No. 832,575. PATENTED OCT. 2, 1906.

A. L. GAGNON.

MONKEY WRENCH.

APPLICATION FILED MAR. 9, 1906.

Fig. 1.

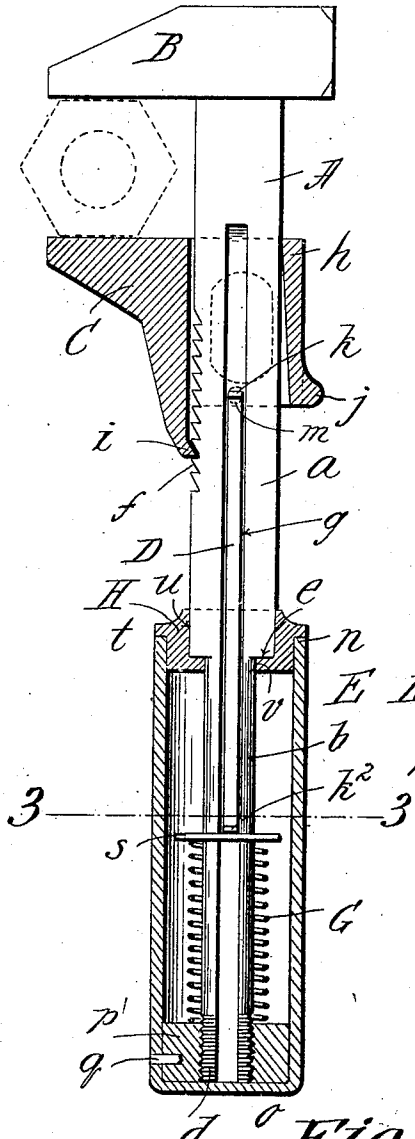


Fig. 2.

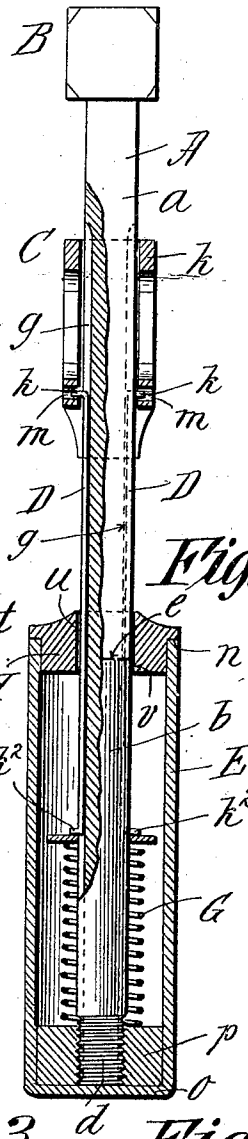


Fig. 4.

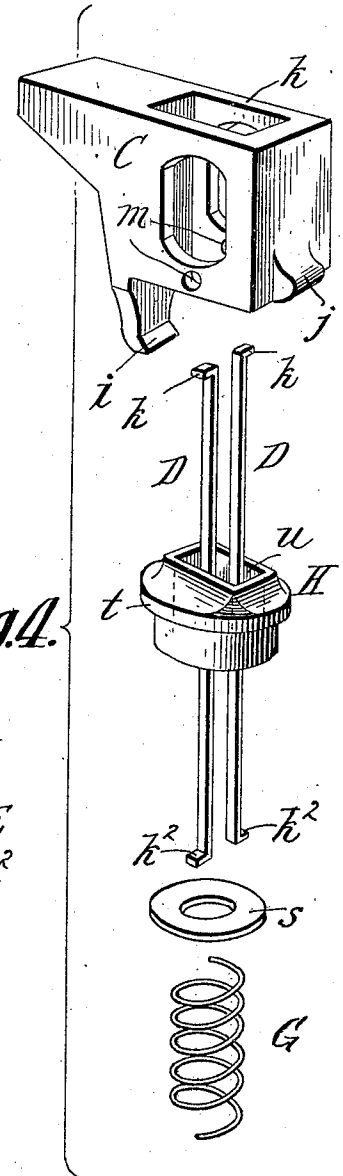


Fig. 3.

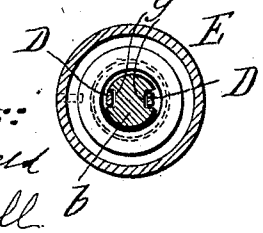
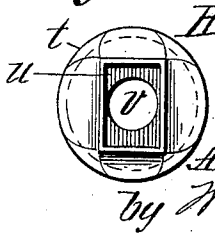


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MONKEY-WRENCH.

No. 832,575. Specification of Letters Patent. Patented Oct. 2, 1906.

Application filed March 9, 1906. Serial No. 305,188.

To all whom it may concern:

Be it known that I, ALPHAGE L. GAGNON, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Monkey-Wrenches, of which the following is a full, clear, and exact description.

This invention relates to quick-action monkey-wrenches of the kind in which the movable jaw has the capability of free sliding movements on the wrench-bar, so as to be positioned instantly to embrace a nut or other part to be engaged by the wrench-jaws, the movable jaw immediately it comes to contact against the nut or other engaged part automatically becoming interlocked with the wrench-bar.

The objects of this invention are to produce a wrench of the general class mentioned of simple and inexpensive construction and comprising comparatively few parts, all of which are practicable of manufacture by approved methods, and to obtain a wrench which is strong, durable, and so generally superior and attractive as to be readily accepted in the trade.

The improvements are clearly shown in the accompanying drawings, described hereinafter, and set forth in the claims.

In the drawings, Figure 1 is substantially a central longitudinal sectional view through the wrench, the wrench-bar and fixed jaw being in side view. Fig. 2 is substantially a similar view to Fig. 1, but seen on a sectional plane at right angles thereto. Fig. 3 is a cross-section on line 3 3, Fig. 1. Fig. 4 is a perspective view of parts of the wrench in separated relations. Fig. 5 is a plan or upper end view of a fitting or bushing piece comprised in this wrench construction.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the wrench-bar, having its forward portion *a* cross-sectionally rectangular and its rear portion *b* of cylindrical form and somewhat reduced, said portion *b* being screw-threaded, as seen at *d*, at its end portion, and the so-formed wrench-bar has the rectangular shoulder *e* at the junction of its differently-formed portions *a* and *b*. The wrench-bar has a fixed jaw B at its forward end, as usual, and is provided with a series of ratchet-teeth along its inner or under edge, as represented at *f*. The wrench-bar is, furthermore, constructed with longitudinal grooves *g g* within its opposite sides.

C represents the movable jaw, having an apertured or yoke-like portion *h*, which embraces and is slidable along the wrench-bar with a reasonably close fit, the aperture through the jaw portion *h* being of such form and dimension as to permit a rocking movement transversely relatively to the wrench-bar of the movable jaw, and the movable jaw has a tooth or portion *i* for engagement with the ratchet-teeth of the bar. The movable jaw, moreover, has the thumb-engagement portion *j* at its side or edge opposite the ratchet-tooth-engagement part *i*.

D D represent comparatively long thin rods sunk within and endwise movable along the aforesaid longitudinal wrench-bar groove *g g*, these rods having outwardly-extending short projections or lugs *k k* at their forward ends which engage in small recesses or perforations *m m* in the opposite cheeks or walls of the movable jaw. The said rods *d d* have similar outwardly-extending lugs or projections k^2 k^2 at their rear ends.

E represents a cylindrical tubular handle constructed with a forwardly open end *n* and a closed rear end *o*, the same being most cheaply and practicably produced as an elongated cold-drawn cup or end-closed tube and having a circular block or nut *p* tightly pressed in the rear closed end of the tubular handle, the screw-threaded hole in this block or nut *p* being coincident with the axis of the wrench-bar, and the said block *p* may in addition to its engagement by the driving fit in the handle also be confined by the locking-pin *q*. G represents a spiral spring surrounding the rear portion of the wrench-bar inclosed within said hollow handle, having one end in bearing against the nut *p* and its other end in bearing against a washer *s*, which is freely slidable along the round portion *b* of the wrench-bar and which is in engagement against the rear end lugs k^2 k^2 of the aforementioned rods D.

H represents a generally cylindrical fitting or bushing piece having the external flange *t* and made with a squared outer end socket *u* and with a circular hole *v* leading from the socket rearwardly through such piece, and in

the assemblage of the wrench parts the cylindrical body of this bushing closely fits within the forward open end portion of the tubular handle and the flange *t* overlaps the end of the handle, and the aforementioned rectangular shoulder *e* of the wrench-bar is fitted and seated in the rectangular socket *u* of the bushing, and the parts are all held together in their proper relations by the screw-thread engagement between the end *d* of the wrench-bar and the part *p*, formed as one with the closed end of the handle, the screw action drawing the wrench-bar so that its shoulder firmly bottoms at the base of the socket *u*.

By merely turning the handle E in the proper direction to unscrew it entirely from engagement with the wrench-bar all of the separate parts may be removed, the handle slipping away from the bushing *h*, permitting the spring and washer to be taken off, whereupon the rods D D, with the movable jaw, also the bushing *h*, may be all disengaged from the wrench-bar and from each other. This enables the spring or any other part to be easily replaced.

In operation the wrench-handle being grasped, for instance, by the right hand the thumb thereof may be extended forwardly to engage the thumb-piece *j*, and the movable jaw may be withdrawn and separated from the fixed jaw easily more than enough to let the jaws pass completely over the nut or part to be turned, it being explained that the pressure naturally exerted by the thumb will so slightly rock the jaw as to carry its engagement part *i* free from the ratchet-teeth. The thumb engagement being released, the spiral spring, through the medium of the rods *d d*, having forward end engagements with the jaw, force the latter closely against the nut, and the movable jaw will immediately or so soon as any strain is brought thereagainst, as in turning the nut, be rocked to the position shown in Fig. 1, its tooth or engaging part *i* interlocking in the adjacent wrench-bar ratchet-tooth of course preventing the movable jaw from receding in the nut-turning action.

I claim—

1. The combination with a wrench-bar, having a fixed jaw, and a series of ratchet-teeth, and provided with longitudinal grooves in its opposite sides, of a second jaw having a portion embracing and slidable along the wrench-bar, adapted for a slight rocking movement relatively thereto, and provided with recesses in its opposite sides, and also having a tooth or portion for engagement with the ratchet-teeth of the bar, rods in, and endwise movable along, the grooves, having outwardly-extending projections engaging in said recesses in the slidable jaw, a spring encircling the handle portion of the wrench-bar and operable to exert a forwardly-sliding action against said rod.

2. The combination with a wrench-bar, having a fixed jaw, and a series of ratchet-teeth, and provided with longitudinal grooves in its opposite sides, of a second jaw having a portion embracing and slidable along the wrench-bar, adapted for a slight rocking movement relatively thereto, and provided with recesses in its opposite sides, and also having a tooth or portion for engagement with the ratchet-teeth of the bar, and provided with a thumb-engagement projection at its rear end, rods in, and endwise movable along, the grooves, having outwardly-extending projections engaging in said recesses in the slidable jaw, a spring encircling the handle portion of the wrench-bar and operable to exert a forwardly-sliding action against said rods.

3. The combination with a wrench-bar having a fixed jaw and a series of ratchet-teeth and provided with longitudinal grooves in its opposite sides, of a second jaw having a portion embracing and slidable along the wrench-bar, adapted for a slight rocking movement relatively thereto and provided with recesses in its opposite sides, and also having a tooth or portion for engagement with the ratchet-teeth of the bar, rods in and endwise movable along the grooves, having outwardly-extending projections at their forward ends engaging in said recesses in the slidable jaw, and having outwardly-projecting lugs at their rear ends, a hollow handle surrounding the rearward portion of the wrench-bar, a spring encircling the handle portion of the wrench-bar within said hollow handle and operable to exert a forwardly-forcing action against said rods.

4. The combination with a wrench-bar, having its forward portion cross-sectionally rectangular and its rearward portion of cylindrical form, and screw-threaded at its extremity, having a rectangular shoulder at the junction of its differently-formed portions, having a fixed jaw, provided with a series of ratchet-teeth along its under edge, and provided with longitudinal grooves in its opposite sides, of a second jaw having a portion embracing and slidable along the wrench-bar, adapted for a rocking movement relatively thereto, and provided with recesses in its opposite sides, and also having a tooth or portion for engagement with the ratchet-teeth of the bar, rods in, and endwise movable along, the grooves, having outwardly-extending projections at their forward ends engaging in said recesses in the slidable jaw and having outwardly-turned projections at their rear ends, a cylindrical tubular handle constructed with a forwardly-open end and a closed rear end portion having an axial screw-threaded hole, a cylindrical externally-flanged bushing-piece, fitted within the forward open end of the handle, and made with a squared outer socket and circular hole lead-

ing rearwardly therefrom and therethrough, the rectangular shouldered intermediate portion of the wrench-bar being fitted in said socket and the cylindrical rearward end of the bar extending through the circular hole in the bushing and with a screw engagement in the rear end of the handle, a washer slidable on the handle-inclosed rear portion of the wrench-bar and in contact against the rear end projections of said rods, and a spring inclosed within said hollow handle and exerting a forwardly-forcing action against the washer.

Signed by me at Springfield, Massachusetts, in presence of two subscribing witnesses.

ALPHAGE L. GAGNON.

Witnesses:

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WM. S. BELLOWS.