

F. KNIGHT.
 AUTOMOBILE TOOL.
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975,694.

Patented Nov. 15, 1910.

Fig. 1.

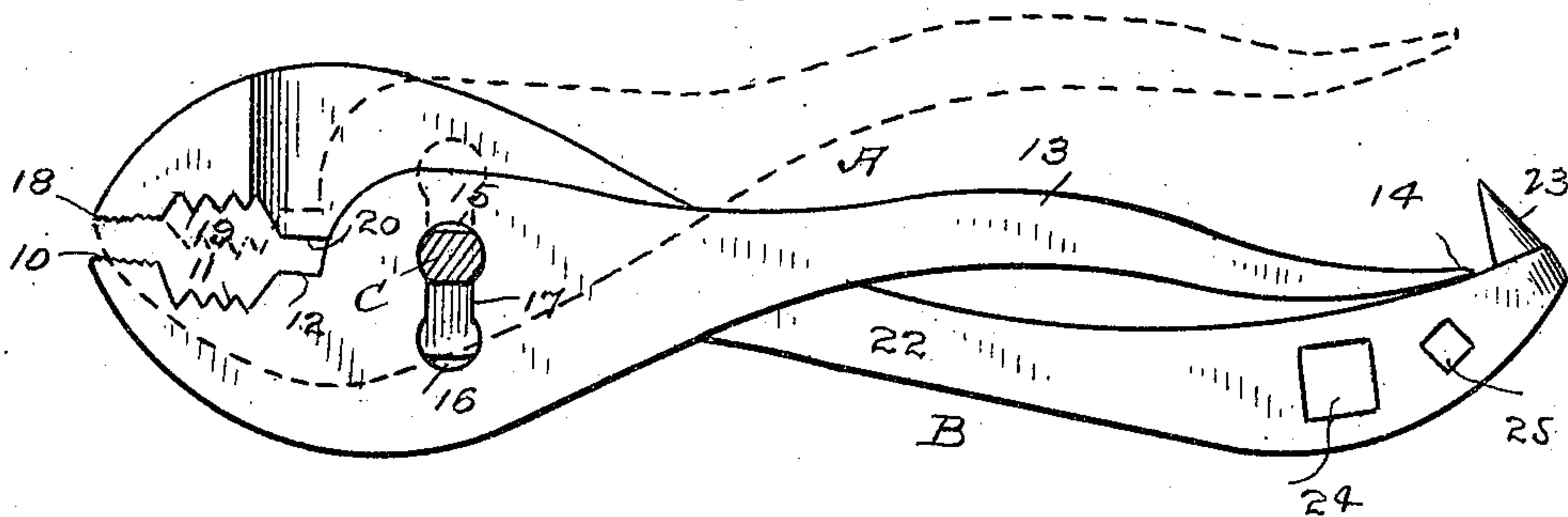


Fig. 2.

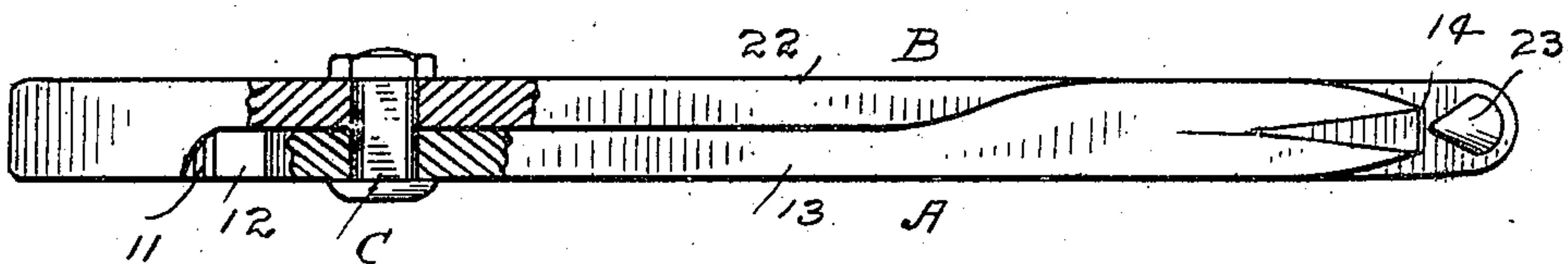


Fig. 3.

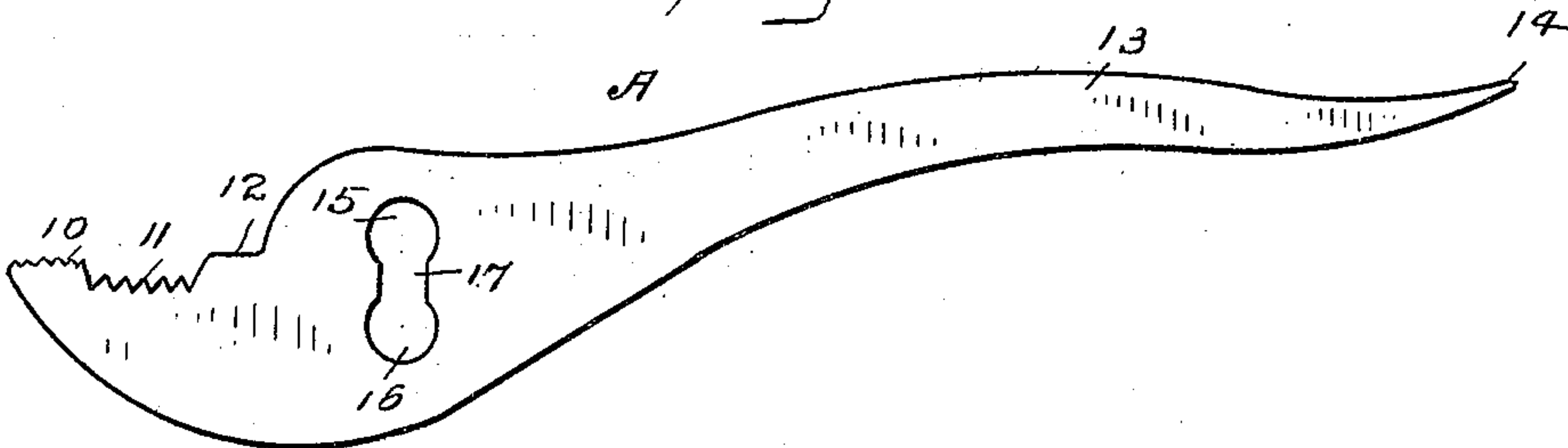


Fig. 4.



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AUTOMOBILE-TOOL.

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To all whom it may concern:

Be it known that I, FRANK KNIGHT, a citizen of the United States, residing at New Haven, county of New Haven, State of Connecticut, have invented an Improvement in Automobile-Tools, of which the following is a specification.

This invention has for its object to provide a novel tool adapted for general use and especially adapted for use as an automobile tool for the reason that it combines in a single tool the separate tools that are essential in all automobile kits, thus dispensing with the trouble and avoiding the expense of carrying a number of separate tools to perform the common and essential operations in making automobile repairs.

With these and other objects in view I have devised the novel combination tool which I will now describe, referring to the accompanying drawing forming a part of this specification and using reference characters to indicate the several parts.

Figure 1 is an elevation of my novel tool with the head of the pivot bolt removed; Fig. 2 an edge view partly broken away; and Figs. 3 and 4 are elevations of the members detached.

My novel tool comprises two cooperating members which are indicated respectively by A and B and a pivot indicated by C. The independent tools embodied in my novel combination tool comprise four pliers, a wire cutter, a screw driver, a cotter pin puller and two wrench sockets adapted to special sizes of nuts, bolts and special parts that require to be turned and for which special keys or wrenches are ordinarily provided.

Member A comprises two plier jaws indicated respectively by 10 and 11, a wire cutting jaw indicated by 12, a handle portion indicated by 13, a screw driver indicated by 14 and two pivot holes indicated by 15 and 16 respectively which are connected by a neck 17. The screw driver is formed on a laterally widened portion of member A.

Member B comprises a plier jaw 18 corresponding with jaw 10, a jaw 19 corresponding with jaw 11, a wire cutting jaw 20 corresponding with jaw 12, a hole 21 having two flattened sides corresponding with neck 17, a handle portion 22, a cotter pin puller 23 which is a round tapering lug lying at approximately a right angle to the handle end of the member and two wrench

sockets indicated respectively by 24 and 25 which are formed by angular openings in the handle portion of the member adapted to engage different sized nuts, bolts and other parts of an automobile that require to be turned.

The handle portions of the two members are oppositely bowed and cooperate with the enlarged plier jaws to form a pulling grip, whereby the cotter pin remover may be operated without separating the handle portions.

The pivot has two flattened sides and is fixed rigidly in hole 21 in member B. When the flattened sides are in alinement with the neck, the pivot may be passed from pivot hole 15 in member A to pivot hole 16, and vice versa. This lateral movement of member B relatively to member A can only take place when the plier jaws are open and the handle portions of the members at right angles to each other. I thus secure four pairs of pliers, one pair through the cooperation of jaws 10 and 18 when the jaws are at their near adjustment, a pair for heavier work through the cooperation of jaws 11 and 19 when the jaws are at their near adjustment, a still larger pair through the cooperation of jaws 10 and 18 when the jaws are at their far adjustment and a still larger pair through the cooperation of jaws 11 and 19 when the jaws are at their far adjustment, it being of course understood that by the term "near adjustment" I mean when the pivot is in engagement with pivot hole 16 in member A, and by the term "far adjustment" I mean when the pivot is in engagement with pivot hole 15 in member A, as in Fig. 1.

It should be especially noted that the handle portion of member A is made short enough so that the screw driver will clear the cotter pin puller when the jaws are at their far adjustment, as is clearly shown in full lines Fig. 1. In this position the cotter pin holder serves as a guard for the screw driver. When the parts are in the relation indicated in dotted lines, Fig. 1, the screw driver serves as a guard for the cotter pin remover. This construction enables me to bring jaws 10 and 18 close together although not into contact when the jaws are at their far adjustment, thus rendering it unnecessary to shift the jaws from the far to the near adjustment except for very fine work. It should also be noted that the openings in

the handle portion of jaw B which comprise the wrench sockets are placed at an angle to each other and near the end of the handle portion of the member. This is in order to
 5 make the tool convenient and handy in use and also to enable me to make it relatively light, the smallest amount of metal being used that is consistent with the necessary strength required to enable the operator to
 10 start a bolt or nut that has become set. It will be further noted that the offset portion of handle A overlaps a corresponding offset portion of handle B.

Having thus described my invention I
 15 claim:

A tool of the crossed handle plier type comprising handle members one of which is provided with a pivot pin, the other being provided with a slot having spaced apart
 20 recesses to receive said pin, whereby an adjustable pivot connection is formed, one of

said handle members being provided with a tapering lug forming a cotter pin remover, the other handle being provided with a shortened tool extremity, the last mentioned
 25 handle being of such length that it will be protected by the projecting cotter pin remover on the other handle when the pivot pin is in one recess, the jaws of said tool being adapted to contact when the pivot pin
 30 is in the other recess, whereby the handle members are held apart and the said shortened tool extremity of one handle forms a guard for the cotter pin remover on the other handle.
 35

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

FRANK KNIGHT.

Witnesses:

A. M. WOOSTER,
 M. A. WEED.