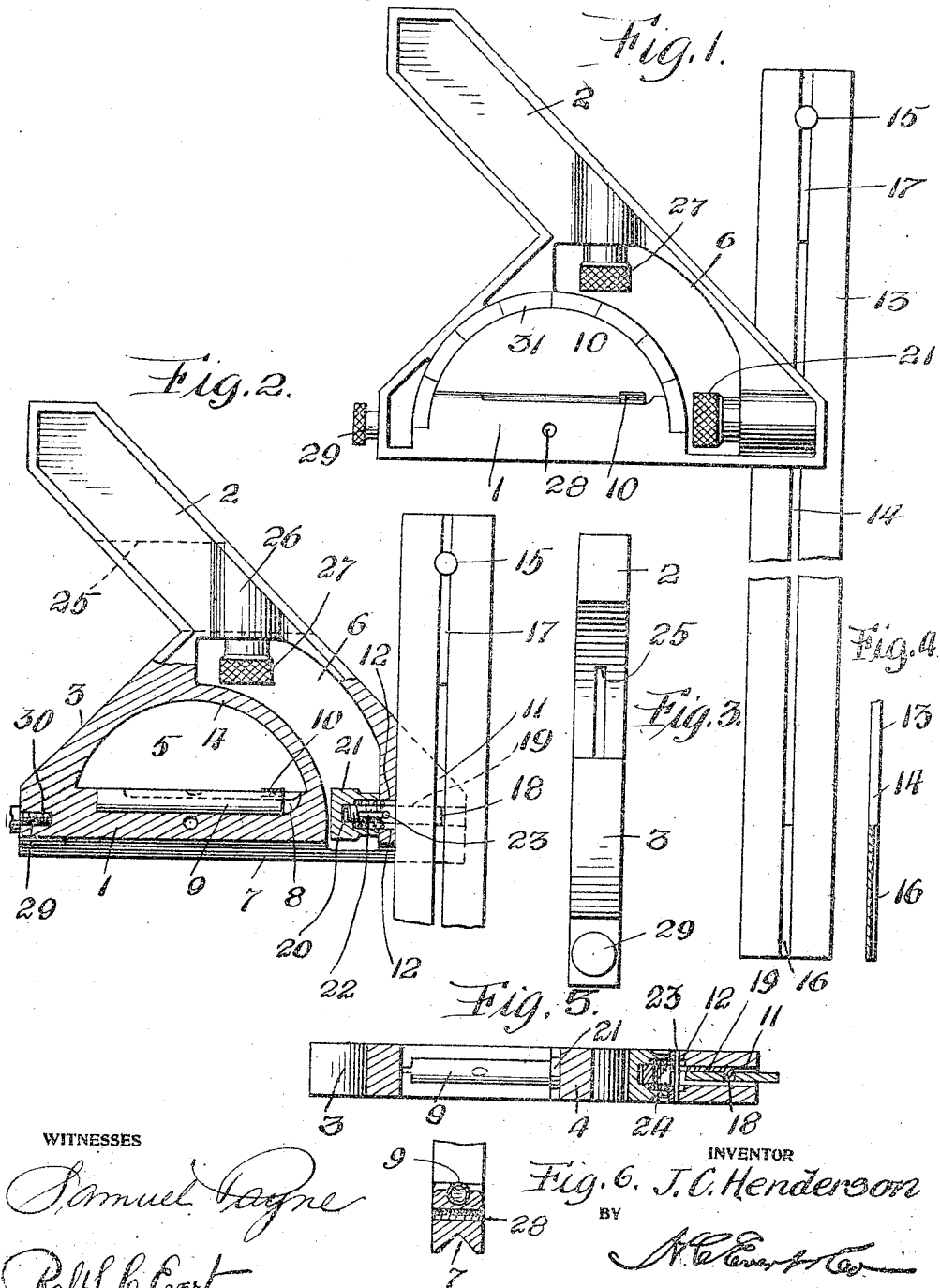


J. C. HENDERSON.
COMBINATION TOOL.
APPLICATION FILED SEPT. 16, 1911.

1,036,491.

Patented Aug. 20, 1912.



WITNESSES

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COMBINATION-TOOL.

1,036,491.

Specification of Letters Patent.

Patented Aug. 20, 1912.

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To all whom it may concern:

Be it known that I, JAMES C. HENDERSON, a citizen of the United States of America, residing at Fayette City, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Combination-Tools, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a combination tool, and more particularly to a tool that can be used as a T-square, miter square, center square, bevel protractor, level and plumb, and depth gage.

The primary object of my invention is to provide a combination tool of the above type that can be easily and quickly adjusted for its various uses, the tool being accurate and highly efficient for the various purposes for which it is intended.

Another object of this invention is to provide a tool consisting of comparatively few parts that are strong and durable, inexpensive to manufacture and easy to assemble.

With the above and other objects in view, the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein:—

Figure 1 is a side elevation of a portion of the tool, Fig. 2 is a similar view of the tool, partly broken away and partly in section, Fig. 3 is an end view of the tool, Fig. 4 is a longitudinal sectional view of a portion of the blade of the tool, Fig. 5 is a horizontal sectional view of the tool, and Fig. 6 is a cross sectional view of the same.

A tool in accordance with this invention comprises a base 1 having one end thereof provided with an angularly disposed arm 2, said arm being preferably disposed at forty-five degrees relatively to the base 1. The arm 2 is connected to the opposite end of the base by a leg 3 disposed at right angles to the arm 2, and between said leg, arm and base there is a semi-circular web 4 providing an opening 5 and a segment-shaped slot 6. The base 1 has the bottom thereof provided with a V-shaped groove 7, whereby the base can be easily placed upon a shaft or the meeting edges of two angularly disposed surfaces or walls, said groove extending

from one end of said base to the opposite end. The top of the base has a longitudinal groove or pocket 8 and in this groove or pocket there is located a level glass 9 retained within the pocket by a strap 10 secured to the top of the base 1.

At the vertex of the angle formed by the base 1 and the arm 2, there is a vertical slot 11 and this slot is in communication with the segment-shaped slot 6 by an opening 12. Adjustably mounted in the slot 11 is a blade 13 having a longitudinal slot 14 extending from one end thereof in close proximity to the opposite end, said slot terminating in an opening 15 for a purpose to be presently referred to. The opposite end of the slot is partially closed by a web 16 and there is another web 17, adjacent to the opening 15 in order to add strength and rigidity to said blade. Engaging in the slot 11 is the hook-shaped end 18 of a clamping member 19, said member extending through the opening 12 into the slot 6. The member 14 terminates in a screw 20 to receive a knurled nut 21. The screw 20 has a transverse slot 22 providing clearance for a pin 23 arranged transversely of the opening 12, this pin limiting the movement of the clamping member. Encircling the screw 20, within the nut 21, is a coiled compression spring 24 and this spring is employed to normally retain the nut 21 tight upon the screw 20, preventing said nut from becoming accidentally displaced. The thickness of the blade 13 is less than the width of the slot 11, under such conditions the blade can readily be placed in engagement with the clamping member. By loosening the nut 21 the blade 13 can be adjusted within the slot 11 and when the nut 21 is screwed home the blade will be fixedly maintained at right angles to the lower edge of the base 1. The opening 15 is employed to enable the screw 29 to be fitted therein when the blade 13 is used as a protractor.

The arm 2, at the upper end of the leg 3, has a slot 25 in parallelism with the base 1, and said arm has a boss 26 containing a clamping member similar to the member 19 previously described, the member within the boss 26 being adjusted by a nut 27. The blade 13 can be readily removed from the slot 11 and placed in the slot 25 and locked therein by means of the adjusting nut 27.

The base 1 is provided with a transverse

opening 28 having the walls thereof screw threaded to receive a screw 29 from either side of the base; and this screw when not in use is carried in a threaded socket 30 provided therefor in the base 1, opposite the slot 11. The screw opening 28 is intermediate the ends of the level glass 9, and the screw 29 is employed for holding the blade 13 upon either side of the base 1. With the blade upon one side of the base 1, it can be swung at any desired angle relatively to said base, the angle being determined by graduations 31 upon the side of the web 4. It is with the blade in this position that the square can be used as a protractor.

It is obvious that with the blade adjustably attached to the base 1, the device can be used as a depth gage, and that by means of the level glass 9, the level of a shaft or other structure can be readily determined.

It is thought unnecessary to describe the various uses of the tool, as artisans may employ the same for various purposes.

What I claim is:—

1. A combination tool comprising a base, a level glass mounted in one edge of the base, an angularly disposed arm projecting from one end of and overlapping said base, said arm provided intermediate its ends with a transverse slot 25 and further having at one end a longitudinal slot 11, said base having one end provided with a slot, an inclined leg connecting the other end of said base to said arm intermediate the ends of the latter, a segment-shaped graduated web connecting said leg and base and spaced from said arm to provide an opening, a longitudinally slotted blade adapted to be mounted in the slot 25 and the slot at the end of said base, means arranged in said opening and extending into the base and engaging in the slot of the blade for adjustably holding said blade in engagement with one end of the

base, and means arranged in said opening and extending into said arm intermediate the ends thereof and capable of engaging in the slot of the blade for adjustably holding said blade in engagement with said arm when the blade is mounted in the slot 25 of the arm.

2. A combination tool comprising a base, a level glass mounted in one edge of the base, an angularly disposed arm projecting from one end of and overlapping said base, said arm provided intermediate its ends with a transverse slot 25 and further having at one end a longitudinal slot 11, said base having one end provided with a slot, an inclined leg connecting the other end of said base to said arm intermediate the ends of the latter, a segment-shaped graduated web connecting said leg and base and spaced from said arm to provide an opening, a longitudinally slotted blade adapted to be mounted in the slot 25 and the slot at the end of said base, means arranged in said opening and extending into the base and engaging in the slot of the blade for adjustably holding said blade in engagement with one end of the base, means arranged in said opening and extending into said arm intermediate the ends thereof and capable of engaging in the slot of the blade for adjustably holding said blade in engagement with said arm when the blade is mounted in the slot 25 of the arm, said blade provided at one end of its slot with an opening, and means capable of extending through the opening of the blade and engaging in the base for coupling the blade to the base when the blade is to be used as a protractor.

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

JAMES C. HENDERSON.

Witnesses:

MAX H. SROLOVITZ,
CHRISTINA T. HOOD.