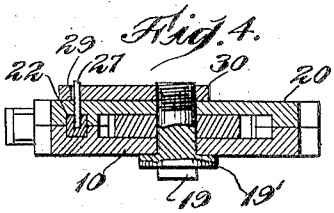


Fig. 4.



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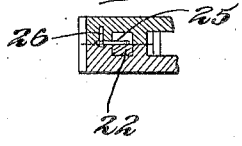


Fig. 7.

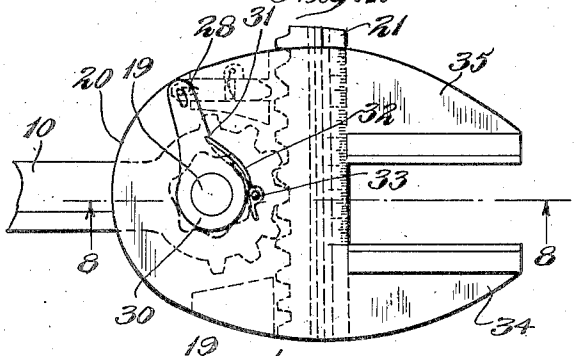


Fig. 6.

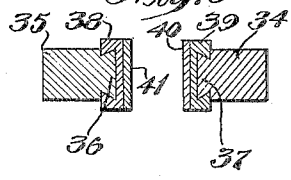
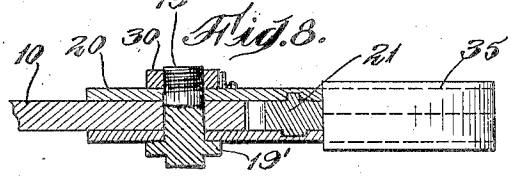


Fig. 8.



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Jan. 20, 1925. 1,523,808

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WRENCH

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Fig. 9.

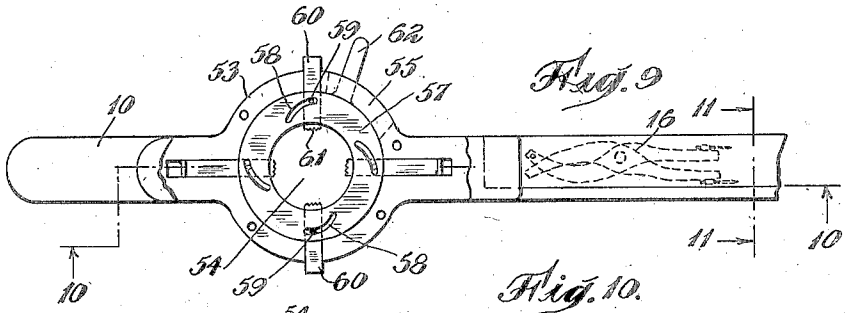


Fig. 10.

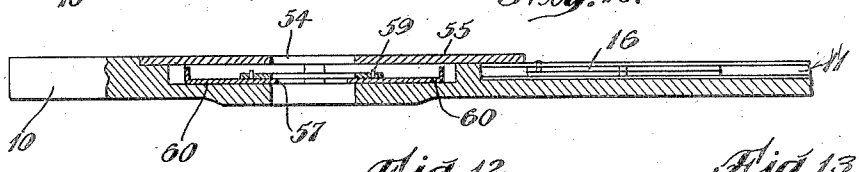


Fig. 12.

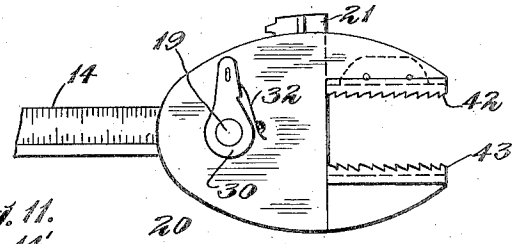


Fig. 13.

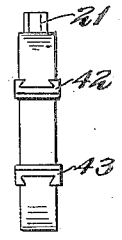


Fig. 11.

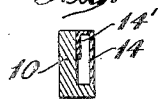


Fig. 14.

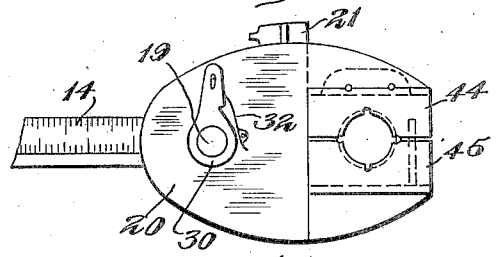


Fig. 15.

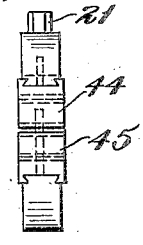


Fig. 16

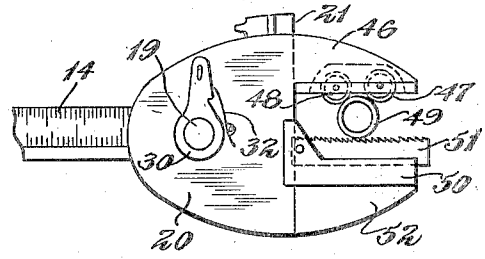
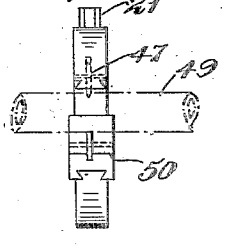


Fig. 17.



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Patented Jan. 20, 1925. 1,523,808

UNITED STATES PATENT OFFICE.

JOHN KROPACZ, OF BIG VALLEY, ALBERTA, CANADA.

WRENCH.

Application filed January 29, 1924. Serial No. 689,254.

To all whom it may concern:

Be it known that I, JOHN KROPACZ, a citizen of Poland, residing at Big Valley, in the Province of Alberta and Dominion of Canada, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches, more particularly to improvements in combination wrenches which are adapted to be used for a variety of purposes.

It is the principal object of the invention to combine a plurality of tools and to allow a ready adjustment and locking of the same in their adjusted positions.

Another object of the invention is the provision of die clamping means in the handle of the wrench.

A further object of my invention is the provision of a wrench with which a flanged and graduated ruler is combined offering space for the convenient attachment and storing of a pair of compasses and an auxiliary saw.

Other objects and advantages of my invention will become more fully known, as the description thereof proceeds, and will then be more specifically pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a side elevation of a combination wrench constructed according to my invention.

Fig. 2 is a top plan view of the tool.

Fig. 3 is a side elevation of the wrench head, partly in section on line 3—3 of Fig. 2.

Fig. 4 is a cross-section through the head on line 4—4 of Fig. 3.

Fig. 5 is a section on line 5—5 of Fig. 3.

Fig. 6 is a section through the jaws of the wrench on line 6—6 of Fig. 3.

Fig. 7 is a side elevation of the wrench head, unlocked.

Fig. 8 is a top plan view, partly in section on line 8—8 of Fig. 7.

Fig. 9 is a side elevation of the wrench handle.

Fig. 10 is a longitudinal section through the same on line 10—10 of Fig. 9.

Fig. 11 is a cross-section on line 11—11 of Fig. 9.

Fig. 12 is a side elevation of two gripping jaws.

Fig. 13 is an end view of the same.

Fig. 14 is a side elevation of two jaws equipped with a thread cutting die.

Fig. 15 is an end view thereof.

Fig. 16 is a side elevation of a pair of pipe cutting jaws.

Fig. 17 is an end view thereof.

The handle 10 of the wrench is provided at one of its sides with a depression 11, in which is pivotally secured at one of its ends, as at 12, a ruler 13, equipped with the customary graduation 14 at one side, while it is flanged upon its other side as at 14′ (Fig. 11) by bending the material at its upper edge back upon itself to allow the carrying of an auxiliary saw 15.

Near its free end the ruler 13 has pivotally and removably attached thereto a pair of compasses 16 adapted to be placed or folded against the flanged side face of the ruler as indicated in dotted lines in Fig. 9, and a locking lug or ear 17 is attached to the handle for holding the ruler in place in the depression 11.

The end of the handle in the neighborhood of the pivot point of the ruler is equipped with a toothed segmental part 18 and a circular central opening for the reception of a bolt 19 by means of which the head 20 is attached to the handle 10.

The head 20 is composed of two superposed plates recessed transversely in approximately their middle for the reception of a rack-bar 21, the teeth of which are in mesh with the teeth of the segment 18.

The rack-bar 21 can be locked in its adjusted position by means of a latch 22 slidably guided in a groove of block 23 arranged in the space between the two plates of the head 20. This latch 22 has a transverse depression 24 in approximately its center, and a spring 25, one end of which is wound around a pin 26 within a recess of block 23 and presses with its free end against the shoulder formed by the depression in latch 22 and has the tendency to press the latch into the teeth of the rack-bar 21.

A vertical pin 27 in latch 22 projects through a slot 28 in the top plate of head 20, and through a slot 29 in the tongue of a locking member 30 movably secured on the outer threaded end of bolt 19 on top of the upper plate of the head 20, and a disk or washer 19′ limits the movement of bolt 19 in one direction.

This locking member 30 has a shoulder 31 adapted to be engaged by one end of a curved leaf-spring 32, pivoted intermediate its ends to a pin 33 projecting from the

upper face of the upper plate of head 20.

The head has two jaws 34 and 35, one of which, the jaw 34, is movable and made integral with rack 21 and disposed rectangularly thereto, while the other, 35, is made in one piece with the plates of the head.

The inner oppositely disposed edges of the jaws are dovetailed in cross-section as shown at 36 and 37 in Fig. 6 for the reception of face blocks 38 and 39 having either smooth faces 40 and 41 or saw faces 42 and 43 (Fig. 12).

If the tool is to be used for thread cutting, suitable dies 44 and 45 provided with dovetailed grooves to snugly fit over the dovetailed edges 36 and 37 of the jaws are attached to these edges.

If the tool is to be used for cutting pipes etc., one of the jaws, for instance 46, is provided with two cutters or disks 47 and 48 working against a pipe 49 while a face block 50 carrying a saw blade 51 is attached to the opposite jaw 52.

The handle 10 is formed near its free end on the edge of a circle 53, and has a central circular opening 54, while a similarly shaped block or plate 55 having a central hole is secured to the handle by means of a plurality of screws 56.

Between plate 55 and a circular depression in handle 10, a circular plate 57 is movably interposed which has a plurality of curved slots 58 in which pins 59 projecting from the upper faces of clamping members 60 travel so that the members are projected with their inner serrated ends 61 into the opening 54 when plate 57 is moved by means of its projecting handle 62, in order to clamp a die 63 in place.

The device operates as follows:—

If it is desired to adjust the jaws of the wrench to the size of the workpiece to be operated upon, latch 22 is disengaged from rack 21 by the operation of pin 27, and is locked in this position by means of locking member 30 and spring 32 in engagement therewith.

After adjusting the movable jaw 34 and rack 21 which is integral therewith, the engagement between spring 32 and locking member is broken and the latch will again engage with the teeth of rack 21 under the action of its spring 25. The exchange of the working cheeks or faces is effected by sliding the same with their dovetailed grooves over the dovetailed edges of the jaws 34 and 35.

If it is desired to use the die 63, the same is clamped into place by means of the clamping members 60 by the proper manipulation of handle 62.

It will be clear that changes may be made in the general arrangement and in the construction of the minor details of my invention without deviating from the scope and spirit thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent is—

1. In a wrench, a handle, a toothed segment formed at one end of said handle, a head pivotally secured to said handle, a rack-bar transversely and slidingly arranged in said head with its teeth in mesh with the teeth of said segment, a jaw formed with said rack, a stationary jaw formed with said head, the inner oppositely disposed edges of said jaws dovetailed in cross-section for permitting the attachment of various tools, a means for locking the parts in their adjusted positions, and a means for holding said locking means in their retracted unlocking position.

2. In a wrench, a perforated handle, a toothed segment formed at one end of said handle, a perforated head composed of two superposed plates pivotally secured to said handle, a rack-bar transversely and movably disposed in said head, a jaw formed with said rack rectangularly disposed thereto, a stationary jaw formed with said head, a locking latch having a depression intermediate its ends, a spring engaging in said depression for pressing said latch normally into engagement with the teeth of said rack, a pin on said latch projecting above the upper plate of said head and movable in a slot in said plate, a slotted locking member into the slot of which said pin extends, and a spring for holding said locking member, pin and latch in place in the retracted position of said latch for allowing an operation of said rack and an adjustment of the jaws, said jaws being dovetailed at their ends in cross-section for permitting the attachment of a plurality of tools provided with dovetailed grooves.

In testimony whereof I affix my signature.

JOHN KROPACZ. [L. S.]