

No. 637,251.

Patented Nov. 21, 1899.

A. L. HAMILTON.
WRENCH.

(Application filed June 29, 1899.)

(No Model.)

Fig. 2.

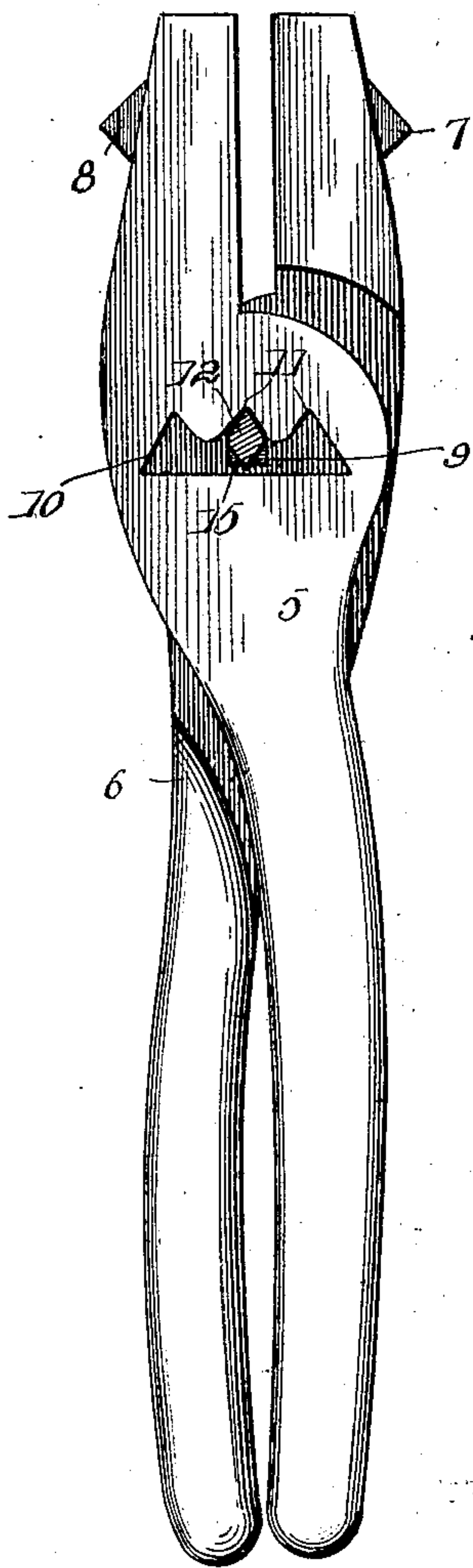


Fig. 1.

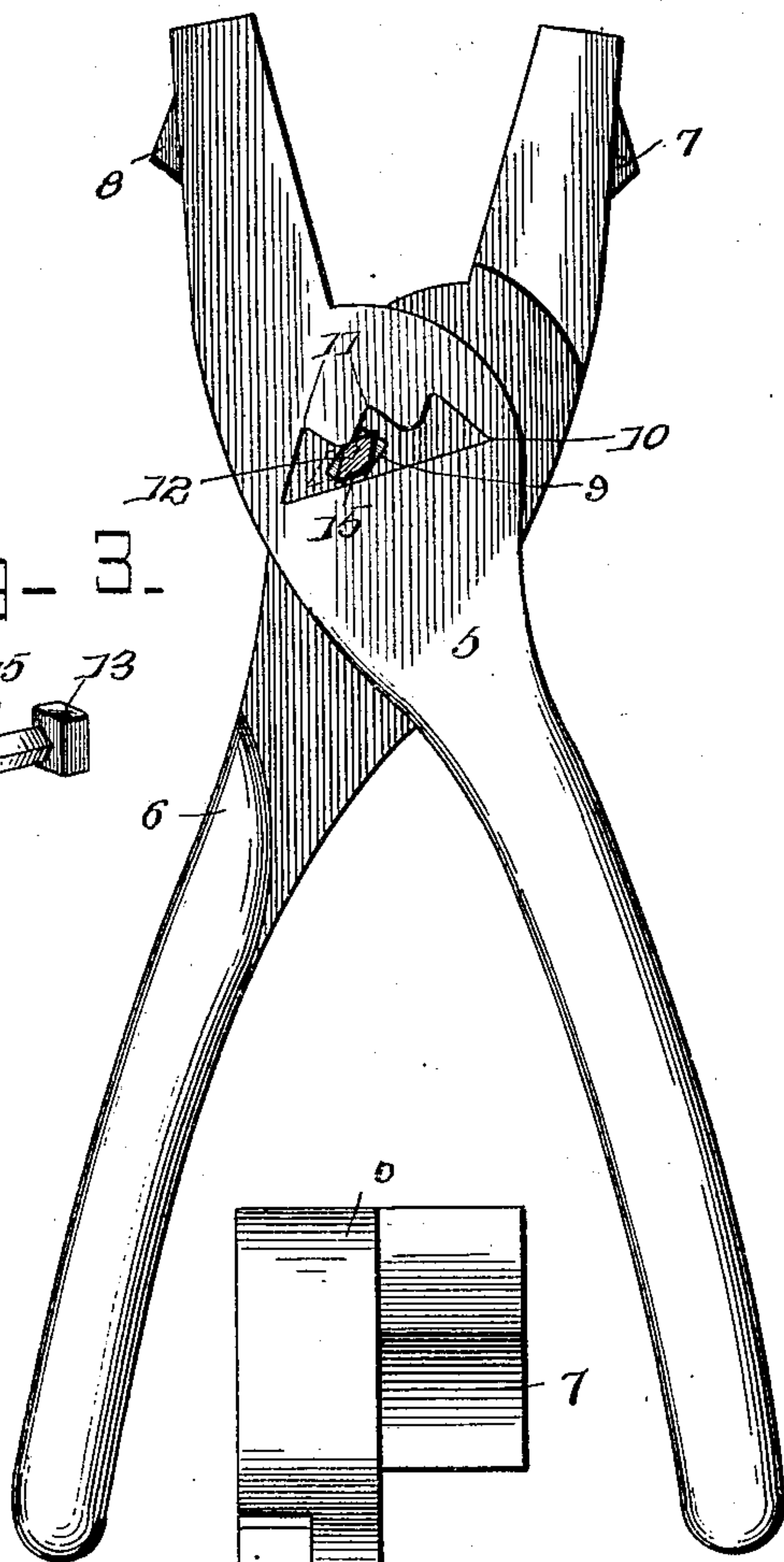


Fig. 3.

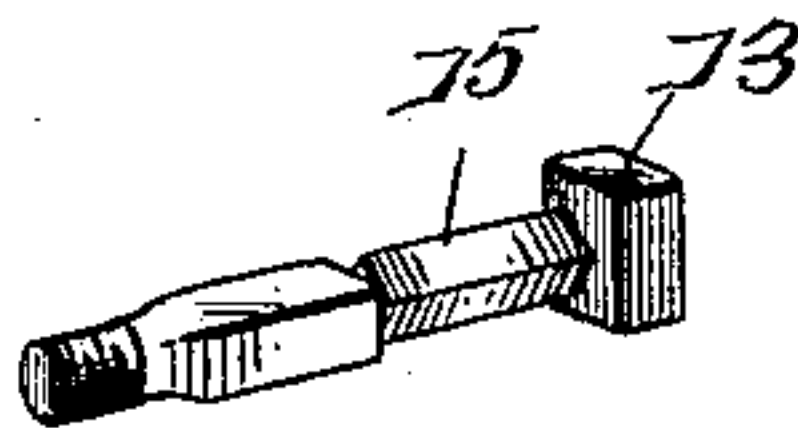
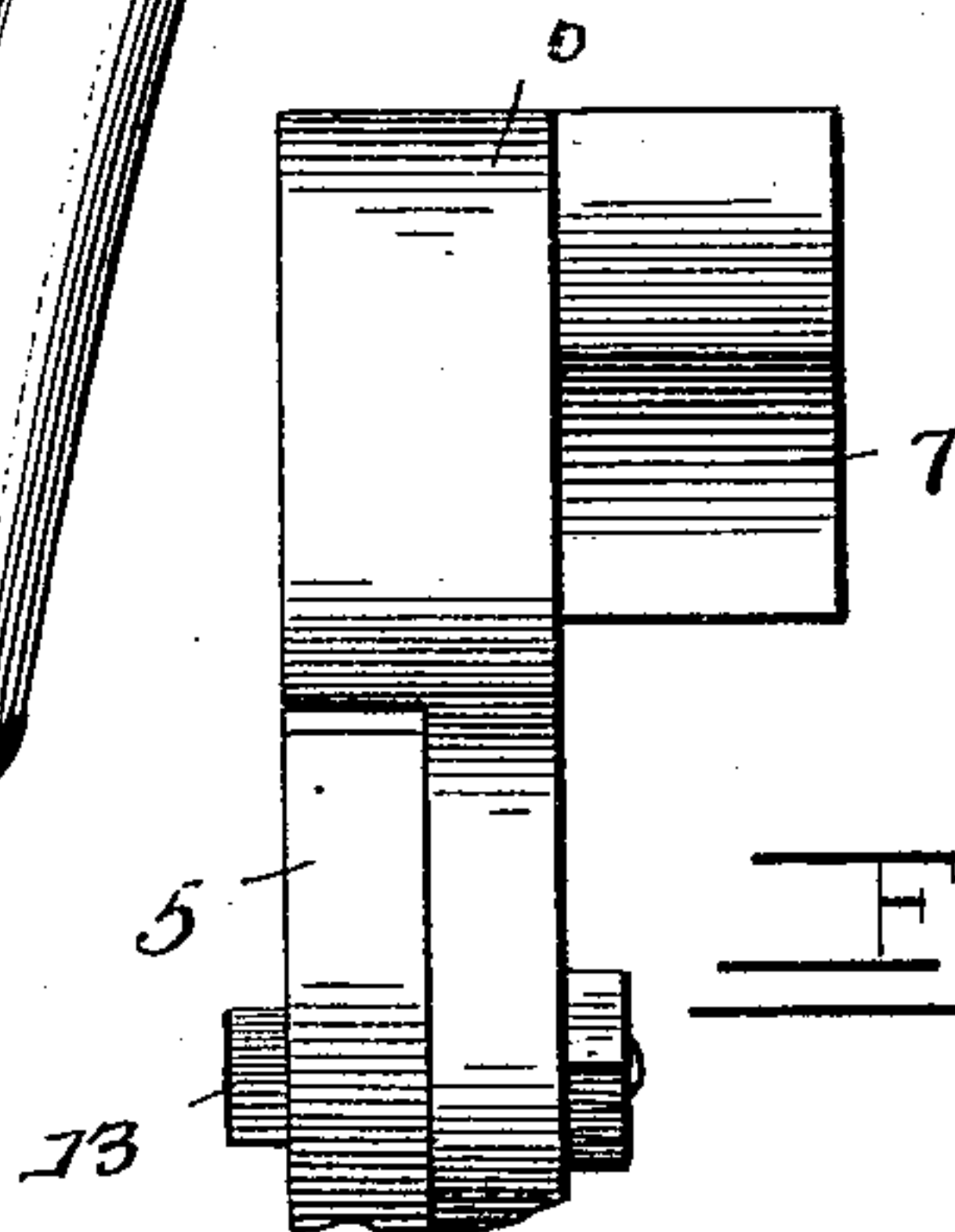


Fig. 4.



Witnesses

F. E. Alden.

Geoff Chandler

A. L. Hamilton, Inventor.

By His Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ARTHUR L. HAMILTON, OF KEARNEY, NEBRASKA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 637,251, dated November 21, 1899.

Application filed June 29, 1899. Serial No. 722,311. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR L. HAMILTON, a citizen of the United States, residing at Kearney, in the county of Buffalo and State of Nebraska, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to wrenches in general, and more particularly to that class comprising mutually-pivoted members in the form of tongs; and it has for its object to provide a device of this nature in which the pivot of the tongs or wrench may be shifted laterally to vary the limits of movement of the jaws of the wrench to grasp larger or smaller bodies.

In the drawings forming a portion of this specification, and in which like numerals of reference designate corresponding parts in the several views, Figure 1 is an elevation of the rear face of the wrench with the head of the pivot removed to show its form. Fig. 2 is a view similar to Fig. 1, showing the position of the pivot when the jaws of the wrench are brought together. Fig. 3 is a detail perspective of the pivot. Fig. 4 is a partial detail side elevation showing the upper portions of the jaws with the pivot complete.

Referring now to the drawings, in forming a wrench in accordance with this invention two members 5 and 6 are provided, each comprising a jaw and a handle. The jaws are provided on similar faces with outwardly-extending lugs 7 and 8, each comprising two sides, the sides of each lug lying at right angles to each other, and the angles of the lugs being adapted to outline opposite angles of a rectangle to receive the opposite corners of a nut or the head of a bolt or other body to be operated upon. The member 6 has formed therein, adjacent one side thereof, an angular opening 9, which is preferably square, and is at that edge of the member in the direction of inward movement of the lug 7.

Transversely of the member 5 is formed a slot 10, the lower wall of which is flat and the end walls of which converge upwardly. The upper wall of the slot 10 is provided with a plurality of angular recesses 11, separated by inwardly-directed similar projections, as shown.

A pivot-pin 12 has its extremity formed to

fit the perforation 9 to be held against rotation with respect to the element 7, said pin in its adjustment to the perforation 9 being passed through the slot 10 and having a head 13, adapted to lie against the outer face of the element 5 and transversely of the slot 10. That portion of the pin or pivot passing through the slot 10 or lying therein is diamond-shaped or has the form of a rhombus in cross-section, the diagonals of which coincide with the diameters of the rectangular end portion of the pivot-pin. The dimensions of this diamond-shaped portion of the pivot-pin 15 are such that when one face thereof lies against the bottom wall of the slot 10 the upper face thereof or opposite face will be movable longitudinally of the slot and free of the inwardly-projecting portions of the upper wall. These inwardly-projecting portions have their ends rounded slightly, as shown, and thus when the pivot-pin is moved longitudinally of the slot until its minor upper angle has passed beyond the apex of the inwardly-projecting portion of the upper wall of the slot the handles of the members 5 and 6 may be moved to rock the pivot-pin, with its diamond-shaped portion, vertical or transversely of the slot 10. When in this position, it will be held against further longitudinal movement of the slot and will act as a pivot for the members as the jaws are brought together. Furthermore, it will be seen that as the jaws are brought together and the pivot-pin is brought to the position shown in Fig. 2 of the drawings it will have a rocking engagement with the adjacent surface of the upper wall of the slot and a consequent minimum of friction. Moreover, by the employment of the diamond-shaped cross-section of the pivot-pin and the flat faces of the inwardly-projecting portions of the upper wall of the slot there is an amount of play which forms substantially a continuous operative relation of the jaws of the wrench from one end to the other of the path of adjustment of the pivot-pin with respect to the member 5—that is, the pivot-pin instead of having only two operative positions, one at each end of the slot, said pivot-pins can be operated continuously of the slot or substantially continuously thereof.

It will be of course understood that the pivot-pin may be diamond-shaped throughout

its length, in which event the perforation 9 would be similarly shaped to receive it. This pivot-pin is held in position in any desired manner, such as by means of a nut upon its 5 end opposite the head.

It will be of course understood that in practice the jaws may have any desired construction, the proportions may be varied, and any desired material may be employed without 10 departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. A wrench comprising two members having jaws adapted to receive a body to be operated upon, a slot in one of the jaws having 15 a continuous succession of inward projections of one wall thereof resulting in a continuous succession of recesses and an opposite wall free of projections and recesses, and a pivot-pin 20 passed through said slot and fixed to the second member, said pin having a cross-sectionally-angular portion adapted to successively enter said recesses and to be rocked

from one to another by manipulation of the members. 25

2. A wrench comprising two members having gripping-jaws, a slot in one of the members having a continuous succession of recesses in one wall thereof separated by angular projections, the opposite wall of said recess being flat and free of projections and 30 recesses, and a pin passed through said recess and seated in the second member, said pin having a cross-sectionally-angular portion adapted to lie transversely of the slot and engage the walls of a recess and to be rocked 35 and moved to project into the succeeding recess and to be further rocked to lie in the succeeding recess and transversely of the slot.

In testimony that I claim the foregoing as 40 my own I have hereto affixed my signature in the presence of two witnesses.

ARTHUR L. HAMILTON.

Witnesses:

H. V. SALTZGABER,

DAVID HAMILTON.