

A. S. REED.
COMBINATION WRENCH.
APPLICATION FILED JAN. 16, 1911.

999,399.

Patented Aug. 1, 1911.

Fig. 1

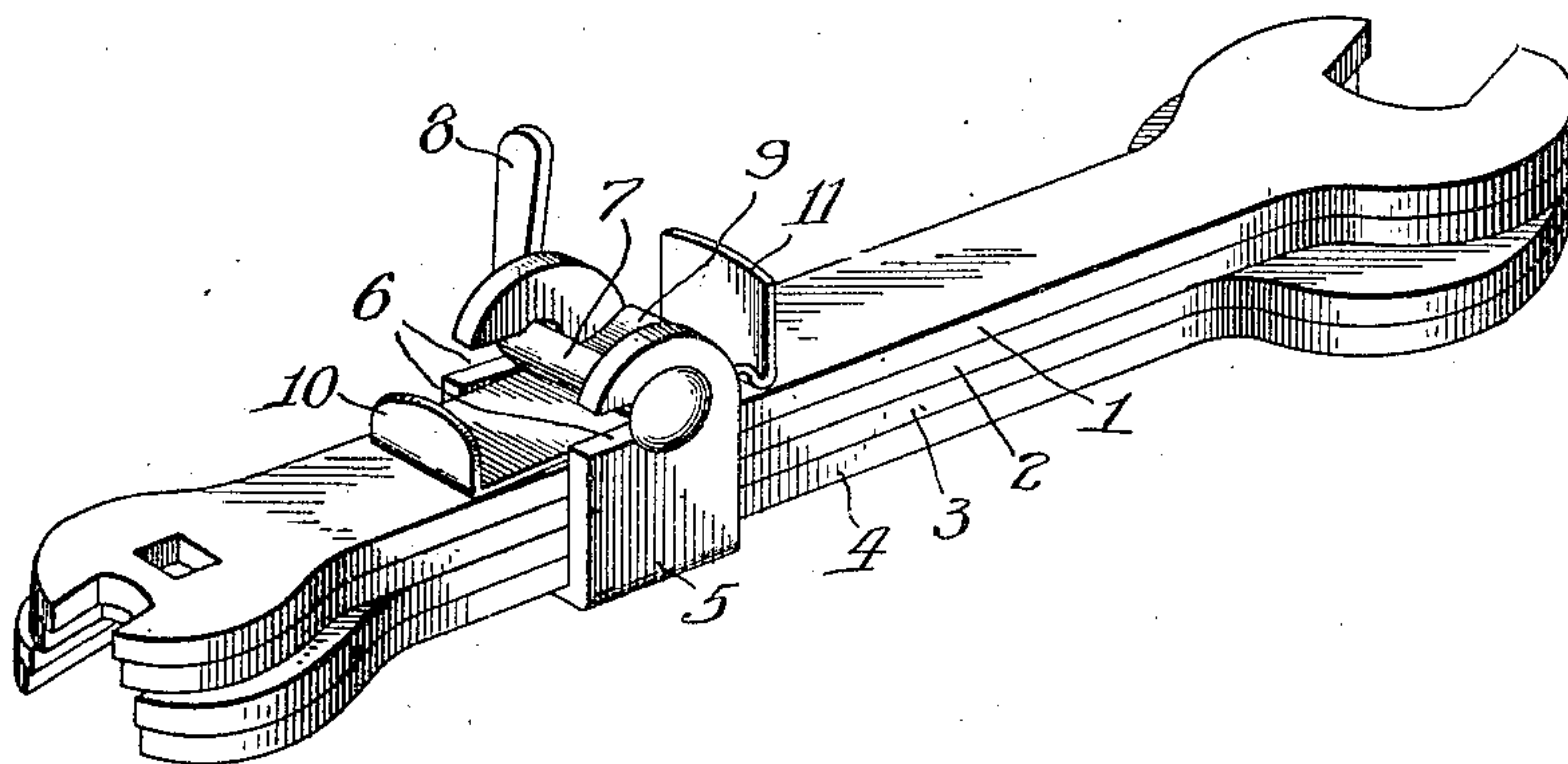


Fig. 2

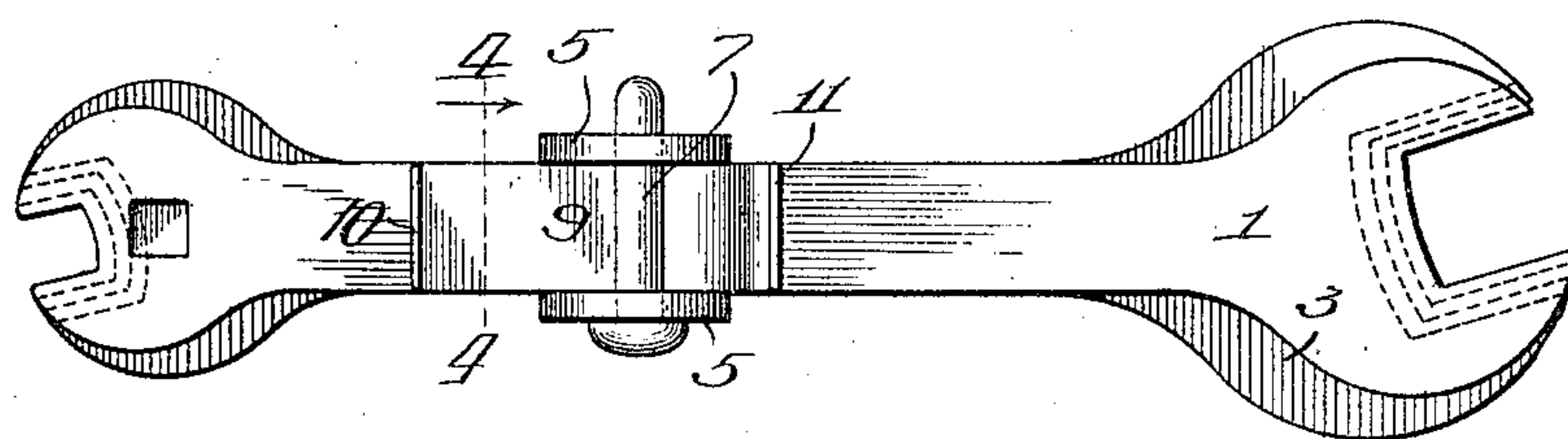


Fig. 3

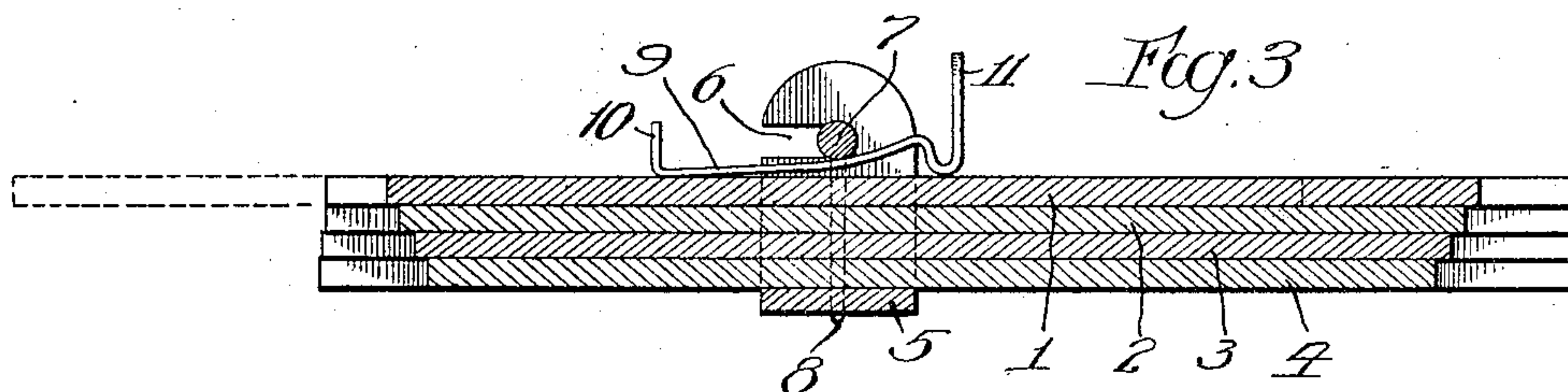
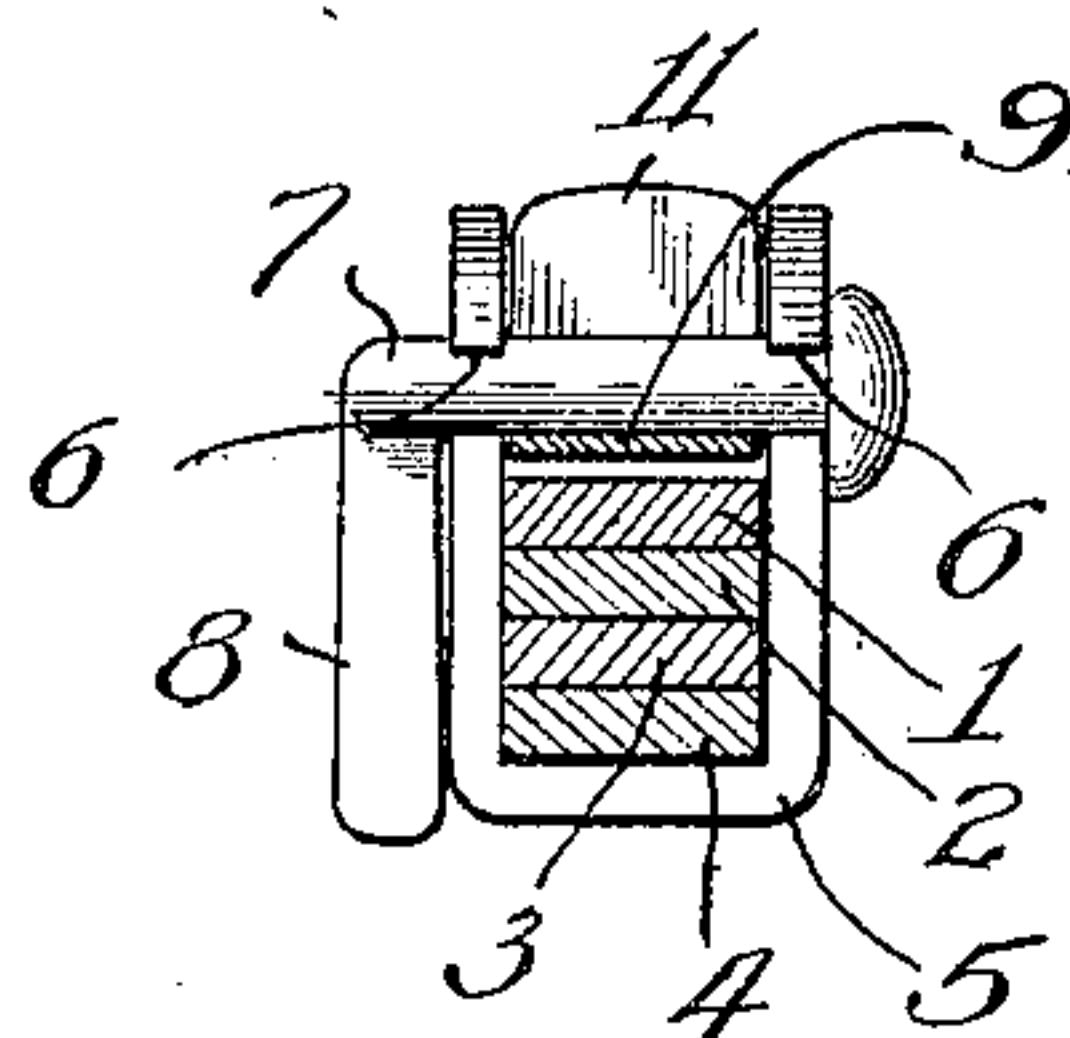


Fig. 4



Witnesses:
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UNITED STATES PATENT OFFICE.

ALBERT S. REED, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ELIJAH T. HARRIS, OF CHICAGO, ILLINOIS.

COMBINATION-WRENCH.

999,399.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed January 16, 1911. Serial No. 603,034.

To all whom it may concern:

Be it known that I, ALBERT S. REED, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Combination-Wrenches, of which the following is a full, clear, concise, and exact description.

Wrenches of the class to which my invention appertains have been heretofore bunched together in sets, and so arranged that either one of the bunch may be slid within the clasp, in either direction, so that either end may be used, as occasion may require. These wrenches may consist each of a flat bar of steel having different sized jaws at either end for engaging with the nuts to be turned. The shape, size, and relative positions of the jaws at the different ends of the different bars may be varied as circumstances may warrant.

My invention, in its more specific aspects, relates to means for clamping several wrenches together, my clamping mechanism being such that the frictional pressure may be readily adjusted to permit of the sliding in either direction of either of the set and the securing of such tool in position for use after having been thus manipulated; also the construction of my clamp is such that the set may be readily disassembled and assembled at the will of the user.

Speaking generally, my clamping mechanism consists of a strap or clip adapted to surround bars when placed in parallel, a locking pin adapted to be inserted through the slotted openings provided in the ends of the strap and a spring wedge adapted to be inserted under the pin to bear against the surface of the wrench under the same, so as to retain the wrenches in frictional engagement.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view illustrative of a set of four wrenches with my clamping mechanism applied thereto, the pin of the clamp being turned to make clear the flattened bent end thereof; Fig. 2 is a plan view showing the several members in ordinary position; Fig. 3 is a side elevation, partly in section, and indicating by dotted lines, the position of one of the wrenches when ex-

tended; and Fig. 4 is a sectional view upon line 4—4 of Fig. 2.

Like parts are indicated by similar characters of reference in the different figures.

In this instance there are shown four wrenches, 1, 2, 3, 4, each consisting of a flat bar and provided with jaws or tools at each end. Such a set of four has been found specially convenient, the sizes of the tools varying from say $\frac{3}{8}$ of an inch down to $\frac{3}{16}$ of an inch, while the central portions of the flat bars are of uniform width. The strap or clip 5 may be, say three-fourths of an inch in width, and is provided with the slots 6. It will be observed that these slots are enlarged at the rear to conform in size to the diameter of the pin 7 inserted therein. This pin may be described as consisting of a wire nail bent at a right angle and having the bent portion 8 thereof flattened.

In order to insert the pin it must be placed opposite one side of the strap so that the flattened bent end will register with the outer or narrow portion of the slots 6. It is then inserted, after which, by turning the flattened end down to the position indicated in Figs. 2, 3, and 4, the pin will be locked so as to prevent its being accidentally detached from the strap. Thereupon the spring wedge 9 is inserted as shown under the pin to bear against the surface of the underlying bar.

It will be observed that the wedge is of spring metal; the end 10 is readily inserted under the pin and then by the thumb-piece 11 pushed in to hold the several members in place by frictional engagement.

Having thus described my invention, what I claim is:—

1. The strap embracing the set of wrenches and provided with slots at the ends thereof, said slots being enlarged at the rear, in combination with a pin provided with a bent flattened end, the said flattened end being adapted to be inserted sidewise through the front and narrower portion of the slots and then to be turned to lock the pin in place; and a spring wedge adapted to be inserted under the pin to press against the surface of the underlying wrench, whereby the several wrenches are adapted to be pressed against each other in frictional engagement, substantially as and for the purpose specified.
2. The combination with a U-shaped strap

adapted to embrace a plurality of bars to
bind the same together, the ends of said
strap being each provided with a slot hav-
ing a restricted throat, of a cross-piece se-
cured in said slots and connecting the ends
5 of said strap, said cross-piece comprising a
pin having a head on one end and an angu-
lar extension on the other end, said angular
extension being flattened to pass through

said throats, and a wedge insertible between 10
said cross-piece and said bars.

In witness whereof, I, hereunto subscribe
my name this twelfth day of January, A. D.,
1911.

ALBERT S. REED.

Witnesses:

GEO. P. BARTON,
McCLELLAND YOUNG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
