

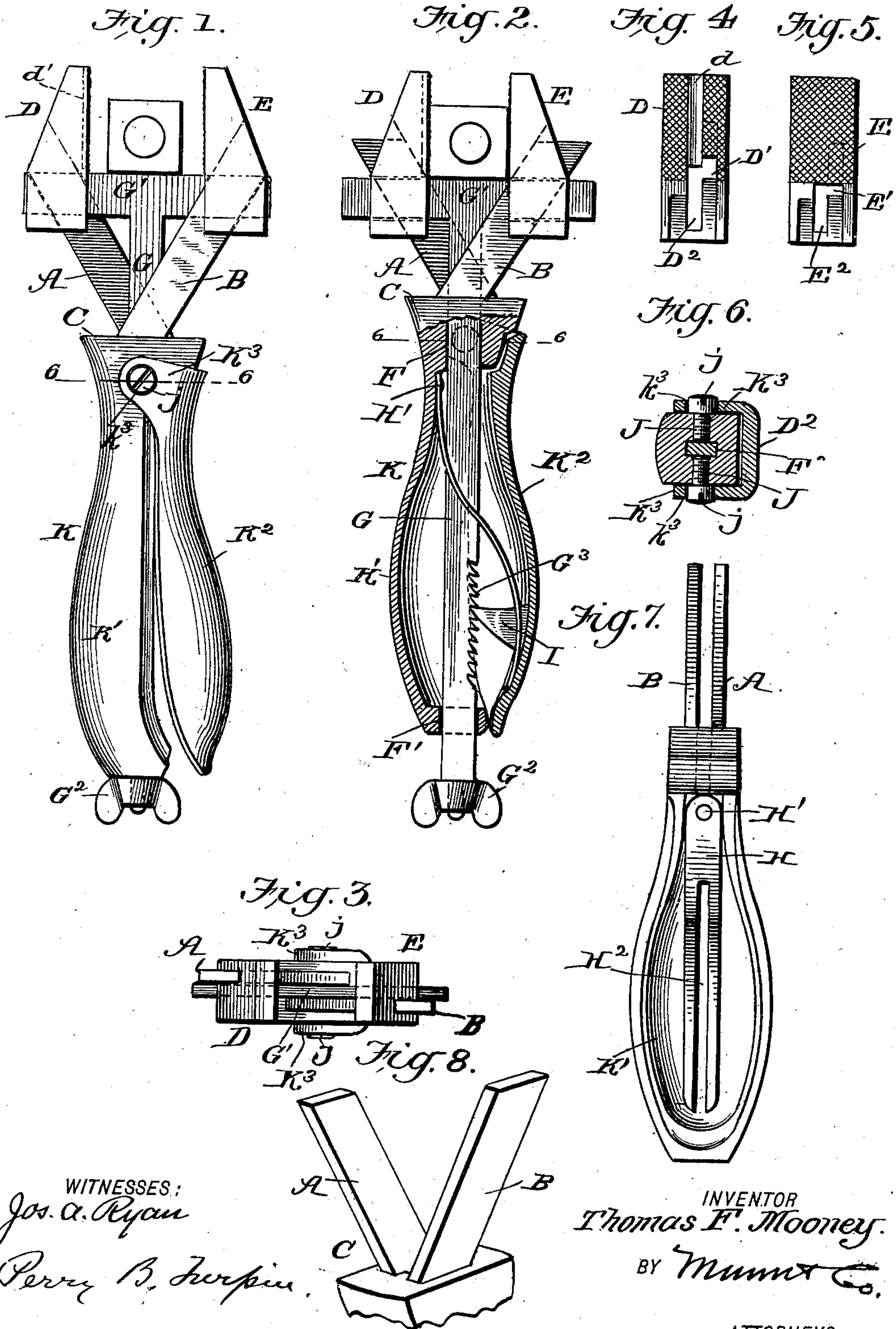
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T. F. MOONEY.
WRENCH.

(Application filed Oct. 3, 1900.)

(No Model.)



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WRENCH.

SPECIFICATION forming part of Letters Patent No. 666,150, dated January 15, 1901.

Application filed October 3, 1900. Serial No. 31,827. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. MOONEY, a citizen of the United States, residing at Baltimore, in the State of Maryland, have made certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention is an improvement in wrenches, and has for its object to provide a quick-acting wrench which will be self-adjusting to the bolt-head, nut, or other object which it may be desired to turn and which may also be used as pliers for manipulating wire.

The invention has for its objects, among others, to furnish a wrench in which the jaws will close automatically and tightly grip the nut; also, to so construct the handle that it will when tightly grasped lock the jaws in the adjustment to which they may have been previously set.

The invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of the wrench with its jaws opened and its actuator applied to a nut to permit the automatic closing of the jaws. Fig. 2 is a side view, partly in section, of the wrench with the jaws closed upon the nut. Fig. 3 is an end view of the wrench with the jaws closed, as shown in Fig. 2. Figs. 4 and 5 are face views of the inner sides of the jaws of the wrench. Fig. 6 is a detail cross-sectional view on about line 6 6 of Fig. 1. Fig. 7 is an edge view of the inner side of the main handle-section, and Fig. 8 is a detail perspective view showing the head of the wrench with the projecting cams.

By my invention I provide a wrench which may be applied to the nut with its jaws open and can be caused to automatically close its jaws upon the nut, thus furnishing a quick-acting wrench which can be conveniently manipulated with one hand. To this end I support the jaws so they can move toward and from each other and provide in connection therewith means for causing the jaws to approach and grip the nut. As shown, I furnish cams or inclines for engagement by the jaws and means for moving the jaws and cams or inclines relatively, so the cams or in-

clines will cause the adjustment of the jaws toward and from each other.

In the construction shown the cams or inclines are in the form of diverging bars A and B, which are mounted upon the head C of the handle K, are spaced slightly apart, as shown in Figs. 3, 7, and 8, and diverge upwardly or toward their free ends, as shown in Figs. 1, 2, and 8. The jaws D and E are provided at D' and E' with slots which slide upon the cams or inclines A and B, so the movement of the jaws and cams or inclines relatively from the position shown in Fig. 1 to that shown in Fig. 2 will cause the jaws to approach each other and tighten upon the nut. Manifestly I do not wish to be limited in this broad feature of my invention to any special means for adjusting the jaws and cams or inclines relatively; but I prefer the construction shown, in which there is provided an actuator-bar which is engaged with the jaws and extends adjacent to the handle. I also prefer to form this actuator-bar with a cross-head or portion which lies between the jaws of the wrench, so it may be engaged with the nut in order that pressure exerted against said cross-bar by bearing against the nut will operate to adjust said jaws toward or from each other by the action of the cams or inclines, as will be more fully described hereinafter.

In the specific construction shown the handle K is provided at its opposite ends with the guide-openings F and F' for the shank of the actuator. The actuator is composed of the shank G, which is movable longitudinally in the openings F and F', and the cross-head G', which is in the form of a bar at right angles to the shank G and at the upper end thereof and fitted to operate in transverse openings or slots D² and E² in the jaws D and E. By this construction the actuator has a slidable connection with the jaws D and E, so it can operate to move the jaws in a direction parallel to that of the shank G and will at the same time permit the jaws to adjust toward each other and away from each other by the action of the cams or inclines, as will be readily understood from the drawings. The shank G protrudes beyond the lower end of the handle and is provided at such end with means by which it may be grasped and operated,

which may preferably be the winged nut G^2 , as shown.

In the operation of the described construction if the wrench be adjusted as shown in Fig. 1, with the cross-bar G' bearing against the nut, an upward pressure will be applied to the handle K to adjust it and the attached cams or inclines A and B to the position shown in Fig. 2, and the jaws will be adjusted toward each other and will be caused to tightly grip the nut, when the wrench may be operated to turn the nut as may be desired. I find it desirable to furnish means for locking the jaws when closed upon the nut, as shown in Fig. 2, and prefer to apply such lock to the shank of the actuator and also to arrange it for operation by the gripping of the handle K . To this end I form the actuator-shank G with teeth G^3 and construct the handle K in sections K^1 and K^2 . The section K^1 is formed with the head C , from which the cams or inclines A and B project, and said main section K^1 is also formed with the openings F and F' , which form the guides for the shank G of the actuator. The section K^2 is pivoted at its upper end to the head of the section K^1 , and its lower end is pressed normally away from the lower end of the section K^1 by means of a spring, which is shown as a plate H , secured at one end H^1 to the section K^1 and having its other or free end slotted at H^2 to fit on opposite sides of the shank G and to bear at its free end against the inner side of the handle-section K^2 , near the lower free end of the latter. The section K^2 is provided on its inner side near its free end with a spur I , whose point is arranged to engage the teeth G^3 of the bar G when the handle is compressed, as shown in Fig. 2, but which spur I clears the teeth G^3 when the handle-sections are as shown in Fig. 1, in which position they are held normally by the spring H . Thus in operation the handle K may be grasped lightly when the parts are applied as shown in Fig. 1 and so held until the jaws are adjusted to the position shown in Fig. 2, at which time the grasp upon the handle may be tightened against the action of the spring H and the spur be engaged with the bar G to lock the parts securely in the adjustment shown in Fig. 2.

In pivoting the section K^2 to the section K^1 it is preferred to form the section K^2 with lugs or ears K^3 , which lap on the opposite sides of the head C and are provided at k^3 with openings which receive the heads j of screws J , which turn into the head C . By this construction, which will be understood from Figs. 1, 3, and 6, I avoid any wearing of the threads of the screws J , provide an ample bearing for the section K^2 of the handle, and counter-sink the screw-heads, thus avoiding any lateral projections on the sides of the wrench.

It will be noticed that the handle-sections K^1 and K^2 are properly curved to form a suitable handle by which to manipulate the wrench.

When the wrench is adjusted as shown in

Fig. 2, the jaws can be released by upward pressure on the lower end of the shank of bar G , as will be understood from Figs. 1 and 2.

The inner faces of the jaws D and E of the wrench are preferably milled, as shown in Figs. 4 and 5, and one of the jaws may be grooved at d to adapt the device for use as pliers in handling wire.

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

1. A quick-acting wrench comprising the wrench composed of a main section and a locking-section provided with means for locking the adjustable parts of the wrench, cam-bars or inclines mounted upon the main section, spaced slightly apart and diverging toward their free ends, the actuator having a shank operating in the main section of the handle and between the cam-bars or inclines, and a cross-head at the upper end of said shank and also arranged between the cam-bars or inclines, and the jaws provided with openings to receive the cam-bars or inclines and the cross-head of the actuator, substantially as set forth.

2. A wrench comprising a handle having cams or inclines, the jaws slidable upon the cams or inclines, and the actuator having a portion extending between the jaws and arranged for engagement with a nut or the like, substantially as set forth.

3. The combination with the handle having the diverging cam-bars or inclines, and the jaws movable upon said cam-bars, of an actuator having a portion extending between said jaws in position for engagement by the nut and arranged at its ends for engagement with the jaws of the wrench, substantially as set forth.

4. The combination in a wrench, of the handle, the cam-bars or inclines upon said handle spaced slightly apart in a direction at right angle to the planes in which said bars extend and diverging toward their free ends, the actuator having a cross-head fitting in such space between the cam-bars or inclines, and the jaws having openings receiving the cross-head and cam-bars or inclines, substantially as set forth.

5. A wrench having a handle, adjustable jaws and automatically-operating means for adjusting said jaws including a shank extending within the handle, and means for locking engagement with said shank and arranged for operation by the handle, substantially as set forth.

6. The combination in a wrench, of the handle having upper and lower guides for the actuator-bar and provided with cams or inclines, the jaws engaged with said cams or inclines, and the actuator connected with the jaws and movable longitudinally in the guides of the handle, substantially as set forth.

7. A wrench having a handle, adjustable jaws, and means for adjusting said jaws in-

cluding a cross-head within the space between the jaws, and arranged for engagement with a nut fitted between the jaws, substantially as set forth.

5 8. The combination, in a wrench, of the handle having projecting cam-bars, an actuator provided with a cross-bar extending transversely of the cam-bars and the jaws having openings formed from their inner to
10 their outer sides and receiving the cam-bars and cross-head, substantially as set forth.

9. A wrench comprising a handle having a main section provided at its upper end with cam-bars and also provided at its upper and
15 lower ends with openings forming guides for the shank of the actuator, the jaws slidable upon the cam-bars, the actuator engaging said jaws and having a shank operating in the guide-openings of the main section of the
20 handle, and the supplemental handle-section jointed to the main section and provided with locking means for engagement with the shank of the actuator, substantially as described.

10. A wrench, substantially as described,
25 having adjustable jaws, and an actuator therefor provided with a portion lying between the jaws and arranged for operation by pressure against a nut or the like fitted between the jaws, substantially as set forth.

30 11. In a wrench substantially as described, the combination of the jaws, an actuator for operating the same, and the handle composed of the main section having guides for the ac-

tuator-bar, and a hinged section provided with locking means to engage an actuator- 35 bar, and a spring for holding the handle-sections normally apart, substantially as set forth.

12. The quick-acting wrench herein described comprising the handle composed of 40 sections, one of which is provided with cam-bars or inclines and the guides for the actuator-bar, and the other of which is pivoted to the main section and is provided with a lock for engagement with the actuator-bar, the 45 spring-plate bearing between said handle-sections and slotted to fit on opposite sides of the actuator-bar, the actuator-bar having a cross-head, and the wrench-jaws engaged with said cross-head and cam-bars or inclines, 50 substantially as set forth.

13. In a wrench substantially as described, the combination with the jaws and the handle provided with means for operating the same and composed of the main section, the 55 hinge-section having lugs or ears lapping on opposite sides of the main section and provided with openings, and the screws connected with the main section and having their heads fitted in the openings of the hinge-section and 60 providing a hinge or pivot therefor, substantially as set forth.

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Witnesses:

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