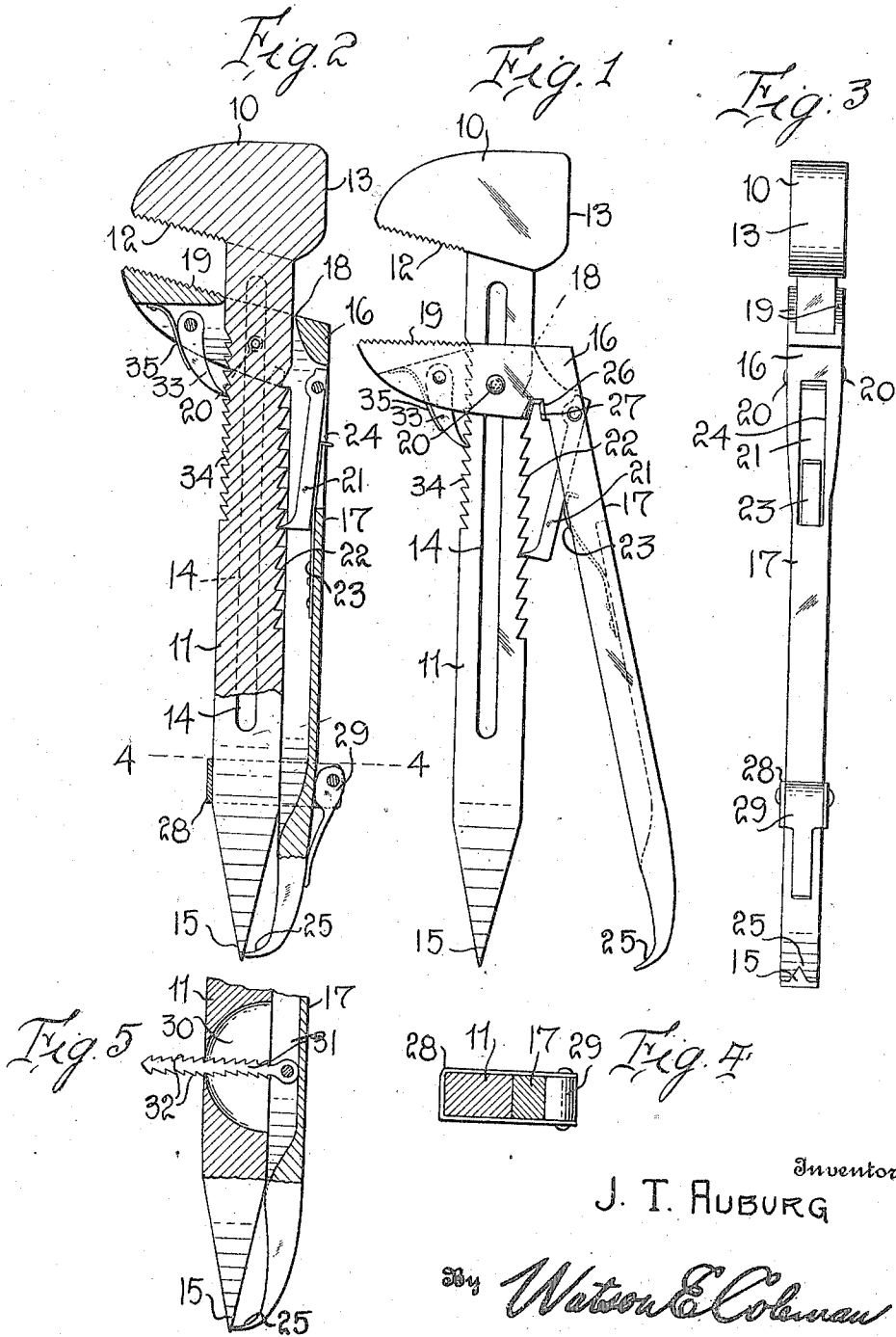


J. T. AUBURG.
ADJUSTABLE WRENCH.
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1,249,587.

Patented Dec. 11, 1917.



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JESSE T. AUBURG, OF NADINE, NEW MEXICO.

ADJUSTABLE WRENCH.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JESSE T. AUBURG, a citizen of the United States, residing at Nadine, in the county of Eddy and State of New Mexico, have invented certain new and useful Improvements in Adjustable Wrenches, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to wrenches, pliers, and like tools, and particularly to a combined wrench, plier, screw driver, nail puller and wire cutter.

The general object of my invention is the provision of a very simple wrench having a fixed and a movable jaw wherein the movable jaw may be adjusted toward or from the fixed jaw and then forced into clamping engagement with the work.

A further object of my invention is the provision of a wrench wherein after the movable jaw has been adjusted toward or from the fixed jaw it may be further adjusted to force it into clamping engagement with the work by power applied to the shank of the movable jaw.

Still another object of my invention is the provision of means whereby the power for shifting the movable jaw into clamping engagement with the work may be applied mechanically and the jaws held in their clamping position.

Still another object is the provision of a wrench of this character in which the movable jaw is provided with a wire cutting slot and the shank of the fixed jaw is provided with wire supporting grooves or notches and wherein the relative movement of the shanks of the fixed and movable jaws toward each other will cause the movable jaw to shift in such manner as to give a shearing cut on the wire which is disposed in the wire cutting slot.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:

Figure 1 is an elevation of a combined pliers and wrench constructed in accordance with my invention;

Fig. 2 is a longitudinal sectional view thereof;

Fig. 3 is a rear elevation thereof;

Fig. 4 is a section on the line 4—4 of Fig. 2; and

Fig. 5 is a fragmentary longitudinal sec-

tional view showing a modified form of latch.

Referring to these drawings, 10 designates the fixed jaw of the wrench, and 11 the shank extending therefrom. The shank is rectangular in section. The head projects beyond the shank on all sides and the inner face of the head 10 extends at an angle to the length of the shank 11 and is toothed or otherwise roughened, as at 12. At the opposite end the head projects beyond the shank to form a hammer head 13. Preferably the side faces of the shank are channeled, as at 14, for a certain purpose which will presently appear. The end of the shank opposite the head is preferably formed to provide a screw driver blade 15.

Slidingly mounted upon the shank 11 is the movable jaw which is designated generally 16. This movable jaw is formed in one piece with the shank 17 which is disposed at an obtuse angle to the movable jaw. The movable jaw is channeled upon the face directed toward the handle and the shank is channeled upon its face confronting the shank 11. The movable jaw is slotted, as at 18, for the passage of the shank 11 and the face of the movable jaw which confronts the face 12 of the relatively fixed jaw is toothed or roughened, as at 19. The movable jaw may be provided with inwardly projecting pins 20 which engage in the grooves 14 so as to prevent any removal of the movable jaw from the shank 11.

Pivotally mounted between the side walls of the shank 17 is a pawl 21 one end of which is adapted to engage with the ratchet teeth 22 on the shank 11, the free end of the pawl being forced inward against the ratchet teeth by means of a spring 23. The end of the shank toward the head 16 is slotted, as at 24, and the adjacent end of the pawl operates within this slot so that the fingers of the operator may readily engage with this end of the pawl so as to turn the free end toward the shank 17 against the force of the spring 23. The extremity of the shank 17 is preferably formed to provide a tack puller or other convenient implement of like character, this extremity of the shank being particularly adapted for pulling staples, tacks, or small nails. As will be seen from Fig. 1, the spring 23 normally urges the shank 17 into an acutely angled relation to the shank 11. The movable jaw is formed with a notch 26 and a cutting blade 27 which coacts with

the shank 11 to form a wire cutter. It will be seen that when the pawl is engaged with any one of the notches 22 and the shank 17 is forced toward the shank 11 the blade 27 will move both toward the fixed jaw 10 and transversely of the shank so that a shearing action will be secured. It will likewise be seen that the wire to be cut may be readily disposed upon any one of the notches 22 and thus held in firm position while being cut.

For the purpose of holding the shank 17 in a more or less parallel relation to the shank 11, I preferably provide a collar, designated 28, which is adapted to slip over the shanks 11 and 17, this collar being provided with a cam 29 which when rotated will bear against the shank 17 and force it inward and lock it in its inwardly turned position. Under these circumstances the shank 17 is held closed against the shank 11 and the jaws held closed against the work. It will be obvious that the cam 29 provides means whereby great leverage may be applied to the shank 17 and thus the jaws firmly closed and locked upon the work.

I do not wish to limit myself to the use of a collar 28 and cam 29 for this purpose, however, as I may use other retaining means. Thus in Fig. 5, I show the shank 11 as formed with a slot 30 whose walls converge outward and show the shank 17 as provided with a pivoted tongue 31, the opposite faces of which are formed with ratchet teeth 32. When this tongue is forced through the slot 30, it may be caused to engage with the wall of the slot and will then lock the jaw 17 in its adjusted position.

Preferably, though not necessarily, a pawl 33 is mounted upon the movable jaw to engage with teeth 34 formed on the shank 11. This pawl 33 is relatively short. The pawl is forced toward the teeth by a small spring 35 and by the provision of this pawl a step by step movement may be given to the movable jaw to force it toward the fixed jaw. The slot 18 is long enough, however, to permit the movable jaw to be forced laterally so as to cause the pawl 33 to disengage from the teeth 34 and then the movable jaw may be readily drawn downward to any desired position. As before remarked, this pawl 33 may be used, but it is not absolutely necessary for the proper operation of the wrench and may be left off if desired.

Particular attention is called to the fact that when the pawl 21 is engaged with the notch 22 and the shank 17 is forced toward the shank 11, the oscillation of the pawl 21 into a position approximately parallel to the shank 17 will cause the pawl to form a movable fulcrum for the movable head and the movable head will, as a consequence, not only rotate upon the pivot of the pawl but

will likewise move toward the fixed jaw 10. A compound leverage is thus secured so that great power is exerted upon the movable jaw and a relatively great clamping action is secured upon the work. It will also be obvious that the movable jaw may be shifted longitudinally along the fixed shank so as to roughly adjust the movable jaw relative to the fixed jaw and that then the closing of the hand by the means before described will cause the movable jaw to shift still farther toward the fixed jaw and exert a binding and clamping action upon the work. After the two jaws have been set upon the work, the movable jaw may be held in a set position by means of the clamping device 28 and 29 or by means of the tongue 31.

If the movable jaw is not limited in its movement upon the shank 11 by means of the pins 20, it is obvious that the movable jaw may be entirely removed from its engagement with the shank 11 and the shank 11 may then be used as a hammer or as a screw driver. Indeed, the shank 11 may be used as a hammer or a screw driver without removing the movable jaw, and the shank 17 may be used for drawing tacks, staples, nails, etc., either with or without removing it from the shank of the fixed jaw. My improved device may be used as pliers, as a wrench, as a small vise, or in a number of other situations. By reason of the relatively great power of the movable jaw it may be readily clamped and firmly secured to the work to be held.

Having described my invention, what I claim is:

An implement of the character described comprising a relatively fixed jaw having a shank toothed on one face, a jaw slidably mounted on the fixed shank and having a shank rigid therewith, said last named shank, adjacent its puncture with the jaw, being longitudinally slotted upon its outer face, a pawl pivotally mounted upon the movable shank, the pivot of said pawl being disposed intermediate the length of the pawl and in said slot, said pawl forming a fulcrum upon which the movable shank and jaw may rock, and a spring urging the pawl into engagement with the teeth, the end of the pawl beyond the pivot thereof and remote from its active end projecting through the slot, when the shank of the movable jaw is angularly disposed with relation to the shank of the fixed jaw.

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

JESSE T. AUBURG.

Witnesses:

R. H. O'QUINN,
A. R. O'QUINN.