

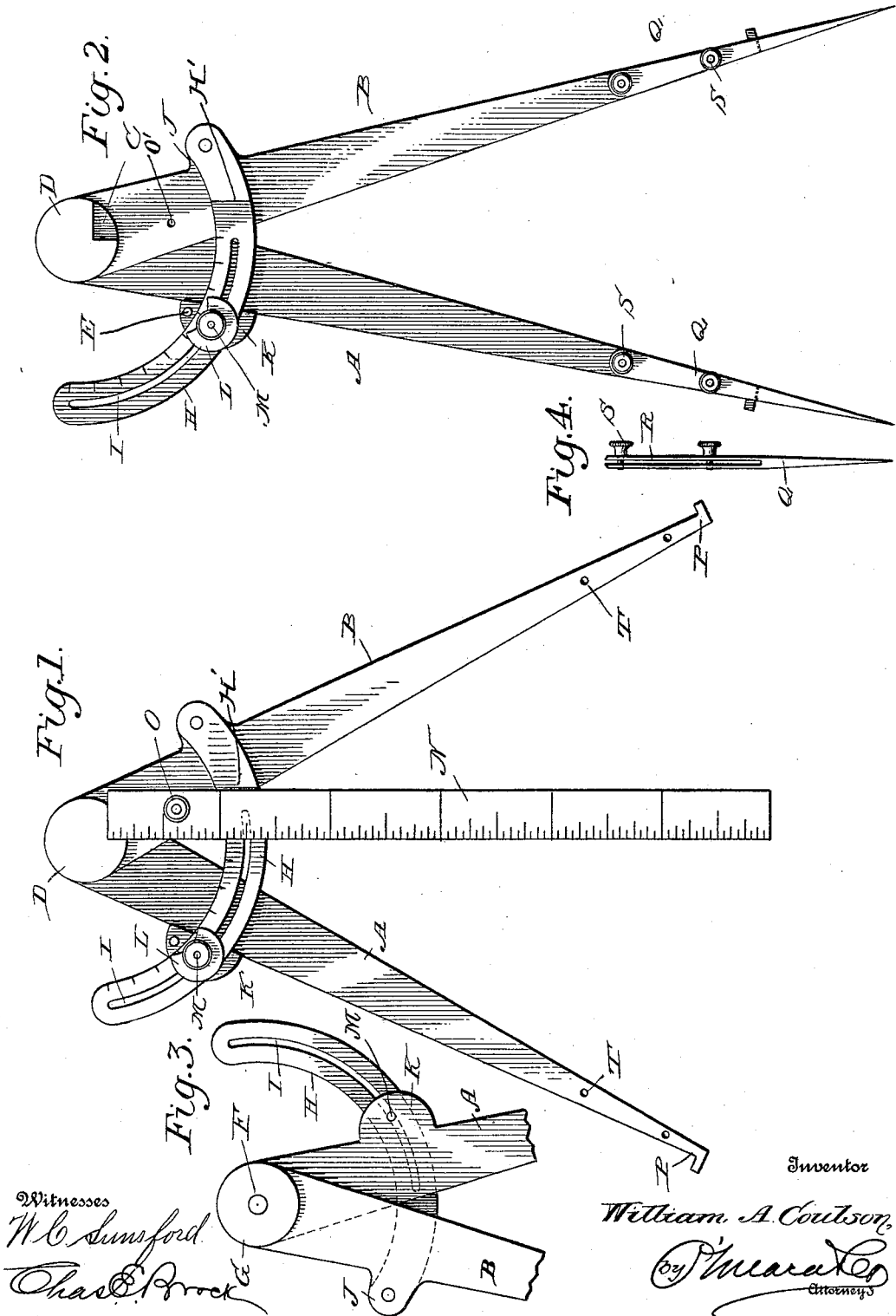
No. 613,665.

Patented Nov. 8, 1898.

W. A. COULSON.  
COMBINATION TOOL.

(Application filed June 21, 1897.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

WILLIAM A. COULSON, OF MOSS POINT, MISSISSIPPI.

## COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 613,665, dated November 8, 1898.

Application filed June 21, 1897. Serial No. 641,678. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. COULSON, residing at Moss Point, in the county of Jackson and State of Mississippi, have invented a new and useful Combination-Tool, of which the following is a specification.

My invention is in the nature of a combination-tool for machinists' use, and has for its object to furnish a combination-tool which may be used for the several purposes of a pair of inside calipers, a center-gage, a try-square, a bevel-gage, a quadrant, a tool-gage, and a pair of dividers or compasses.

The invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the claim.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe it, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view in side elevation of a pair of inside calipers having secured thereto means for adjusting them into position for use as a center-gage for turning round or cylindrical bodies. Fig. 2 is a similar view of the calipers converted into dividers or compasses. Fig. 3 is a rear view of the calipers, the legs being in position for use as a tool-gage. Fig. 4 is a view in side elevation of one of the removable points, the attachment of which converts the calipers into dividers or compasses.

Like letters of reference mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by letters, A and B are the legs of a pair of inside calipers, such as are used by machinists to try inside diameters of hollow work, such legs being provided with the usual outward-projecting feet P. Near their feet these legs A and B are provided with holes T to receive the screws S for attaching points Q to the legs, whereby they may be used as dividers or compasses, said points Q having forked or bifurcated upper ends R to embrace the legs A and B and suitable holes to coincide or register with the holes T in legs A and B, the screws engaging

in the holes in the legs and points and rigidly securing the points to the legs. Other forms of points might be secured to the legs A and B in the same manner—such, for instance, as points for outside calipers or for scribing or with lead-pencil or pen points.

The legs A and B are pivotally connected at their upper ends by means of the ordinary pivotal screw F, a washer D also being used when necessary or desired.

An ear or lug J projects from the outer edge of the leg B not far from the pivot, to which is pivotally secured a curved bar H, approaching a semicircle in length, provided with a slot I, extending more than ninety degrees in the bar, and with a shoulder H'. A lug or ear K projects from the outer edge of the leg A in a position corresponding with lug J on leg B. A screw M projects from said lug K through slot I and has a nut L for clamping the curved bar H to the lug K in any position to which it may be moved. The curved bar has a graduated scale indicating the number of degrees of angle existing between legs A and B in any position, a pointer E on lug K indicating the proper mark upon said scale.

The washer D has a right-angled recess C, which when in proper position to serve my purpose in a tool-gage will have one edge directly in line with the point where the inner lines of the legs A and B come together.

A rule N, graduated with inches and fractions thereof, is to be seated with its upper end in said recess C, with one side against the shoulder H' of the sector, and clamped tightly in position by a screw O entering a threaded hole at O' in leg B. The legs of the calipers are now set at an angle of sixty degrees, when the tool becomes a gage for finding the center for a lathe in turning all kinds of round or cylindrical work.

When a tool-gage is desired to test the bevel of tools being sharpened, especially such tools as are used in cutting threads to gage, the legs are moved until the pointer E indicates the degree of inclination required, and the legs then locked in that position by set-screw M, when by turning the calipers over, as in Fig. 3, the bevel of the tool may be tested in the angle between the legs.

When a quadrant is desired, it is only necessary to lock the legs in the proper position for that purpose.

When a try-square is desired, it is only  
5 necessary to adjust the legs to an angle of ninety degrees and clamp them tightly in position, when the legs will form the arms of such a square.

When a gage for bevels is required, (or, as  
10 it is sometimes erroneously called, "a bevel-square,") it is only necessary to adjust the legs to the proper angle to each other and secure them in that position by set-screw M.

The advantages attending the use of my  
15 invention will be obvious from the foregoing description. A machinist possessing a tool thus made can in an instant transpose it into any of the tools specified, and is thus saved the expense of a large number of tools inde-  
20 pendent of the advantage of the decreased liability of loss of time and vexatious delay due to the necessity very often existing of looking up stray tools.

While I have illustrated and described the  
25 best means now known to me for carrying out my invention, I wish it to be distinctly un-

derstood that I do not confine myself to the exact details of construction shown and described, but hold that any slight variations in such details which might suggest them-  
30 selves to the ordinary mechanic would clearly fall within the limit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by  
35 Letters Patent of the United States, is—

The combination of a pair of legs pivoted together at one end and having lugs on their outer edges, a sector-arm pivoted to one of said lugs, having a central slot and a shoul-  
40 der near one end, a screw projecting from the other lug through the slot of the sector-arm, a nut on said screw to clamp the sector-arm, a pointer located on the last-named  
45 lug, and a graduated rule secured to one of the legs and adapted to fit against the shoulder of the sector-arm, substantially as described.

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