No. 636,098. Patented Oct. 31, 1899.

W. D. ARNOT.

COMBINATION TOOL.

(Application filed May 25, 1899.)

(No Model.)

Fig. 1

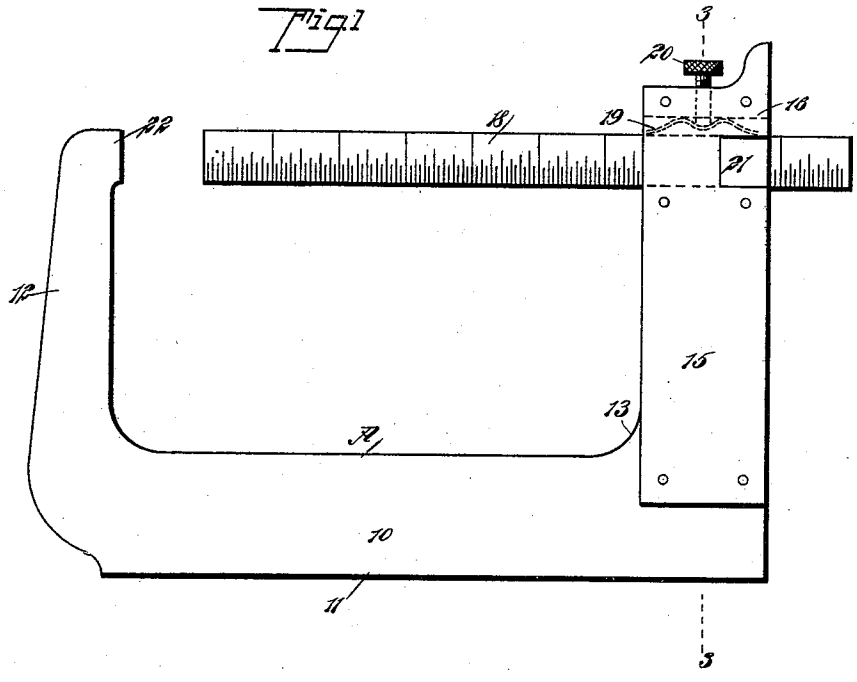


Fig. 2

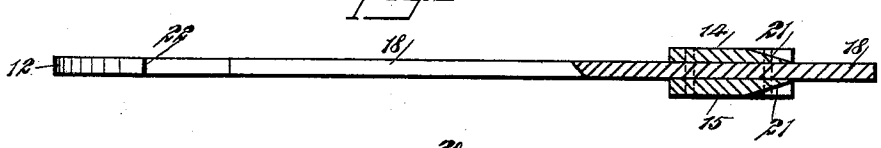
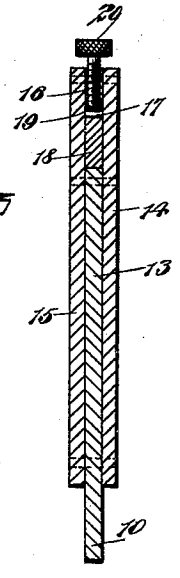


Fig. 3



WITNESSES:

J. A. Brophy

J. Wed Acker

INVENTOR

William D. Arnot

BY

Munn

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM D. ARNOT, OF FITCHBURG, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO GEORGE B. LAWRENCE, OF SAME PLACE.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 636,098, dated October 31, 1899.

Application filed May 25, 1899. Serial No. 718,208. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. ARNOT, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and Improved Combination-Tool, of which the following is a full, clear, and exact description.

The object of my invention is to provide a tool that may be used as a depth-gage, external or internal square, a caliper-gage, and a caliper-rule.

A further object of the invention is to construct a tool of the character above described that may be conveniently carried in the pocket.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate correspondng parts in all the figures.

Figure 1 is a side elevation of the improved tool. Fig. 2 is a plan view of the tool, one of the members being in horizontal section, also a portion of the graduated scale or slide; and Fig. 3 is a vertical section taken substantially on the line 3 3 of Fig. 1.

The body or frame A of the tool is preferably made of metal stamped or cut from a sheet, and usually the said frame or body is made of thin flat steel. The said frame or body A consists of a base member 10, having a straight edge 11 at its bottom, and two end members 12 and 13. Preferably also the inner edge of the frame or body is concaved where the end members connect with the base member, and the end member 13 joins the straight edge 11 of the base member at right angles.

Two thin plates 14 and 15 are secured by pins, rivets, or otherwise to opposite sides of the end member 13. These plates 14 and 15 extend above the end member 13, as illustrated in Fig. 3, and the space between the plates 14 and 15 is closed at the top by an inserted block 16, but a space 17 is formed between the said inserted block 16 and upper edge of the end member 13 in order to form a seat for the sliding graduated scale 18. This scale is provided with graduations upon each side a short distance from each longitudinal edge, so that in using the tool measurements may be taken from either side. A spring 19 is located within the chamber 17, having bearing upon the top of the sliding scale, and a set-screw 20, passed through the block 16, engages with said spring, and through the medium of the spring and set-screw the sliding scale may be held in adjusted position.

The scale is read at opposite points 21, produced one in the plate 14 and the other in the plate 15, and these reading-points are formed by producing opposing inclined recesses in the said plates 14 and 15, as is clearly shown in Fig. 2. The end member 12 of the frame or body is provided at its upper end with an inward extension 22, the vertical face of which extension is opposite the sliding graduated scale and is at right angles to the straight edge 11.

The surface 22 serves as a caliper-tip or anvil. In caliper-rules and caliper-squares the graduations and reading-points are generally all on what may be known as the "backbone" of the tool. Consequently in calipering an object the tool usually registers less than the actual measurement. Under the construction herein shown and described the graduated scale or rule and reading-points are directly in line with the object calipered, thus eliminating the variation caused by the jaws springing in the old caliper-rule, and therefore obtaining better results. Cylindrical objects may be calipered to the extreme limit of adjustment by the use of the improved tool, with the added advantage of showing the measurement of the diameter calipered. The outer end of the sliding scale or rule 18 may be used as a depth-gage, and the under edge of the sliding scale or rule 18 and adjacent straight surface of the end member 13 may be used as an external square, while the said straight outer surface of the end member 13 and straight edge 11 may be used as an internal square, the calipering being accomplished between the tip or anvil 22 and inner end of the scale or rule 18.

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

1. A combination instrument comprising an approximately U-shaped frame formed of thin flat material and having one of its end members provided with an inwardly-extending caliper-tip or anvil, the other end member having an outer straight edge, and a thin adjustable graduated blade mounted on the member having the outer straight edge and in alinement with the caliper-tip or anvil, substantially as described.

2. A combination instrument comprising a frame having a base formed with a straight bottom edge, and two end members, one end member being formed with a straight outer edge at right angles to the bottom edge, and the other member being provided at its end with a caliper-tip or anvil, and a graduated blade sliding in the upper end of the end member having the straight edge and arranged at right angles to said straight edge the said blade being in alinement with the caliper-tip or anvil and adapted to be moved toward or from the tip, or to be projected beyond the straight edge of the end member to form therewith a square, substantially as specified.

3. A combination instrument comprising a frame formed of flat metal and comprising a base member having a straight edge at its bottom, an end member terminating in an inwardly-extending caliper-tip or anvil, and a second end member whose outer edge is straight and connects at right angles with the straight edge of the base, the said second end member being of less length than the first end member, plates secured to opposite sides of the second end member and extending above the same, and a graduated blade mounted to slide on the top edge of the said second end member and between the said plates, the said blade being in horizontal alinement with the caliper-tip or anvil, substantially as described.

WILLIAM D. ARNOT.

Witnesses:
J. E. McCONNELL,
ANDREW CONNERY.