

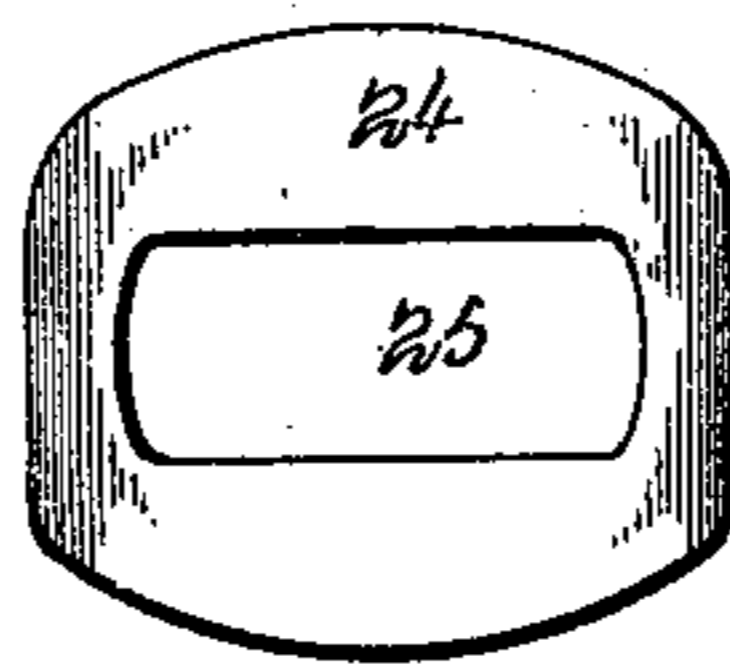
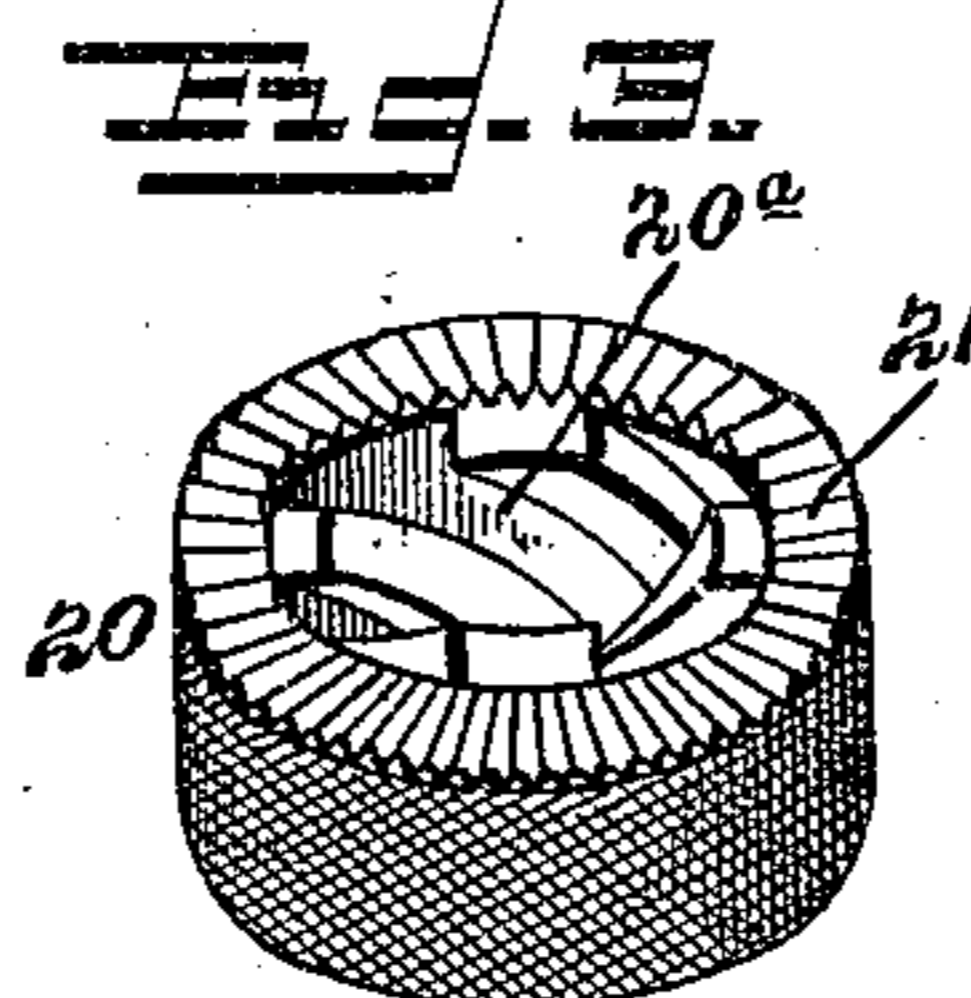
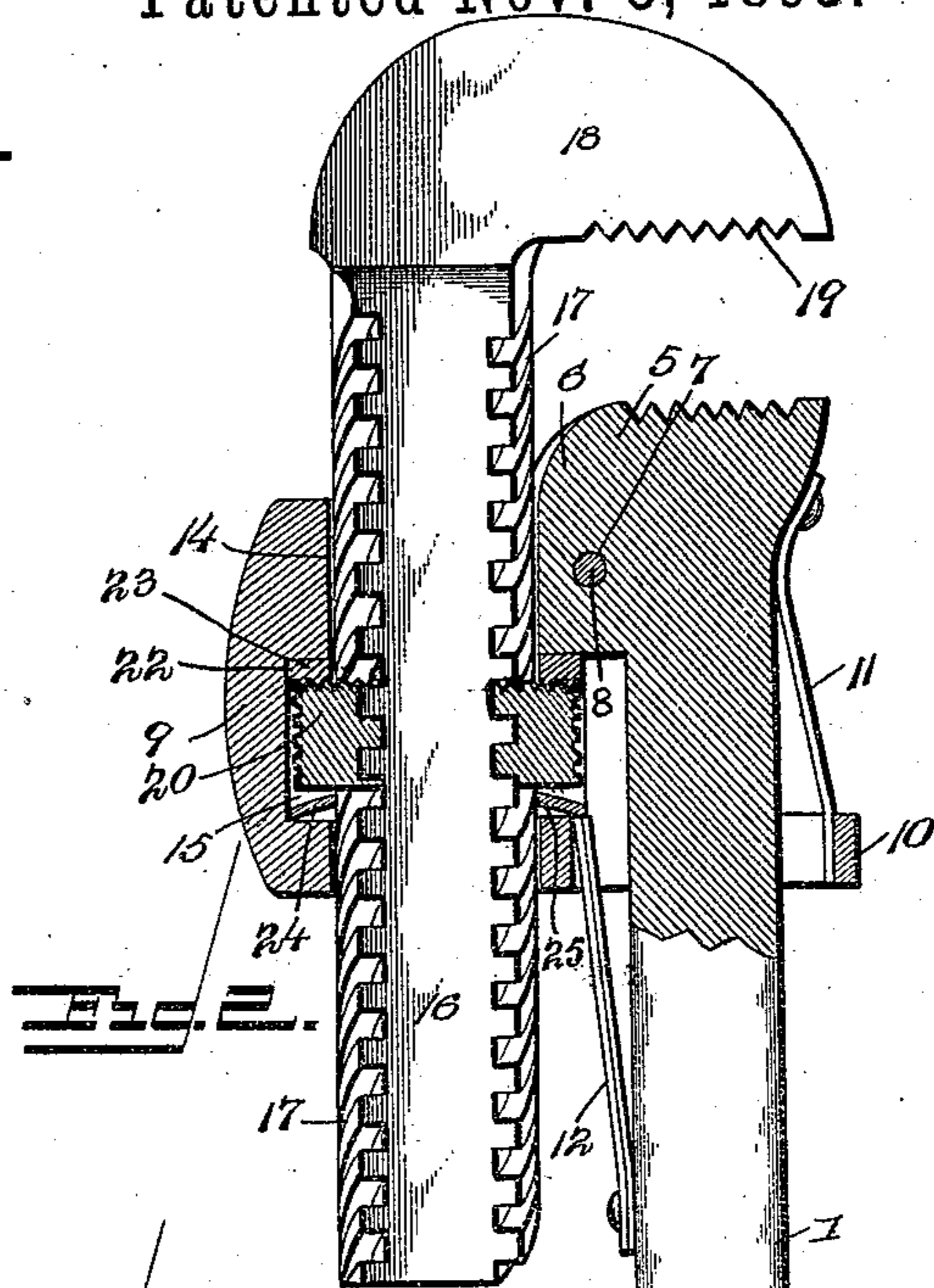
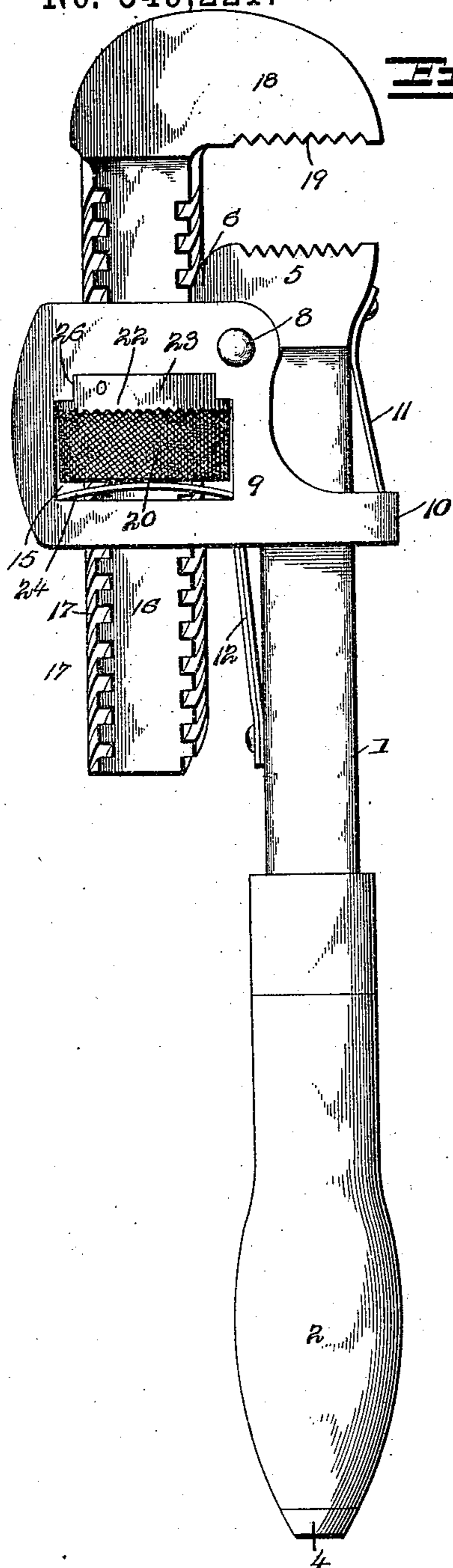
(Model.)

2 Sheets—Sheet 1.

M. WENGER.
WRENCH.

No. 549,221.

Patented Nov. 5, 1895.



Inventor

Milton Wenger

Witnesses

E. H. Stewart
S. P. Walhauser

By his Attorneys.

C. A. Snow & Co.

(Model.)

2 Sheets—Sheet 2.

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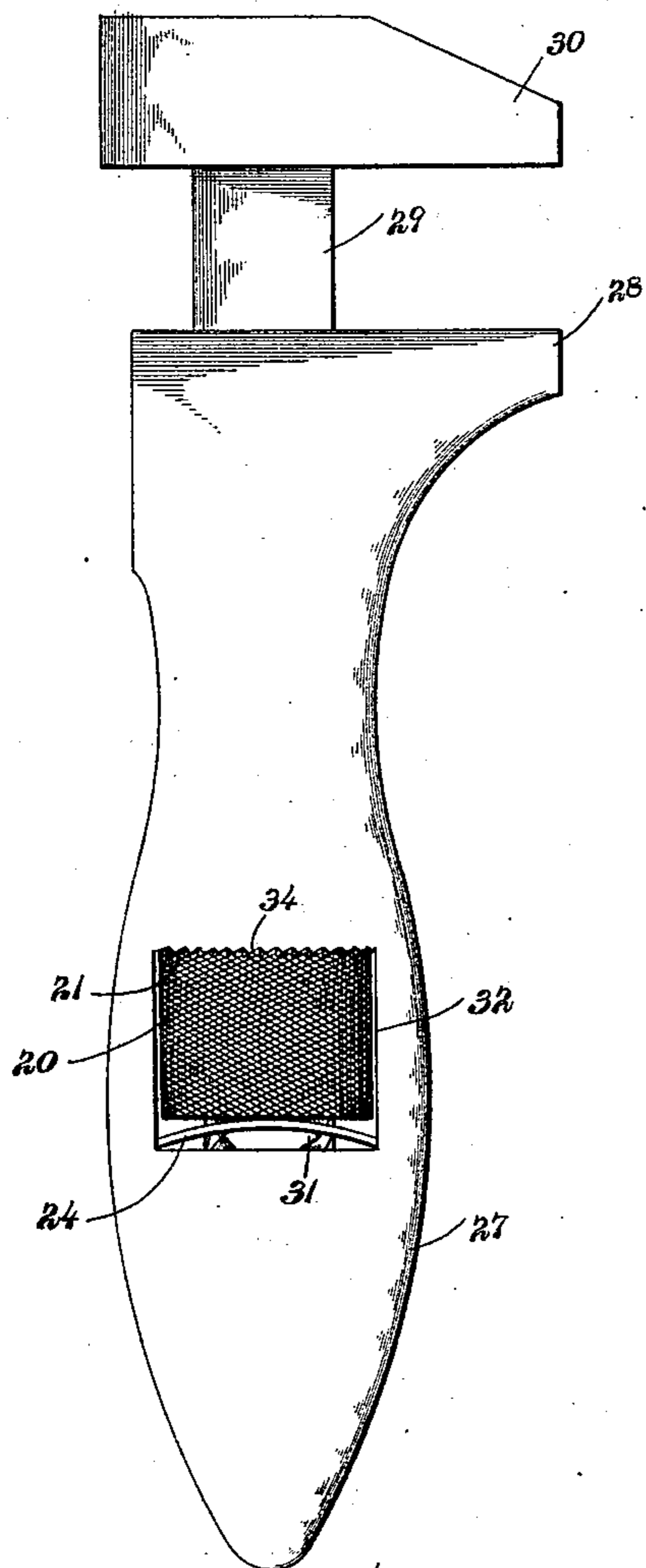


Fig. 5.

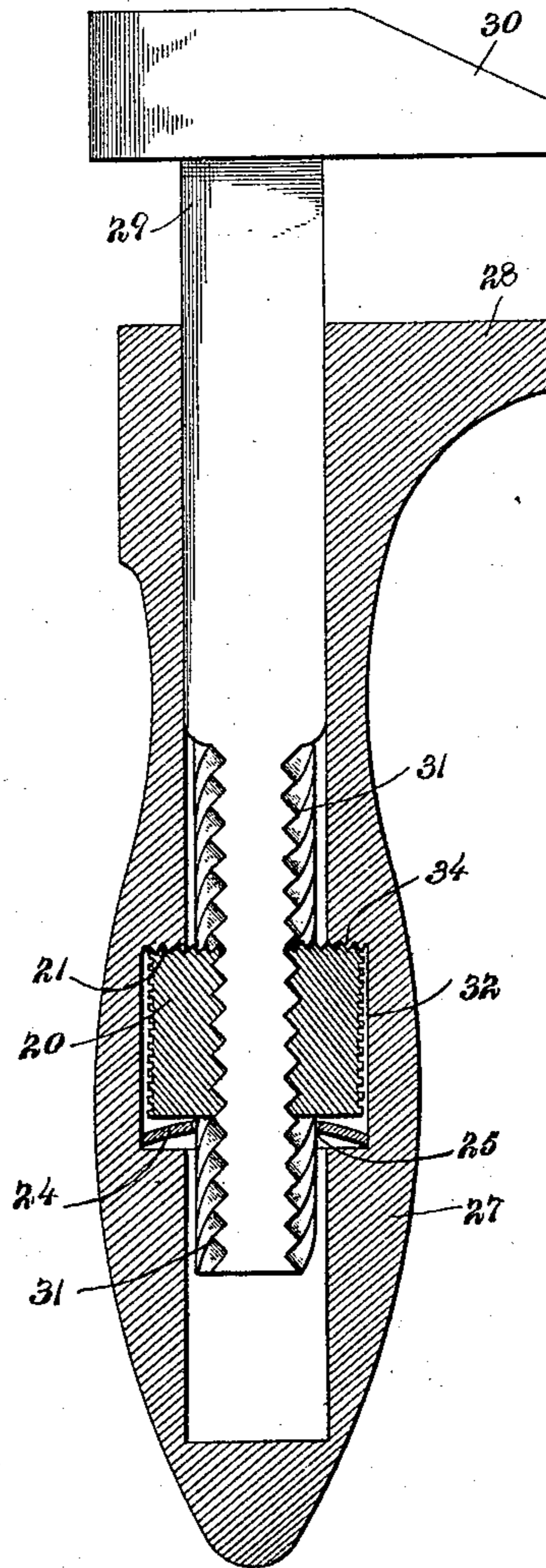


Fig. 6.

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UNITED STATES PATENT OFFICE.

MILTON WENGER, OF NEW HOLLAND, PENNSYLVANIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 549,221, dated November 5, 1895.

Application filed September 29, 1894. Serial No. 524,515. (Model.)

To all whom it may concern:

Be it known that I, MILTON WENGER, a citizen of the United States, residing at New Holland, in the county of Lancaster and State of Pennsylvania, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to nut-adjusted wrenches; and it has for its object to effect certain improvements in wrenches of this character whereby the threaded shanks of such wrenches can be adjusted very rapidly.

To this end the main and primary object of the present invention is to provide simple and efficient means applicable to all forms of nut-adjusted wrenches with screw-shanks, whereby a quick adjustment of the wrench can be secured, while at the same time being positively held in its adjusted position, and the invention therefore contemplates the ready and quick adjustment of a nut-adjusted wrench with one hand, whereby the time required in adjusting and applying a wrench to different-sized nuts or pipes may be reduced to a minimum.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a side elevation of an ordinary form of nut-adjusted wrench provided with the herein-described improvement. Fig. 2 is a longitudinal sectional view of the construction shown in Fig. 1. Fig. 3 is a detail in perspective of the adjusting-nut. Fig. 4 is a plan view of the bowed spring-plate for the adjusting-nut. Fig. 5 is a side elevation of another form of nut-adjusted wrench equipped with my improvement for quickly adjusting the same and holding the adjustment at any point. Fig. 6 is a central longitudinal sectional view of the form of wrench shown in Fig. 5.

Referring to the accompanying drawings, it will be seen that the improvements claimed are applicable to different forms of nut-adjusted wrenches having screw-shanks, and in Figs. 1 and 2 of the drawings is illustrated an ordinary form of wrench in connection with which the improvements may be advan-

tageously employed, and in this form of wrench the numeral 1 designates a shank provided at one end with a handle 2, which is secured on the shank through the medium of the usual ferrule 3 and a tip-nut 4. The other end of the shank 1 is provided with a toothed head 5, and this head forms a heel 6, which is perforated at 7 to receive a pivot 8 for securing a movable yoke 9 to the shank.

The movable yoke 9 is provided with a loop 10, that loosely embraces the shank, and on opposite sides of the stationary shank 1 are secured reversely-disposed adjusting-springs 11 and 12, the free adjacent ends of which are located within the loop 10 at the opposite ends thereof.

The yoke 9 is provided with a longitudinal bore or opening 14 and a transverse opening 15, communicating with the longitudinal bore. The said longitudinal bore of the movable yoke 9 loosely accommodates and receives a sliding or movable shank 16, which is provided at opposite edges with continuations of a series of threads 17, having a long pitch, much longer than the usual screw, and at the outer end of the movable shank 16 is located a head or jaw 18, having an inner serrated or toothed face 19, which, together with the corresponding face of the head or jaw 5, provides for firmly gripping the object operated on.

The movable threaded shank 16 loosely accommodates thereon a cylindrical adjusting-nut 20, whose interior is bored and provided with a plurality of spiral grooves or threads 20^a, which agree in pitch with and loosely receive the threads 17 of the movable shank 16. The nut 20 is provided with a milled periphery to form a purchase for the fingers of the hand, and upon one face is provided with a series of radial teeth 21, which are normally held into engagement with the opposite teeth 22, formed on the inner face of a catch-ring 23. The catch-ring 23 is securely fitted to the movable yoke 9 within the transverse opening 15 and at one side of said opening, the teeth of said catch-ring being also radially arranged in the same manner as the teeth 21 of the nut 20. A bowed spring-plate 24 loosely fits on the movable shank 16 and is interposed between one side of the nut 20 and the transverse opening 15.

of the yoke to normally hold the teeth of the nut in engagement with those of the opposed catch-ring. The said catch-ring may be recessed at one side to form opposite flanges
 5 26, embracing opposite sides of the yoke to provide convenient means for fitting the ring thereto.

From the above it will be understood that the present invention resides in the arrange-
 10 ment of the nut 20, combined with the spring and catch therefor, and it will be obvious that the objects of the invention will be secured by simply providing one face of the nut with a roughened surface instead of with
 15 teeth, and by providing the yoke with teeth or a roughened surface where the catch-ring is located, and these means for operating and holding the nut are not only simple and inexpensive, but may be applied to all forms
 20 of nut-adjusted wrenches with screw-shanks other than the form shown in Figs. 1 and 2 of the drawings, as illustrated by another form of wrench in Fig. 5 of the drawings.

The form of wrench shown in Fig. 5 of the
 25 drawings is of a simple construction, such as is commonly employed as a pocket-wrench and for similar uses, and in said figure of the drawings 27 designates a hollow or tubular handle-shank provided at one end with the
 30 fixed jaw 28 and accommodating for movement therein the sliding or movable shank 29, carrying at its outer end the integral movable jaw or head 30, opposed to the jaw 28. The movable shank 29 is provided for a portion
 35 of its length at opposite edges with continuations of a series of threads 31 of a long pitch and adapted to be engaged by the adjusting-nut 20, of a construction already described. In connection with the form of wrench de-
 40 scribed, and as illustrated in Fig. 5 of the drawings, the adjusting-nut 20 is mounted loosely in the transverse nut-opening 32, formed in the handle-shank 27, intermediate of its ends, and provided with a roughened or
 45 toothed side 34, that is adapted to be normally engaged by the roughened or toothed face 21 of the nut 20. The roughened or toothed face of the nut 20 is held in engagement with the roughened or toothed side of the opening 32
 50 by means of the bowed spring-plate 24, interposed between one side of the opening 32 and one side of the nut 20, as clearly illustrated in the drawings.

Whether the adjusting-nut and its catch
 55 devices be applied to a wrench of the form shown in either Fig. 1 or 5 of the drawings or to other forms of wrenches, the operation is always the same to secure a quick adjustment of the wrench. To operate the wrench
 60 it is simply necessary for the operator to grasp the nut 20 and rotate the same in one direction to open the jaws, and by reason of the long-pitched threads of the movable shank the jaws will open very quickly. The open
 65 jaws of the wrench are then slipped over the object to be operated upon and the movable jaw pushed to the desired position, in which

position it will be held firmly by the engagement of the teeth of the nut with those at one side of the opening in which the nut works, 70 and the spring 24, whether it be a spring-plate or other form of spring, renders this engagement of the teeth positive and overcomes the fault of the common screw-wrenches, which often loose their adjustment when turning a 75 pipe or nut. The wrench can also be adjusted by turning the nut 20 in either direction, as in other wrenches; but by sliding the jaws together over an object after being opened a correct adjustment is made instantly. 80

In the operation of the wrench it will be understood that inasmuch as the toothed or roughened faces of the nut and one side of the opening in which the nut works are simply to provide for a non-slipping frictional 85 grip for the nut the said nut can be readily turned in either direction without disengaging the teeth thereof from the teeth of one side of the said opening in which the nut works. In thus turning the nut with the 90 fingers—for instance, in opening the jaws of the wrench—the spring 24 readily yields, so as to allow the teeth of the nut to freely ride over the opposing teeth engaged thereby; but, however, when the jaws of the wrench 95 have been adjusted on the object any tendency of the movable jaw to separate away from the fixed jaw necessarily draws or pulls the nut into tight engagement with the teeth at one side of the opening in which the same 100 works, thereby positively preventing the nut from rotating and consequently preventing the jaws from separating. While the toothed engagement of the nut with the teeth of the stationary or fixed part of the wrench does 105 not interfere with the ready manipulation of the nut with the fingers, such engagement, also, does not interfere with the inward movement of the movable jaw by simply pushing on such jaw. In this connection it is to be 110 noted that after the jaws of the wrench have been opened and slipped over an object it is simply necessary to push against the movable jaw to force the same inward. In thus pushing the movable jaw inward it will be 115 obvious that the spring 24, yields so as to allow the toothed or serrated side of the nut to entirely disengage the opposing teeth or serrations on the stationary part of the wrench, and when the nut is thus disengaged the 120 same will freely rotate under the influence of the long-pitch threads of the movable shank, so as to allow of the closing of the wrench or inward movement of the movable jaw, without turning the nut with the fingers. 125

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention. 130

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a wrench, a stationary shank pro-

vided with a nut opening having a toothed or
roughened side, the movable shank arranged
to work through the nut opening and pro-
vided with a plurality of threads of long
5 pitch, a cylindrical adjusting nut mounted
within said opening and provided with a
toothed or roughened face opposed to the
toothed or roughened side of said opening,
and a spring interposed between one side of
10 the nut and one side of the nut opening to
normally hold the nut in engagement with
the toothed or roughened side of said nut
opening, said spring being adapted to allow
the nut to be disengaged from the toothed or
15 roughened side of the nut opening and to be
automatically rotated by an inward move-
ment of the movable shank, substantially as
set forth.

2. In a wrench, the combination with a

stationary shank carrying a yoke at one end 20
having a transverse opening, and a threaded
movable shank mounted to slide through said
yoke, of a catch ring fitted within the trans-
verse opening of the yoke and provided with
a series of radial teeth, an adjusting nut 25
mounted within said transverse opening and
provided on one face with a series of radial
teeth opposed to those of the catch ring, and
a bowed spring plate arranged at one side of
the nut to normally hold the same engaged 30
with said catch ring, substantially as set forth.

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

MILTON WENGER.

Witnesses:

S. DILLER BOWERS,
ELI M. MARTIN.