No. 867,556. PATENTED OCT. 1, 1907.

R. CAMPBELL.

COMBINATION TOOL.

APPLICATION FILED OCT. 2, 1906.

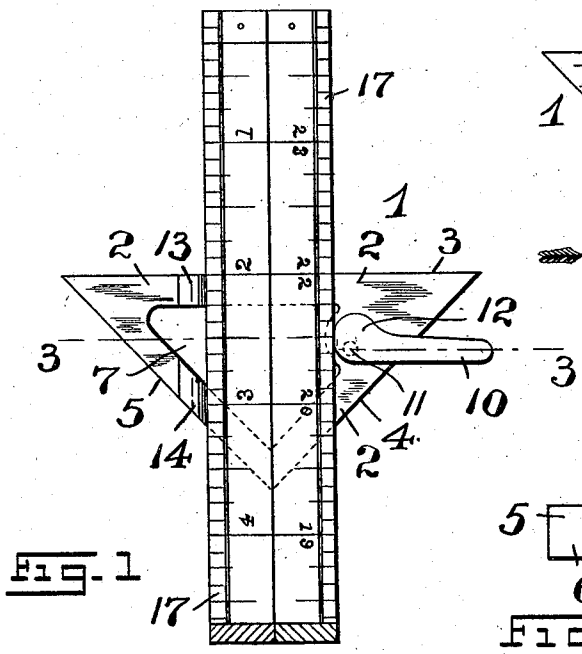


Fig. 1

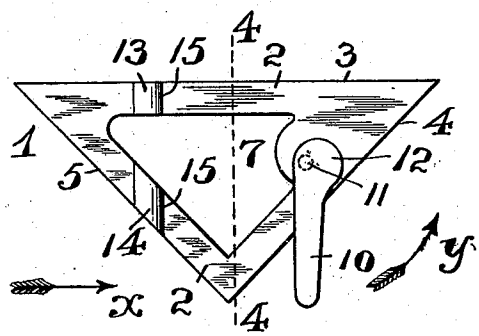


Fig. 2

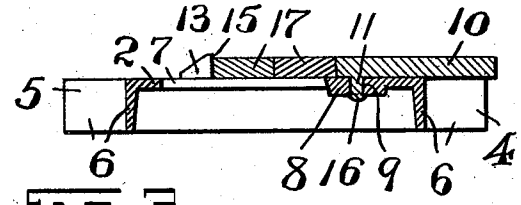


Fig. 3

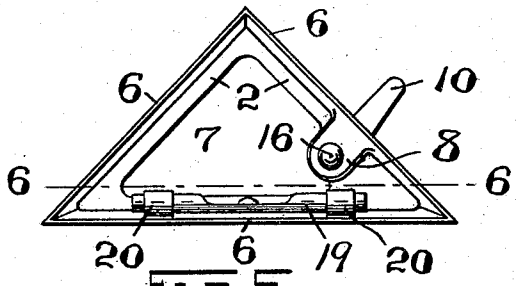


Fig. 5

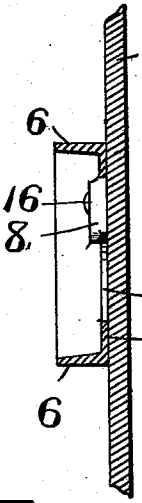


Fig. 4

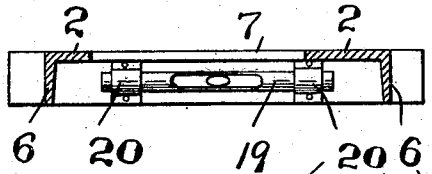


Fig. 6

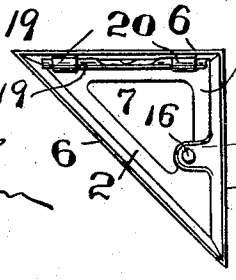


Fig. 7

WITNESSES:

F. H. W. Fraentzel

Frederick Jamison

INVENTOR:

Robert Campbell,

BY

Fraentzel and Richards,

ATTORNEYS.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT CAMPBELL, OF ELIZABETH, NEW JERSEY.

COMBINATION-TOOL.

No. 867,556. Specification of Letters Patent. Patented Oct. 1, 1907.

Application filed October 2, 1906. Serial No. 337,060.

To all whom it may concern:

Be it known that I, ROBERT CAMPBELL, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in a Combination-Tool; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention has reference, generally, to improvements in that class of tools designed for use as squares, miters, marking-gages, and the like; and the present invention has for its principal object to provide a novel and simply constructed contrivance which is small and compact, so that it can be readily carried in the pocket or tool-chest, and which is capable of a quick and easy adjustment to the ordinary foot-rule or the usual straight-edge, so as to be capable in its use as a marking-gage, a depth-gage, a T-square, a try-square, a miter, and similar uses.

A further object of this invention is to provide a device of the general character hereinafter more fully described, which may be used also as a spirit level, and as a plumb-square.

Other objects of this invention not at this time more particularly mentioned will be clearly understood from the following detailed description of the same.

With the various objects of my present invention in view, the same consists primarily in the novel tool hereinafter more fully set forth; and, this invention consists, furthermore, in the various arrangements and combinations of the devices and parts, as well as in the details of the construction of the same, all of which will be more fully described in the accompanying specification and then finally embodied in the clauses of the claims which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a plan or top view of the tool and a portion of a foot-rule with which the tool is used, showing the same secured to the rule in one of its adjusted positions; and Fig. 2 is a similar view of the tool shown detached from the rule. Fig. 3 is a transverse section taken on line 3—3 in Fig. 1 of the drawings; and Fig. 4 is a cross-section of the tool, said section being taken on line 4—4 in Fig. 2 of the drawings, looking in the direction of the arrow *x*, said view showing in connection therewith a longitudinal vertical sectional representation of a portion of a straight-edge. Fig. 5 is a rear view of the said tool or device which embodies the principles of this invention, said tool being provided upon one of its inner sides with a spirit-level; and Fig. 6 is a cross-section of the same, said section being taken on line 6—6 in said Fig. 5. Fig. 7 is a rear view of the device adapted for use as a plumb-square.

Similar characters of reference are employed in all of the above described views to indicate corresponding parts.

Referring now to the said several figures of the drawings, the reference-character 1 indicates the complete tool, the same being made in the form of a right-angle triangle, substantially as shown. The said tool consists of a stock or body 2, the same being bounded by the three marginal edges or sides 3, 4 and 5, so as to provide a triangle formed between the sides 4 and 5 with a right-angle, and between the respective sides 3 and 4, and 3 and 5 with angles of 45 degrees each.

Extending downwardly from each marginal edge 3, 4 and 5 is a flange 6, substantially as shown in Figs. 3, 4, 5 and 6, and for the sake of lightness and cheapness of construction the body or stock 2 is provided with an opening 7.

Pivotally connected with an extension 8, which is provided with a perforation or hole 9, is a pin or stud 11 of a lever 10, which lever is movably arranged upon the upper surface of the stock or body 2 and is formed with an eccentric or cam-shaped binding portion 12. A pair of lugs or projections 13 and 14 extend upwardly from the face of the said stock or body 2, each lug or projection being provided with a straight and vertically extending face 15, substantially as shown in Figs. 2 and 3 of the drawings. The stud or pivot 11 of the said lever 10 is preferably made integral with the said lever and extends into and through the perforation or hole 9, said pin or stud being riveted over to provide a head 16 upon its free end which prevents the displacement of the said lever or arm 10 from its operative position upon the upper face of the stock or body 2.

The tool may be readily used with the arms of the ordinary foot-rule 17, or with an ordinary straight-edge 18, by placing the rule or straight-edge between the vertical faces 15 of the lugs 13 and 14 and the pivoted lever or arm 10, when the latter is in the position indicated in Fig. 2, and then by turning the said lever or arm in the direction of the arrow *y* bringing its eccentric or cam-shaped end-portion 12 tightly against the edge of the foot-rule or straight-edge, as will be clearly evident. In this manner the tool and the foot-rule or straight-edge are securely connected against displacement from each other, the said tool being secured in any adjusted position along the indications upon the face of the rule, that may be desired.

It will be clearly evident from an inspection of Fig. 1 of the drawings, that when the device 1 has been secured in its position upon the rule, the entire contrivance may be used as a marking-gage, a depth-gage, a T-square, a try-square, or as a 45 degree miter. By throwing back the lever or arm 10 into the position in-

dicated in Fig. 2 of the drawings, the device is readily detached from the rule or straight-edge and may be used as an ordinary inside square.

From an inspection of Fig. 1 of the drawings, it will be clearly seen that by placing the combined device and foot-rule in the one hand and loosening up the arm or lever 10, the contrivance can be slipped along the longitudinal edges of the rule or straight-edge, and then easily secured in any adjusted position thereon that may be desired.

If desired, the body or stock 2 may be provided upon any one of its inner faces with a spirit level 19 suitably secured in position by means of fastening devices 20, as clearly illustrated in Figs. 5, 6 and 7 of the drawings, the device shown in Fig. 7 being especially adapted as a plumb-square.

The use of the devices shown in the accompanying drawings are clearly evident and need not be further described, suffice it to say, that when the device 1 is secured in position upon the rule in the manner indicated in Fig. 1, by placing the edge 3 against a board or the like, the parts may be used as an ordinary T-square for drawing or marking lines at right angles to the edge of the board; but when placing either of the edges 4 or 5 of the device against an edge of the board or the like, any one of the two longitudinal edges of the rule extending beyond the said edges 4 and 5 may be used for drawing lines at 45 degrees to the edge of the board as will be clearly evident; and, furthermore, when detached from the rule, the device may be variously used as a square.

From the foregoing description of my present invention, and from an inspection of the accompanying drawings, it will be clearly seen that I have produced a device which can be quickly and easily attached to the rule or straight-edge, for its various uses, and can be just as quickly detached therefrom, so as to be stored in the tool-chest, or that it may be carried without discomfort in the pocket.

I claim:

1. The herein described stock for use as a tri-square in connection with a rule or straight-edge, comprising a triangular body formed of three sides 3, 4 and 5 having an opening 7 between them, a flange 6 extending downwardly from the edge of each side, a perforated extension connected with one of said sides and extending partway into said opening 7, a lug upon each of the sides 3 and 5 of said stock, each lug being provided with a vertical face 15, said faces 15 lying in the same vertical plane at right angles to the plane of the flange 6 of said side 3, and a lever arranged upon the outer face of said extension, said lever being provided with a stud arranged in the perforation of said extension and formed with a head 16, and means at the pivoted end of the lever adapted to be forced against one edge of the rule or straight-edge for forcing the opposite edge of the rule or straight-edge in retaining engagement with the faces 15 of the lugs upon said sides 3 and 5, substantially as and for the purposes set forth.

2. The herein described stock for use as a tri-square in connection with a rule or straight-edge, comprising a triangular body formed of three sides 3, 4 and 5 having an opening 7 between them, a flange 6 extending downwardly from the edge of each side, a perforated extension connected with one of said sides and extending partway into said opening 7, a lug upon each of the sides 3 and 5 of said stock, each lug being provided with a vertical face 15, said faces 15 lying in the same vertical plane at right angles to the plane of the flange 6 of said side 3, and a lever arranged upon the outer face of said extension, said lever being provided with a stud arranged in the perforation of said extension and formed with a head 16, and a cam-shaped binding member 12 at the pivoted end of the lever adapted to be forced against one edge of the rule or straight-edge for forcing the opposite edge of the rule or straight-edge in retaining engagement with the faces 15 of the lugs upon said sides 3 and 5, substantially as and for the purposes set forth.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 29th day of September, 1906.

ROBERT CAMPBELL.

Witnesses:
FREDK. C. FRAENTZEL,
F. H. W. FRAENTZEL.