W. WRIGHTSMAN.

COMBINATION TOOL.

APPLICATION FILED JAN. 13, 1908.

906,180. Patented Dec. 8, 1908.

Fig. 1.

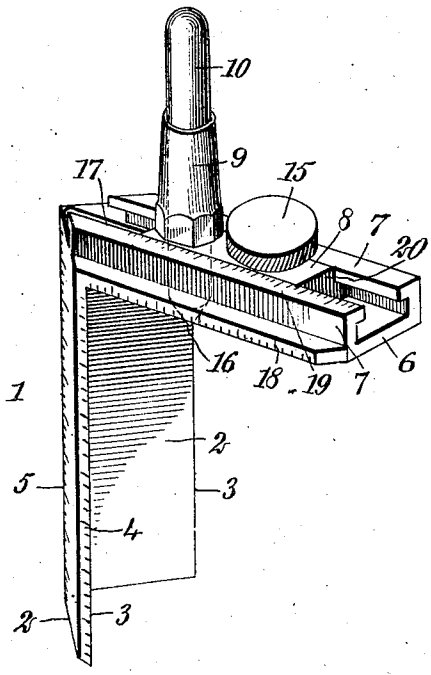


Fig. 2.

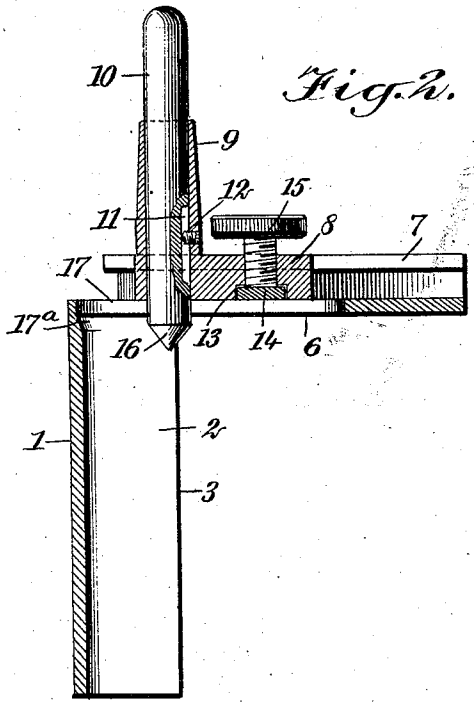
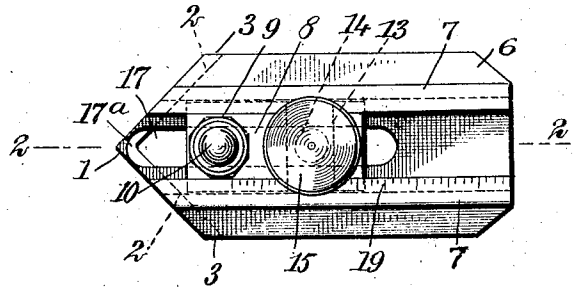


Fig. 3.



WITNESSES

Geo. W. Naylor

John K. Braelwoged

INVENTOR

Warner Wrightsman

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

WARNER WRIGHTSMAN, OF EVANSVILLE, INDIANA, ASSIGNOR OF ONE-HALF TO DAVISON S. HAYNES, OF EVANSVILLE, INDIANA.

COMBINATION-TOOL.

No. 906,180. Specification of Letters Patent. Patented Dec. 8, 1908.

Application filed January 13, 1908. Serial No. 410,578.

To all whom it may concern:

Be it known that I, WARNER WRIGHTSMAN, a citizen of the United States, and a resident of Evansville, in the county of Vanderburg and State of Indiana, have invented a new and Improved Combination-Tool, of which the following is a full, clear, and exact description.

This invention relates to combination tools.

An object of the invention is to provide a combination tool embodying a center punch, a try-square and a linear scale.

A further object of the invention is to provide a device of the class described having a center punch, and arranged so that when it engages a body of circular cross-section in a suitable manner the center punch can be positioned at the cross-sectional center of the body.

A still further object of the invention is to provide a combination tool embodying an adjustable center punch, and having a scale adapted to coöperate with the center punch and graduated to represent diameters, so that when the tool is arranged in a suitable position with respect to a body of known cross-section, the center punch can be positioned at the cross-sectional center of the body by arranging the center punch in a definite position with respect to one of the scale graduations.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth 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 corresponding parts in all the views, and in which—

Figure 1 is a perspective view of my invention; Fig. 2 is a longitudinal cross-section of the device on the line 2—2 of Fig. 3; and Fig. 3 is a plan view of the device.

Before proceeding to a more detailed explanation of my invention, it should be stated that the combination tool can be used for a variety of purposes and in different trades. It is primarily useful in centering bodies of known cross-section, for example, shafting or the like, though it also answers the purposes of a linear scale and a try-square. The center punch of the tool is adjustable, and the arrangement is such that when the tool is properly positioned with respect to a shaft or similar body, the line of movement of the point of the punch intersects the cross-sectional center of the shaft. Consequently, by adjusting the punch the latter can be brought into position at the center and can be used for marking the same in the usual manner.

Referring more particularly to the drawings the device, which may be fashioned from any suitable material, for example tool steel, has a member 1 comprising similar sides 2 arranged at an angle with each other. The separated edges 3, of the sides 2 are beveled and have indicated thereon scales 4, which may be graduated in any convenient manner, for example, in inches and fractions of inches. Near the adjacent edges, the sides 2 have further scales 5, similar to the scales 3 or of any common or preferred type. At one end, the member 1 has a laterally disposed arm 6, at substantially right angles with the member and preferably integral therewith. At the upper face, the arm 6 is provided with under-cut guides 7, between which is slidably arranged a block 8, having shoulders formed suitably to engage the under-cut guides. The block 8 is formed with a sleeve 9, having the bore at substantially right angles to the direction of movement of the block. Within this sleeve 9 is movably located a center punch 10, provided with a groove 11, into which projects the end of a threaded stud 12, arranged in a suitably threaded opening of the sleeve. The stud 12 serves to limit the movement of the center punch and prevents the same from becoming displaced from the sleeve. At the under side, the block 8 has a transverse recess 13, in which is mounted a cross-bar 14, adapted to rest against the upper face of the arm 6 between the guides. A set-screw 15, is located in a properly threaded opening of the block and engages the cross-bar 14. By means of the set-screw, the cross-bar and the block can be jammed into position between the guides to hold the punch in any desired position. The pointed end 16 of the punch projects through a slot 17 in the arm 6. The slot 17 extends substantially to the end of the arm adjacent to the member 1, and the latter at the end of the slot has a cut-away portion 17^a, adapted to receive the punch

and to permit the point of the same to be arranged closely adjacent to the intersection of the sides 2.

At the opposite edges, the arm 6 has linear scales 18 indicated thereon, which may be graduated in any desired fashion, for example, to represent inches and fractions thereof. Upon one of the guides 7 is provided a further scale 19, graduated to represent diameters. That is to say, each graduation of the scale represents a predetermined diameter, and when the edge 20 of the block 8 registers with one of the graduations of the diameter scale, the center puuch is positioned at the cross sectional center of a body having a diameter corresponding to the scale graduation in question. For example, if the tool is arranged with the member 1 engaging at the side of a shaft four inches in diameter, the arm 6 extending over the end of the shaft, the cross-sectional center of the latter can be determined by sliding the block until the edge 20 ergisters with the graduation 4 of the diameter scale. When this occurs, the center punch is positioned at the cross-sectional center of the shaft and can be employed in the usual manner to indicate the center

It will be understood that owing to the angularity of the sides 2, the longitudinal center line of the arm 6, which is at right angles to the member 1 and bisects the angle between the sides of the same, will intersect the center of the shaft, in accordance with the well-known geometrical principle that the bisector of an angle, the sides of which are tangent to a circle, passes through the center of that circle.

The tool is adapted also for use with square shafts, or shafts of other angular cross-section, though for such purpose the graduation of the scale 19 would necessarily be different.

The member 1 and the arm 6 constitute a try-square of the kind commonly employed by metal workers, carpenters and others. The scales 4, 5 and 18 can be employed as linear rules of the ordinary type.

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

1 In a device of the class described, in combination, a member having sides at an angle with each other, an integral, rigid arm extending from said member at one end thereof and at right angle therewith, said arm having under cut guides and a slot between said guides, a block arranged to slide between said guides and having the sides extended to engage at said under cut guides, said block having a sleeve presenting a bore adapted to register with said slot, a center punch movably arranged within said sleeve and adapted to project through said slot, said sleeve having means for limiting the movement of said punch longitudinally thereof, said block having a cross bar adapted to engage said arm, and a set screw controlling said cross bar whereby said block can be locked in any desired position.

2. In a device of the class described, a try-square having rigidly connected arms arranged at right angles to each other, and a center punch adjustable longitudinally of one of the arms of the square.

3. In a device of the class described, a try-square having one of its arms longitudinally slotted and provided with a guide-way, a block slidable in the guide-way, and provided with a sleeve, a center punch movable through the sleeve and means for securing the block in adjustable position.

4. In a device of the class described, a try-square having one of its arms slotted and provided with a guide-way a block movable in the guide-way, a center punch supported by the block and movable through the arm, and means for securing the block in its adjusted position.

5. In a try-square, a center punch mounted for longitudinal movement on one of the arms thereof for the purpose set forth.

6. In a device of the class described, the combination with a try-square of a punch adjustably mounted on one of the arms thereof, said arm being provided with a scale for the purpose set forth.

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

WARNER WRIGHTSMAN.

Witnesses:

R. C. BENEFIELD,

PAUL A. MUELLER.