

J. A. TRAMBLEY.
WRENCH.
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974,726.

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Fig. 1

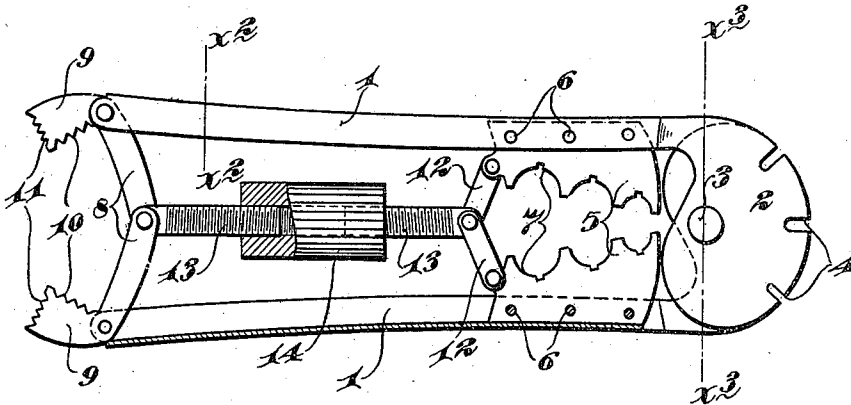
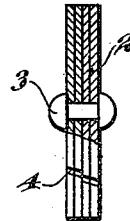


Fig. 2



Fig. 3



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UNITED STATES PATENT OFFICE.

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WRENCH.

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To all whom it may concern:

Be it known that I, JOSEPH A. TRAMBLEY, a citizen of the United States, residing at Maxbass, in the county of Bottineau and State of North Dakota, have invented a certain new and useful Improved Wrench; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved combination wrench and, to this end, it consists of the novel construction and arrangement of parts hereinafter described and defined in the claims.

The improved wrench is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a plan view of the improved wrench, with some parts shown in section; Fig. 2 is a detail view in section, taken on the line $x^2 x^2$ of Fig. 1, on an enlarged scale; and Fig. 3 is a detail view partly in section, taken on the line $x^3 x^3$ of Fig. 1.

The numeral 1 indicates a pair of pivotally connected channel-shaped operating levers having widened flanges at one end to form disk-like hubs 2. The flanges of these hubs 2 are pressed close together and pivotally connected by means of a rivet 3, as best shown in Fig. 3. At their outer edge portions, the hubs 2 are formed with a series of graduated cooperating wire cutting notches 4.

Between the internal flanges of the operating levers 1, and just forward of the hubs 2, are rigidly secured a pair of blocks 5, by means of rivets 6. These blocks 5 have formed on their inner faces a series of cooperating external thread cutting dies 7.

The free outer ends of the levers 1 are connected by means of a relatively long toggle lever 8 and the outer ends of the members thereof terminate in laterally projecting cooperating clamping jaws 9. Each clamping jaw 9 is provided with two sets of teeth 10 and 11, which sets of teeth extend at right angles to each other, and the teeth 10 extend at right angles to the adjacent member of the toggle lever 8 and the teeth 11 extend approximately parallel therewith.

The outer ends of the die blocks 5 are connected by means of a relatively short toggle lever 12. Axially aligned reversely threaded bolts 13 are pivotally connected at their outer ends, one to each connection between the members of the toggle levers 8 and 12. The inner ends of the bolts 13 have screw-threaded engagement with a comparatively long nut 14 which acts like a turnbuckle. By turning the nut 14, the toggle levers 8 and 12 may be buckled more or less and thereby pivotally move the levers 1 with respect to each other. When the wrench is adjusted to the position indicated in Fig. 1, the teeth 10 of the jaws 9 are in a position to be clamped onto a comparatively large object, and by rotating the nut 14 still farther to draw the two bolts 13 closer together, the jaws 9 will be turned into a position so that the teeth 11 may be used for clamping comparatively small objects. It is also evident that, by rotating the nut 14, the cooperating die blocks 5 can be adjusted at will and the hubs 2 moved in respect to each other and used as a wire cutter.

The tool described will be found serviceable for a great many different purposes.

What I claim is:—

1. In a wrench of the kind described, the combination with a pair of pivotally connected operating levers, of a toggle lever connecting the said pairs of levers, cooperating jaws formed on the members of said toggle lever, and means for moving said toggle lever for opening and closing said jaws, substantially as described.

2. In a wrench of the kind described, the combination with a pair of pivotally connected operating levers, of a pair of toggle levers connecting said operating levers, and the members of one of said toggle levers having a pair of cooperating jaws, a pair of axially aligned bolts secured at their outer ends to the pivotal connection between the members of said toggle levers, and a nut having right and left hand threads for threaded engagement with the inner ends of said bolts, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH A. TRAMBLEY.

Witnesses:

G. H. KALBFLEISCH,
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