L. S. STARRETT.

COMBINATION TOOL.

APPLICATION FILED FEB. 11, 1911.

1,011,262.

Patented Dec. 12, 1911.

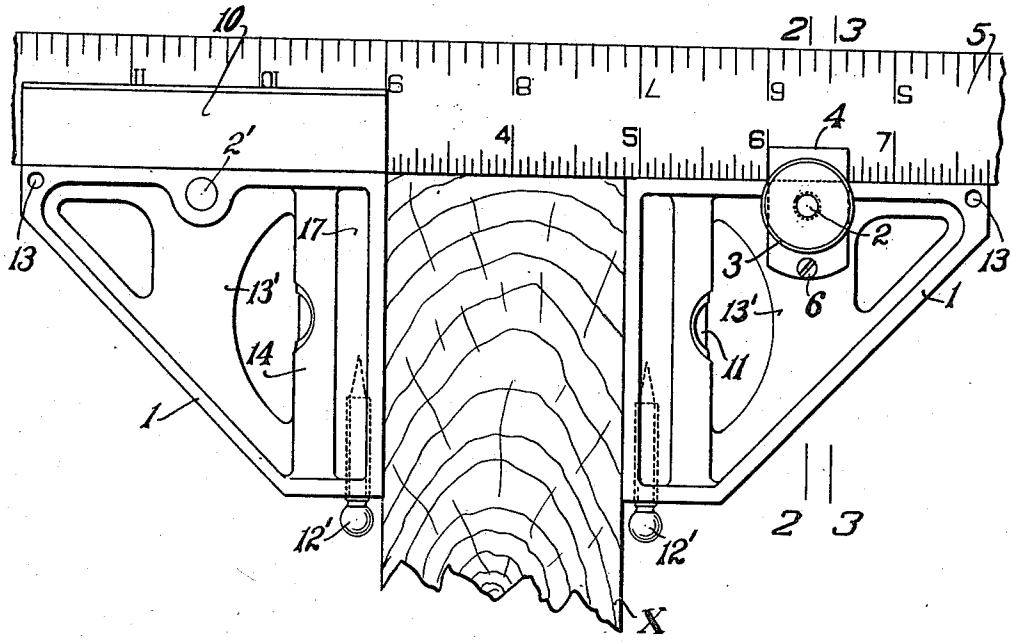


FIG. 1

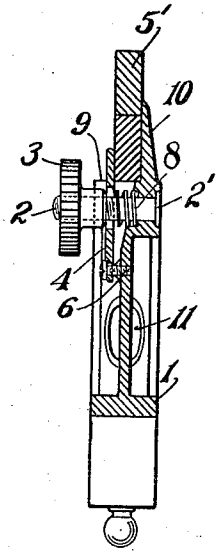


FIG 2

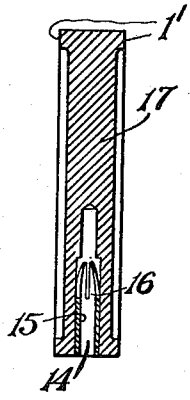


FIG. 4

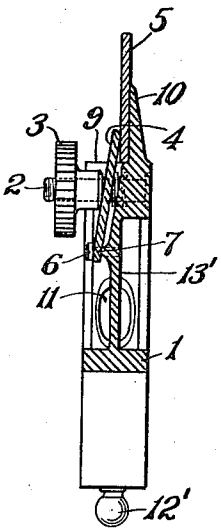


FIG. 3

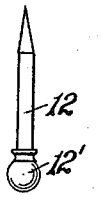


FIG. 5

WITNESSES

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COMBINATION-TOOL.

1,011,262. Specification of Letters Patent. Patented Dec. 12, 1911.

Application filed February 11, 1911. Serial No. 607,974.

To all whom it may concern:

Be it known that I, LAROY S. STARRETT, a citizen of the United States, residing at Athol, county of Worcester, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Combination-Tools, of which the following is a specification.

This invention relates to an improvement in combination tools, and particularly to an instrument combining the functions of back square plumb level, miter angle, circle scriber and also of beam gage.

My present invention provides a simple and compact tool, affording all of these functions, and in the specification which follows I shall describe a particular embodiment of the same which I find to be practical for actual use.

The construction and operation of this tool will be more fully described in the specification which follows and in the drawings which form a part of that specification I have shown an embodiment above referred to.

Throughout specification and drawings like reference numerals are employed to indicate corresponding parts and in the drawings:—Figure 1 is a view of a pair of squares in use on a straight edge as a beam gage, Fig. 2 is a section on the line 2—2, Fig. 1, Fig. 3 is a similar section, showing the use of a thin metal straight edge, Fig. 4 is a section through the scriber pin socket, and Fig. 5 is a view of the scriber pin.

The tool consists of a frame casting of general right triangular shape comprising side flanges 1 of sufficient thickness to afford good bearing surface and having their edges 1^1 faced off to give lateral bearings on the sides of the instrument. On one of the sides, 9, bounding the right angle of the device, I form a flange or shoulder 10, giving a slideway in which may be laid an ordinary carpenter's rule, as 5^1 Fig. 2, or a thin steel straight edge, as 5, see Fig. 3. The flange 1 on the side 9 is opened to permit the clamp piece 4 to bear close against the flange 10, so that it is adapted to hold either a thick or a thin straight edge. The clamp 4 has a shallow groove near its lower end which receives the edge of a fulcrum 7 to which it is held by a screw 6 loosely passing through the clamp 4 and set on that part of the frame on which the fulcrum is formed and which braces the sides of the tool. The clamp 4 is adjusted by a nut 3 on a threaded post 2 fixed in the frame. A spring 8 surrounds the post 2 and tends to hold it out on the post which passes loosely through an elongated slot in the plate 4. The post 14, which is cast integral with the frame, is bored out and the level bubble tube 11 is held therein. Between the post 14 and the frame side is left a web 17 which is drilled for a socket for the scriber pin 12, provided with the spherical head 12^1. In the socket is a bushing 15 provided with spring fingers 16, at its end between which the pivot of the pin 12 is yieldingly held. The frame is provided in one corner with a pivot hole 13 through which the scriber pin may be thrust to center the device when it is desired to strike a circle. The tool proper, therefore, consists of a small stock, itself comprising a back square, plumb level and miter angle.

One stock, when used with a straight edge, forms a most accurate square or plumb or level or a depth gage. A pair of stocks clamped on a straight edge gives a thickness gage for measuring beams and the like. By using the scriber pin 12 in the pivot hole 13 a circle may be struck from any length on a straight edge as a radius. It will, therefore, be seen that my device offers a great variety of uses and can be used with such instruments always at hand as carpenters' folding rules, etc.

Within the limits of the appended claims the form, structure and arrangement of my devices may be varied without departing from the spirit of my invention.

What I, therefore, claim and desire to secure by Letters Patent is:—

1. A combination tool of the class described, comprising a right triangular frame bounded by flat bearing faces formed by the lateral flanges of the frame, a spirit level located along one of the sides bounding said right angle, a shouldered bearing slide on the other of said faces, said frame flange being cut out centrally of said slide, a clamp pivoted to said frame and extending over said slideway, said frame also having a pivot hole in one corner and having a socket parallel to said spirit level and a scriber pin removably held in said socket.

2. A combination tool of the class described, comprising a right triangular

frame bounded by flat bearing faces, a spirit level located along one of the sides bounding said right angle, a shouldered bearing slide on the other of said faces, a fulcrum on said frame, a slotted clamp pivoted on said fulcrum and extending over said slideway, a threaded post on said frame and passing through said clamp, a nut on said post, said frame also having a pivot hole in one corner and having a socket parallel to said spirit level and a scriber pin removably held in said socket.

3. A combination tool of the class described, comprising a laterally flanged right triangular frame and forming a square and miter angle, a shouldered bearing slide on one of the faces, said frame flange being cut out centrally of said slide and a clamp pivoted to said frame and extending through said cut and over said slideway to hold a straight edge therein.

4. A combination tool of the class described, comprising a right triangular frame bounded by flat bearing faces, a spirit level located along one of the sides bounding said right angle, a shouldered bearing slide on the other of said faces, a fulcrum on said frame, a slotted clamp pivoted on said fulcrum and extending over said slideway, a threaded post on said frame and passing through said clamp and a nut on said post.

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

LAROY S. STARRETT.

Witnesses:
FRANK E. WING,
WILLARD G. NIMS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."