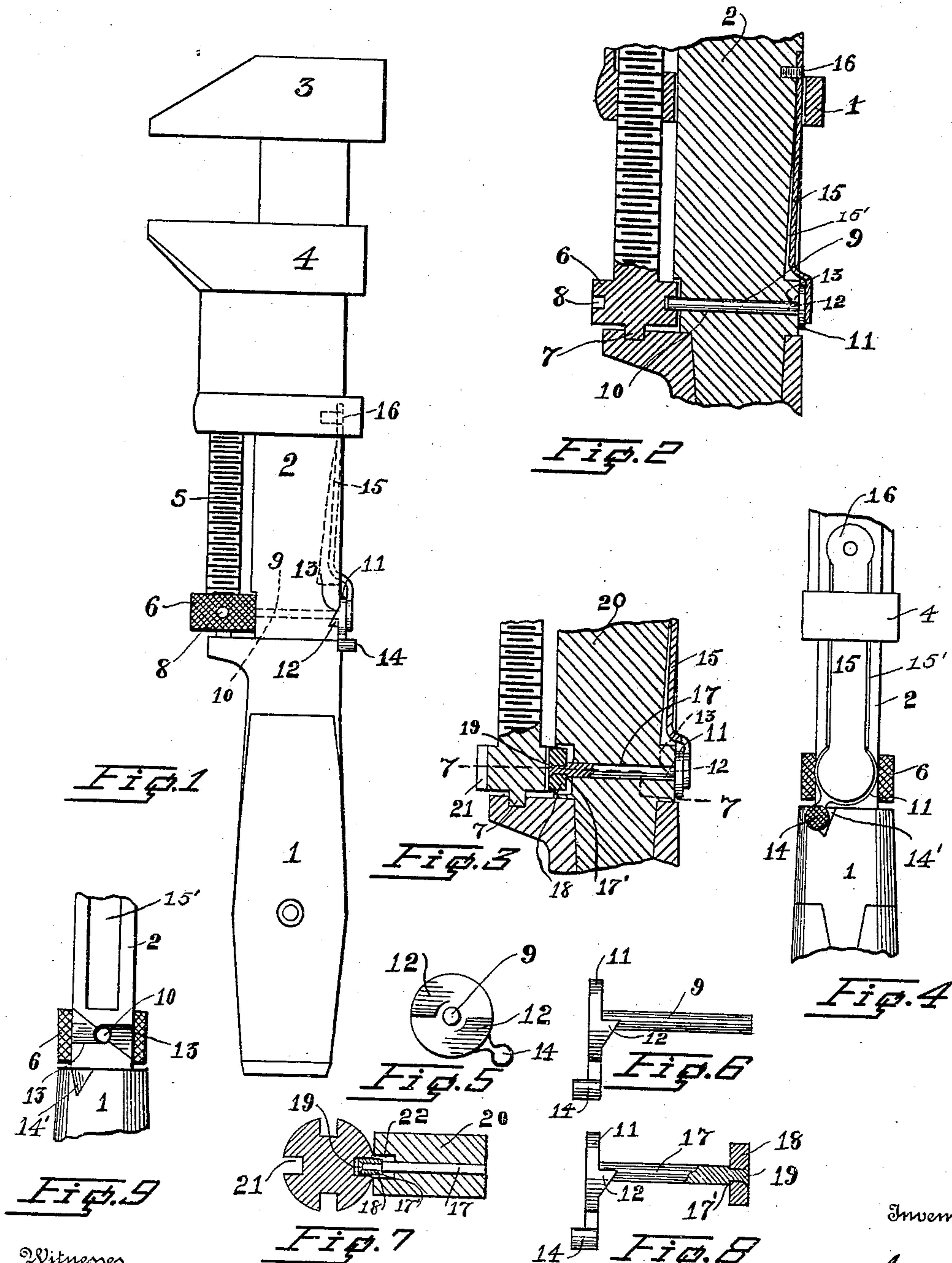


G. H. STRAIGHT.
WRENCH.

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945,633.

Patented Jan. 4, 1910.



Witnesses

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GEORGE H. STRAIGHT, OF ALLENTON, RHODE ISLAND, ASSIGNOR OF ONE-THIRD TO JOHN JORDAN AND ONE-THIRD TO FREDERICK A. JORDAN, BOTH OF AUBURN, RHODE ISLAND.

WRENCH.

945,633.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE H. STRAIGHT, a citizen of the United States, residing at Allenton, in the county of Washington and State of Rhode Island, have invented a new and useful Improvement in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches and pertains more particularly to means for locking the slidable jaw in any position to which it may be adjusted.

The object of the invention is to provide an improved, simplified and inexpensive locking means of the type characterized above, which will be capable of ease in operation and afford efficiency and practicality in actual use.

Further and other objects will later hereinafter appear.

Referring to the drawings:—Figure 1 is a side elevation of the wrench, equipped with the improved locking means, Fig. 2 is a fragmentary longitudinal sectional view showing the locking means, Fig. 3 is a similar view illustrating a modification, Fig. 4 is a fragmentary rear elevation of Fig. 1, Fig. 5 is an end elevation of the cam member of the locking means in detached position, Fig. 6 is a side elevation of the locking member of Fig. 1, Fig. 7 is a sectional view on line 7 7 of Fig. 3, Fig. 8 is a side elevation partly in section of the modified form of locking member, and Fig. 9 is a fragmentary rear elevation of the wrench shank, with the spring and cam member omitted.

The invention as herein disclosed is illustrated as applied to a wrench of conventional form having a handle 1, shank 2, a rigid jaw 3, on the shank 2, and a slidable jaw 4 operated by a screw 5 formed with a knurled operating nut 6, which screw has a bearing in the handle portion of the wrench as indicated at 7. Nut 6 is formed with a series of radial shallow openings 8 arranged in spaced relation about the periphery of the nut into which the slidable locking pin 9 is adapted to project, as depicted in Fig. 2 of the drawings. Pin 9 is arranged in an opening 10 which is disposed transversely through shank 2 and carries at one end a head 11, which is formed with a pair of oppositely-disposed cams 12, which ride on similar cam faces 13 formed on the rear side of shank 2, as shown in Fig. 1, which cam faces 13 conformably

receive cams 12 of the locking member. Head 11 is provided with an outwardly-projecting finger engaging piece 14, whereby the same may be conveniently operated. This finger piece engages in a seat 14' formed on the rear side of shank 2, whereby a stop is formed to limit the movement of this piece in one direction. The rear side of the wrench shank is further formed with a lengthwise groove or depression 15' in which a flat spring 15 engages, this spring having one end enlarged and secured to the shank 2 as illustrated at 16 and has its opposite end bent outwardly at an angle and then extended to lie substantially parallel with the major portion of the spring at which point it is enlarged and bears against head 11 of the locking member.

Referring to the modification illustrated in Fig. 3 and Fig. 8, the pin 17 here designated has one end slightly reduced in diameter, thereby forming a shoulder 17' which bears against one side of an oblong block or shoe 18, loosely mounted upon the reduced portion of the pin and is held in its stated relation thereto by upsetting the end 19 of the pin into a countersunk hole provided upon the outer side of the block 18. The opposite end of the pin 17 carries the same form of cam arrangement and operating mechanisms as described in connection with Fig. 6.

Referring to Fig. 3 and Fig. 7 the shank of the wrench here designated 20 through which projects the pin 17 is formed on its front side with a recess 22 of oblong contour of a size slightly in excess of the shoe carried by the pin to allow the same to slide in and out of the recess. In this form of the invention the operating nut has formed therein, in lieu of the recesses in the preferred form, slots 21 into which the shoe 18 projects. In this form of the invention as is also true in the preferred form, upon partial rotary motion being applied to the pin by means of the handle provided thereon, the cams on the head of the pin are caused to ride upon the similar cam faces provided upon the rear face of the shank of the wrench, thus causing the pin to be disengaged from the openings in the adjusting nut, and maintained in such disengaged position by means of the spring upon the rear side of the wrench which exerts pressure against the head of the cam. The pin 17 in its rotation within the

shank 20 causes the shoe to be withdrawn from the slot 21 in such manner that while the pin partakes of the rotary motion of the head, the shoe, due to its loose connection upon the pin, partakes only of the longitudinal movement of the pin, since the shoe has merely sliding movement in the guiding recess 22.

Having thus described my invention, I claim as new and desire to secure by Letters Patent;—

1. In combination with the shank of a wrench having a rigid jaw, a slidable jaw on the shank, and a screw having an operating nut with a series of radial apertures therein, a pin slidable transversely through said shank to engage in said nut apertures, a cam member carried by the pin, a cam face on the wrench shank to cooperate with said cam member, and a spring carried by the shank and bearing against said cam member.

2. In combination with the shank of a wrench having a rigid jaw, a slidable jaw, and a screw having an operating nut provided with a series of radial apertures, a pin slidable transversely through the shank, to engage in the nut apertures, a cam member carried by the pin, comprising a head, oppositely disposed cams on the head, and an operating member, the wrench shank being formed with a pair of cam faces which cooperate with said cams of the cam member, said wrench shank being formed with a longitudinal groove, and a flat spring having one end rigidly secured in said groove at one

end of the latter, the free end of the spring being bent outwardly at an angle and then being extended to lie approximately parallel with the major portion of the spring and bearing against the head of the cam member.

3. In combination with the wrench shank having a rigid jaw, a slidable jaw, and means for operating the slidable jaw, a spring pressed member slidable with respect to the wrench shank having its free end for engagement with said operating means to thereby prevent movement thereof, and means for enabling said spring pressed member to be operated including a cam which rides on the rear face of the wrench shank, said wrench shank being formed with a cam face to cooperate with said cam.

4. In combination with a wrench including a shank having a rigid jaw on one end, a slidable jaw and means for operating the same, locking means which extend through the shank to engage with said operating means, the rear end of the locking means extending on the rear side of the shank, and means cooperating with the rear side of the shank whereby said locking means may be moved into and out of engagement with said operating means.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. STRAIGHT.

Witnesses:

ALFRED A. SHERMAN,
EZRA D. THOMAS.