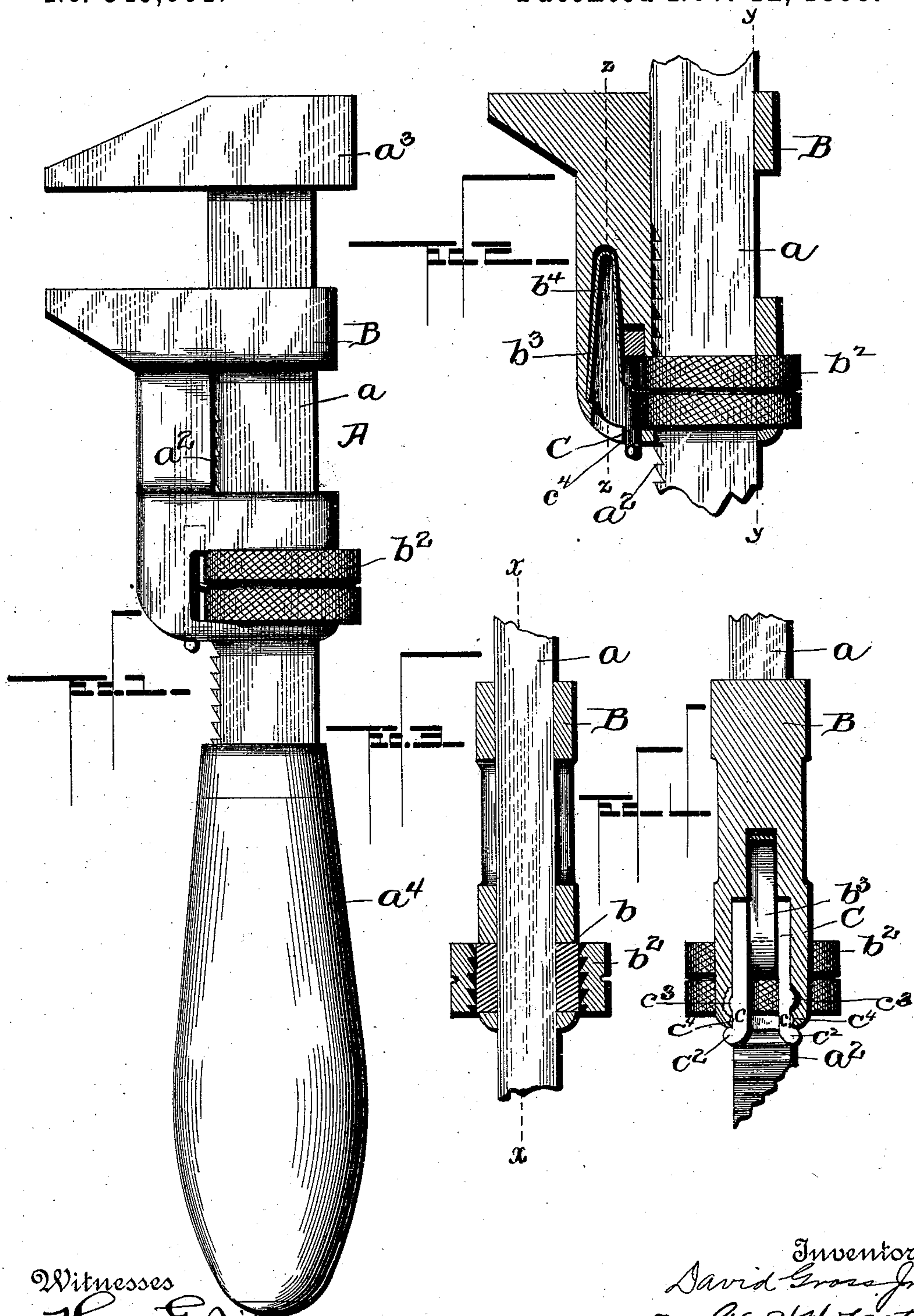


(No Model.)

D. GROSS, Jr.  
WRENCH.

No. 549,601.

Patented Nov. 12, 1895.



Witnesses

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# UNITED STATES PATENT OFFICE.

DAVID GROSS, JR., OF BERLIN, CANADA.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 549,601, dated November 12, 1895.

Application filed February 12, 1895. Serial No. 538,155. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID GROSS, Jr., a subject of the Queen of England, residing at Berlin, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches.

The object is to provide a wrench wherein the movable jaw-actuating nut may be held in operative engagement with said jaw should the usual nut-retaining spring become broken or otherwise inoperative; and to these ends the invention consists of a retaining device adapted, in the absence of the spring, to serve the function thereof, substantially as hereinafter more fully disclosed, and pointed out in the claims.

With these objects in view the invention consists in certain novel details of construction and an arrangement of parts, which will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, forming part of this specification, similar letters of reference indicate corresponding parts in the several views.

Figure 1 is a view in elevation of one embodiment of the invention applied. Fig. 2 is a detail sectional view taken on the line  $x x$  of Fig. 3, with the fixed-jaw and movable-jaw operating nut in side view. Fig. 3 is a detail sectional view taken on the line  $y y$  of Fig. 2; and Fig. 4 is a detail view, in section, taken on the line  $z z$  of the same figure.

In the drawings, A represents the wrench proper, comprising a shank  $a$ , having a toothed face  $a^2$  and provided at the upper end with a head  $a^3$ , which serves as the fixed or stationary jaw, the opposite end of the shank being socketed in a handle  $a^4$ .

B represents the movable jaw, which is mounted to slide upon the shank and is cut away transversely at  $b$  to receive a nut  $b^2$ , which when properly seated lies normally in engagement with the toothed face of the shank and by which the adjustment of the jaw is effected in the well-known manner. This nut is mounted so as to admit of sufficient transverse play and may by the proper application of pressure be disengaged from the teeth of the shank, when the jaw will be free to

move up or down, as desired. To retain the nut engaged, a spring  $b^3$ , seated in a socket or well  $b^4$  of the jaw B, is employed. Heretofore with wrenches of this class the breaking or bending of this spring rendered the wrench inoperative, and where it was impossible to replace the spring the wrench became both inoperative and useless. To obviate this objectionable feature and without appreciably increasing the cost, I employ the device described in the following paragraph.

C refers to an approximately-U-shaped retaining device of spring metal let into an offset of the nut-holding spring-socket  $b^4$ , with its cross-piece normally (when not in use) standing above the plane of the nut  $b^2$  and its arms or pendants standing at the sides of the spring  $b^3$  and its free ends provided with outwardly-curved lateral projections  $c^2$ , extending sufficiently below the movable jaw to permit of the same being conveniently compressed. The arms or pendants of the retaining device C are formed with recesses between the projections  $c^2$  and like projections  $c^3$  formed on said arms or pendants a short distance above the projections  $c^2$ , which recesses receive the lower edge of the movable jaw to provide with the spring-pressure of said arms or pendants, for the effective automatic retention of said retaining device in its elevated position, out of contact with the nut  $b^2$ , when not required to be brought into requisition.

In use when a rapid adjustment is desired the operator presses the nut inward against the action of the spring and thus holding it, raises or lowers the jaws, the nut being held disengaged from the toothed shank. Upon the release of the nut the spring acts, forcing the nut into engagement and thereby locking the jaw, which latter may be given a fine adjustment by a partial turn of the nut. In the event of the breaking or bending of the spring or the failure thereof for any other reason to act it is only necessary to compress the arms or pendants of the U-shaped retaining-device C by pressing inward upon the projections  $c^2$  and pulling outward upon the same until the projections  $c^3$  thereof engage notches or recesses  $c^4$  in the movable jaw to hold the retaining device against further outward movement. The cross-piece of

the retaining device C will now be brought to and force the nut into operative engagement with the rack of the fixed jaw and thus effectively hold said nut, thus serving in the  
5 capacity of the spring in preventing lateral play of the nut, yet providing for its rotation to suitably effect the adjustment thereof.

Having thus described my invention, what I claim as new is—

10 1. In a wrench, the combination with a movable jaw, a fixed jaw and the spring pressed, movable jaw adjusting nut, of the approximately U-shaped spring retaining device arranged adjacent to, and adapted to move and  
15 hold said nut into operative engagement with the rack of said fixed jaw, substantially as set forth.

2. In a wrench, the combination with a movable jaw, a fixed jaw, and the spring-pressed,  
20 movable jaw adjusting nut, of the approxi-

mately U-shaped spring retaining device arranged adjacent to, and adapted to move and hold said nut in operative engagement with the rack of the fixed jaw, said retaining device  
25 having its arms provided with lateral projections at its extreme lower ends and additional projections a short distance above the afore-said projections, and the lower edge of said  
movable jaw, adapted to engage said arms intermediately of said projections and having  
30 notches engaged by the upper ones of said projections, substantially as and for the purpose described.

In testimony whereof I have affixed my signature in the presence of two witnesses.

DAVID GROSS, JR.

Witnesses:

E. P. CLEMENT,  
J. BOHLEDER.