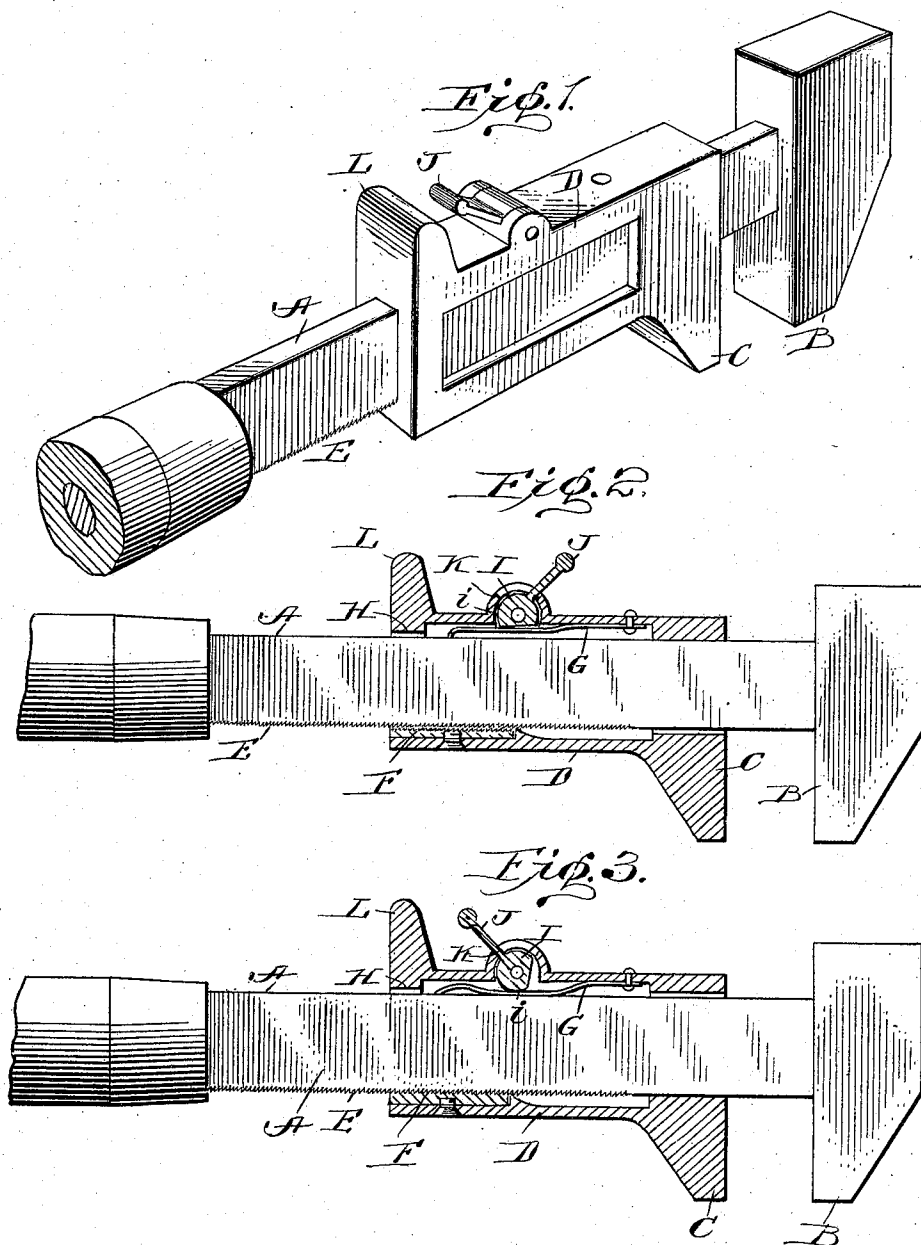


No. 873,262.

PATENTED DEC. 10, 1907.

H. A. PAQUETTE.
WRENCH.

APPLICATION FILED JAN. 11, 1907.



Inventor

Witnesses
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UNITED STATES PATENT OFFICE.

HERMAN A. PAQUETTE, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO PERSY S. ANGLE, OF WASHINGTON, DISTRICT OF COLUMBIA.

WRENCH.

No. 873,262.

Specification of Letters Patent.

Patented Dec. 10, 1907.

Application filed January 11, 1907. Serial No. 351,871.

To all whom it may concern:

Be it known that I, HERMAN A. PAQUETTE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to wrenches susceptible of adjustment by means of the sliding of one jaw-carrying member upon the other, engagement of said members being secured by means of coöperative racks or the like.

It is desirable, in wrenches of this type, that they should be readily adjustable to meet the requirements of varying conditions in practice, and that such adjustments should be obtainable with the utmost ease and rapidity, and by one movement of the thumb of the hand which holds the wrench, leaving the other hand free. Means should be provided whereby a tentative adjustment can be yieldably maintained and positively fixed when desired; and the whole matter of the adjustment of the wrench, positively locking it when the needed adjustment is obtained, and releasing it when desired, should be within control of the hand holding the wrench.

Wrenches have heretofore been made which attain in a more or less degree some of the objects above stated; but it is the purpose of my invention to produce a wrench of such construction that it shall meet all the aforesaid requirements, and in the most simple and efficient manner.

The invention will be fully described with reference to the accompanying drawings, which form a part of this specification, and then particularly pointed out and defined in the annexed claims.

In said drawings: Figure 1 is a perspective view of a wrench embodying my invention. Fig. 2 is a longitudinal vertical section thereof, with the wrench-bar and its fixed jaw in elevation, showing the racks disengaged, which position may be maintained by pressure of the thumb upon the thumb-piece L at the back of the movable jaw-frame D. Fig. 3 is a similar section, showing the adjustment positively maintained by the locking device.

A indicates a wrench-bar, having a suit-

able handle, and provided with the jaw B. Coöperative with the jaw B is the sliding jaw C, carried by a movable jaw-frame D, which slides on the wrench-bar. Upon one side, the wrench-bar has a rack E, with which coöperates a rack F carried by the sliding jaw-frame, or suitably secured within or integral with said jaw-frame, to hold the parts together against relative longitudinal movement. Back of its jaw C, the slidable jaw-frame contains a spring G, preferably a leaf or plate spring as shown, which is attached to the inside of the jaw-frame opposite to the racks E, F, and bears against wrench-bar A, thereby holding the wrench-bar and slidable jaw-frame in yieldable engagement; the frame being loose enough upon the bar to allow, in connection with a cut-out portion H in the rear end thereof, sufficient transverse play of one part upon the other to disengage the racks. Hence, by bearing upon the spring side of the jaw-frame or upon the thumb-piece L, the racks will be released from engagement, and permit longitudinal movement of the jaw frame upon the wrench-bar.

I indicates a locking-cam pivoted in the frame to bear against the spring G and in such manner that upon the locking movement of its thumb-lever J the bulge of the cam will force the spring flatwise against the wrench-bar, and thereby bear against the wrench-bar, causing positively-locked engagement between the racks E, F. Said locking-cam may be of any appropriate form, for example, an eccentrically-pivoted disk; but for compactness and shorter movement I preferably employ a construction as shown in the drawings, wherein the cam consists of a disk having a segment cut from its edge adjacent to the wrench-bar when the cam is in unlocked position; as in Fig. 2. This affords adequate space for yielding of the spring G when the cam is inoperative as shown in Fig. 2; it locates the cam nearer to the wrench-bar; and a very short turn of the cam brings its bulge or rounded edge at i into action against the spring, pressing or clamping it against the wrench-bar to effect positive locking as in Fig. 2.

The instant the thumb-lever J is pressed or pulled back by the operator's thumb, the cam begins action upon the spring, bearing it harder against the wrench-bar and increasing the lock at E, F; and the complete but

short movement of said thumb-lever, to the position shown in Fig. 3, clamps the spring firmly against the wrench-bar, with practically the same effect as direct engagement of the cam on the bar. A scarcely perceptible eccentricity of the cam-pivot is desirable, and will provide sufficient bulge at *i* to increase the locking action as the thumb-lever is pressed forward.

10 K indicates a stop-piece limiting the movement of the thumb-lever J, and consequently of the locking-cam also. L denotes a thumb-piece just back of the thumb-lever, adapted to receive the pressure of the operator's thumb for releasing the engagement at E, F, 15 when the cam is unlocked.

In operation, the handle of the wrench being grasped by the operator's hand, it is evident that the jaws B C can be adjusted to 20 and fixed upon the nut or other part to be turned entirely by the thumb of the hand holding the wrench, allowing all adjustments and manipulations to be made with that hand, and leaving the other hand free. For, 25 the thumb-lever J being pressed forward, as shown in Fig. 2, the operator may with his thumb press upon the thumb-piece L of the movable jaw-frame D, thereby forcing the racks E F out of engagement; and, keeping 30 his thumb pressed upon said part L, the operator can move the jaw-frame D to desired position, so as to close the jaws upon the nut or object to be turned; whereupon, by releasing the pressure of the thumb from the 35 thumb-piece L, the spring G forces the racks E F into engagement, thus maintaining the adjustment. Then the operator can with his thumb press backward the thumb lever J, causing the locking-cam I to forcibly bear 40 the spring G flatwise upon the wrench-bar, thus positively locking the jaws.

I have shown the locking-cam so arranged

that its locking action occurs when the thumb-lever is pressed or drawn backward or toward the handle of the wrench; this being on account of the slant of the teeth of the racks E, F, preventing any back movement of the sliding jaw when the thumb-lever is moved for effecting the positive lock. But if preferred the locking movement of the thumb-lever may be forward or toward the jaws of the wrench, and may be made as the culmination of the frame-adjusting movement of the thumb. 50

I claim as my invention, and desire to secure by Letters Patent of the United States: 55

A wrench comprising a shank carrying a fixed jaw and formed with a series of teeth, a movable jaw slidably mounted on the shank and formed with teeth to cooperate with the teeth of the shank, a spring carried by the movable jaw and having its free terminal bent laterally to rest upon the shank, that portion of the spring in rear of said terminal being normally free of contact with the shank, and a locking member eccentrically 60 mounted in the movable jaw, said member being formed with a plane portion to engage the spring in rear of the free terminal when the member is in open position to reinforce the spring bearing of said terminal on the shank, said member being also formed with a second plane portion to engage the spring in rear of the terminal when the member is in operative position, whereby to force said engaged portion of the spring into binding 65 contact with the shank. 70 75

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

HERMAN A. PAQUETTE.

Witnesses:

OSGOOD H. DOWELL,
EDWARD R. WITMAN.

Correction in Letters Patent No. 873,262.

It is hereby certified that the name of the assignee in Letters Patent No. 873,262, granted December 10, 1907, upon the application of Herman A. Paquette, of Washington, District of Columbia, for an improvement in "Wrenches," was erroneously written and printed "Persy S. Angle," whereas said name should have been written and printed *Percy S. Angle*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 7th day of January, A. D., 1908.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.