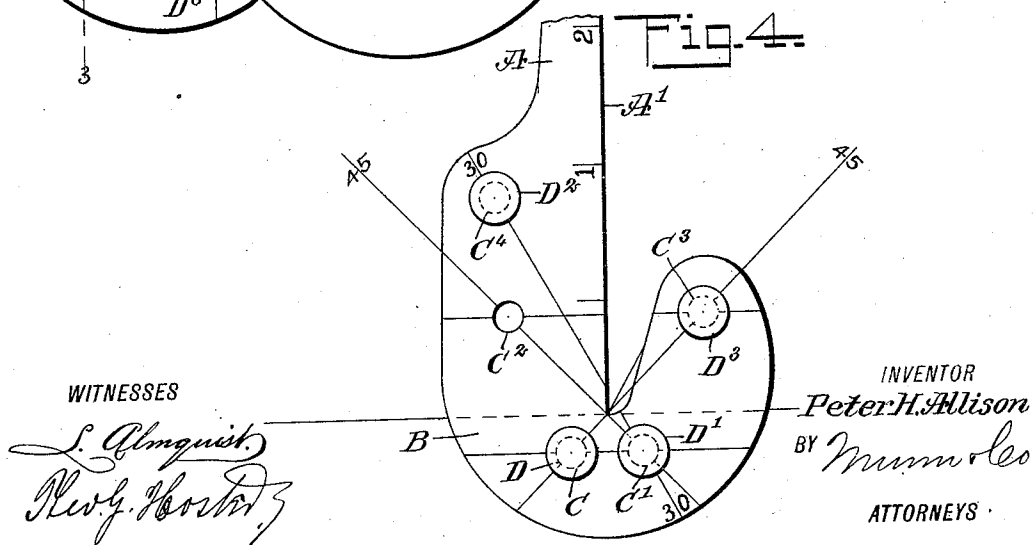
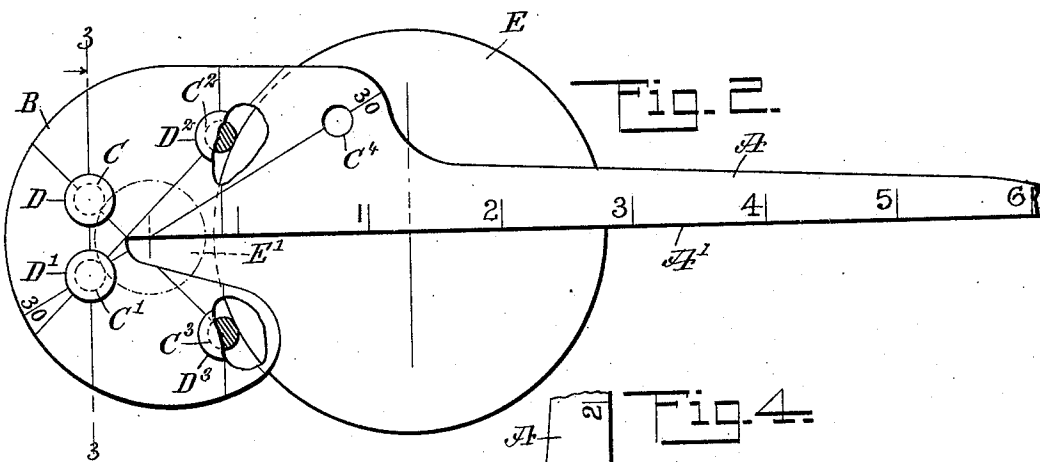
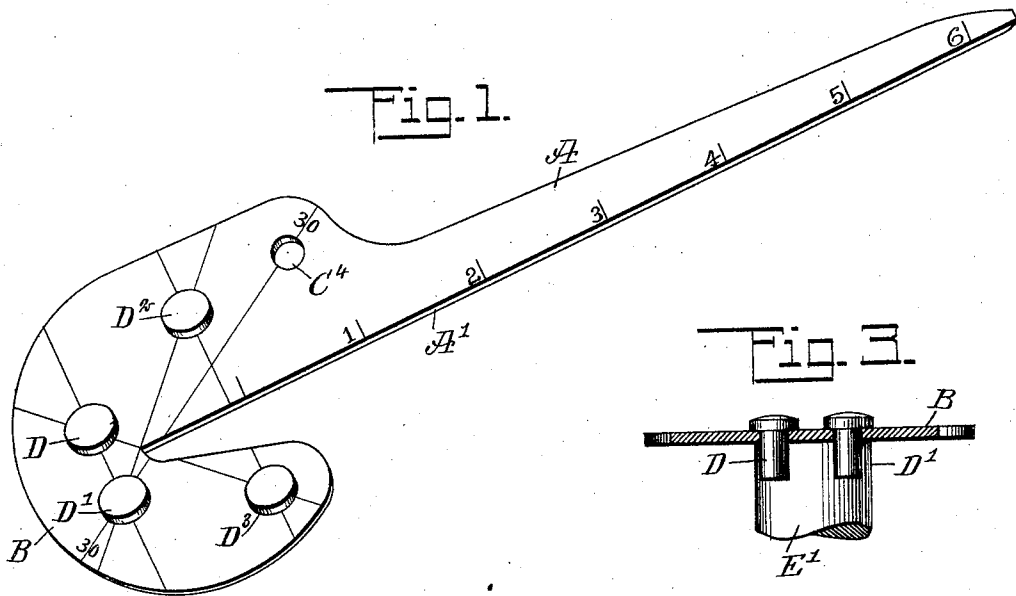


P. H. ALLISON.
COMBINATION CENTER SQUARE.
APPLICATION FILED JAN. 2, 1909.

934,260.

Patented Sept. 14, 1909.



UNITED STATES PATENT OFFICE.

PETER HALL ALLISON, OF TORRINGTON, CONNECTICUT.

COMBINATION CENTER-SQUARE.

934,260.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed January 2, 1909. Serial No. 470,396.

To all whom it may concern:

Be it known that I, PETER HALL ALLISON, a subject of the King of Great Britain, and a resident of Torrington, in the county of Litchfield and State of Connecticut, have invented a new and Improved Combination Center-Square, of which the following is a full, clear, and exact description.

The invention relates to measuring instruments, and its object is to provide a new and improved combination center square, more especially designed for accurately determining the center of round work, for laying out angles and for use as a T-square, depth gage and scale.

For the purpose mentioned the instrument is provided with a blade and a head thereon, having apertures disposed on opposite sides of a line coinciding with the inner edge of the blade, and removable pins for engagement with the said apertures to bring the pins and the edge of the blade in desired relative positions.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement; Fig. 2 is a plan view of the same, parts being in section, and showing the instrument as applied for centering a round piece of work; Fig. 3 is a cross section of the same on the line 3—3 of Fig. 2 and showing the instrument applied to a piece of work of small diameter; and Fig. 4 is a plan view of the improvement and showing the various angles that can be accurately laid out by the use of the instrument.

The blade A of the measuring instrument terminates at one end in a head B extending on opposite sides of the inner edge A' of the blade A, as plainly shown in the drawings. The head B is provided with pairs of apertures C, C' and C², C³, of which the apertures C, C' are disposed equidistant on opposite sides of a line coinciding with the inner edge A', and the apertures C², C³ are similarly disposed equidistant on opposite sides of the inner edge A', but the apertures C, C' are nearer together than the apertures C², C³. An auxiliary aperture C⁴ is also arranged on the head B a distance forward of the aperture C². The apertures C, C' are adapted to be engaged by removable head pins D, D', and similar pins D², D³

are adapted to be engaged with the apertures C², C³, and any one of the pins may be inserted in the aperture C⁴.

Now when it is desired to find the center of a round piece of work E of large diameter, as shown in Fig. 2, then use is made of the two pins D², D³, and the instrument is applied to the work E, so that the pins D², D³ engage the peripheral face of the work E and the blade A extends across the end to be centered. Now lines are drawn along the edge A' across the end of the work E, and the intersection of the lines indicates the center of the work E.

When it is desired to find the center of a small piece of work E' use is made of the pins D, D' in the same manner as above described relative to the work E and the pins D², D³.

By using the pins D, D³, for instance, while the other pins D', D² are removed, an angle of 45° may be drawn relative to the edge against which the said pins D and D³ abut, and angles of 60° and 30° may be drawn by inserting the pin D² in the aperture C⁴ and using this pin D² in connection with the pin D' inserted in the aperture C'. In a like manner an angle of 60° may be drawn by the use of pins in the apertures C³ and C⁴, it being understood that the angles are drawn along the inner edge A' of the blade A.

It will be understood that the arrangement of the apertures C, C', C² and C³ with respect to the edge A' is such that a line drawn through the centers of the openings C, C³ will form upon the side adjacent to the opening C³ an angle of 45° with the edge, while on the opposite side the angle will be 135°. The arrangement of the openings C', C² with respect to the edge is the same. The arrangement of the opening C⁴ and the opening C' with respect to the edge is such that a line drawn through the centers of C', C⁴ will make an angle of 30° with the edge on the side toward the opening C⁴, while a line drawn through the centers of C³, C⁴ will make an angle of 60° with the edge upon the side toward the opening C⁴. It is also understood that by the use of the pins D, D' engaging the apertures C, C' or the pins D², D³ engaging the apertures C², C³, the instrument can be used as a T-square or as a depth gage, the edge A' being for the purpose provided with a graduation representing linear measurement.

The measuring instrument shown and described is very simple and durable in construction, and by the use of the removable pins in the several apertures the instrument can be readily used for accurately determining the center of round work, for laying out angles and for using the instrument as a square, depth gage, scale and the like.

The lines shown in Fig. 4, extending outside of the instrument and marked 45, are lines that may be laid out by the instrument relative to an arbitrary line which may be considered as the base.

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

1. A measuring instrument comprising a head and a blade having a straight edge and extending from the head, said head having detachable pins connected therewith and arranged in pairs, the members of each pair being arranged upon opposite sides of the straight edge of the blade and at equal distances therefrom, and in such manner that the lines connecting the centers of the members of a pair will intersect the edge at a right angle.

2. A measuring instrument comprising a blade, a head on one end of the said blade and having pairs of apertures, the apertures of each pair being spaced equidistant on opposite sides of a line coinciding with the inner edge of the said blade, and pins for removable engagement with the said apertures.

3. A measuring instrument comprising a

blade, a head on one end of the said blade and having pairs of apertures, the apertures of each pair being spaced equidistant on opposite sides of a line coinciding with the inner edge of the said blade, the distances between the apertures of the said pairs of apertures varying for larger and smaller work, and pins for removable engagement with the said apertures.

4. A measuring instrument comprising a blade, a head on one end of the said blade and having pairs of apertures, the apertures of each pair being spaced equidistant on opposite sides of a line coinciding with the inner edge of the said blade, the said head also having an auxiliary aperture, and pins for removable engagement with the said apertures.

5. A measuring instrument comprising a head and a blade having a straight edge and extending from the head, the head having a series of openings upon each side of the straight edge, the individual members of which are arranged at different distances from the edge, the arrangement of the members of the series on one side being symmetrical with the arrangement of the series of the members on the other side, and a pair of pins for engaging the openings.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER HALL ALLISON.

Witnesses:

EDWARD W. MORGAN,
DANIEL McDOUGALL.