W. E. ELLIOTT.

WRENCH.

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963,700.

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Fig. 1.

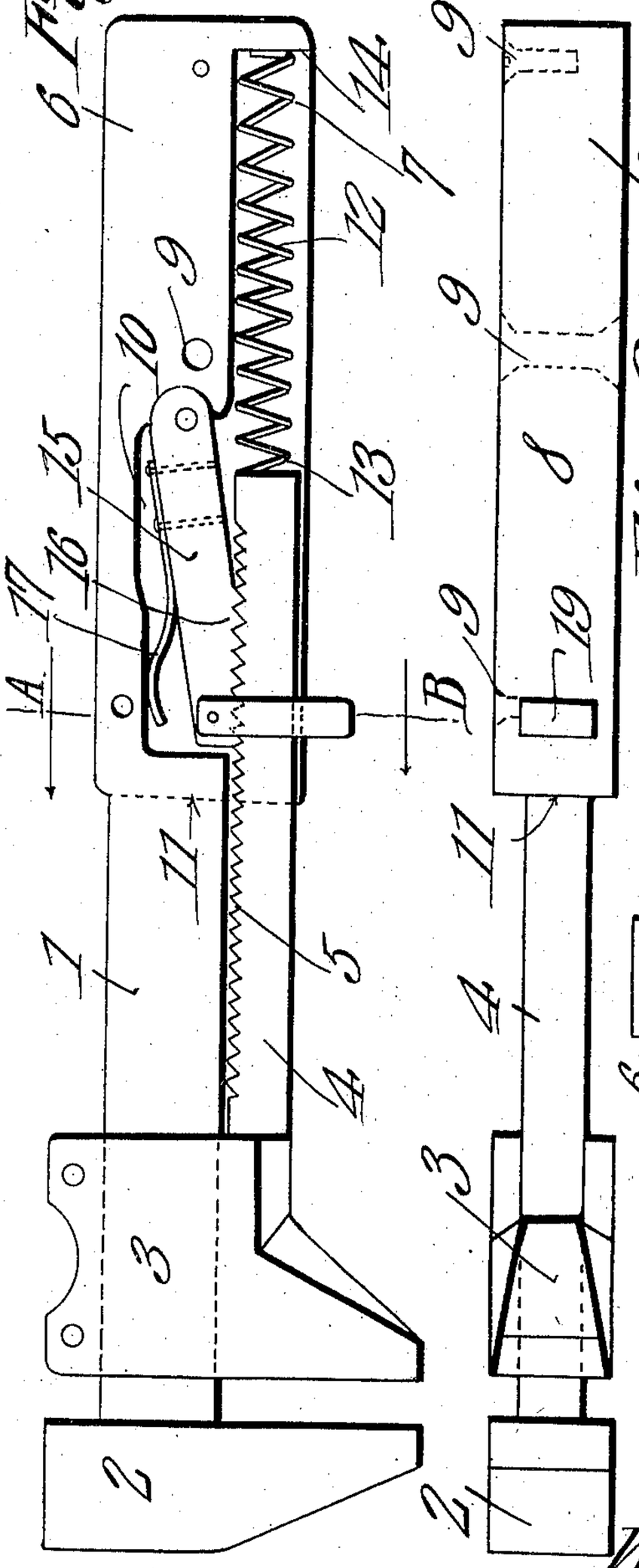


Fig. 2.




Fig. 3.

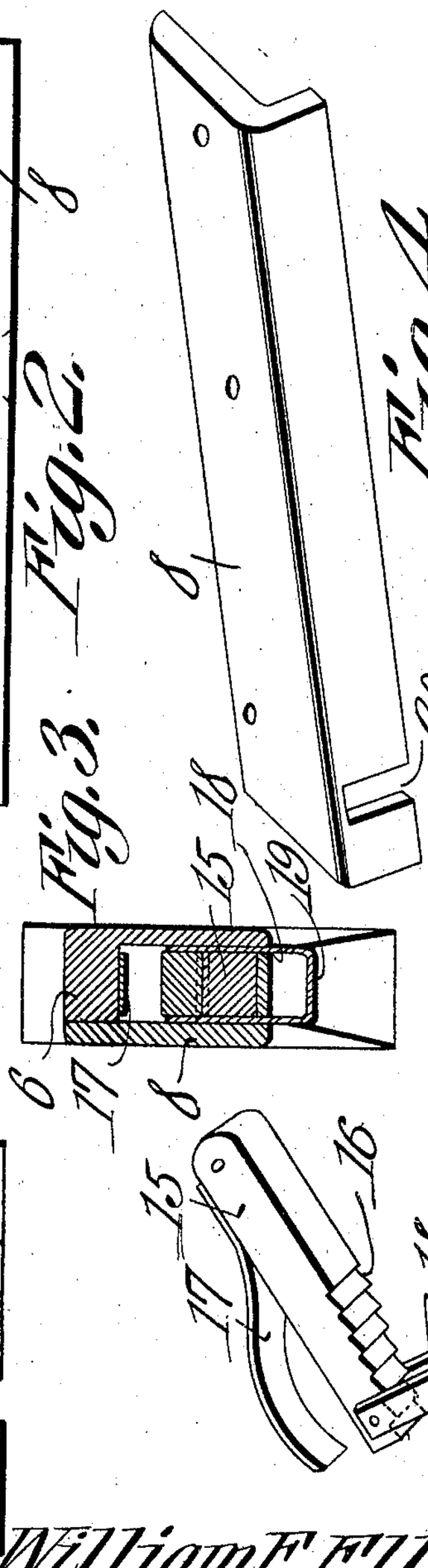


Fig. 4.




Fig. 5.




Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM E. ELLIOTT, OF SAULT STE. MARIE, MICHIGAN.

## WRENCH.

963,700. Specification of Letters Patent. **Patented July 5, 1910.**

Application filed October 1, 1909. Serial No. 520,531.

*To all whom it may concern:*

Be it known that I, WILLIAM E. ELLIOTT, a subject of the King of England, residing at Sault Ste. Marie, in the county of Chippewa and State of Michigan, have invented a new and useful Wrench, of which the following is a specification.

My invention relates to wrenches and has for an object to provide a wrench that can be backed over the corners of a nut to obtain a new grip without removing the jaws from the nut.

Another object is to provide a wrench in which the movable jaw will automatically move to operative position.

A further object is to provide a wrench which can be adjusted to operate as a monkey wrench or as a ratchet wrench by a simple pressure of the operator's hand upon the releasing member.

With the above advantages and other objects in view which will appear as the description proceeds, my invention embraces certain novel details of construction and combination of parts which will be hereinafter more fully described and claimed.

In the accompanying drawings forming a part of this specification;—Figure 1 is a side elevation of a wrench constructed in accordance with my invention with a portion of the handle removed to expose the operating mechanism. Fig. 2 is a bottom plan view of my improved wrench. Fig. 3 is a transverse sectional view taken on the line A—B of Fig. 1 looking in the direction of the arrow heads. Fig. 4 is a detail perspective view of the removable handle plate. Fig. 5 is a perspective view of the spring pawl.

Like characters of reference designate similar parts in the views shown.

Referring now to the drawings, 1 designates the shank of the wrench having at one end a fixed jaw 2. Slidingly mounted on the shank 1 is a movable jaw 3 having an integral shank 4, the top face of which is provided with a series of ratchet teeth 5. The end of the shank 1 remote from the fixed jaw is expanded to form a substantially oblong enlargement 6 which is provided with a longitudinal recess 7, formed in its bottom face and opening through its side face and one end face, as shown.

An L shaped plate 8 is removably secured by screws or similar connectors 9 to the recessed side of the enlargement 7 and cooperates with the latter to form a convenient handle and also a closure for the opening in the bottom and the side face of the enlargement.

The recess 7 is enlarged at its forward end to form a chamber 10 which is preferably rectangular in contour and extends from approximately the middle portion of the recess to within a slight distance from the end face 11 of the handle.

A spiral spring 12 is seated in the recess 7 and is held under tension between the end face 13 of the toothed shank 5, which latter projects into the recess below the chamber, and the opposite end face 14 of the recess whereby to normally hold the jaws closed. The spring stores up energy as the movable jaw is slid back from the fixed jaw to return the same to its initial position as soon as the jaw is released.

A pawl 15 is pivoted at one end to the side walls of the chamber 10 and is provided on its bottom face with a series of teeth 16 to engage the ratchet teeth of the shank 4. The teeth of the pawl are formed from substantially the middle portion of its bottom face to the forward edge thereof, and are disposed in a plane intersecting the plane of the bottom face of the pawl so that a considerable number of teeth will be in engagement with the ratchet teeth of the movable shank 4 when the pawl is rocked into engagement therewith.

A leaf spring 17 is rigidly secured at one end to the top face of the pawl and bears at its free end against the top wall of the chamber to normally hold the pawl in engagement with the ratchet teeth of the movable shank.

A yoke piece 18 is hinged at its extremities to the side walls of the pawl adjacent the free end thereof and straddles the movable shank 4. The cross bar 19 of the yoke projects through a suitable opening 20 formed in the L shaped plate 8 to provide a convenient shoulder against which the thumb or forefinger of the operator's hand may be placed to force back the pawl against the pressure of its spring and release the pawl teeth from engagement with the ratchet teeth of the movable jaw 4.

It is evident that a pressure on the yoke piece will permit the movable jaw to be slid back from the fixed jaw against the pressure of the spiral spring. Upon the pressure being removed from the yoke the

pawl will engage the shank of the movable jaw and lock the jaw in position. The wrench may be now used as an ordinary monkey-wrench.

Should the yoke be depressed while the jaws are in the position shown in Fig. 1, the movable jaw will at once be closed by the spiral spring 12. The particular advantage of this feature is that the jaws may be adjusted to grip the wrench faces of a nut in the usual manner, but instead of having to remove the wrench from the nut faces when the wrench has been revolved to an inconvenient angle for manipulation, the yoke may be depressed by the thumb or forefinger of the hand gripping the wrench handle, when the pawl will be released and the wrench may be readily backed over the corners of the nut until the jaws have again come into position for a new grip upon the wrench faces. The spring will then automatically close the movable jaw upon the nut after which the pressure may be removed from the yoke to permit the pawl to again engage the ratchet teeth of the movable shank. The jaws will now be locked in position and the wrench can again be manipulated to advance the nut. The operation may be repeated until the nut is advanced to its desired position without removing the wrench from operative position upon the nut.

From the foregoing description taken in connection with the accompanying drawings, it is thought that the construction and operation of my invention will be easily understood without a more extended explanation, it being understood that various changes in the form, proportion and minor details of construction may be made without sacrificing any of the advantages or departing from the spirit of the invention.

What is claimed is;—

1. In a tool, a shank terminating at one end in a fixed jaw, and having a longitudinal recess formed in its bottom face and opening through its side face remote from said jaw, a removable L shaped plate assembled with said shank to form a closure for said recess, a movable jaw seated on said shank, and having a shank projecting into said recess, said shank being provided with ratchet teeth on its top face, a spiral spring seated in said recess and exerting a pressure on the end face of the movable jaw shank in the direction of said fixed jaw whereby to hold the jaws normally closed, a pawl pivoted at one end to the side walls of said recess above said spiral spring and having a series of teeth formed on its bottom face adjacent its free end to engage said ratchet teeth, a spring to hold the free end of the pawl normally in engagement with said teeth, and a yoke piece carried by said pawl for releasing the same from engagement with the ratchet teeth.

2. In a tool, a shank having a fixed jaw at one end, and a substantially oblong enlargement at the other, said enlargement having a recess formed longitudinally its length opening through its side and bottom faces, and an oblong chamber formed at one end of said recess, a removable L shaped plate adapted to form a closure for said recess and chamber and coöperating with said enlargement to form a handle, a movable jaw seated on said shank and movable thereon toward and away from said fixed jaw, said movable jaw having a shank projecting into said recess below said chamber, said shank having ratchet teeth formed on its top face, a spiral spring seated in said recess and exerting a pressure on said shank in the direction of the fixed jaw whereby to keep said jaws normally closed, a spring pawl pivoted at one end in said chamber and having a series of teeth formed on its bottom face adapted to engage the ratchet teeth of said movable jaw shank, and a yoke piece hinged at its extremities to the free end of said pawl and straddling said movable jaw shank for releasing the pawl from engagement with said shank.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM E. ELLIOTT.

Witnesses:

FRED R. HOVINSTRA,

HUBERT J. PARSILLE.