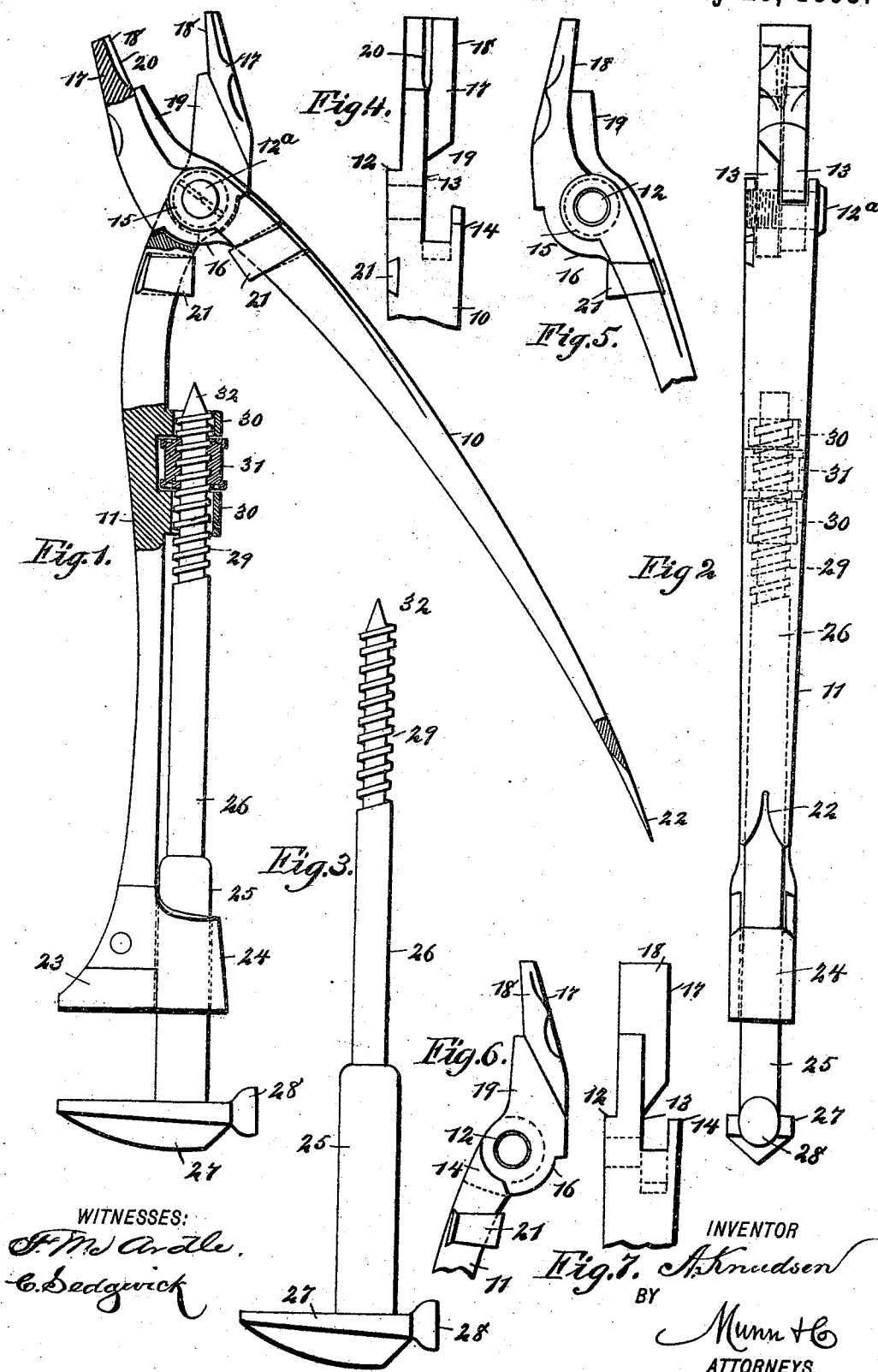


A. KNUDSEN.
COMBINATION TOOL.

Patented July 25, 1893.



UNITED STATES PATENT OFFICE.

ANDREW KNUDSEN, OF TUCSON, ARIZONA TERRITORY.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 502,259, dated July 25, 1893.

Application filed December 8, 1892. Serial No. 454,538. (No model.)

To all whom it may concern:

Be it known that I, ANDREW KNUDSEN, of Tucson, in the county of Pima and Territory of Arizona, have invented a new and Improved Combination-Tool, of which the following is a full, clear, and exact description.

My invention relates to improvements in combination tools; and the object of my invention is to produce a simple, strong, cheap and convenient tool, which has the general appearance of pliers and may be used like ordinary pliers, and which also comprises, in a compact shape, shears, nippers, an adjustable wrench, tack hammer, a screw driver, and a tack puller.

To these ends my invention consists in certain features of construction and combinations of parts, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken side elevation, with parts in section, of the tool embodying my invention, the pliers being shown in an open position as also is the wrench. Fig. 2 is a plan or edge view of the tool. Fig. 3 is a detail side elevation of the detachable hammer which serves also the purpose of a wrench jaw and screw-driver, as hereinafter described. Fig. 4 is a broken inside plan of one of the plier jaws showing particularly the tack or wire groove therein. Fig. 5 is a broken side elevation of one of the plier members and jaws, the view being taken from the outside. Fig. 6 is a similar view taken from the inside; and Fig. 7 is a broken inside plan view of one of the plier jaws, the jaw shown being the one used opposite the jaw shown in Fig. 4.

The tool is made in the general form of pliers and has two somewhat similar members 10 and 11 which are pivoted together near one end, in substantially the usual way, on a pin or rivet 12^a which passes through holes 12 in the plier members. The members are reduced in thickness, as shown at 13, at the points where they are pivoted together, and each member has on one side a lip 14, which extends parallel with the reduced portion 13 of the member, while on the opposite side is a

nearly circular rib 15 which bears on the lip of the opposite member. This construction renders the joint of the pliers very strong, as the two parts are thus practically dovetailed together. The shorter end portions of the members 10 and 11 are substantially similar and are formed into jaws 17 which, near their free ends and inner sides, are made flat, as shown at 18, and which are provided with shear blades 19 extending from the flat portions of the jaws to the pivot pin 12^a, these blades being arranged like ordinary shear blades so that they will fit snugly together and bring their cutting edges into operative position. One of the jaws 17 has in its flat portion, a longitudinal groove 20, adapted to receive the shank of a tack or a piece of wire and enable it to be easily pulled, twisted, or held rigidly.

The members 10 and 11 are provided at points near their pivots and above the same with oppositely arranged blades 21, the edges of which register, and these blades are countersunk in the sides of the members and they serve as nippers and enable a wire to be cut or notched and they may be used in a general way like ordinary nippers. The member 10 terminates at its free end in a slotted tack puller 22, of substantially the usual kind. The free end of the member 11 is widened and flattened, as shown at 23 in Fig. 1, so as to form the rigid jaw of a wrench, and on the back side of the member, near its free end, is a slideway 24 formed in a clip which is fastened to the member, and the outer surface of the slideway is flush with the end surface of the member 11.

The squared shank 25 of the movable wrench jaw is held to move in the slideway, and this shank has its body portion reduced, as shown at 26, so that it serves as the handle of the tack hammer which will be described below. The outer end of the shank 25 terminates in a jaw 27 which is held parallel with the fixed jaw 23 and is adapted to be moved toward and from the same. On the back of the jaw 27, a hammer-head 28 is formed, and when the shank 25, 26 is removed from the slideway 24 and member 11, it will be seen that the detached part forms a convenient hammer of which the reduced part 26 of the shank 25

serves as a handle, and the head 28 on the jaw forms the face or driving portion of the hammer.

The shank 26, near its outer end, is screw threaded, as shown at 29, and is held to move loosely through parallel lugs 30 which are formed on the inner side of the member 11, and between these lugs is a milled and revolvable nut 31 which fits the thread of the shank. By turning this nut the shank may be moved back and forth and the jaw 27 adjusted so as to bring it the desired distance from the jaw 23. It will be seen then that when the shank 26 and jaw 27 are in position, as shown in Fig. 1, the device may be used as an ordinary monkey-wrench. One end of the shank 26 is reduced to an edge 32 which may be inserted in the slot of a screw, and the detached jaw and shank may be used as a screw-driver.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A combination tool comprising two members pivoted together near one end and having the extremities of their shorter ends formed into pliers, the remaining portions of the said shorter ends being formed into over-

lapping shear blades, a fixed jaw formed on the free end of one of the said pivoted members, a slideway secured to the said member near the jaw, a longitudinally movable shank adapted to travel in the slideway and having a jaw at its outer end extending opposite the fixed jaw, and a screw mechanism for adjusting the shank, substantially as described.

2. A combination tool, comprising pliers having a fixed jaw on one member, and an adjustable and detachable shank carried by the jaw member and having a jaw extending opposite the fixed jaw, the movable jaw having a hammer head produced thereon, substantially as described.

3. A combination tool, comprising pliers, a rigid jaw formed on the free end of one of the plier members, a shank held to move parallel with said member, and a movable jaw formed on the outer end of the shank and extending opposite the fixed jaw, substantially as described.

ANDREW KNUDSEN.

Witnesses:

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