A. P. JOHNSON.

COMBINATION TOOL.

APPLICATION FILED JAN. 3, 1911.

991,316. Patented May 2, 1911.

Fig. 1

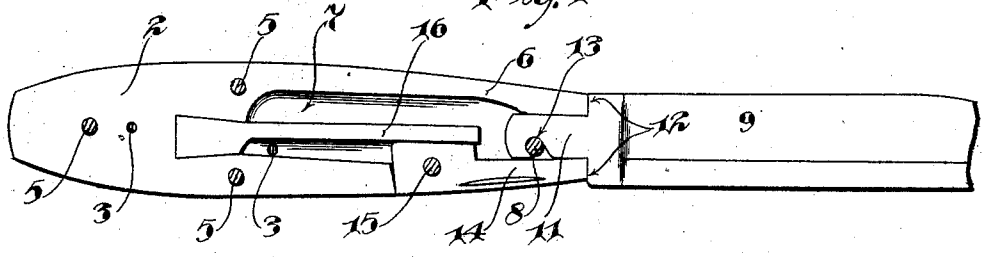


Fig. 5

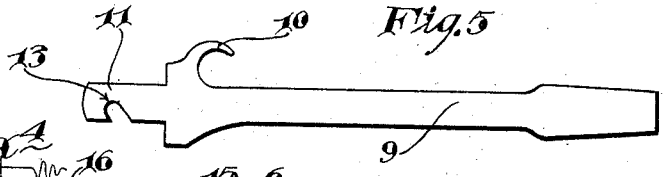


Fig. 2

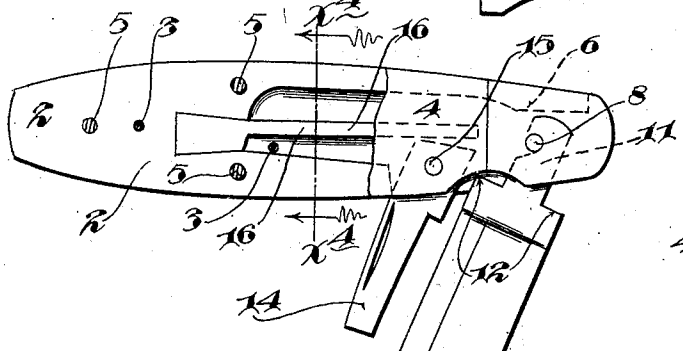


Fig. 4

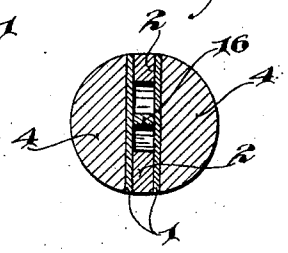


Fig. 6

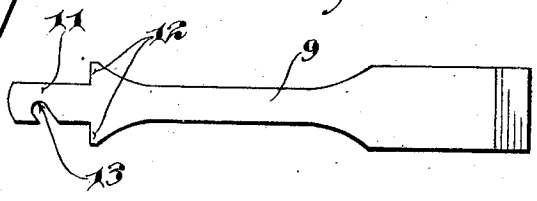
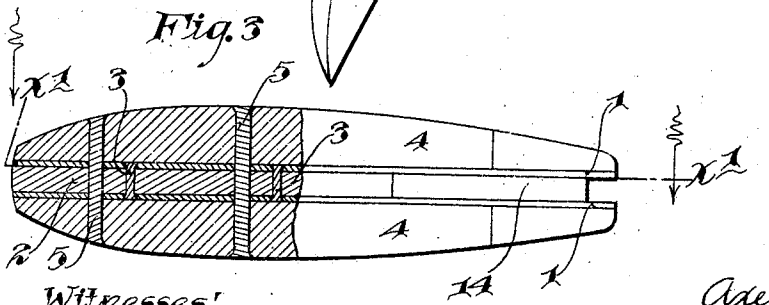


Fig. 3



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UNITED STATES PATENT OFFICE.

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COMBINATION-TOOL.

991,316. Specification of Letters Patent. Patented May 2, 1911.

Application filed January 3, 1911. Serial No. 600,518.

To all whom it may concern:

Be it known that I, AXEL P. JOHNSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Combination-Tools; 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 tool and, to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view partly in longitudinal section, taken on the line x^1 x^1 of Fig. 3, and partly in side elevation, with some parts broken away; Fig. 2 is a view substantially the same as Fig. 1, with some parts shown in different positions; Fig. 3 is an outside elevation of the handle of the improved tool, with some parts broken away and with some parts shown in section; Fig. 4 is a transverse section taken on the line x^4 x^4 of Fig. 2; Fig. 5 is a view in side elevation of one of the removable and interchangeable tool blades in the form of a screw driver and a cork puller; and Fig. 6 is a view corresponding to Fig. 5 but showing a chisel in place of the screw driver.

Referring first to the handle of the improved combination tool, which is bifurcated to receive and hold the detachable and interchangeable tools, the numeral 1 indicates a pair of thin metallic lining plates spaced apart from each other by means of a metallic spring block 2 rigidly secured to the lining plates 1, by means of small rivets 3. On the outer face of each lining plate 1 is a cheek piece 4, preferably made of wood and rigidly secured thereto by means of long rivets 5 spaced through the lining plates 1, spacing block 2 and cheek piece 4. The spacing block 2 is of the same shape as the lining plate 1 and is cut away, at one end, to form a spring arm 6 and an open irregular seat 7 between the lining plates 1. Rigidly secured to the two lining plates 1 and extending between the same is a pivot pin 8 for detachably holding the interchangeable tool blades 9 which may take various forms.

In Figs. 1 and 2, the tool blade 9 is in the form of a knife; in Fig. 5 is shown a screw driver having a cork puller 10 attached thereto; and in Fig. 6 is shown a chisel. Each of the tool blades 9 is provided with a shank 11 and a pair of reversely formed stop shoulders 12, located one on each side of the shank 11 and at a point where the shank 11 joins the tool blade 9. In one edge of each shank 11 is formed a notch 13, for engagement with the pivot pin 8, by lateral and a pivotal movement of the blade 9 when its shank 11 is inserted between the inner edge of the spring arm 6 and the pivot pin 8. The free end portion of the spring arm 6 normally rests on the edge of the shank 11, opposite from the notch 13, and yieldingly presses the shank 11 onto the pivot pin 8 with the pivot pin 8 seated in the notch 13.

To hold the tool blades 9 interlocked with the pivot pin 8, and against pivotal movement, the extreme free end of the spring arm 6 engages one of the shoulders 12, and a lock lever 14 is provided for engagement with the other shoulder 12. The lock lever 14 is mounted for swinging movement into and out of the seat 7 on the opposite side of the pivot pin 8 from the spring arm 6, by means of a pivot pin 15 rigidly secured to the two lining plates 1 and extending therebetween. The extreme free end of the lock lever 14 is yieldingly held in engagement with one of the notches 12, by means of a flat spring 16 mounted in the seat 7 and having dovetailed engagement with the spacing block 2.

The above described device, while comparatively simple, has, in actual practice, been found highly efficient for the purposes had in view.

What I claim is:

1. A combination tool comprising a bifurcated handle, a pivot pin, a detachable tool blade having a pair of stop shoulders and a notched shank for engagement with said pivot pin, a spring arm yieldingly pressing said notched shank onto said pivot pin and engageable with one of said stop shoulders, and a spring pressed lock lever engageable with the other of said stop shoulders.

2. A combination tool comprising a pair of lining strips and handle forming pieces secured thereto, a spacer interposed between

said lining strips and having a spring arm, a pivot pin, a detachable tool blade having a notched shank and a pair of stop shoulders, said spring arm yieldingly pressing said notched shank onto said pivot pin and engageable with one of said stop shoulders, and a spring pressed lock lever pivotally mounted between said lining strips and engageable with the other of said stop shoulders.

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

AXEL P. JOHNSON.

Witnesses:
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