

(No Model.)

E. C. ROBERTS.
WRENCH.

No. 583,870.

Patented June 1, 1897.

Fig. 2

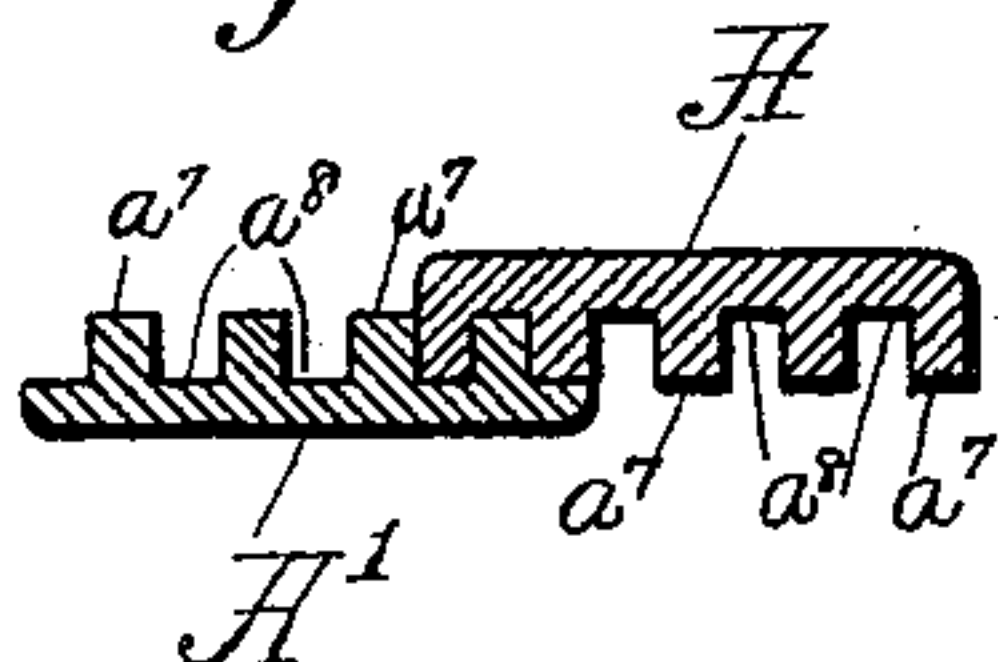


Fig. 1

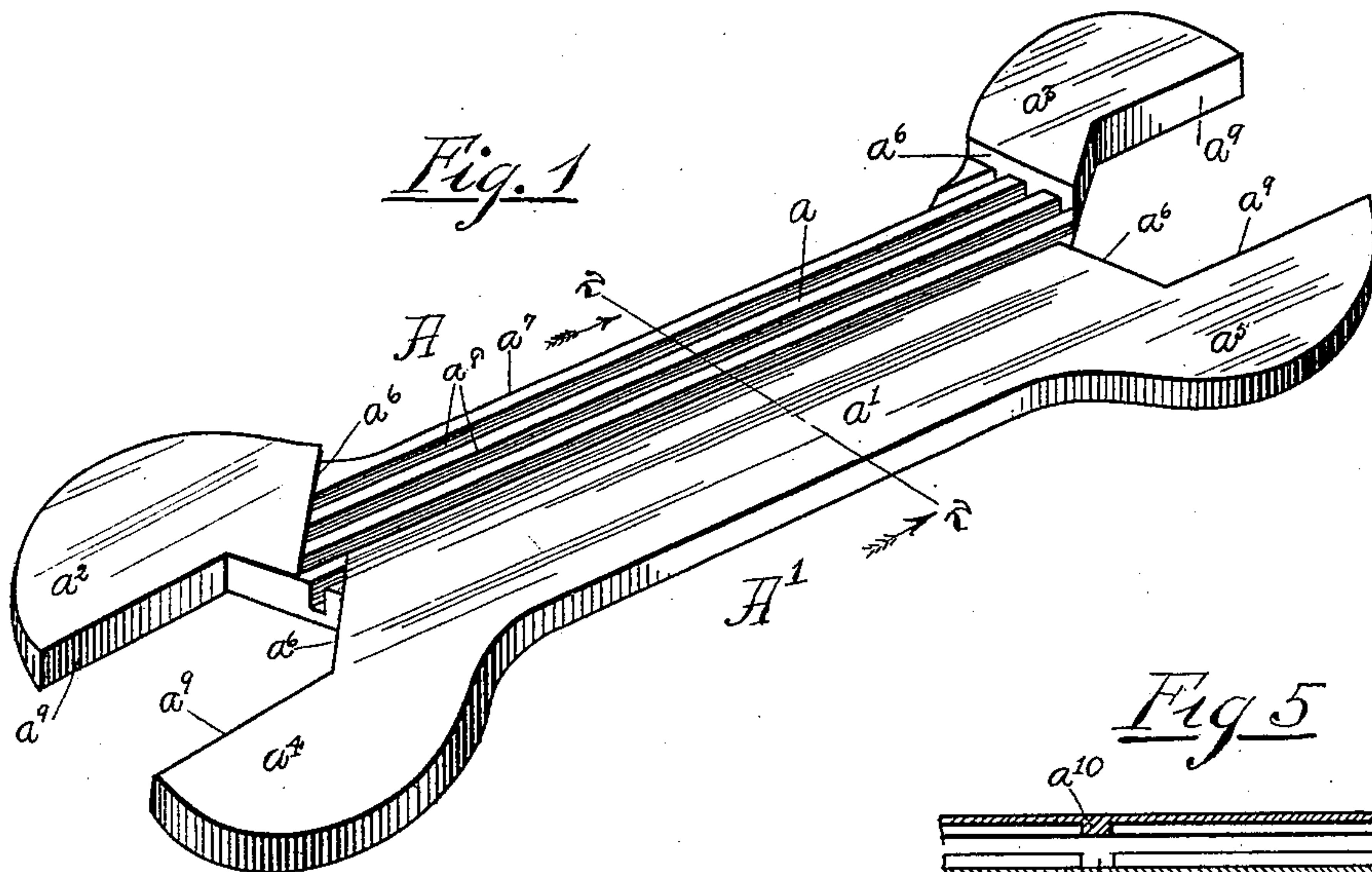


Fig. 5

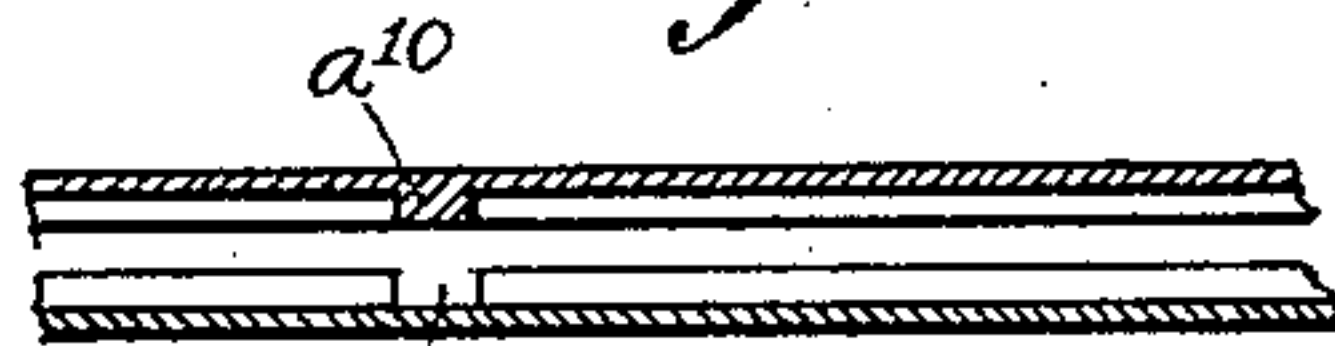


Fig. 6

Fig. 3

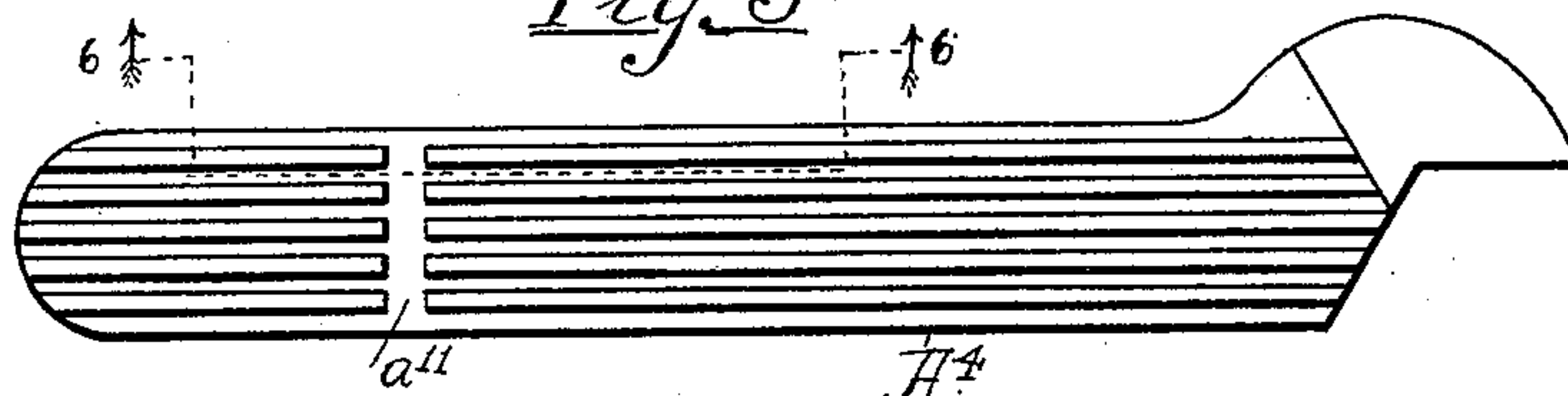
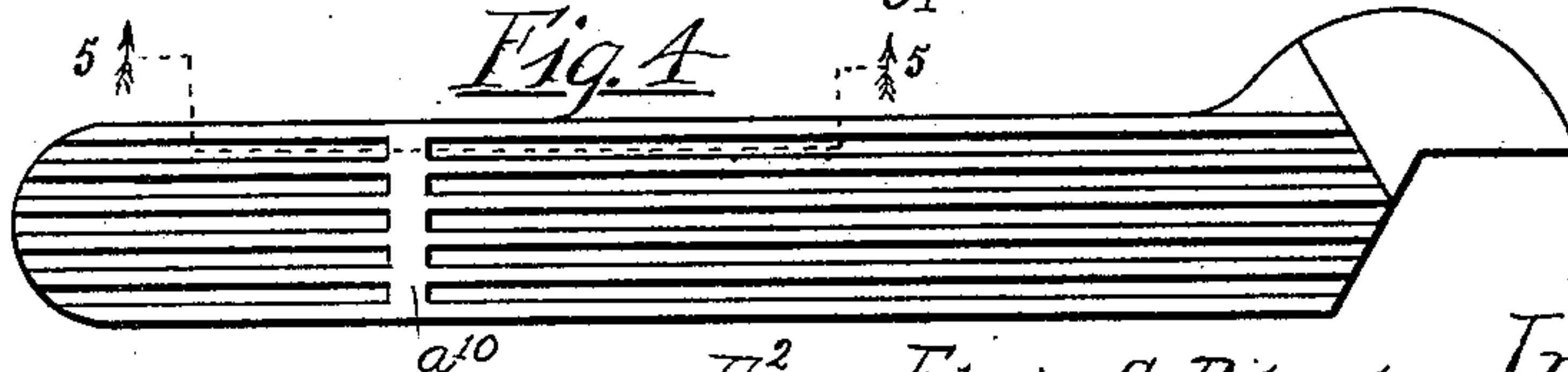


Fig. 4



Witnesses

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H²

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UNITED STATES PATENT OFFICE.

EDWIN C. ROBERTS, OF WEST PULLMAN, ILLINOIS, ASSIGNOR OF ONE-HALF TO FREDERICK J. MEYERS, OF CHICAGO, ILLINOIS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 583,870, dated June 1, 1897.

Application filed June 26, 1896. Serial No. 597,077. (No model.)

To all whom it may concern:

Be it known that I, EDWIN C. ROBERTS, of West Pullman, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches, and refers more particularly to an improved wrench of the spanner type, which is formed of two parts or members adapted to fit and interlock together in various positions of adjustment, so as to adapt the wrench to various sizes of nuts.

The object of the invention is to provide an extremely simple, compact, and convenient device of the character referred to which is so constructed as to dispense with screw or analogous adjusting and securing, and which may be arranged to fit any sized nut within the range of its adjustability by simply placing the members together in the required position of adjustment.

The invention consists in providing two wrench members having coöperating jaws and provided upon their meeting sides with interfitting projections and corresponding recesses, which interfitting parts serve to hold the members rigidly together with the opposing jaws in adjusted relation to each other.

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

Figure 1 is a view in perspective of a double-ended wrench embodying my invention. Fig. 2 is a transverse section taken on line 2 2 of Fig. 1. Figs. 3 and 4 are inside face views of the two members of a slightly-modified form of the invention provided with jaws at one end only. Fig. 5 is a fragmentary longitudinal sectional view taken on the line 5 5 of Fig. 4. Fig. 6 is a similar view taken on line 6 6 of Fig. 3.

Referring first to Figs. 1 and 2, the embodiment of the invention shown in said figures consists of two wrench members A A', each having a central straight body portion $a a'$, respectively forming the shank or handle portion of the wrench and provided at each end with jaws $a^2 a^3$ and $a^4 a^5$, respectively. The two members A A' are made relatively flat and broad in the direction of the plane of

operative movement of the wrench, so as to afford the required strength with the minimum weight of metal, and are adapted to fit together or to be superposed one upon the other with their flat sides together when the parts are assembled in operative position.

In the present case, in which the particular wrench illustrated is a small pocket-wrench, said jaw portions $a^2 a^3$ and $a^4 a^5$ are made thicker than the shank or handle portions of the wrench members, one side face of each jaw being arranged approximately flush with the outer surface of the main body or handle part, while the opposite surface of the jaw projects above the handle portion a distance equal, approximately, to the thickness of the handle part of the opposing member, as shown clearly in the drawings. At the juncture of the thickened jaw portion with the handle portions are formed shoulders a^6 , said shoulders being arranged obliquely with relation to the longitudinal axes of the wrench members, and the shoulders of the opposite members being adapted to meet and fit against each other when the wrench is adjusted to its smallest size or with one handle member in exact register with the other, so that the wrench as a whole will then present a substantially smooth and finished exterior.

The meeting faces of the handle portions of the two wrench members are each formed into or provided with a series of alternate rectangular ribs and grooves, as $a^7 a^8$, preferably of equal width and spaced at uniform distances apart, so that the ribs of one member, as A, will fit accurately within the grooves of the other member A', and vice versa. These grooves and corresponding ribs are made relatively deep, so as to afford a reliable means of securing the members rigidly against lateral movement with relation to each other in the plane of the effective or wrenching strain. Inasmuch as the alternate ribs and grooves of each member are of uniform size and conformation, it will be obvious that the members may be so placed together as to overlap each other varying distances, as indicated clearly in Fig. 2, and that when so placed but a single groove and corresponding rib are interlocked, as will be the case

when the wrench is adjusted to its widest capacity. The two members will nevertheless be reliably and rigidly secured together. Inasmuch as the side surfaces of the grooves and ribs are parallel with each other and at right angles to the plane of wrenching strain, there will obviously be no tendency for the parts to separate under such strain, while at the same time the members may be freely separated for the purpose of readjustment by simply lifting one member from the other.

Inasmuch as the smallest change of adjustment of the members with relation to each other will be a distance equal to the distance from the center of one rib or groove to the center of the next rib or groove, the parallel or effective faces $a^9 a^9$ of the jaws of one end of the wrench will be arranged to stand in different lateral relation to the centers of said ribs or grooves from those of the opposite end of the wrench, so as to divide the adjustment between the ends of the wrench. By reason of this construction if one end of the wrench cannot be adjusted closely enough to fit any desired nut the opposite end can.

In Figs. 3, 4, and 5 I have illustrated a slight modification in which the wrench is provided at one end only with jaws, but in which the general features of construction are the same. In this instance, however, a cross rib or key a^{10} is let into the meeting face of one handle member A^2 , and a corresponding groove or recess a^{11} is formed in the opposite member A^4 , as shown clearly in the sectional views, Figs. 5 and 6. The object of this construction is to absolutely prevent endwise movement of one member with relation to the other. This feature will not usually be found necessary, but may be employed when desirable.

While I have herein shown what I deem preferred embodiments of my invention, yet it will be obvious that various modifications may be made without departing from the invention. For instance, while in the present instance the interlocking parts are shown as having the form of continuous ribs and grooves, yet it will be obvious that they might be intermitted and extend throughout only a portion of the length of the handle, or might even take the form of studs and corresponding recesses. The broader claims are therefore to be construed as embracing these and analogous constructions.

I claim as my invention—

1. A wrench comprising two members separable on a plane of cleavage substantially coinciding with the line of strain or plane of effective movement of the wrench, a jaw secured to one of said members and a converse

jaw secured to the other, and a plurality of interfitting projections and corresponding recesses, trending lengthwise of said members upon their meeting faces and in parallel relation to each other, whereby the members may be adjusted upon each other to vary the distance between their jaws and be locked against independent lateral movement in the plane of wrenching strain.

2. A wrench comprising two members constructed to separate on a plane parallel with the plane of operative movement of the wrench, and a plurality of longitudinally-alined and laterally parallel interfitting projections and depressions upon the meeting faces of said members, said interfitting parts having their lateral sides arranged generally at right angles to the said meeting faces, whereby tendency to separate under operating strains is avoided.

3. A wrench consisting of a handle divided lengthwise upon a plane substantially coinciding with the line of strain, the meeting faces of the two sections being formed with a plurality of longitudinally-trending parallel interlocking tongues and grooves and a jaw upon each section of the handle.

4. A wrench consisting of a handle divided lengthwise upon a plane substantially coinciding with the line of strain, the meeting faces of the two sections being formed with a plurality of longitudinally-trending interlocking tongues and grooves rectangular in cross-section, and a jaw upon each section of the handle.

5. A wrench comprising two members separable in a plane of cleavage substantially coinciding with the line of strain or plane of effective movement of the wrench, interfitting projections and recesses arranged lengthwise of said members in laterally parallel relation to each other and opposing cooperating jaws upon each end of said members, the pair of jaws at one end of the wrench being arranged in different relation to the interfitting parts from those of the opposite end, whereby the wrench may be adjusted to fit nuts varying in size an amount equal to only half the distance between centers of laterally adjacent pairs of interfitting parts, substantially as set forth.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 20th day of June, 1896.

EDWIN C. ROBERTS.

Witnesses:

FRED J. MEYERS,
ALBERT H. GRAVES.