No. 708,355. Patented Sept. 2, 1902.

C. P. HARTLEY.

COMBINED POCKET RULE, SQUARE, COMPASSES, AND COMB.

(Application filed June 2, 1902.)

(No Model.)

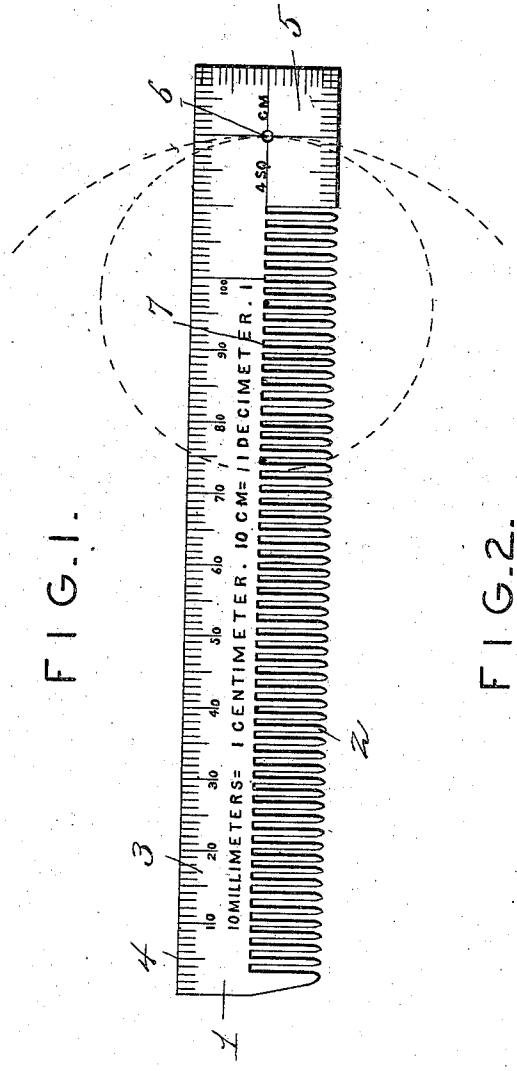


FIG. 1.

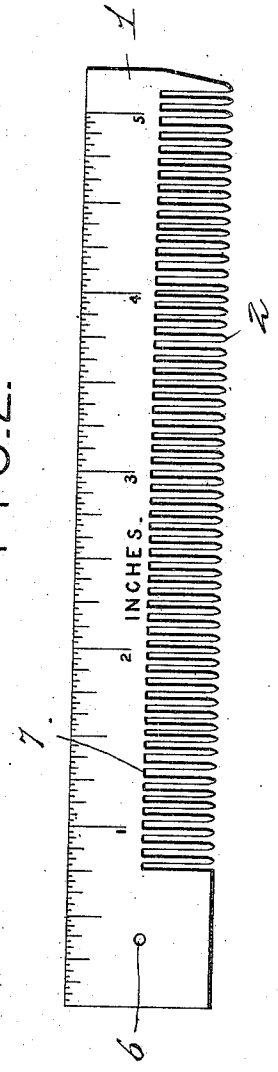


FIG. 2.

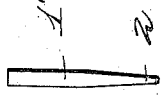


FIG. 3.

Witnesses

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COMBINED POCKET RULE, SQUARE, COMPASSES, AND COMB.

SPECIFICATION forming part of Letters Patent No. 708,355, dated September 2, 1902.

Application filed June 2, 1902. Serial No. 109,978. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. HARTLEY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in a Combined Pocket Rule, Square, Compasses, and Comb, of which the following is a specification.

This invention relates to a combined pocket rule, square, compasses, and comb; and the primary object of the same is to provide a convenient article which may be carried in the pocket and graduated in accordance with the metric system, as well as in inches and fractions of the latter, and having comb-teeth with their inner limiting walls in longitudinal alinement with an opening in one end of the device to permit circles of different diameters to be described by changing the position of a centering point or pin in relation to the spaces between the comb-teeth and also to construct one end of the device in such manner that it may serve as a square, both in truing and ascertaining angles, and also divided by scale-marks to indicate a square denomination or denominations.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of the device embodying the features of the invention. Fig. 2 is a similar view of the reverse side of the same. Fig. 3 is an end elevation thereof.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates the body of the improved combined device, which is mainly in the form of a comb having teeth 2 at one side extending regularly from a back 3 with a longitudinally-straight edge 4, the teeth 2 terminating at a distance from one end of the body to provide a square member 5, having in the center an opening 6 in longitudinal alinement with the inner end walls 7 of the spaces between the teeth 2. One face of the back 3 is divided by scale-marks to represent millimeters, centimeters, and a decimeter or other denominations of the metric system, and in the present instance the square member 5 is supplied with scale-marks indicating four square centimeters. On the reverse side of the body 1, as shown by Fig. 2, scale-marks are applied indicating inches and fractions of the latter, and, as shown by Fig. 3, the teeth 2 are oppositely sloped or converged toward their points, as in ordinary comb constructions.

In the use of the device the straight edge 4 serves as a rule or means of laying out straight lines, and in making measurements either the metric denominations may be used or the inches and fractions of the latter. The square is formed by the intersecting end edge of the square member 5 and the straight edge 4, a true angle being obtained by disposing the device in a horizontal or flat plane to bring the straight edge 4 in coincidence with one line or edge to be tested, and the end edge of the square member will then be in position to determine the trueness or accuracy of the angle sought to be tested or measured. Furthermore, the square member 5 may be conveniently employed for ascertaining the number of square centimeters within a certain area or surface by laying said member flat upon the latter. The device may also be used to perform the ordinary functions of a comb in view of the provision of the teeth 2, and in describing a circle the point of a pencil is inserted through the opening 6 after the device has been laid flat upon a surface and a pointed device or pin is inserted in one of the spaces between the comb-teeth in accordance with the radius of the circle desired to be described, and the entire device is then rotated and through the medium of the pencil-point the outline of the circle obtained.

It is proposed to construct the improved device in suitable pocket lengths and form the same of aluminium, celluloid, or other desirable material, and in carrying the device it is preferred that it be inserted in a leather case having means for fastening it in a pocket. One convenient size for an aluminium device made in accordance with the invention will be thirteen centimeters long, two centimeters broad, and two millimeters thick, with the side edge portion containing the teeth beveled from two millimeters at the center to

one millimeter at the edge. There will be six teeth to the centimeter, each tooth being one millimeter wide, with four-sixths of a millimeter between the teeth. It will be observed that these dimensions provide convenient means for obtaining measurements; but it will be understood that variations in these dimensions may be made at will.

Having thus fully described the invention, what is claimed as new is--

1. A device of the class set forth, having teeth at one side, an opening in one extremity in alinement with the inner end walls of the spaces between the teeth, a straight edge at the side opposite that having the teeth, and scale-marks on opposite faces of the portion of the device from which the teeth extend, said scale-marks extending inwardly from the said straight edge.

2. A device of the class set forth having teeth at one side projecting from a back formed with a straight edge, the said back having scale-marks on opposite sides thereof and the teeth terminating at a distance from one end of the device to provide a square member which has an opening at the center thereof.

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

CHARLES P. HARTLEY.

Witnesses:
JNO. A. NICOL,
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