

(No Model.)

J. G. FLETCHER.  
WRENCH.

No. 592,199.

Patented Oct. 19, 1897.

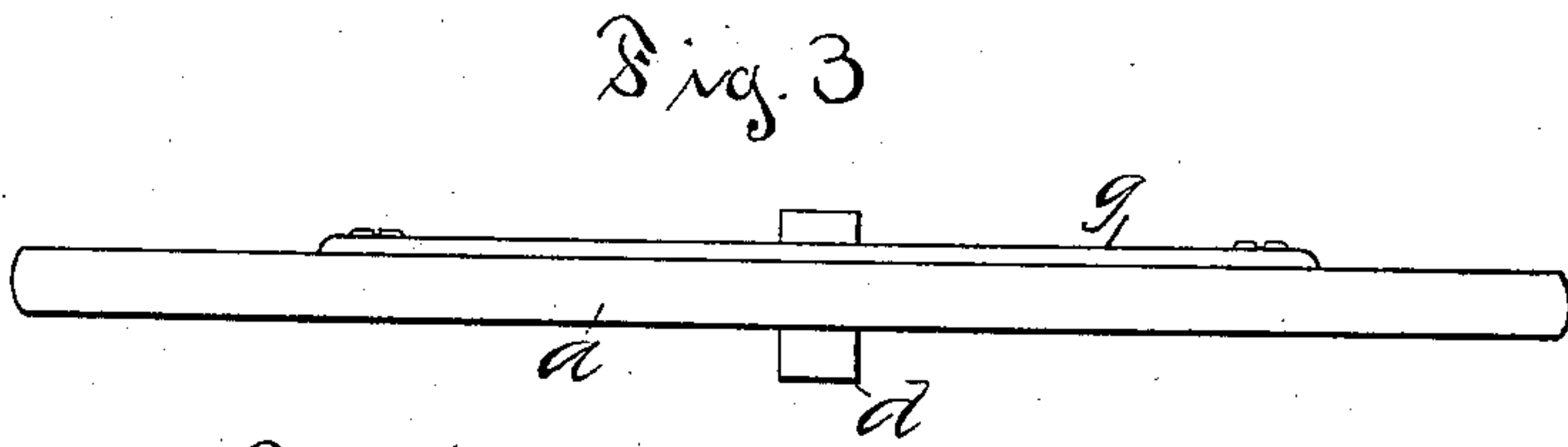
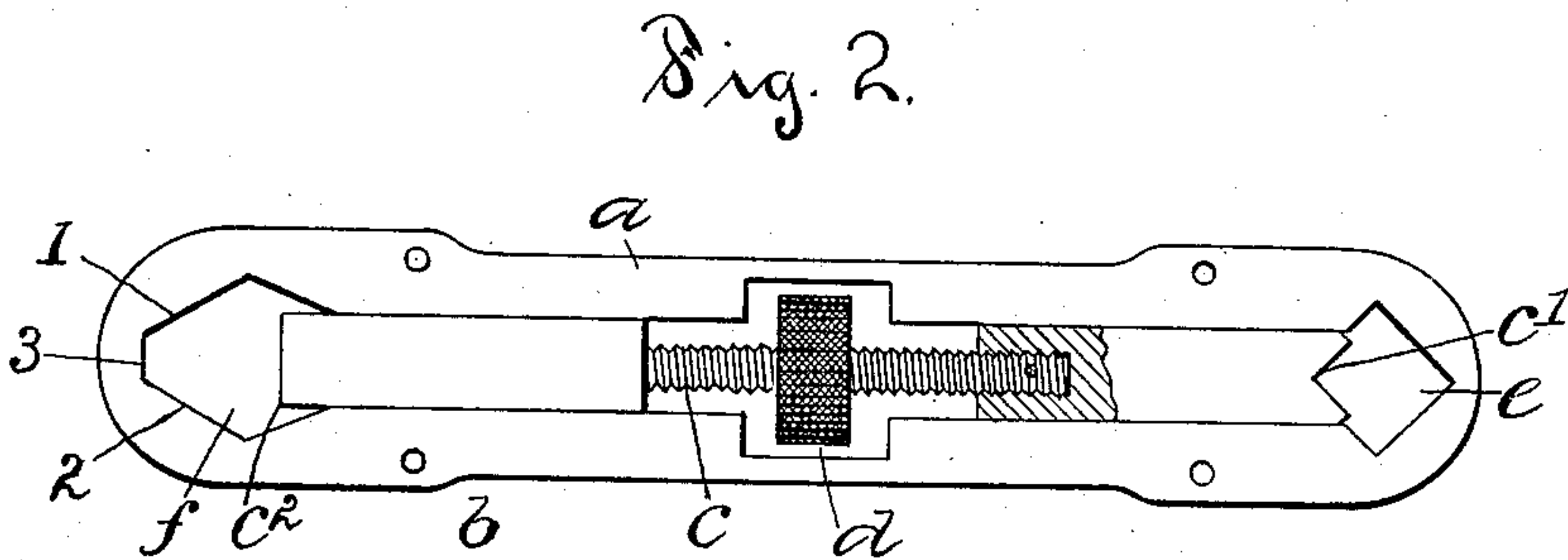
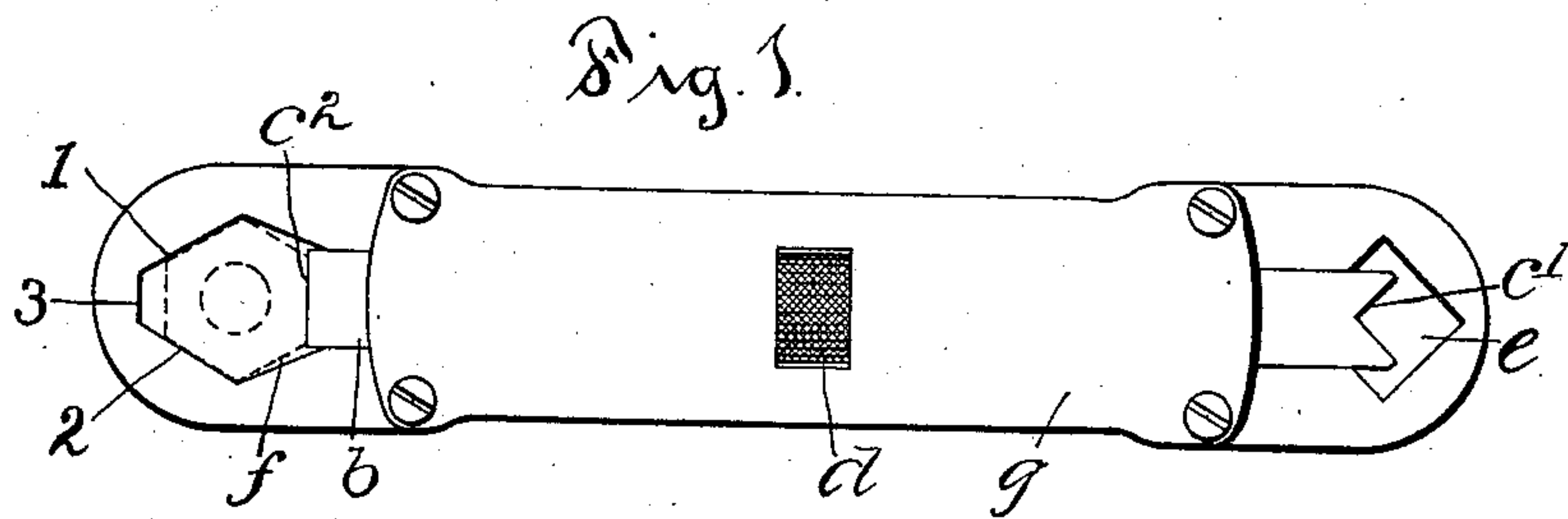
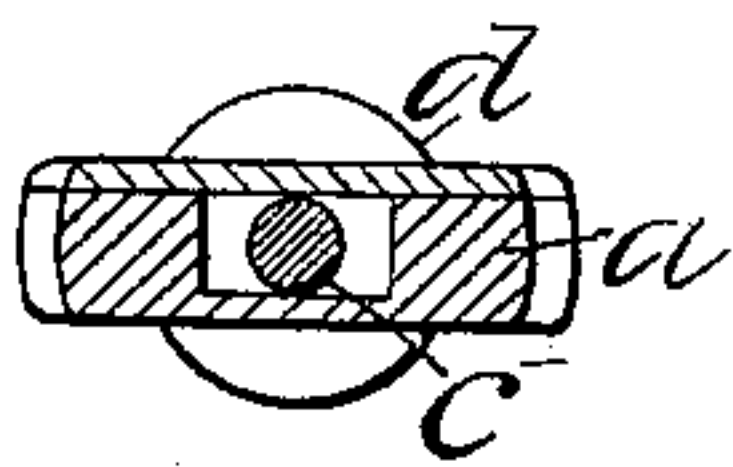


Fig. 4.



Witnesses

Harris E. Hart.

Arthur B. Jenkins

Inventor

by Joseph G. Fletcher,  
Chas. L. Burdett,

Attorney.

# UNITED STATES PATENT OFFICE.

JOSEPH G. FLETCHER, OF HARTFORD, CONNECTICUT, ASSIGNOR OF ONE-HALF TO CHARLES E. WILLARD, OF SAME PLACE.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 592,199, dated October 19, 1897.

Application filed December 21, 1896. Serial No. 616,422. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH G. FLETCHER, of Hartford, in the county of Hartford and State of Connecticut, have invented certain  
5 new and useful Improvements in Wrenches, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a  
10 wrench which may be conveniently carried in the pocket or in a tool-bag and is particularly adapted for use on a bicycle, the wrench being so constructed as to readily grasp any size of hexagonal nut within the limit of the  
15 nut-socket in the wrench-body.

To this end my invention consists in the wrench and in the combination of its parts, as hereinafter described, and more particularly recited in the claim.

Referring to the drawings, Figure 1 is a plan view of the wrench. Fig. 2 is a plan view of the wrench-body with the cover-plate removed and part cut in section to show the construction. Fig. 3 is a detail edge view of  
25 the wrench. Fig. 4 is a detail view in cross-section through the wrench.

In the accompanying drawings the letter *a* denotes the body part of the wrench, which in shape is a somewhat thin oblong framework  
30 of metal with rounded ends. Along the center of the frame *a* is a channel or socket, in which is located a movable jaw *b*, which has a limited lengthwise-sliding movement in the socket, which it fits quite closely. This jaw *b*  
35 has a threaded stem *c*, on which a nut *d* is fitted, the nut being large enough in diameter to extend beyond the walls of the jaw-socket into recesses or openings in the body part of the wrench or in its cover. The edges of this  
40 nut lie closely against the side walls of the opening which form shoulders to take the thrust of the jaw when its grasping-face is close upon a nut.

In the form of my invention shown herein  
45 its particular feature is embodied in a double-ended wrench, and the jaw has two grasping-faces, the one which is appurtenant to the rectangular socket *e* and having an angular recess *c'* in the grasping-face, while the face  
50 *c''* of the jaw at the end appurtenant to the other nut-socket *f* at the other end of the

wrench-body has a flat face at right angles to the path of movement of the jaw in its socket. In this form of the jaw it is made in two sections, the threaded shank of the one  
55 part being screwed into a socket in the other section and held firmly, as by means of a pin driven through the jaw into the shank. The nut *d* is first screwed upon the threaded shank *c*, and the jaw, with the nut, after the two  
60 sections of the jaw have been pinned together, is dropped into the socket, securing the cover-plate *g* in place, which may be done by means of screws or rivets.

The main feature of my invention resides  
65 in the nut-socket *f* having the side walls 1 and 2 so arranged as to make with each other an angle of sixty degrees, thus conforming to two sides of a hexagonal nut. It is preferred to form this socket with one narrow  
70 face 3 at right angles to the path of movement of the sliding jaw *b* and located opposite to the grasping-face *c''* of this jaw. These two surfaces *c''* and 3 are substantially parallel to each other. When a hexagonal nut is  
75 located in the socket *f*, it is grasped on three sides of its center by grasping-faces equally disposed about that center. The faces 1 and 2 of the nut-socket and the grasping-face *c''*  
80 are applied to the three alternate faces out of the six faces by which the edge of the hexagonal nut is bounded. This gives a very firm hold upon the nut, and owing to the equal disposition of the grasping-faces about  
85 the center of the nut and of the bolt enables the nut to be screwed in place with great accuracy and without any danger of distorting the bolt or the threads.

I am aware that wrenches of this general class and of the type illustrated in the rec-  
90 tangular socket at the right hand of the wrench shown in the accompanying drawings are not new, but my device is an improvement over such structures in the construction and location of the grasping-faces of the surface  
95 of the nut-socket adapted to grasp a hexagonal nut when combined with the sliding jaw with its flat grasping-surface arranged as hereinbefore described. By means of my improvement a wrench of this kind can be used  
100 on hexagonal nuts of various sizes from the smallest size to one which just fits within the



limits of the socket formed in the end of the wrench.

The nut-socket for the hexagonal nuts is formed with a short surface in opposition to the flat grasping end of the jaw in order to give the needed strength to the end of the wrench-body at this part. The ends of the wrench-body are rounded, so as to enable the wrench to be used on a nut which is located close to some projecting part of the machine or article near the place where the nut is screwed upon a threaded bolt or projection.

I claim as my invention—

In combination in a pocket-wrench, a thin

oblong body part having a lengthwise jaw-socket opening into a nut-socket near one end of the body part, a nut-socket having the wall opposing the grasping-face of the jaw shorter than those adjacent and said adjacent flaring sides making with each other an angle of about sixty degrees, the sliding jaw located in the jaw-socket and having a transverse grasping-face and means for reciprocating said jaw in its socket.

JOSEPH G. FLETCHER.

Witnesses:

CHAS. L. BURDETT,  
ARTHUR B. JENKINS.