

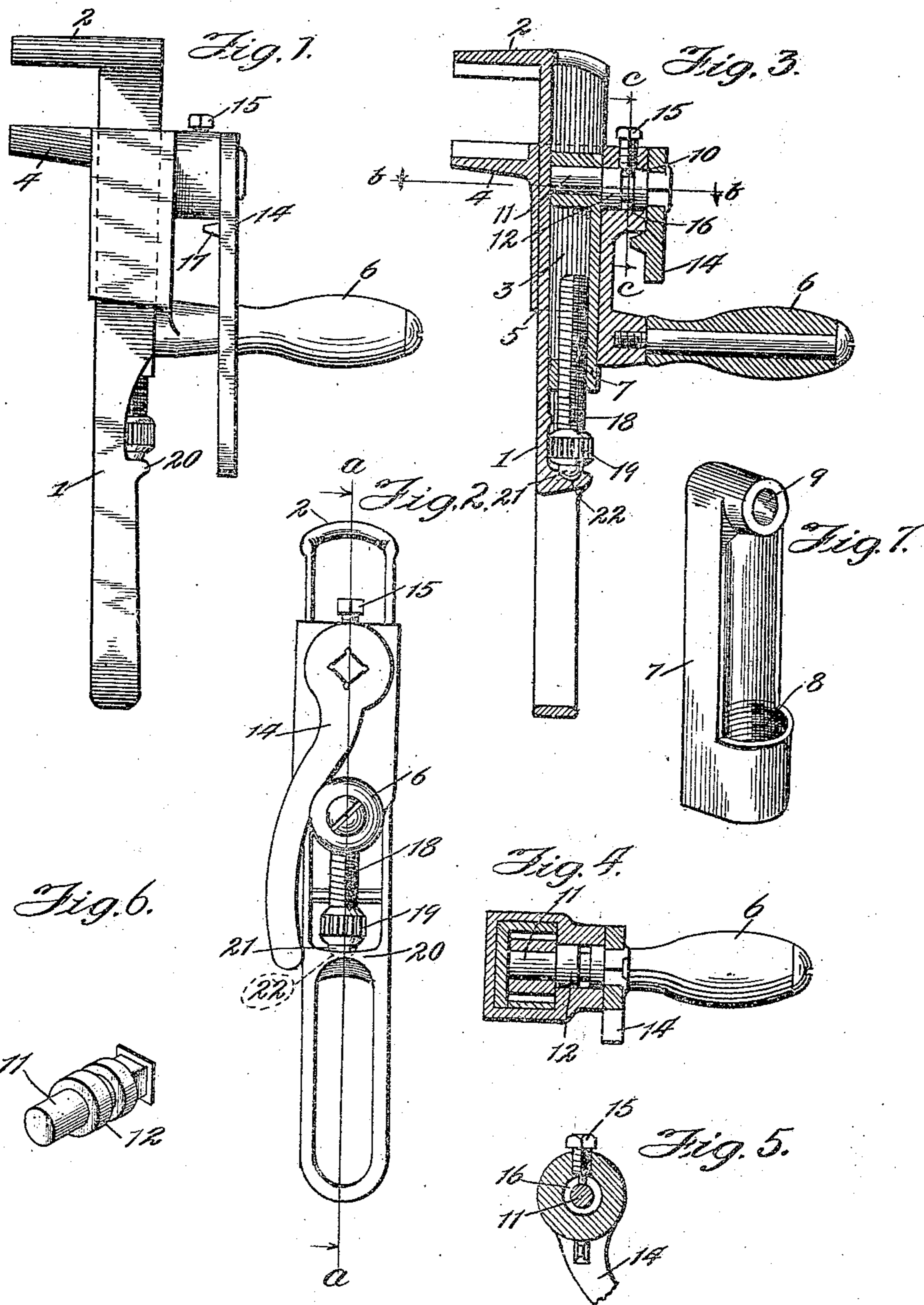
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PATENTED DEC. 17, 1907.

E. R. KLEMM.

WRENCH.

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UNITED STATES PATENT OFFICE.

EMIL R. KLEMM, OF CHICAGO, ILLINOIS.

WRENCH.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EMIL R. KLEMM, a citizen of the United States of America, and resident of Chicago, Cook county, Illinois, have invented a certain new and useful Improvement in Wrenches, of which the following is a specification.

My invention relates to wrenches of that particular type or character in which means, such, for example, as an eccentric device, are employed in addition to a screw for obtaining relative adjustment on the part of the jaws, the screw or screw-threaded means being usually employed for first adjusting the jaws with respect to a certain size of nut or bolt-head, and the eccentric device, or similar means, being then actuated for the purpose of giving the jaws a final and very powerful grip on the nut or bolt-head.

Generally stated, the object of my invention is to provide an improved and highly efficient wrench of the foregoing character, and a special object is to provide an improved construction and arrangement for relieving the eccentric device, or similar means, of all unnecessary or injurious strain; and another object is to provide an improved construction and arrangement whereby an externally threaded rotary member, such as a bolt or a threaded rod, may be employed for adjusting one jaw of the wrench relatively to the other; and it is also an object to provide certain details and features of improvement tending to increase the general efficiency and serviceability of a wrench of this particular character.

To the foregoing and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a wrench embodying the principles of my invention. Fig. 2 is a back or rear view of the same. Fig. 3 is a sectional view on the line *a—*a** in Fig. 2. Fig. 4 is a sectional view on line *b—*b** of Fig. 3. Fig. 5 is a sectional view on line *c—*c** of Fig. 3. Fig. 6 is a perspective view of the eccentric pin. Fig. 7 is a perspective view of the traveling nut.

As thus illustrated, my invention comprises a shank or body 1 adapted to serve as a handle, and provided at its upper end with a gripping jaw 2. It will be seen that the back of said shank or body-portion 1 is provided with a guide-way 3, and that this portion of the shank or body is formed with straight

parallel and smooth front and back and side surfaces. The adjustable jaw 4 is provided with a hollow portion 5 adapted to fit and slide upon the said straight upper portion of the shank or body 1 of the wrench. A laterally projecting handle 6 is preferably attached to the head rigid with the adjustable jaw 4, so as to make the wrench more convenient to handle and operate. Also, as illustrated, the traveling nut 7 is provided and adapted to slide back and forth in the guide-way 3. One end of the traveling nut is provided with a threaded bore 8 extending longitudinally of the nut, and the other end of the said nut is provided with a transverse opening 9. Relative to this construction and arrangement, the back of the adjustable jaw is provided with an opening 10 adapted to receive and, in effect, provide a bearing for the flange or larger diameter of the eccentric pin 11. The eccentrically formed portion 12 of said pin is adapted to engage and rotate in the opening 9 of the said nut. Preferably the outer end of said eccentric pin is squared to receive a crank handle 14. A screw-bolt 15 extends through the top of the movable jaw 4, and may be screwed down so as to enter within the space 16 between the flange of the eccentric pin 14 and the eccentrically formed portion 12, thus locking the pin and crank handle 14 in place. The stop 17 on the crank 14 is adapted to engage the nut 15, and thus limit the movement of the crank. A rotary screw-threaded member, such as a threaded rod or bolt 18, is provided and arranged in engagement with the threaded bore or socket 8 of the traveling nut. In order to prevent longitudinal movement of said externally screw-threaded member, its outer end-portion is provided with an enlargement or collar 19, which is confined between the shoulders 23 and 20, and which also serves as a thumb-piece by which to manually rotate the screw. This member preferably terminates in a rounded end 21, fitting in the socket 22 in the shoulder 20. With this construction and arrangement, the movable jaw has an extended bearing on the shank or body-portion of the wrench, and consequently slides smoothly and is not liable to bind thereon. The eccentric pin 11 constitutes the medium of connection by which the rotary screw communicates motion to the movable or adjustable jaw, and is, by reason of said extended bearing surface, relieved of all unnecessary and injurious strain. Inas-

much as the screw is rotary, but not movable in an endwise direction, while the nut is non-rotary and longitudinally adjustable, the movable jaw is easily and effectively adjusted without causing any portion of the mechanism below the shoulder 20 to move or change its position in a direction lengthwise of the shank 7. Furthermore, no portion of the threaded rod or screw is compelled to slide longitudinally upon and in contact with some supporting member or portion of the body. The jaw 4 can be first adjusted by means of the screw 18, and the final grip on the nut or bolt-head or other object can be effected by manipulating the handle 14, it being understood that this handle can be used to release the wrench from the nut or bolt-head.

My improved tool is much simpler in construction than most of those now in use, and more efficient. The parts thereof are also so arranged as to obtain a maximum of strength with a minimum use of material.

What I claim as my invention is:

1. A wrench comprising a shank and fixed jaw, a hollow movable jaw, a traveling nut in operative relation with said movable jaw, endwise stationary means for bringing said movable jaw into contact with any article between said jaws, and eccentric means for tightening the grip of said movable jaw.

2. A wrench comprising a shank and fixed jaw, a hollow movable jaw, a traveling nut in operative relation with said movable jaw, endwise stationary means for bringing said movable jaw into contact with any article between said jaws, said means comprising a threaded rod seated in said shank, and eccentric means for tightening the grip of said movable jaw.

3. A wrench comprising a shank and fixed jaw, a hollow movable jaw, a traveling nut in operative relation with said movable jaw, endwise stationary means for bringing said movable jaw into contact with any article between said jaws, said means comprising a

threaded rod seated in said shank, and means for tightening the grip of said movable jaw, said means comprising an eccentric in operative relation with said movable jaw, and a crank bar adapted to give the desired motion to said jaw through said eccentric.

4. A wrench comprising a shank and fixed jaw, a hollow movable jaw, a traveling nut in operative relation with said movable jaw, endwise stationary means for bringing said movable jaw into contact with any article between said jaws, said means comprising a threaded rod seated in said shank, and means for tightening the grip of said movable jaw, said means comprising an eccentric in operative relation with said movable jaw, and a crank bar adapted to give the desired motion to said jaw through said eccentric, said eccentric being provided with a peripheral groove, and a set-screw adapted to pass through the shank and into said peripheral groove holding said eccentric in place.

5. A wrench comprising a shank and fixed jaw, a hollow movable jaw, a traveling nut in operative relation with said movable jaw, endwise stationary means for bringing said movable jaw into contact with any article between said jaws, said means comprising a threaded rod seated in said shank, means for tightening the grip of said movable jaw, said means comprising an eccentric in operative relation with said movable jaw, a crank bar having a stop thereon, adapted to give the desired motion to said jaw through said eccentric, said eccentric being provided with a peripheral groove, and a set-screw adapted to pass through the shank and into said peripheral groove holding said eccentric in place, and adapted to engage the stop on the crank bar to limit the motion thereof.

Signed by me at Chicago, Illinois, this 27th day of February, 1907.

EMIL R. KLEMM.

Witnesses:

SARAH LEWIS,

ALBERT JOHN SAUSER.