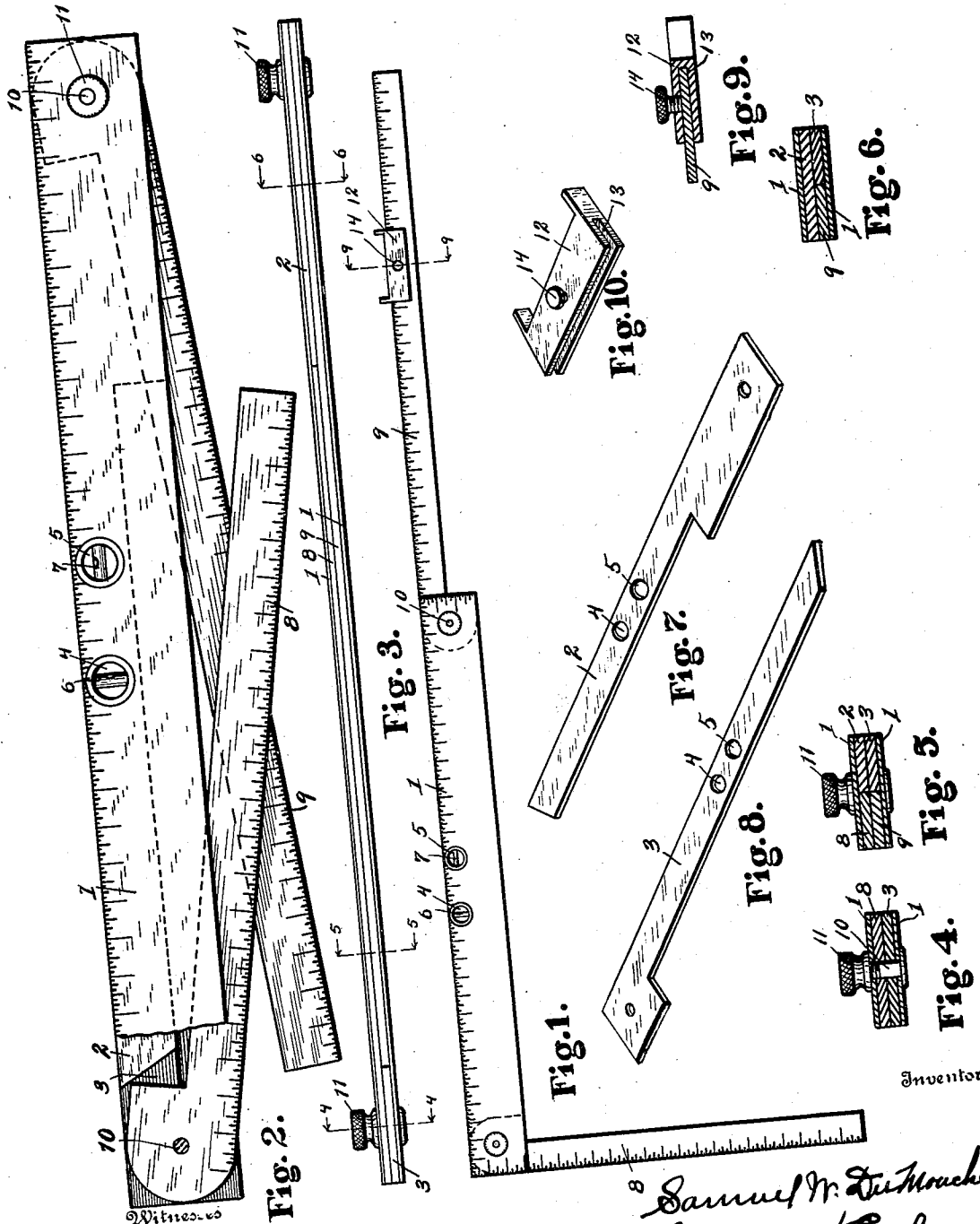


S. W. DU MOUCHEL.
COMBINATION TOOL.
APPLICATION FILED MAY 17, 1909.

Patented Jan. 30, 1912.

1,015,877.



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SAMUEL W. DU MOUCHEL, OF KALAMAZOO, MICHIGAN.

COMBINATION-TOOL.

1,015,877.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed May 17, 1909. Serial No. 496,531.

To all whom it may concern:

Be it known that I, SAMUEL W. DU MOUCHEL, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and useful Combination-Tool, of which the following is the specification.

This invention relates to an improved combination tool.

The main objects of this invention are to provide a combination tool which is readily adjusted for use as a square, level, plumb, six-foot pole, or as a hinge gage.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The structure described constitutes one effective embodiment of my invention. Other embodiments could be readily devised by those skilled in the art.

The invention is clearly defined and pointed out in the claims.

A structure constituting an effective and preferred embodiment of the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure 1 is a plan view of a structure embodying the features of my invention, with one of the arms extended at right angles to the main body and the other extended into alinement therewith. Fig. 2 is a plan view, with the arms partially collapsed, a portion of one of the side plates being broken away to better show the arrangements of the parts. Fig. 3 is a front edge view of my improved combination tool collapsed. Fig. 4 is an enlarged detail section taken on a line corresponding to line 4-4 of Fig. 3. Fig. 5 is an enlarged transverse section taken on a line corresponding to line 5-5 of Fig. 3. Fig. 6 is an enlarged transverse section taken on a line corresponding to line 6-6 of Fig. 3. Fig. 7 is a perspective view of the spacing plate 2. Fig. 8 is a perspective view of the spacing plate 3. Fig. 9 is an enlarged detail, through the hinge gage, taken on a line corresponding to line 9-9 of Fig. 1. Fig. 10 is a perspective view of the hinge gage.

In the drawings, similar reference characters refer to similar parts throughout the several views, and the sectional views are

taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the main body of my improved combination tool is preferably made up of a pair of metal side plates 1, 1, between which are arranged the spacing plates 2 and 3. These spacing plates are oppositely-disposed and superimposed upon each other. The means for connecting the spacing plates and the side plates together are not here illustrated as they will be readily understood. The side plates and the spacing plates are provided with registering holes 4 and 5, in which are respectively arranged the plumb glass or bulb 6, and the level glass or bulb 7. The rear edges of the side plates and spacing plates are arranged in the same plane, as are also their ends.

At the ends of the body, I pivot the blade-like arms or extensions 8 and 9. These arms are also formed of metal and are adapted to be folded or collapsed between the side plates in front of the spacing plates, the arms being disposed oppositely relative to the spacing plates. The pivots 10 for the arms are provided with nuts 11 so that the arms may be clamped in their adjusted positions. When the arms are extended into alinement with the body, their rear edges are in the plane of the rear edge of the body. When they are extended at right angles to the body, their rear edges are in the plane of the ends of the body. The rear edge and ends of the body and the rear edges of the arms are provided with scale indicia, which is illustrated in conventional form in the drawing.

In the structure illustrated, the arms and body, when extended, form a six-foot measure, or when the arms are extended at right angles, they form a square. By providing the level and plumb glasses, the tool may be used as a square, level, plumb or six-foot measure, and I also preferably provide in this connection, a gage 12 which is slotted at 13 to be slipped over the edge of one of the arms, and is adjustably secured upon the arms by means of the set screw 14. The tool may, with this attachment, be used as a gage for setting door hinges. The arms may be adjusted and secured at any angle, so that the tool can be used as a try-square, if desired.

My improved tool is comparatively simple and economical in structure, and is very

convenient in use. I have illustrated and described the same in detail in the form preferred by me, although I am aware that my invention is capable of considerable variation in structural details.

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

1. A combination tool comprising a body consisting of side plates and a pair of interposed spacing plates, the spacing plates being shorter than the side plates and being of substantially one-half the width thereof except their outer ends which are of substantially the width of the side plates, said spacing plates being oppositely disposed, said side plates and spacing plates being provided with centrally registering openings, and a pair of blade-like arms of substantially one-half the width of said side plates and having pivot portions of substantially the width of said side plates disposed between the side plates and the adjacent spacing plate at the inner end of the other spacing plate to fold oppositely between said side plates in front of said spacing plates; and pivots for said arms arranged through said side and spacing plates said pivots being provided with clamping nuts whereby said arms may be secured in their adjusted positions, the rear edges of said arms and at least one of said main body plates being

provided with scale indicia, and longitudinally and transversely disposed gage bulbs arranged in registering openings in said side and spacing plates.

2. A combination tool comprising a body consisting of side plates and a pair of interposed spacing plates, the spacing plates being shorter than the side plates and being of substantially one-half the width thereof except their outer ends which are of substantially the width of the side plates, said spacing plates being oppositely disposed, and a pair of blade-like arms of substantially one-half the width of said side plates and having pivot portions of substantially the width of said side plates disposed between the side plates and the adjacent spacing plate at the inner end of the other spacing plate to fold oppositely between said side plates in front of said spacing plates; and pivots for said arms arranged through said side and spacing plates said pivots being provided with clamping nuts whereby said arms may be secured in their adjusted positions, the rear edges of said arms and at least one of said main body plates being provided with scale indicia.

SAMUEL W. DU MOUCHEL.

Witnesses:

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