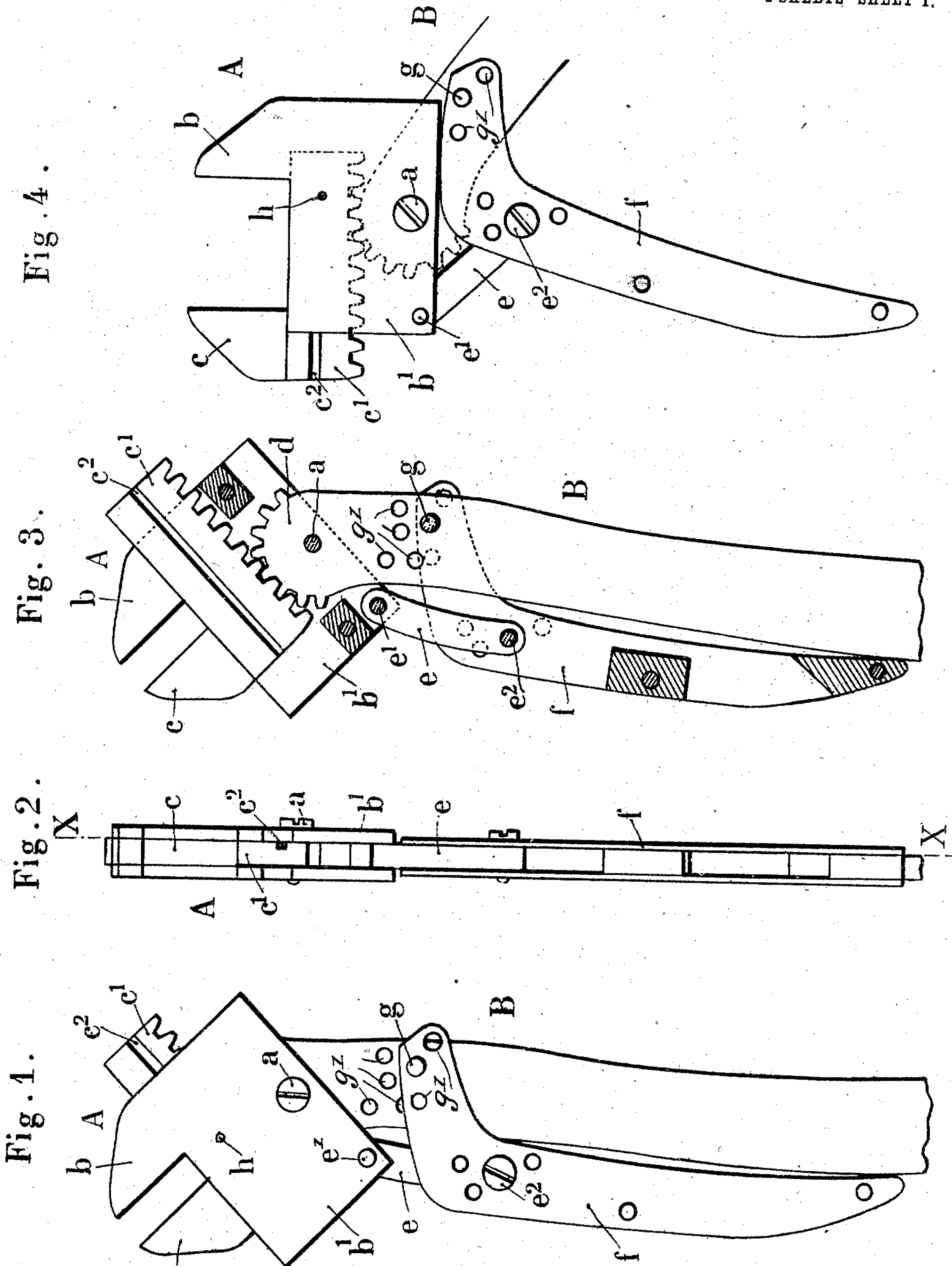


E. F. MAITRUGUE.
 SPANNER WITH AUTOMATIC PARALLEL LOCKING ACTION.
 APPLICATION FILED DEC. 28, 1908.

967,651.

Patented Aug. 16, 1910.

2 SHEETS—SHEET 1.



WITNESSES
W. M. Avery
J. P. Davis

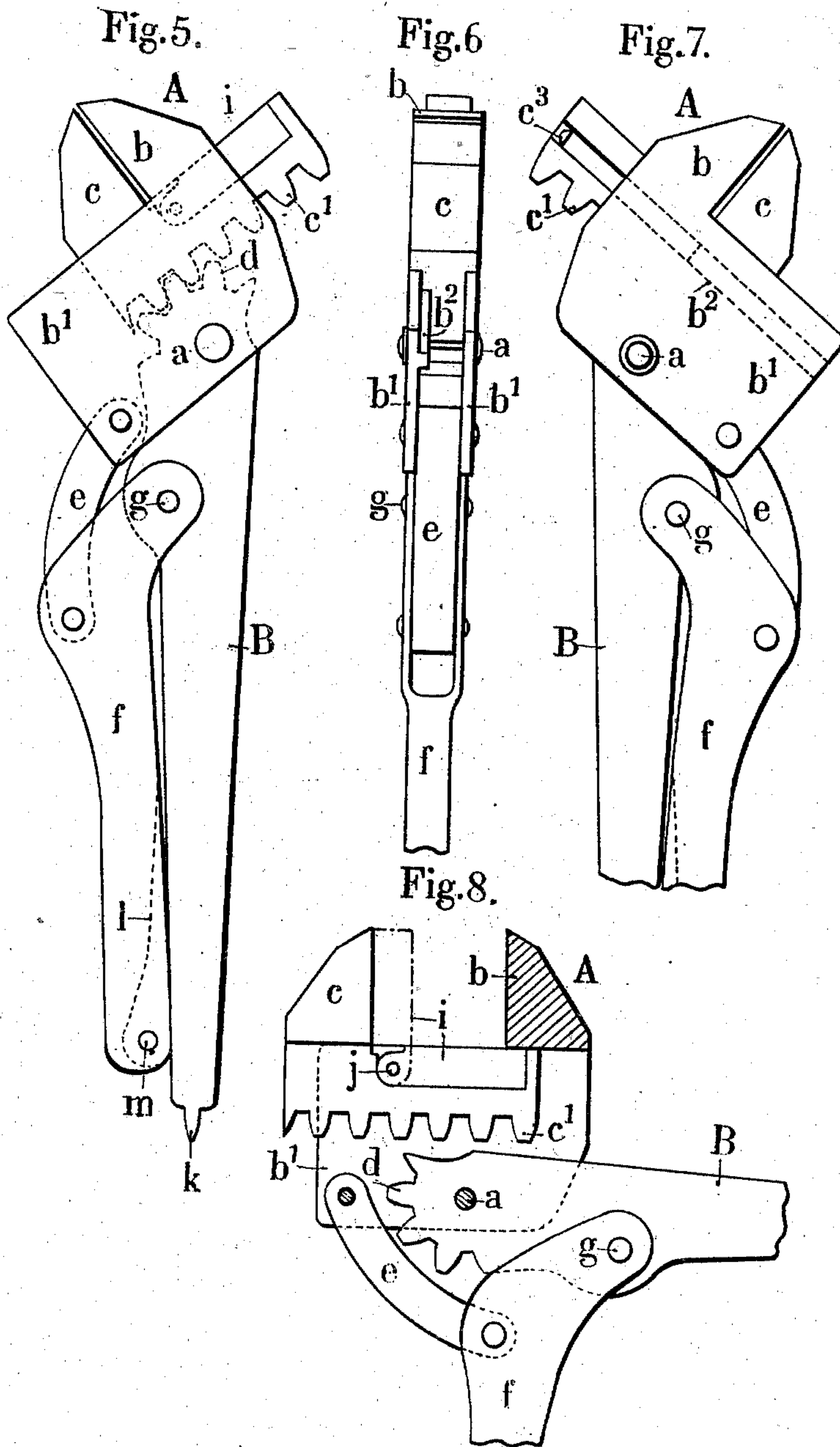
INVENTOR
Edmond Félix Maitrue
 BY *Mum & Co.*
 ATTORNEYS

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UNITED STATES PATENT OFFICE.

EDMOND FÉLIX MAITRUGUE, OF PONTARLIER, FRANCE.

SPANNER WITH AUTOMATIC PARALLEL LOCKING ACTION.

967,651.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed December 28, 1908. Serial No. 469,532.

To all whom it may concern:

Be it known that I, EDMOND FÉLIX MAITRUGUE, of 68 Grande Rue, Pontarlier, (Doubs,) Republic of France, engineer, have invented a Spanner with Automatic Parallel Locking Action, of which the following is a full, clear, and exact description.

This invention relates to a spanner with automatic parallel tightening or locking action, having a head adapted to revolve under the action of a special operating lever about an axis connecting the same with one of the two branches of the handles. This pivoting motion has for its purpose to cause the displacement of a jaw forming part of the spanner and provided for this purpose with a rack gearing with a toothed sector cut on the principal branch of the handle.

This spanner permits nuts in close quarters to be reached and to be firmly and securely held, thereby preventing the spanner from turning about the nuts which are to be locked or loosened.

This invention will be hereinafter described with reference to the accompanying drawing in which:—

Figure 1 represents in elevation this spanner in a flat position. Fig. 2 is a side view thereof. Fig. 3 is a vertical section of the spanner made according to line $x-x$ of Fig. 2. Fig. 4 shows the same spanner in an open state. Fig. 5 shows a modified form of spanner in a flat and closed position. Fig. 6 is an edge view of the same. Fig. 7 shows this spanner from the side opposite to Fig. 5. Fig. 8 shows in section a part of the spanner.

As shown in this drawing, this spanner comprises a head A mounted at the upper part of an arm B on which it is pivoted by means of a small bolt or a screw a . This head is constituted by a first jaw b with cheeks b^1 between which a second jaw c can move. These two jaws are parallel and the jaw c is provided with a rack c^1 engaged by the toothed sector d on the end of the arm B. The displacement of the movable jaw c between the cheeks b^1 is produced when the head is caused to rotate upon the bolt a by means of a small link e and a lever f pivoted at g upon the arm B. In fact, in virtue of this pivotal action, the rack c^1 is caused to move on the sector d in one direction or the other, according as the small operating lever is lowered or raised. A lug h connected with one of the cheeks b^1 and engaged in a suit-

able groove c^2 provided in the rack c^1 prevents the movable jaw c from lifting. The pivoting axes e^1 e^2 of the link e as well as the axes g of the lever f being constituted by screws, the conditions of the drive can be modified in placing these axes in the different holes g^1 provided for this purpose in the parts of the spanner. Furthermore, the fact of having a movable jaw with a rack operated by the toothed sector of the arm B allows the required opening of the spanner to be obtained while maintaining a suitable spacing between the arm B and the lever f . This required opening is obtained instantaneously by removing the screw a and meshing the sector with other teeth of the rack.

In the modified form shown in Figs. 5 to 8, this improved spanner comprises a jaw b provided at the lower part with two cheeks b^1 between which the second jaw c can move. The operating lever f of the spanner is pivoted at g to the arm B and is connected with the cheeks b^1 of the jaw b by means of a link e . The arm B is provided with a toothed sector meshing with the teeth of the rack c^1 .

In order to give to the movable jaw c the required spacing with reference to the fixed one b , it is only necessary to straighten horizontally the arm B, which has for its purpose to completely disengage the rack c^1 from the sector d , then to arrange this jaw at the required spacing before lowering the arm B. A lug c^3 arranged on the rack c^1 and abutting against the rib b^2 prevents separation of the movable jaw c from the fixed jaw b . The movable jaw c is provided with a blade i pivoted at j capable of being lowered into a groove provided in the rack c^1 and of being positioned so as to convert the spanner into a shear. The arm B is provided with a screw driver k while the lever f is provided with a punch l pivoted at m and adapted to fit in a groove in the lever when not in use.

Claims:

1. A spanner or wrench comprising a head having a jaw and two cheek pieces, a jaw mounted to slide between the cheek pieces of the head and provided with a rack on its under side, an arm pivoted to the head and having a toothed sector at its end engaging the rack of the jaw, an elbow lever pivoted to the arm, and a link pivoted to the head and said lever.

2. A spanner or wrench, comprising a head having a jaw, a jaw mounted to slide in the head and having a rack on its under side, an arm pivoted to the head and having a toothed sector engaging the rack of the jaw, a lever pivoted to the arm, and a link pivoted to the said lever and head.

3. A spanner or wrench, comprising a head having a jaw, a movable jaw mounted in the head, an arm pivoted to the head, means for operating the movable jaw from the arm, a lever pivoted to the arm, and a link pivoted to the lever and head.

4. In a spanner or wrench, a head having a jaw, a jaw mounted to slide in the

head and provided with a groove and a rack, a cutter pivoted to the movable jaw and adapted to fold in the groove thereof, an arm pivoted to head and having a toothed sector engaging the rack of the jaw, a lever pivoted to the arm, and a link pivoted to the said lever and head.

The foregoing specification of my spanner with automatic parallel locking action signed by me this fifteenth day of December 1908.

EDMOND FÉLIX MAITRUGUE.

Witnesses:

HANSON C. COXE,
MAURICE H. PIGNET.