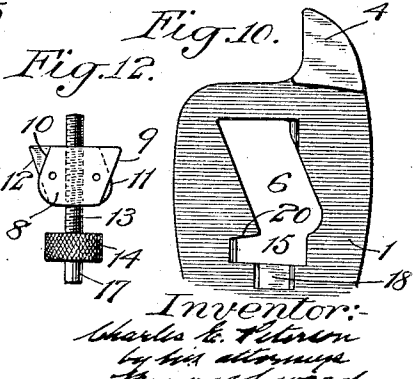
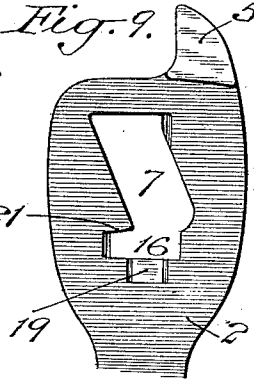
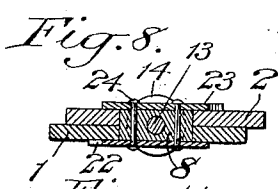
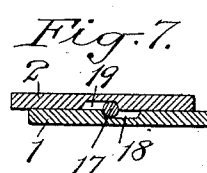
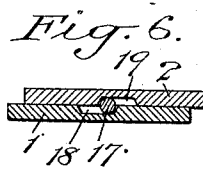
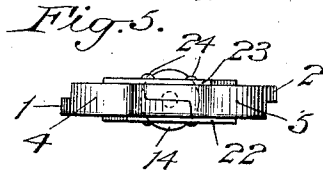
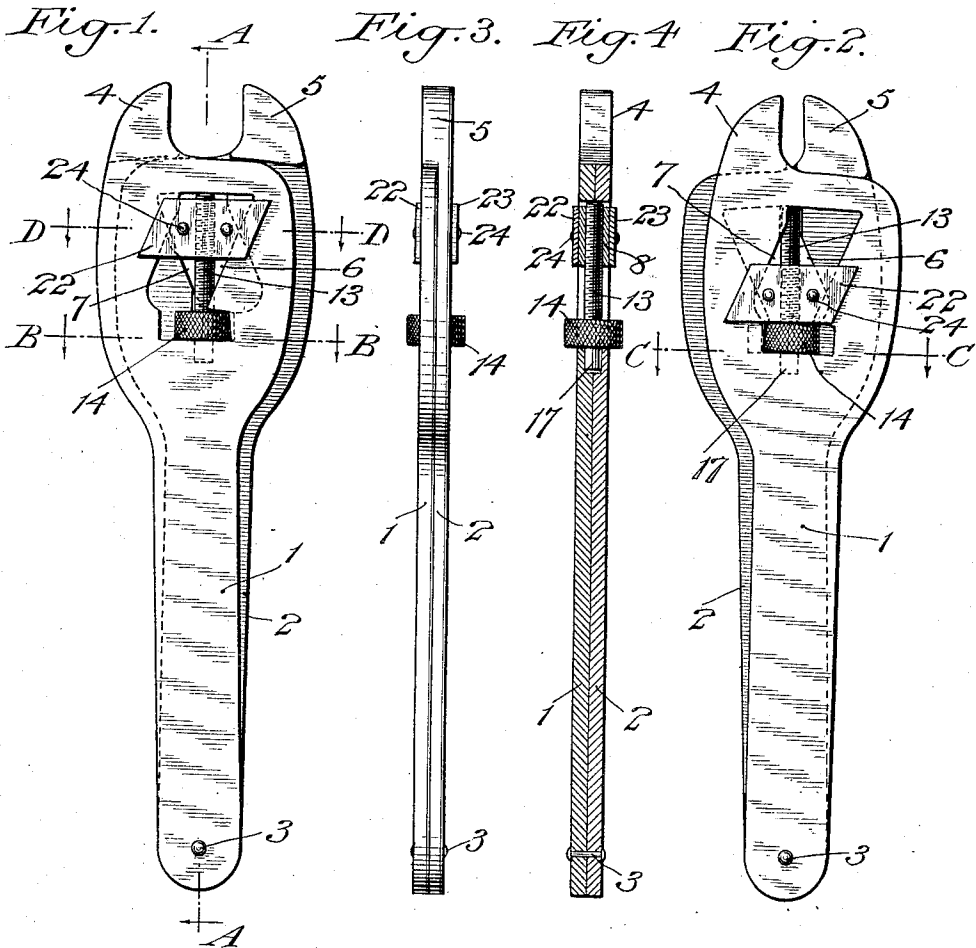


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WRENCH.

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1,016,578.

Patented Feb. 6, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

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WRENCH.

1,016,578.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed November 21, 1911. Serial No. 661,593.

To all whom it may concern:

Be it known that I, CHARLES E. PETERSON, a citizen of the United States, and resident of the borough of Brooklyn, in the city and State of New York, have invented a new and useful Improvement in Wrenches, of which the following is a specification.

The object of my invention is to provide a wrench in which the jaws may be very rapidly opened and closed and in which the parts may be readily assembled, will be cheap to manufacture, very strong and easily manipulated.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents in side elevation the wrench with the jaws near the limit of their outward movement, Fig. 2 is a similar view showing the jaws at the limit of their inward movement, Fig. 3 is a view in edge elevation of the wrench, Fig. 4 is a longitudinal section taken in the plane of the line A—A of Fig. 1, Fig. 5 is an end view of the wrench, Fig. 6 is a transverse section taken in the plane of the line B—B of Fig. 1, Fig. 7 is a transverse section taken in the plane of the line C—C of Fig. 2, Fig. 8 is a transverse section taken in the plane of the line D—D of Fig. 1, Fig. 9 is a detail inside view of one combined jaw and handle member, Fig. 10 is a detail inside view of the other combined jaw and handle member, Fig. 11 is an end view of the double cam block and thumb screw, and Fig. 12 is a side view of the same.

The two overlapping combined jaw and handle members 1 and 2 are hinged together at 3 at their inner ends and are provided with oppositely arranged jaws 4 and 5 at their outer ends. These members are provided with oppositely arranged cam slots 6, 7, which cross each other. A double cam block 8 is provided, which block is fitted to slide in the slots 6 and 7, the said block having oppositely arranged pairs of cam surfaces 9, 10 and 11, 12, fitted to their respective cam slots 6 and 7. This cam block is moved outwardly and inwardly along the cam slots in the overlapping members 1 and 2 by means of a thumb screw 13. This thumb screw has fixed thereto an enlargement 14 forming a thumb piece located within transverse recesses 15, 16, at the inner ends of the cam slots 6 and 7, projecting beyond the outer faces of the members

1 and 2. The plain inner end 17 of the thumb screw 13 is seated in transversely elongated recesses 18, 19, at the inner ends of the recesses 15, 16, said screw extending outwardly through the double cam block 8 to a point adjacent to the outer ends of the cam slots 6 and 7. This screw is held against longitudinal movement by the shoulders 20, 21, formed by the recesses 15, 16, which shoulders overlap the outer face of the thumb piece 14.

To hold the members 1 and 2 together, and to hold the screw and double cam block against lateral displacement, the opposite sides of the cam block have fixed thereto plates 22, 23, overlapping the walls of the cam slots 6 and 7, respectively. These plates 22, 23, may be secured to the block 8 by any means, such, for instance, as rivets 24.

From the above description it will be seen that a turning movement of the thumb screw will impart a rapid opening or closing of the jaws according to the direction in which the screw is turned, by reason of the fact that the double cam block 8 has an opening or closing effect upon each of the members 1 and 2. It will furthermore be seen that the wrench is of very simple construction.

It is evident that various changes might be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the structure herein set forth, but

What I claim is:—

1. A wrench comprising two overlapping combined jaw and handle members hinged together and having slots crossing each other, a block fitted to slide in said slots and a longitudinally arranged thumb screw having a screw-threaded engagement with the block for moving it along said slots to open and close the jaws.

2. A wrench comprising two overlapping combined jaw and handle members hinged together and having slots crossing each other, a block fitted to slide in said slots, a longitudinally arranged thumb screw having a screw-threaded engagement with the block for moving it along said slots and means for preventing longitudinal movement of said thumb screw.

3. A wrench comprising two overlapping combined jaw and handle members hinged

together and having slots crossing each other, a block fitted to slide in said slots, a longitudinally arranged thumb screw having a screw-threaded engagement with the block for moving it along said slots and side plates carried by the block overlapping the walls of their respective slots.

4. A wrench comprising two overlapping jaw and handle members hinged together and having cam slots crossing each other, a double cam block fitted to slide in said slots and a thumb screw engaging said block and having an enlargement forming a thumb

piece and a plain extension, said overlapping members having recesses for receiving the enlargement and the end extension of the thumb screw. 15

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this twentieth day of November 1911. 20

CHARLES E. PETERSON.

Witnesses:

F. GEORGE BARRY,
HENRY C. THIEME.

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