No. 803,529. PATENTED OCT. 31, 1905.

M. E. GARWOOD.

COMBINED NUT AND PIPE WRENCH.

APPLICATION FILED MAY 11, 1905.

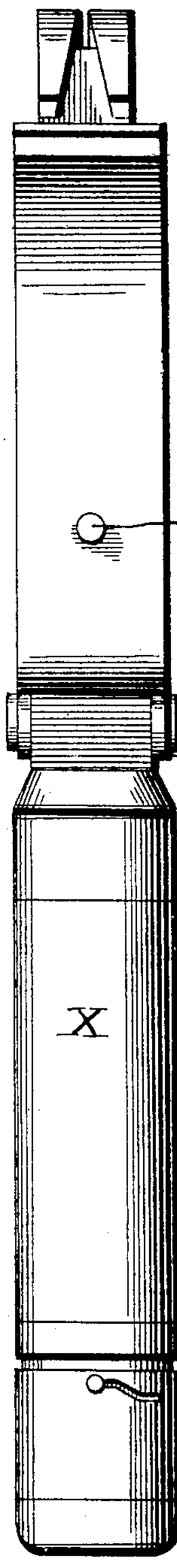


Fig. 1.

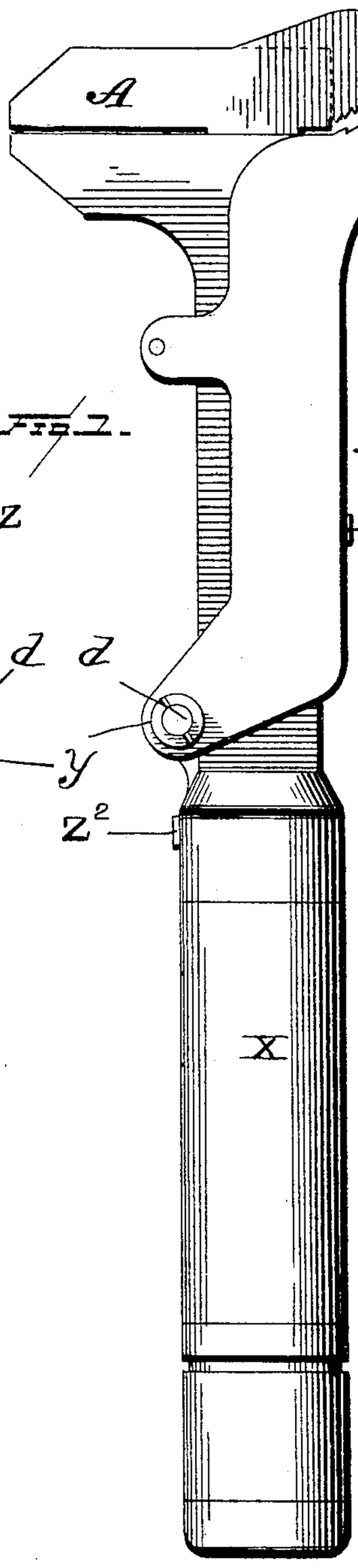


Fig. 2.

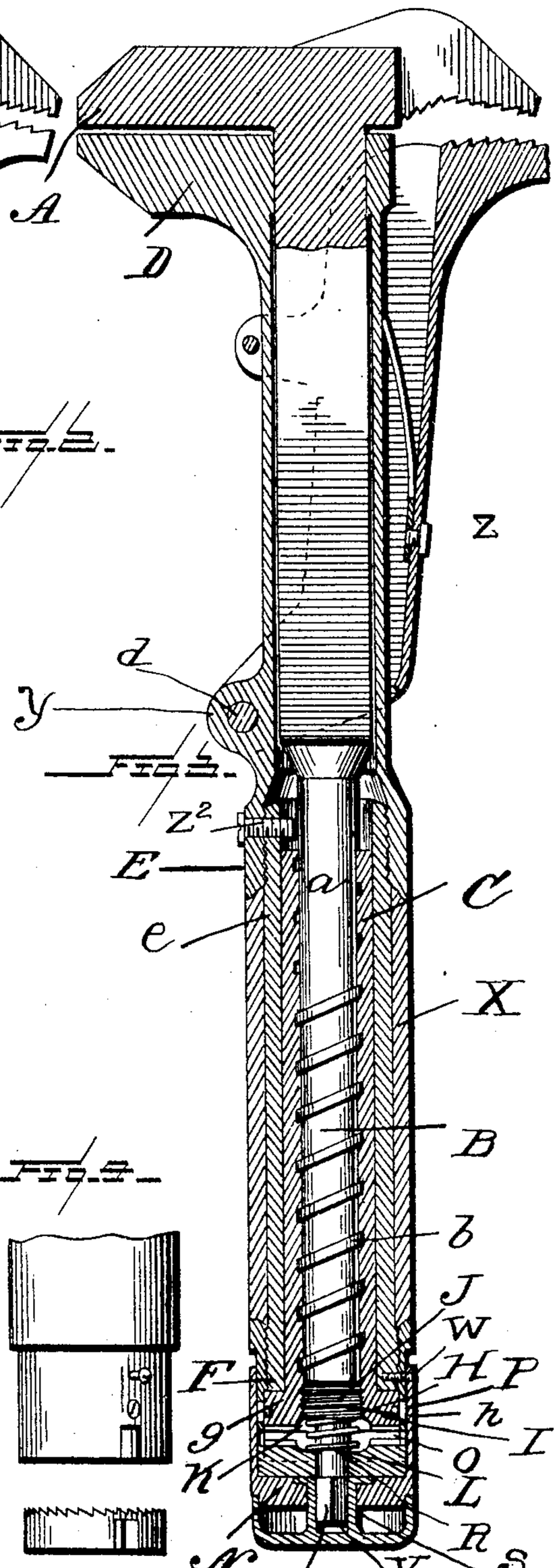


Fig. 3.

Fig. 4.

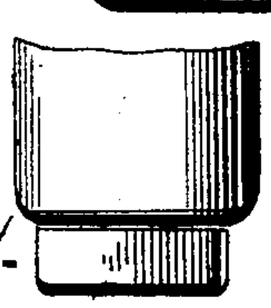
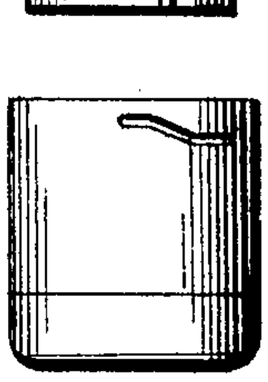


Fig. 5.



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COMBINED NUT AND PIPE WRENCH.

No. 803,529. Specification of Letters Patent. Patented Oct. 31, 1905.

Application filed May 11, 1905. Serial No. 260,047.

To all whom it may concern:

Be it known that I, MILES E. GARWOOD, a citizen of the United States, residing at Bingham, in the county of Leelanau and State of Michigan, have invented certain new and useful Improvements in a Combined Nut and Pipe Wrench, of which the following is a specification.

My invention relates to improvements in a nut and pipe wrench combined and to a nut or pipe wrench singly; and the objects of my improvements are, first, to provide a mechanism whereby the wrench may readily be adjusted to any nut or pipe within its capacity; second, to secure a vise grip or permanent set on objects desired; third, to provide a movable upper jaw with head and shank in one piece and a rigid lower jaw made continuous with the handle; fourth, to provide a ratchet bevel-gear lock. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an edge or front view; Fig. 2, a side elevation; Fig. 3, a vertical section; Fig. 4, a detailed view, parts separated; Fig. 5, a modification thumb-piece.

Similar letters refer to similar parts throughout the several views.

The wrench consists of six parts—an upper and movable jaw and shank in one piece, a rigid lower jaw continuous with the handle, a ratchet-lock, a revoluble sheath, an outside slotted cylinder, and a device or thumb-piece, respectively. That portion of the shank B of the wrench is provided with elevated spiral threads *b* upon its surface and works inside of a circular metal sheath or cylinder C, having an enlarged head *g* at its end. Said cylinder C is incased by a metal cylinder *e*, and said metal cylinder *e* is united as a whole with the lower jaw-shank at E and is also connected with said cylinder C by a metal piece F, and said cylinder C is also united as a whole with a metal piece I by means of a threaded screw J, said enlarged head *g* at the end of said cylinder C, around which is a circular groove, is held in position by a metal pin H. The said ratchet K is held or disengaged by means of a spiral coil-spring R. The shaft L, being the reduced section of I, and M, being the square form of I, as a whole work in square hole of N. The duplicate ratchet N works loosely upon L when out of adjustment, (shown at O.) The locking between the surfaces at O is controlled by a metal pin W. Said pin is mounted in the lower portion of the metal cylinder *e*. The outer portion of said pin travels in an inclined slot in the cap. The cap is provided for locking the jaws of the wrench in their adjusted position. To do this, the cap is given a partial turn to the left, which will elevate the cap and bring the serrated surface in the cap in contact with the serrations at the base of part C, and thereby lock the same from further rotation. The lower part of the pipe-jaw is attached by means of a lug *y* on the shank of said jaw. Said lug is fastened by means of a rivet or screw *d*, passing through and through.

The lower pipe-jaw is provided with a spring *z* for pushing the jaw away from the shank, thus providing a means of grasping a pipe loosely and tightening upon it when leverage is applied. The upper jaw is prevented from getting beyond its capacity by a metal screw z^2, thus dispensing with the side slot in the model and also preventing the handle from unscrewing from the lower jaw. By a turning movement of the device V the aforesaid cylinder C revolves about the inclosed part of the shank, resulting in the opening or closing of the jaws A and D.

When it is desired to apply the wrench to an object, the thumb-piece is used to operate the revoluble sheath, which adjusts the movable jaw to any object within its capacity. Then the outside slotted cap or cylinder is given a turn, which instantly locks the wrench at the required adjustment.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a nut or pipe wrench, of a fixed jaw continuous with the handle and a movable jaw and shank in one piece, the upper portion of said shank being in the form of a square, the lower part of said shank being cylindrical in form and provided with elevated spiral threads upon its surface and working inside of a revoluble sheath, a ratchet-lock capped by a slotted cylinder, a thumb-piece; said revoluble sheath being adapted to increase or decrease the relative distance of said movable jaw and shank as one piece, from or to said fixed jaw, substantially as described.

2. The combination in a nut or pipe wrench of a fixed jaw continuous with the handle, and a movable jaw and shank in one piece, the upper portion of said shank being in the form of a square, the lower part of said shank being cylindrical in form and provided with elevated spiral threads upon its surface and

working inside of a revoluble sheath, a ratchet bevel-gear capped by a slotted cylinder, and a device or thumb-piece adapted to operate the said revoluble sheath, substantially as described.

3. The combination in a nut or pipe wrench with a fixed jaw continuous with the handle, and a movable jaw and shank in one piece, the upper portion of said shank being in the form of a square, the lower part of said shank being cylindrical in form and provided with elevated spiral threads upon its surface and working inside of a revoluble sheath, a device or thumb-piece, a ratchet bevel-gear capped by a slotted cylinder, said cylinder being adapted to control the movements of said ratchet bevel-gear, substantially as described.

4. The combination in a nut or pipe wrench with a fixed jaw continuous with the handle and a movable jaw and shank in one piece, the upper portion of said shank being in the form of a square, the lower part of said shank being cylindrical in form and provided with elevated spiral threads upon its surface and working inside of a revoluble sheath, a device or thumb-piece, a slotted cylinder, and a ratchet bevel-gear adapted to prevent the rotation of said revoluble sheath, whereby the jaws of the wrench are locked as one piece, or as a whole at any required distance within the capacity of the wrench, substantially as described.

5. The combination in a nut and pipe wrench combined with a fixed jaw continuous with the handle and a movable jaw and shank in one piece, the upper portion of said shank being in the form of a square, the lower part of said shank being cylindrical in form and provided with elevated spiral threads upon its surface and working inside of a revoluble sheath, a device or thumb-piece, a ratchet bevel-gear capped by a slotted cylinder, a lug for the attachment of the lower part of the pipe-jaw, and a spring adapted for pushing the lower pipe-jaw away from the shank, thus producing a means of grasping a pipe loosely and tightening upon it when leverage is applied, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

MILES E. GARWOOD.

Witnesses:
F. D. MARVIN,
JUNE SHIELDS.