No. 828,859. PATENTED AUG. 14, 1906.

J. MERCKENS.

COMBINED WRENCH AND THREAD RETRACING TOOL.

APPLICATION FILED APR. 17, 1905. RENEWED JUNE 29, 1906.

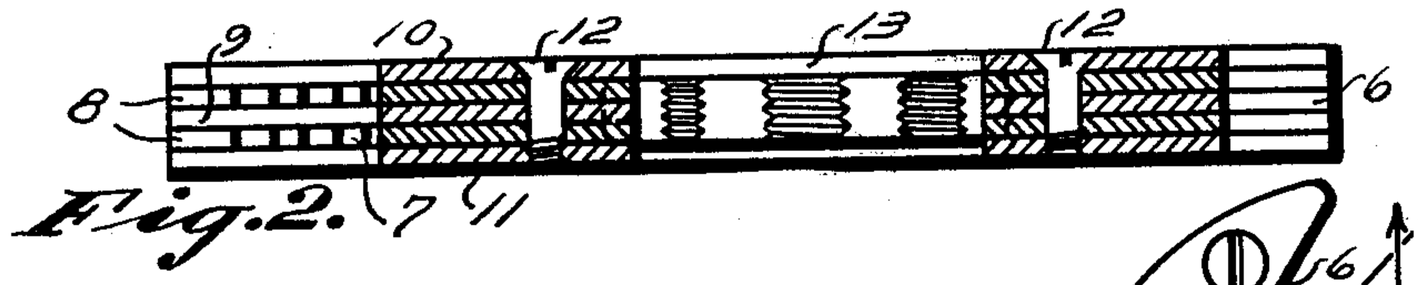

Fig. 2.

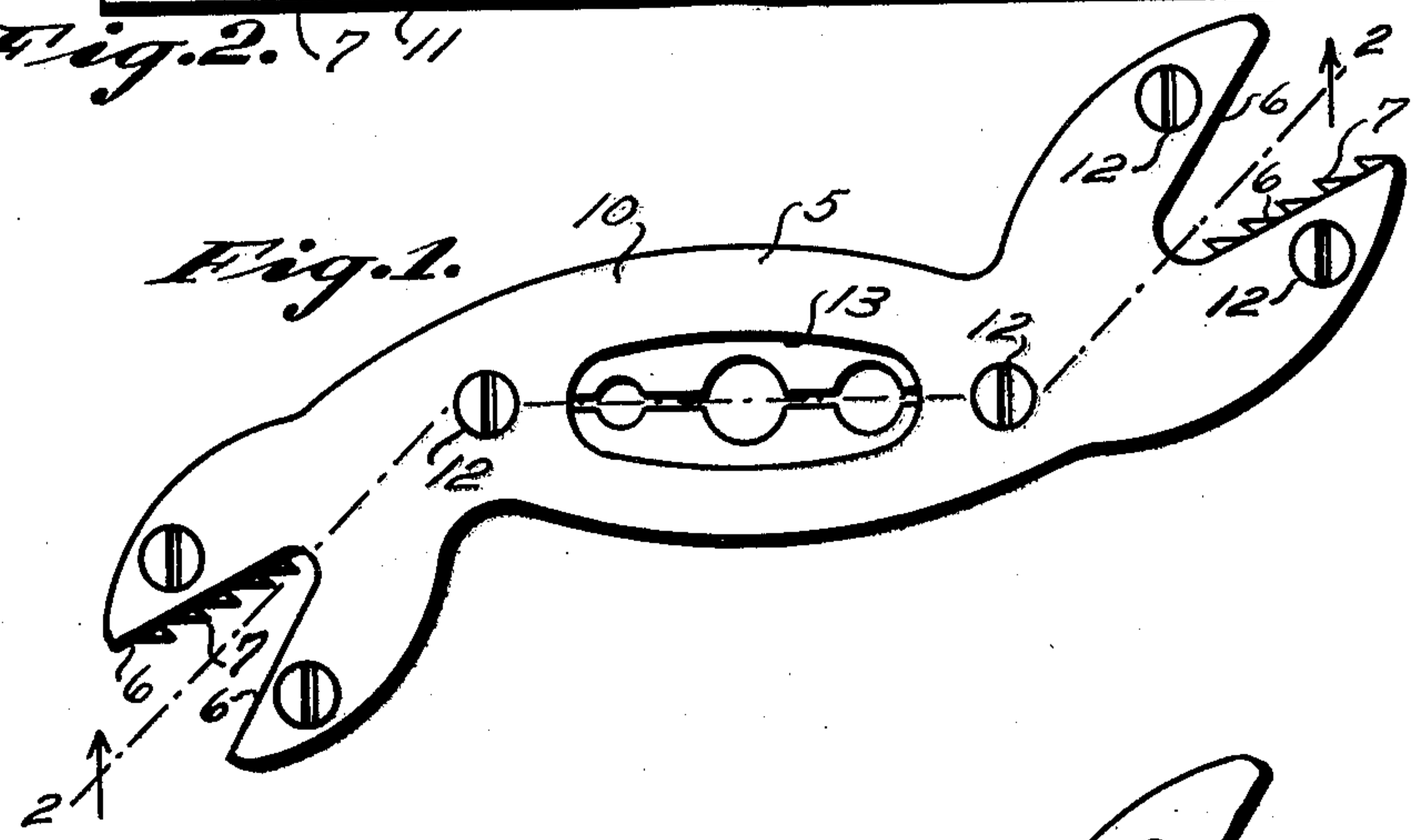

Fig. 1.

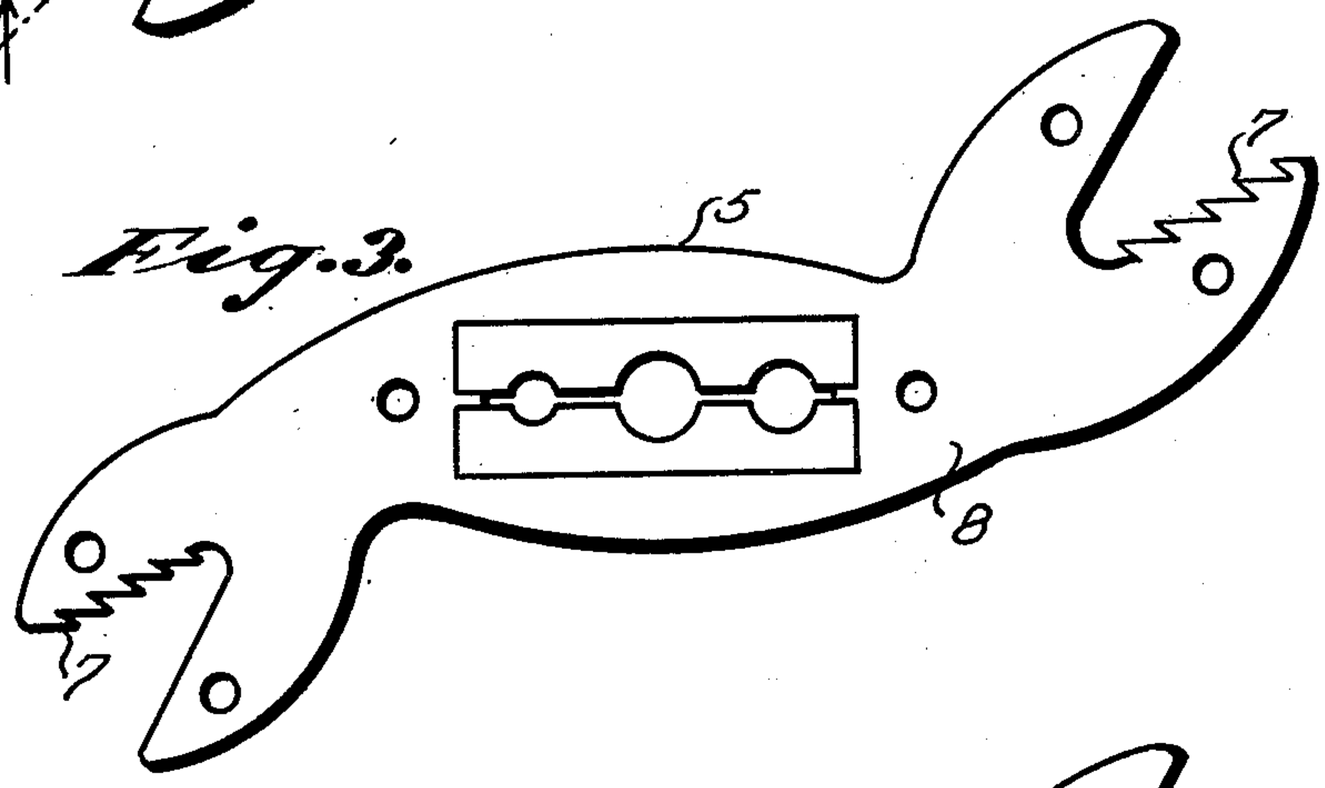

Fig. 3.

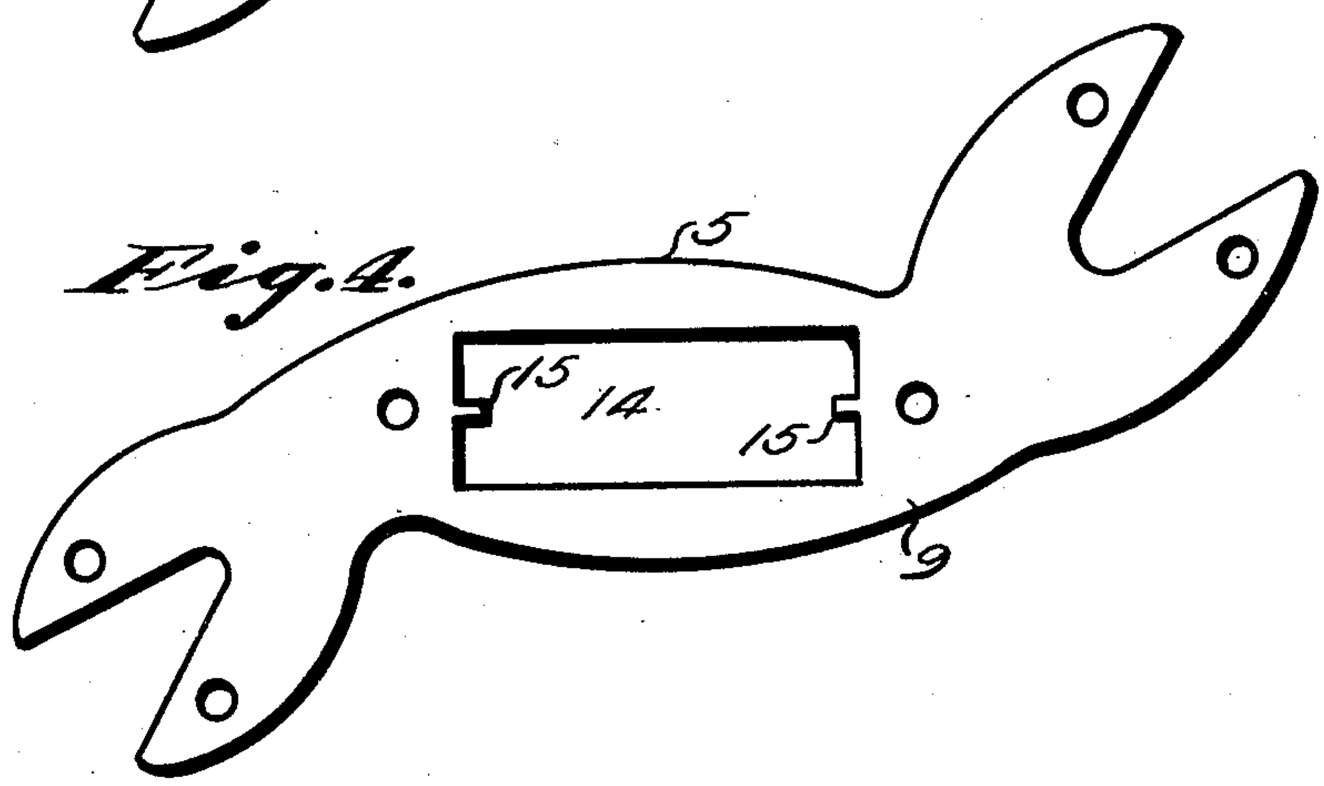

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN MERCKENS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE EDMUNDS-METZEL MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS.

COMBINED WRENCH AND THREAD-RETRACING TOOL.

No. 828,859. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed April 17 1905. Renewed June 29, 1906. Serial No. 324,053.

To all whom it may concern:

Be it known that I, JOHN MERCKENS, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Combined Wrench and Thread-Retracing Tool, of which the following is a specification.

My invention relates to improvements in combined wrenches and thread-cutting tools.

The main objects of this invention are to provide in a device of this class an improved form of thread-retracing die and improved means for securing the die within the handle of the wrench and adapted to permit the die to be readily replaced by others of different sizes or to be readily repaired. I accomplish these objects by the devices shown in the accompanying drawings, in which—

Figure 1 is a plan view of a wrench and thread-tracing device constructed according to my invention. Fig. 2 is a longitudinal section of the same on the line 2 2 of Fig. 1 and showing the laminated structure of the handle. Fig. 3 is a plan view of one of the inner toothed plates of the handle, showing the thread-cutting dies in position therein. Fig. 4 is a plan of the middle reinforcing-plate.

The device shown in the drawings consists of a handle 5, having a plurality of thread cutting or tracing sockets of different sizes in its middle part and having at each end a pair of wrench-jaws 6, which are disposed at an angle to each other and provided with gripping-teeth 7 on one side, so as to be suitable for gripping either pipes or nuts.

The handle and jaws are of laminated structure, and preferably consist of alternate plates of tool-steel and of annealed steel or other tough malleable metal. The tool-steel plates 8 are provided with projecting teeth 7 on one jaw of each wrench-head and are tempered to give the teeth the desired degree of hardness. The tool-steel plates 8 are separated by a plate 9 of annealed steel and bound together by the exterior plates 10 and 11, which are also of annealed steel. All of these plates are of substantially the same outer contour and are secured together by means of a plurality of screws 12, which have threaded engagement with the plate 11 and are provided with heads countersunk into the plate 10. The structure of the wrench-heads is not specifically claimed herein, but is more fully described and claimed in my co-pending application filed December 5, 1904, Serial No. 235,497.

The outer plates 10 and 11 are each provided at their middle part with an elliptical aperture 13, while the inner plates 8 and 9 are provided with rectangular or prismatic apertures 14, which extend transversely through the plates and register with each other and with the apertures 13 in the outer plates. The inner plates are each provided with a pair of tongues 15, which extend into the apertures 14. The apertures 14 are of exactly the same shape and form within the body of the handle 5 a cavity for retaining a pair of die-plates 16, which are separated by the tongues 15 to form a slot 17 for cuttings. The die-plates 16 are provided with thread-cutting sockets 18, as shown. The die-plates 16 are equal in thickness to the combined thickness of the inner plates 8 and 9 and are retained within the handle by means of the cover-plates 10 and 11, which overlap the die-plates on all edges, since the apertures 13 are located centrally of the apertures 14 and are of smaller dimensions in each direction.

It will be seen that the plates which form the handle, jaws, and teeth are of such form that they may be readily stamped from sheet metal. The toothed plates may then be tempered independently of the softer reinforcing-plates. The soft plates serve to support the hardened and more brittle plates and prevent the latter from being broken by falls or blows. In case the teeth become broken the corresponding plates may be readily replaced and the full utility of the device preserved. Similarly the thread-cutting dies may be replaced by others either for the purpose of repair or for the purpose of replacing the dies with others having thread-cutting sockets of other sizes. The rectangular or prismatic shape of the apertures 14 prevents the tendency of the die-sockets to rotate within the handle, and accordingly relieves the tongues 15 from undue strain, to which they might be subjected if the die-plates were round.

The operation of devices of this class is well known, and any features of operation which are peculiar to the device shown will be readily understood from the drawings and the foregoing description.

It will be seen that some of the details of

the construction shown may be altered without departing from the spirit of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A tool of the class described, comprising a handle formed of a plurality of superimposed plates secured together, a thread-tracing die, the plate or plates forming the interior of said handle having therein an aperture fitting said die, and the outer plates overlapping said die to retain the same within the handle and each having therein a smaller aperture registering with said die, substantially as described.

2. A tool of the class described, comprising a handle formed of a plurality of superimposed plates secured together, a thread-tracing die, the plate or plates forming the interior of said handle having therein an aperture fitting said die, and the outer plates overlapping said die to retain the same within the handle, each having therein a smaller aperture registering with said die, one of said outer plates being readily removable to permit the removal of said die, and means for detachably securing said removable outer plate to the handle, substantially as described.

3. A tool of the class described, comprising a plurality of superimposed plates, the inner plate or plates having an aperture extending transversely through the same and having tongues projecting into said aperture from opposite sides, a thread-tracing die fitting within said aperture and comprising a plurality of sections spaced apart by said tongues, and the outer plates being formed to overlap said die-sections and retain the same within said aperture, substantially as described.

Signed at Chicago this 14th day of April, 1905.

J. MERCKENS.

Witnesses:
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