

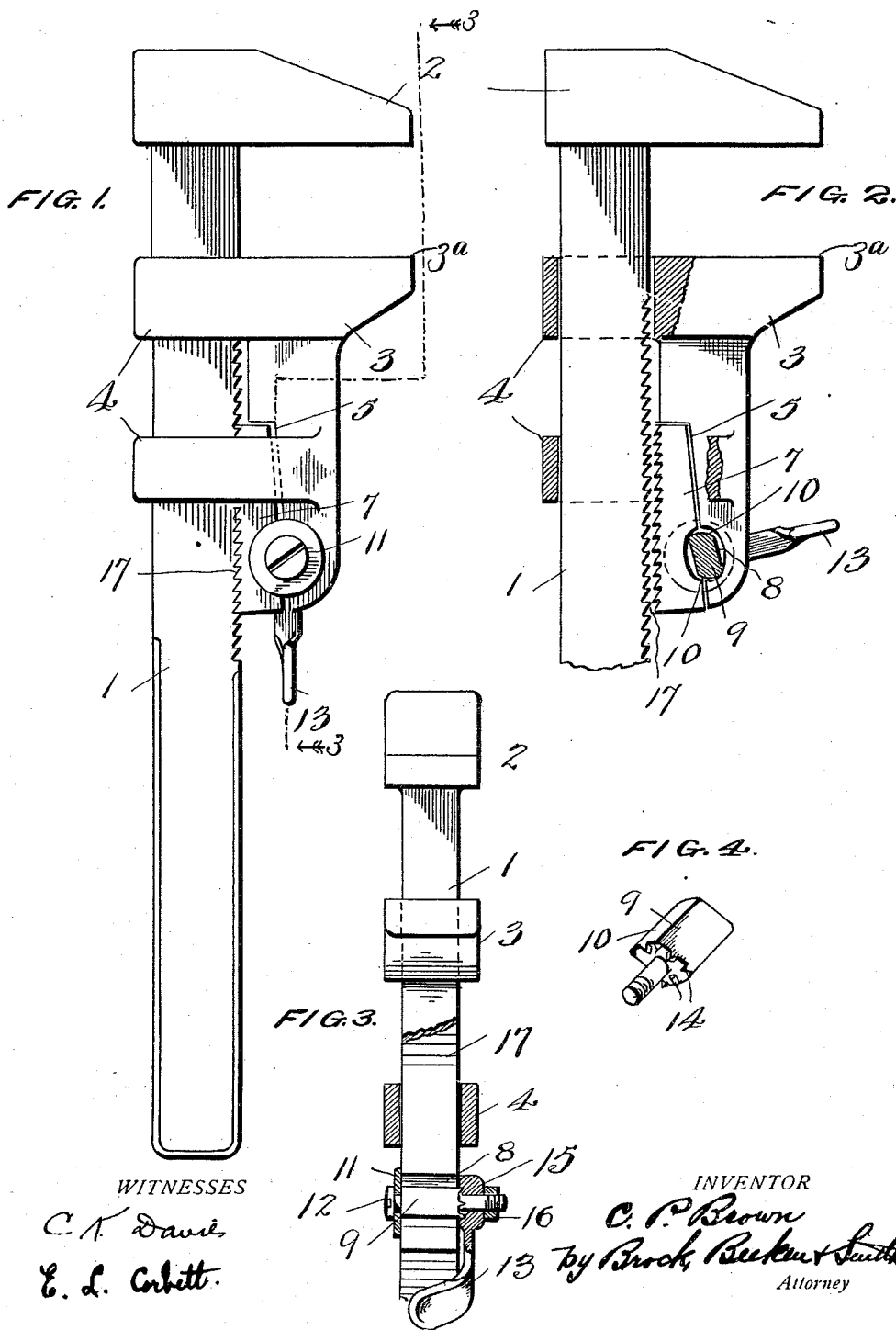
C. P. BROWN.
WRENCH.

APPLICATION FILED APR. 14, 1909. RENEWED MAR. 18, 1911.

1,006,057.

Patented Oct. 17, 1911.

2 SHEETS-SHEET 1.



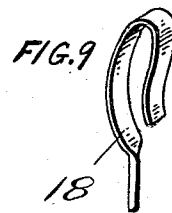
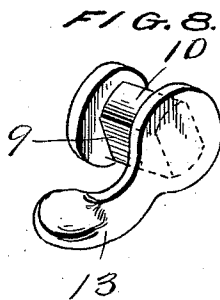
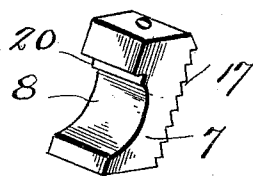
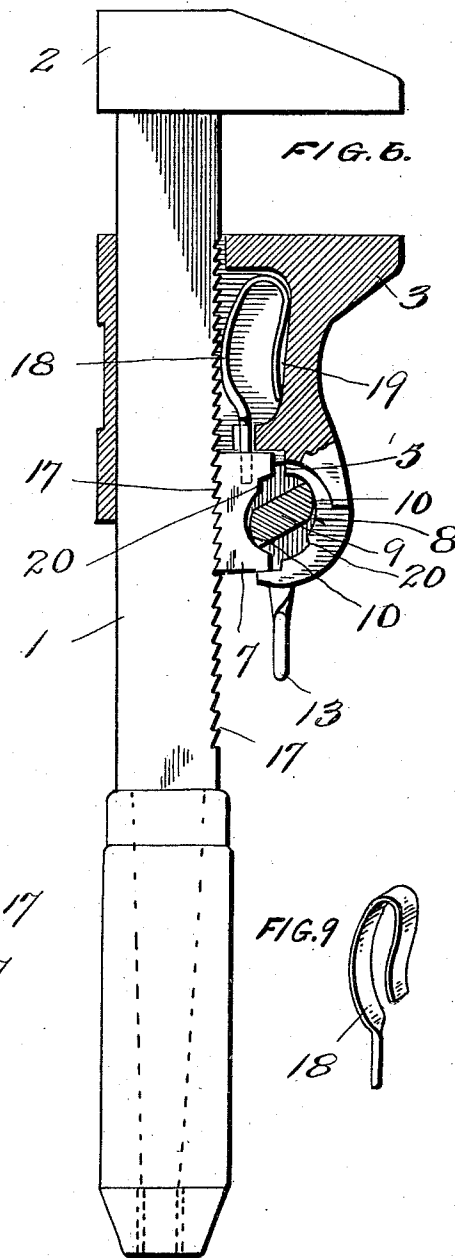
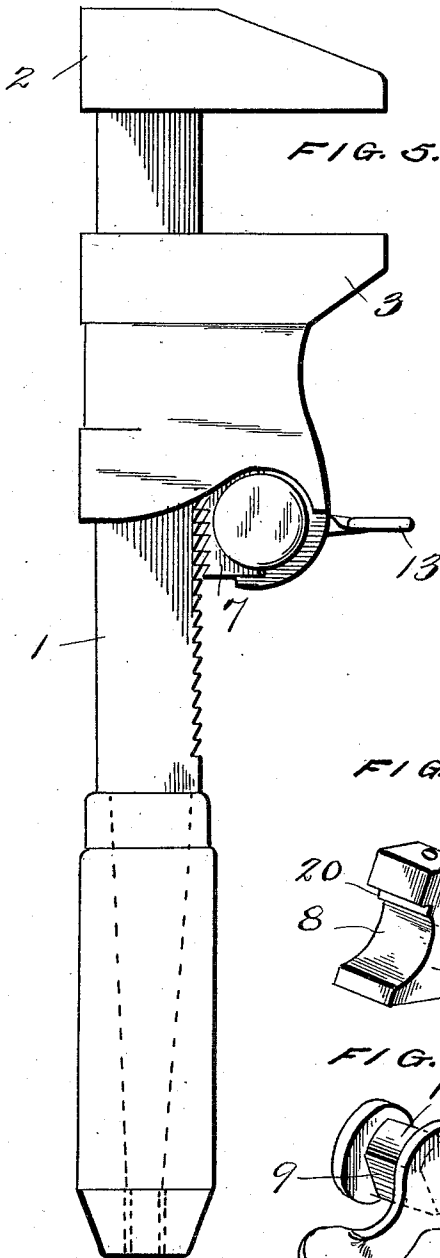
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WITNESSES

C. H. Davis.
E. L. Corbett.

INVENTOR

C. P. Brown
By Brock Baker Smith
Attorney

UNITED STATES PATENT OFFICE.

COMMODORE PERRY BROWN, OF RONCEVERTE, WEST VIRGINIA.

WRENCH.

1,006,057.

Specification of Letters Patent.

Patented Oct. 17, 1911.

Application filed April 14, 1909, Serial No. 489,839. Renewed March 18, 1911. Serial No. 615,388.

To all whom it may concern:

Be it known that I, COMMODORE P. BROWN, a citizen of the United States, residing at Ronceverte, in the county of Greenbrier and State of West Virginia, have invented a new and useful Wrench, of which the following is a specification.

My invention relates to wrenches, and particularly to wrenches of the quickly adjustable type.

The characteristics and advantages of the invention will be hereinafter fully set forth in connection with a detailed description of the accompanying drawing, in which—

Figure 1 is a side view of a wrench embodying my invention; Fig. 2 is a fragmentary sectional view, Fig. 3 is a section on the line 3—3, Fig. 1, Fig. 4 is a detail of the cam-shaped key 9. Fig. 5 is a side elevation of a modified form of the wrench. Fig. 6 is a view similar to Fig. 5 with the movable jaw member in section. Fig. 7 is a perspective view of the wedge used in the construction shown in Figs. 5 and 6. Fig. 8 is a perspective view of the eccentric cam used in the modified construction and Fig. 9 is a perspective view of the spring or means for normally disengaging the complementary teeth of the shank and wedge in relation to each other.

Similar reference characters refer to similar parts.

Considering the first form shown in Figs. 1 to 4, respectively, reference numeral 1 designates the shaft, having fixed jaw 2; 3 a movable jaw having guides 4 embracing the shaft; 5, a socket with a slanting face in the movable jaw 3; 7, a tapered plug or wedge in the socket; 8, a recess of generally oval shape formed partly in the movable jaw and partly in the wedge 7; 9, a key passing through recess 8; 10, eccentric cam surface formed on the key; 11, a washer at one end of the key secured in place by upsetting the end of the key, as shown at 12; 13, an operating lever; 14, a toothed shoulder formed on the key; 15, the hub of lever 13 having recess complementary to the tooth or shoulder 14; 16, a nut by which the lever is secured adjustably on the key, and 17, complementary notches formed on the shank of the wrench and the adjacent face of wedge 7. In Fig. 2, the wedge is shown in the unlocked position and it is obvious that the movable jaw may be slipped up and down on the shank to

fit the desired nut and the wedge 7 moving in its socket to permit adjustment of the jaw. When the jaw is in approximately correct position, lever 13 is moved toward the position shown in Fig. 1 causing key 9 to move in recess 8 until the longer axis of the key is approximately in line with the short axis of the recess. This forces wedge 7 inward so that its teeth register with those of the shank and at the same time has a tendency to force the wedge toward the fixed jaw of the wrench; the movable jaw is at the same time forced downward and the lower end of the jaw is moved outward from the shank, this slight movement being accompanied by play between the shank and guides 4. By this means the movable jaw is not only made fast and rigid with the shank, but the outer end of the jaw at the point 3^a is moved slightly toward the corresponding end of the fixed jaw. This serves to give an initial angle to the movable jaw in the opposite direction to the angle to which the act of binding the nut tends to spring it; in other words, by my construction the liability of the movable jaw to spring downward when in operation is overcome. The wrench may be disassembled by removing nut 16 and lever 13 from key 9, removing the key from recess 8, thus loosening the wedge 7 and the shank may then be withdrawn from the movable jaw. The parts are reassembled by reverse operations. The angle of the operating lever 13 in relation to the key may be adjusted by means of the hub 15 and complementary projections 14 on the key and hub of the lever.

Considering now the form of the invention shown in Figs. 5 to 9, inclusive, it has been found advisable in practice to utilize some automatic means for disengaging the complementary teeth of the shank and wedge so that when the key member carrying the cam-shaped surfaces is moved into the position where pressure is released on the wedge-member, the wedge-member will not only be free but become disengaged from the teeth of the shank and will of its own accord move outward so that the movable jaw of the wrench may be quickly adjusted. The particular means for effecting this may, of course, take many forms but in the drawings is shown a preferred form of automatic disengaging means which includes new and valuable features of construction. The general construction of the

wrench in its modified form is substantially the same as shown in the simpler form of Figs. 1 to 4 inclusive, and the same reference characters have been applied here wherever applicable, and only the difference of construction between this form and that shown in Figs. 1 to 4 inclusive will be pointed out specifically, it being understood that the other parts are substantially the same. It will be noted that the movable jaw member is provided with a socket 19, above the socket containing the wedge-member 7. This socket 19 communicates with the socket in which the wedge-member is seated as shown more particularly in Fig. 6 of the drawing. Mounted upon the wedge-member 7 is flat-spring 18 which is doubled upon itself so that its main portion is confined in the socket 19. When the key 9 is operated so as to cause the cam-shaped surfaces carried thereby to move the wedge-member into engagement with the shank of the wrench, the flat spring 18 will be crowded into its socket and will thereby be brought under tension. When the key 9 releases the wedge-member the expansion of the spring 18 acting against the sides of the movable jaw member and the shank of the wrench forces the wedge-member 7 immediately out of engagement with the teeth of the shank of the wrench. It has also been found desirable to provide a recess 8 which is generally oval-shaped with auxiliary surfaces or notches 20 which limit the movement of the key 9 to the end that said key may not be turned too far and thus engage or disengage the wedge and shank when not desired, as the case may be.

I claim:

1. In a wrench, the combination of a shank having a fixed jaw, a movable jaw having guides engaging the shank, a wedge fitting loosely in a socket in the movable jaw and having corrugations engaging complementary corrugations on the shank, a key having opposite eccentric cam-surfaces fitting loosely in an oval recess formed in adjacent faces of the movable jaw and wedge, and a handle on the key serving to rotate the key and lock the movable jaw in adjust-

ed position and to incline the tip of the movable jaw toward that of the fixed jaw.

2. In a wrench, the combination of a shank having a fixed jaw, a movable jaw having guides engaging the shank, a wedge fitting loosely in a socket in the movable jaw and having corrugations engaging complementary corrugations on the shank, a key having opposite eccentric cam-surfaces fitting loosely in an oval recess formed in adjacent faces of the movable jaw and wedge, a handle on the key serving to rotate the key and lock the movable jaw in adjusted position and to incline the tip of the movable jaw toward that of the fixed jaw, and means for automatically causing the wedge to disengage from the shank when the movable jaw is released from its locked position.

3. In a wrench, the combination of a shank having a fixed jaw, a movable jaw having guides engaging the shank, a wedge fitting loosely in a socket in the movable jaw and having corrugations engaging complementary corrugations on the shank, a key having opposite eccentric cam-surfaces fitting loosely in an oval recess formed in adjacent faces of the movable jaw and wedge, a handle on the key serving to rotate the key and lock the movable jaw in adjusted position and to incline the tip of the movable jaw toward that of the fixed jaw, and means for limiting the turning movement of the key in the oval recess.

4. In a wrench, the combination of a shank, having a fixed jaw, a movable jaw having guides engaging the shank and provided with sockets facing inwardly toward the shank, a wedge located in one of said sockets, a flat-spring doubled upon itself seated in the other of said sockets and engaging with the wedge-member located in the first socket to normally cause said wedge-member to disengage the shank, and means for moving the wedge-member into engagement with the shank.

COMMODORE PERRY BROWN.

Witnesses:

T. A. DEEVER,
P. P. BROWN.