

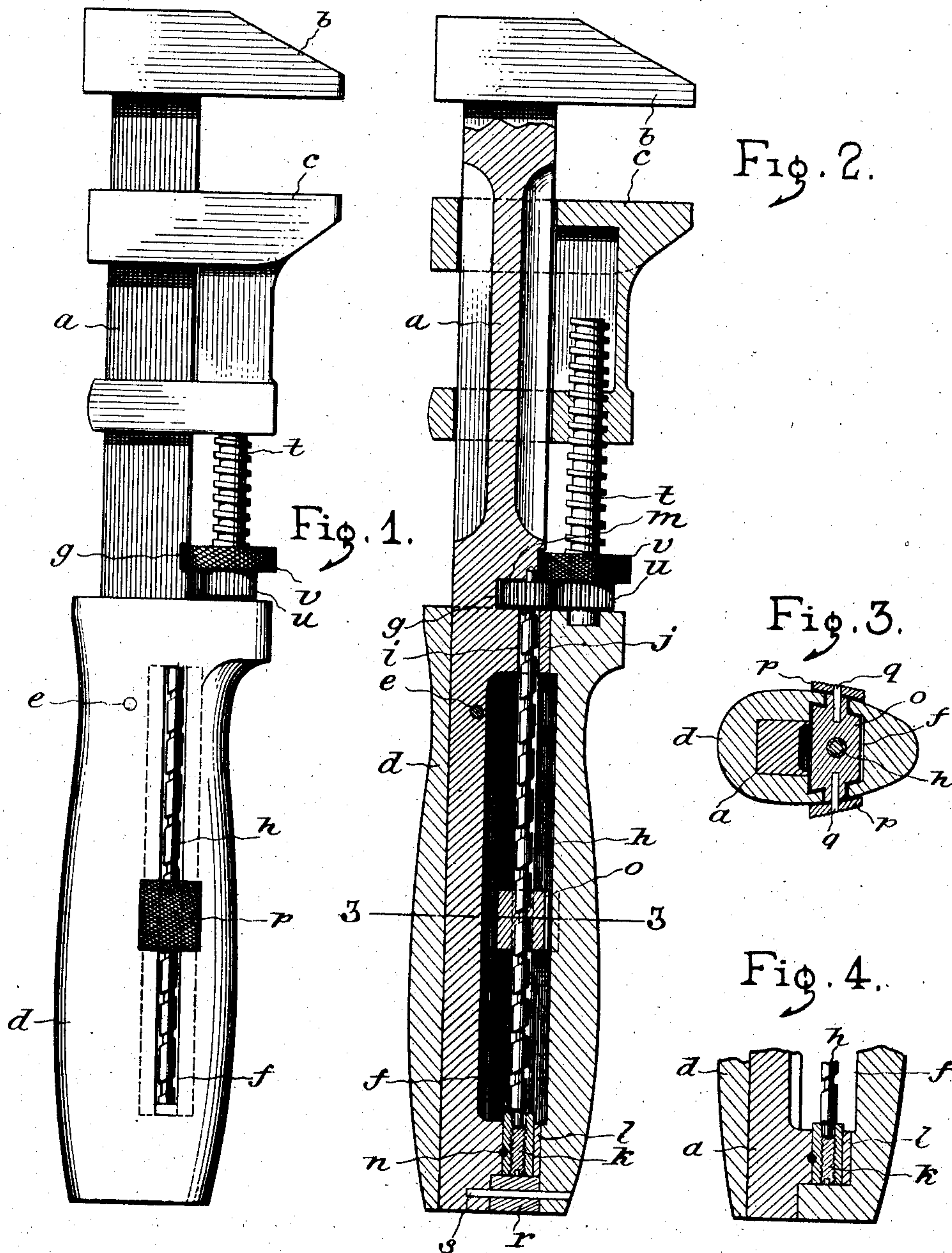
No. 854,376.

PATENTED MAY 21, 1907.

F. McARTHUR.

WRENCH.

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Witnesses:

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UNITED STATES PATENT OFFICE.

FINLAY McARTHUR, OF MONTREAL, QUEBEC, CANADA.

WRENCH.

No. 854,376.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FINLAY McARTHUR, a subject of the King of England, residing at Montreal, in the Province of Quebec, in the Dominion of Canada, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to new and useful improvements in quick acting wrenches including a fixed jaw, a movable jaw, a spiral extending longitudinally of the wrench, and means operated from said spiral, for quickly adjusting the position of the movable jaw from said spiral, and consists in certain features of novelty in the details of construction all as hereinafter more fully set forth, and specifically pointed out in the claims.

The object of this invention is to provide means whereby such a wrench may be quickly adjusted to position, and comprises in its construction means to render the wrench available for ordinary use in the event of the quick acting feature becoming, for any reason, inoperative for the time being.

Referring to the accompanying drawings in which similar letters of reference denote corresponding parts in all the figures; Figure 1 is a side elevational view of the improved wrench; Fig. 2 is a longitudinal, central, sectional view, taken through the wrench; Fig. 3 is a sectional view taken on line 3—3 of Fig. 2; Fig. 4 is a fragmentary sectional view showing a modified construction hereinafter described.

Referring to the parts *a* is the shank of the wrench, having on one end the fixed jaw *b*, a slidable jaw *c* being provided as is common in wrenches. On the shank *a* is secured a handle-shell *d* which is secured in position by means of the pin *e*, which passes through the handle and shank to secure them together. As will be observed in Fig. 2 the shank is recessed at *f* and at *g*, and in the recess *f* is seated a spirally threaded member *h* which passes through a perforation *i* formed in one lug *j* of the shank and is seated in the inserted screw-threaded bearing block *k* which is screwed into position in the lug *l* at the opposite end of said shank, there being a pinion *m* on said spiral *h* within the recess *g*, while the end of the spiral is seated in a suitable recess beyond said pinion, as shown in Fig. 2. The bearing block *k* is held in position by means of the pin *n* which is put in position before the handle is placed in position.

The handle-shell *d* is hollow, and is preferably constructed with sufficient opening at one end for the insertion of the nut *o*, which slides on the spiral for the purpose of rotating the pinion referred to, and said nut is manipulated by means of the finger pieces *p—p* which slide outside the handle, and are pinned to said nut by means of the pins *q—q*, as best shown in the sectional view, Fig. 3, said finger pieces being preferably roughened to afford a better grasp in operation. In the event of the opening made in the handle for the insertion of the shank not being large enough for the nut, the block *r* may be used and sufficient space be left therefor in the end of the handle, and when this block is used it should be locked in position by means of the pin *s*, as shown in Fig. 2.

Seated at one end in a recess in the forward end of the handle and at its opposite end in a screw-threaded orifice in the slidable jaw, is a screw-threaded stem *t*, which engages the slidable jaw to actuate the same. On this stem *t* is a pinion *u* which meshes with said pinion *m*, while a burred thumb piece *v* is placed on said stem in close juxtaposition to, or is formed integral with, said pinion *u*. The longitudinal axes of the spiral and said stem *t* are approximately parallel, and it is evident that when the nut *o* is moved longitudinally of the spiral *h* that said spiral will be caused to rotate, owing to the fact that the said nut is angular at its top and bottom sides, and closely fits within the space between the said handle shell and the shank of the wrench, though sufficient room is left to avoid unnecessary friction. The ends of the spiral are slightly tapered to avoid friction, and it is evident that the parts should be so proportioned as to permit easy manipulation.

Owing to the fact that the stem *t* is out of alinement with the spiral the strain on said spiral is materially reduced and no ordinary use of the wrench will throw it out of commission, but, if by any reason the spiral should refuse to perform its function, the member *v* may be manipulated as is common in wrenches where no spiral is used.

The handle-shell is preferably formed so as to provide a guard for the spiral, thereby preventing accidental bending thereof, which would place it out of commission, and to that the said handle is formed as shown in the sectional view, Fig. 3 so as to inclose the nut *o*, leaving only a slightly attenuated portion

thereof projecting through the slot left in said handle, and the thumb pieces *p* are secured by the pins *q* to said attenuated portions.

I am aware that minor changes may be made in the form and position of the parts shown in the accompanying drawings without departing from the spirit of the invention, and it is my intention to claim all such modifications as may be within the scope of the following claims.

Having described the invention, what is claimed as new is;

1. In a wrench of the character described, the combination comprising a shank with a fixed jaw thereon, a handle shell fixed on said shank, a jaw slidable on said shank, a spiral mounted in said shank, a nut on said spiral, an approximately parallel screw-threaded stem seated in said handle and slidable jaw, and pinions adapted to transmit rotary motion from said spiral to said stem, and thereby to the slidable jaw.

2. In a wrench, the combination comprising a fixed jaw, a shank on said jaw, a rotatable spiral mounted in said shank, a pinion on the said spiral, a nut on said spiral, a slidable jaw and a handle shell mounted on said shank, a screw-threaded stem seated in said handle and rotatable in a correspondingly screw-threaded orifice in said slidable jaw and a pinion on said stem in mesh with the first mentioned pinion.

3. In a wrench, the combination comprising a recessed shank, having a fixed jaw thereon, a recessed slidable jaw, a handle fixed on said shank, a nut on said spiral, a pinion on the spiral in the recess of the shank,

a screw-threaded stem seated in said handle and engaging said slidable jaw, a burred thumb piece and a pinion on said stem, said pinion meshing with the first mentioned pinion.

4. In a wrench, the combination comprising a recessed shank having a fixed jaw thereon, a slotted handle shell rigidly mounted on said shank, a spiral rotatably mounted in the said shank, a pinion fixed on said spiral, a nut on said spiral, said nut being guided between the shank and handle-shell, a slidable jaw, having screw-threaded orifice therein, a screw threaded stem seated in said orifice and in the handle, a thumb piece on said stem, and a removable bearing in said shank for one end of said spiral.

5. In a wrench of the character described, the combination comprising a recessed shank having a fixed jaw thereon, a bearing mounted in a perforation in said shank, a spiral mounted in said bearing at one end and projecting through a perforation in said shank at the opposite end, a pinion on said spiral in a recess in said shank, a nut on said spiral, a slidable jaw, a handle, a stem mounted in said handle and slidable jaw, and a pinion thereon in mesh with said first mentioned pinion.

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

FINLAY McARTHUR.

Witnesses:

F. H. GIBBS,

I. H. ELLIOTT.