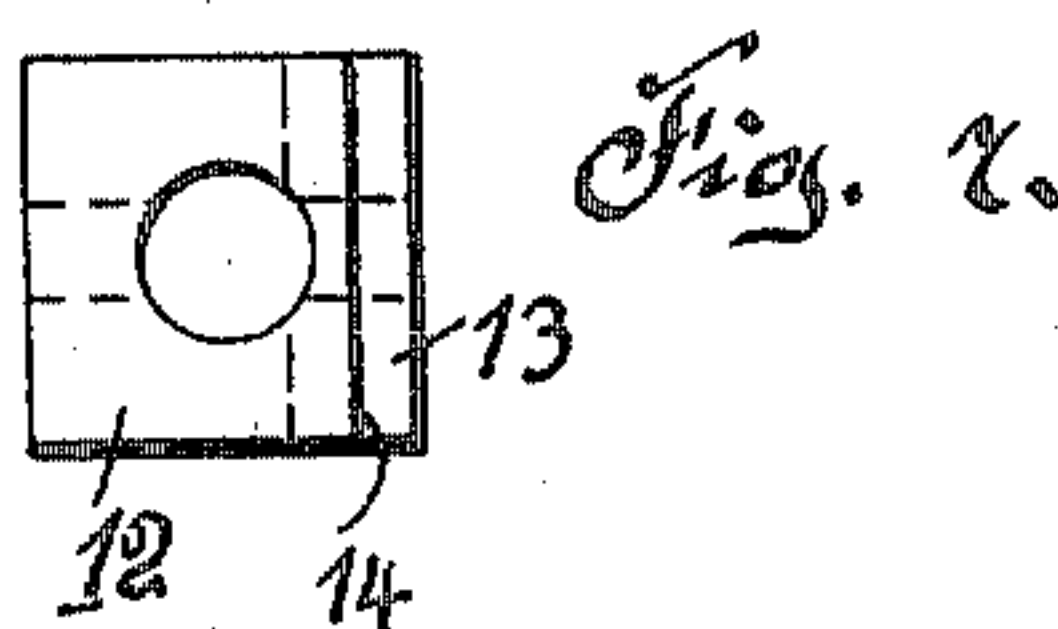
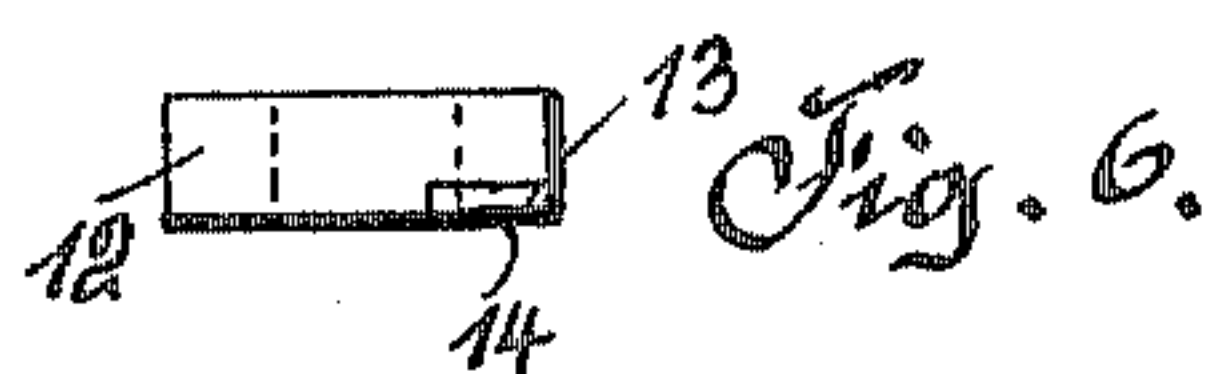
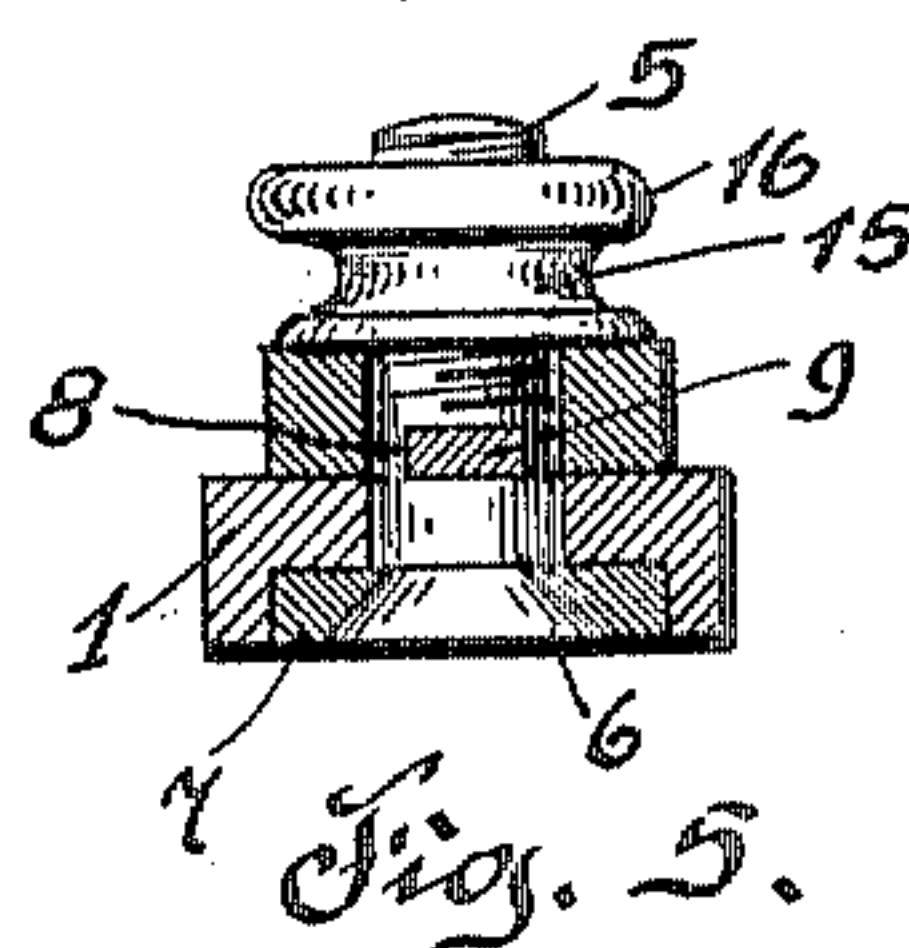
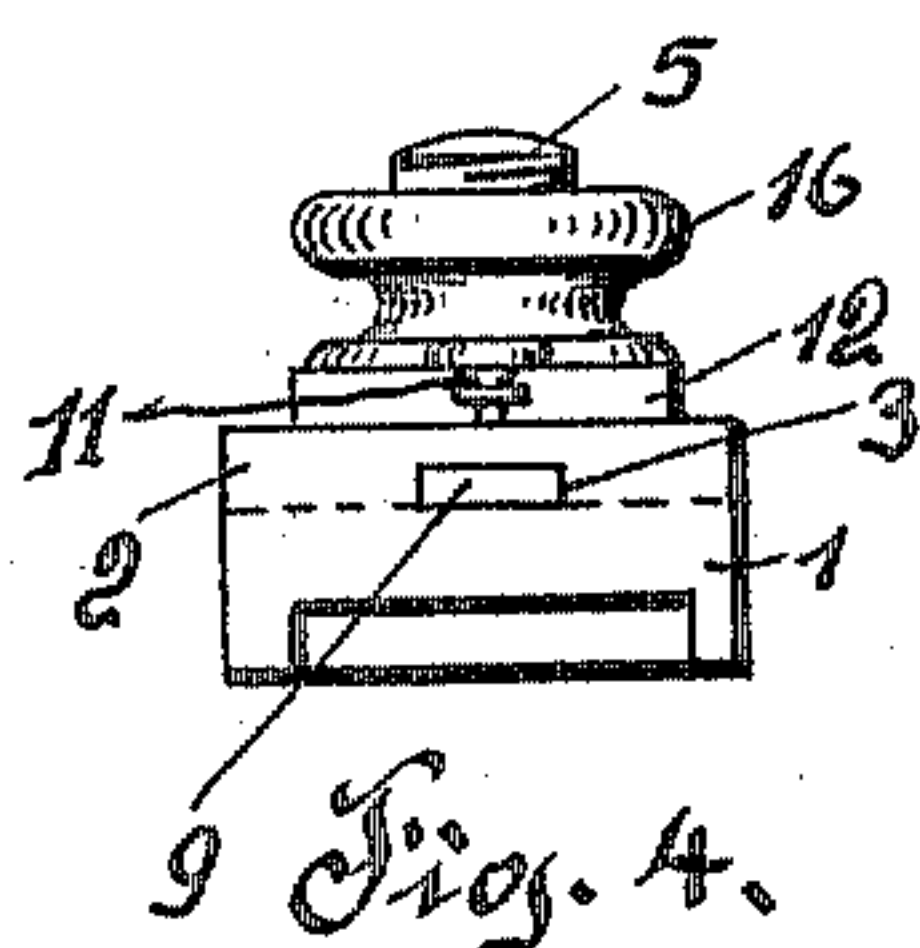
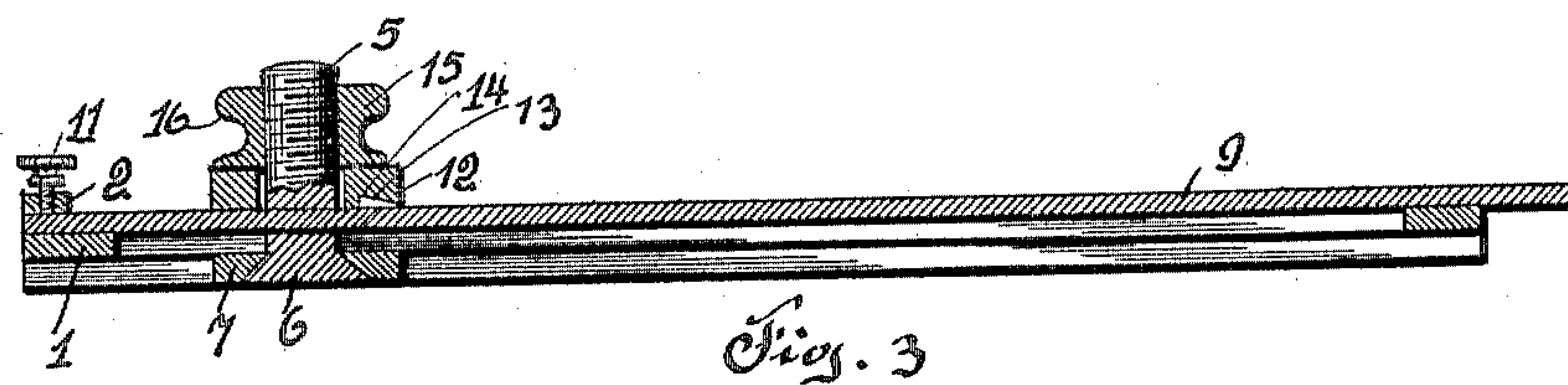
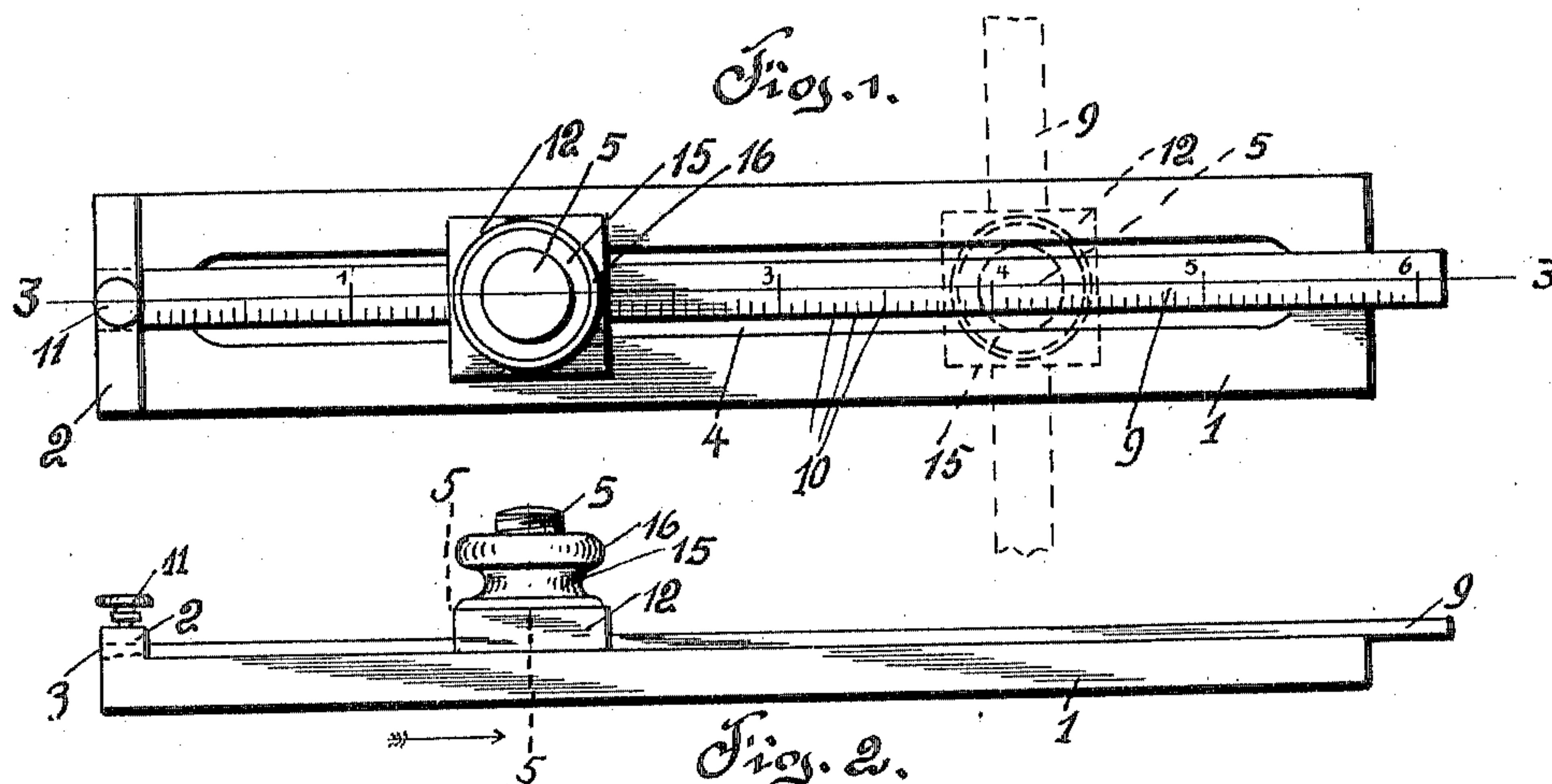


No. 816,885.

PATENTED APR. 3, 1906.

R. G. SHALLENBERGER.
COMBINATION HAND TOOL.
APPLICATION FILED SEPT. 19, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

RALPH G. SHALLENBERGER, OF BRADDOCK, PENNSYLVANIA.

COMBINATION HAND-TOOL.

No. 816,885.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed September 19, 1905. Serial No. 279,176.

To all whom it may concern:

Be it known that I, RALPH G. SHALLENBERGER, a citizen of the United States of America, residing at Braddock, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Combination Hand-Tools, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in combination-tools.

The particular type of tools comprising the embodiment of present invention are combined rulers, bevels, and T-squares.

In the provision of tool of the foregoing type I employ adjustable plates secured to one another with a relation of scale, whereby the one plate can be set and locked at any angle upon the other or can be locked in the same axial disposition thereupon.

Detail construction will appear in the course of the following description, in which reference is had to the accompanying drawings, forming a part of this specification, like numerals designating like parts throughout the several views.

Figure 1 is a top plan view. Fig. 2 is a side elevation thereof. Fig. 3 is a central longitudinal section on the line 3 3 of Fig. 1. Fig. 4 is an end elevation. Fig. 5 is a transverse section on the line 5 5 on Fig. 2 looking toward the arrow, and Figs. 6 and 7 are respective detail side and bottom plan elevation of an element for locking the relatively adjustable plates of the tool.

The invention specifically comprises a plate 1, of inverted-U shape in cross-section, which is formed at its one end with an enlarged portion 2, in which is provided a rectangular opening 3. (Indicated in dotted line, Fig. 2.) Plate 1 is formed between its ends with a longitudinal slot 4, through which extends a bolt 5, formed with an enlarged inclined head 6, which bears against the sides of the inclined opening in a washer 7, movably held between the side walls of the U-shaped plate 1. Said bolt 5 is formed in a plane flush with the surface of plate 1 or very slightly raised thereabove with a rectangular opening 8, through which extends a ruler 9, provided on its edge with a scale 10. When the tool is closed, said ruler lies in alinement with the slot 4 and the end thereof is held in the recess 3 of the enlarged por-

tion 2 of said plate 1 by a set-screw 11, extending through said enlarged portion and bearing against said ruler.

Concentrically disposed upon the bolt 5 is a block 12, of preferably square contour, which is provided on its underneath face with an inclined groove 13, extending adjacent to one edge of said block, so as to form upon the body portion thereof a shoulder 14. The block 12 is locked upon the plate 1 by virtue of a nut 15, threaded upon the end of bolt 5 and provided with a milled periphery 16 from said nut bearing with its underneath surface against said block 2.

In using the tool as a ruler the parts are in a "closed" position, the ruler 9 being secured in the recess 3 in the manner described. Said ruler is set at any angle with relation to plate 1 by raising the set-screw 11 therefrom by rotating upwardly the nut 15, so as to relieve the pressure upon the block 12, at which time the ruler is turned at any angle to the plate 1 and is set at such angle by tightening the nut 15 upon the block 12. This arrangement is especially advantageous when the tool is employed as a bevel. When it is desired to use the tool either as a T-square or as an L-square, the foregoing operation is repeated, the rule being set at an angle of ninety degrees with relation to the plate 1 and the block 12 being turned until the shoulder 14 confronts and lockingly abuts the side, or more particularly the adjacent side, of a slot 4, at which time the nut 15 is tightened upon said block to bind the structure into locking engagement.

It is obvious that various minor changes may be made without departing from the spirit or scope of my invention as defined in the appended plans.

It is to be noted that when the device is employed in any of its functions the length of the ruler with relation to the plate 1 is adjustable by moving the same in the bolt 5 any desired distance. From the foregoing description it will be therefore seen that both an angular and longitudinal adjustment of said ruler in relation to said plate is permitted.

Having fully described my invention, I claim—

1. A device of the type set forth embodying a longitudinally-slotted plate, a bolt arranged in the slot of said plate, said bolt being provided with an opening therethrough,

a ruler extending through the opening in the bolt and means for locking the bolt and the ruler at adjusted positions upon the plate.

2. A device of the type set forth embody-
5 ing a plate formed with an enlarged recessed edge, and a longitudinal slot in the body portion thereof, a bolt extending through said slot and movable therein, a ruler passing through said bolt and adapted to be held in
10 said recess when in the same actual disposition as said slot, an element loosely mounted upon said bolt and bearing against said ruler, and adapted to lock the same at any angle

with relation to said plate, under pressure, and a set-nut mounted upon said bolt, and 15 bearing against said locking element, said locking element being formed on its underneath surface with a shoulder adapted to bear against the walls of said slot, in its locking position. 20

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

RALPH G. SHALLENBERGER.

Witnesses:

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