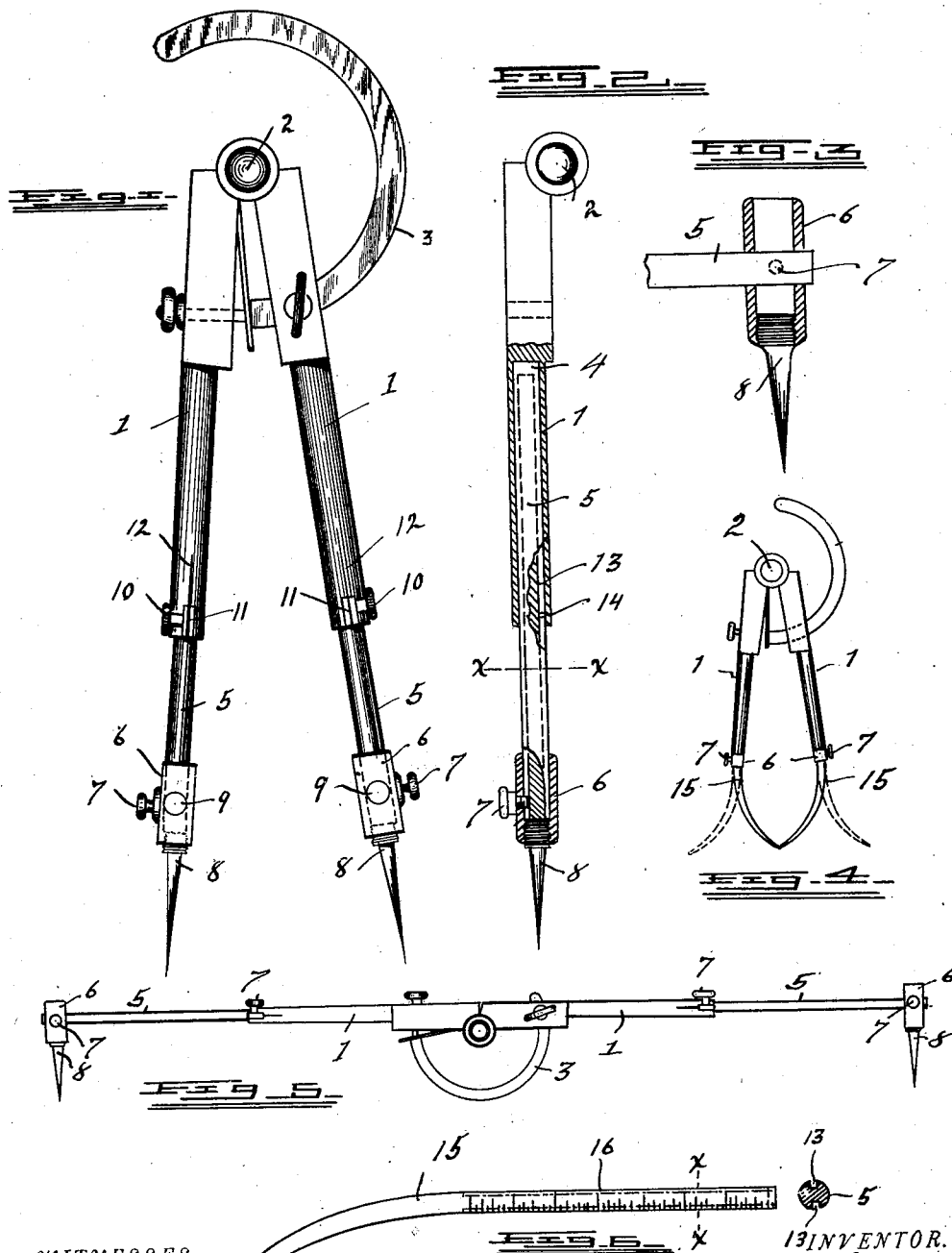


No. 732,463.

PATENTED JUNE 30, 1903.

O. STODDARD.
CALIPERS AND DIVIDERS.
APPLICATION FILED JULY 25, 1902.

NO MODEL.



WITNESSES.
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OSCAR STODDARD, OF DETROIT, MICHIGAN, ASSIGNOR TO THE BATTLE CREEK NOVELTY COMPANY, LIMITED.

CALIPERS AND DIVIDERS.

SPECIFICATION forming part of Letters Patent No. 732,463, dated June 30, 1903.

Application filed July 25, 1902. Serial No. 116,898. (No model.)

To all whom it may concern:

Be it known that I, OSCAR STODDARD, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Dividers and Calipers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to dividers and calipers; and it consists in the construction and arrangements of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to provide means whereby the points may be tipped, so as to stand at right angles to the legs of the divider, enabling the legs to be extended to their full extent, and in the case of calipers to provide for holding the points against turning in the sockets of the legs and at the same time provided for taking interior and exterior diameters.

The above object is attained by the device illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a divider involving my invention. Fig. 2 is a sectional view taken longitudinally through the leg of the divider and its adjustable point. Fig. 3 is an enlarged view, partly in section, showing the point adjusted at right angles to the leg. Fig. 4 is an elevation showing the instrument equipped with caliper-points. Fig. 5 is an elevation showing the instrument extended and the point standing at right angles to the legs. Fig. 6 is an elevation of one of the points and a transverse section through the point on line X X, Figs. 2 and 6.

Referring to the characters of reference, 1 designates the legs of the divider, hinged together at 2 in the ordinary manner and provided with the usual arc 3. Within the legs of the divider are formed sockets 4, that receive the stems 5 of the points, attached to the lower ends of said stems by the sleeves 6, in which said stems enter and are secured by

means of set-screws 7, which pass through the walls of the sleeves and bear against said stems. The outer ends of said sleeves are threaded, and into said threaded openings are screwed the points 8. Passing transversely through the sleeves on a plane with the set-screws 7, but at right angles thereto, are the apertures 9, through which the stems of the dividers are adapted to pass and in which they may be secured by the said screws 7, so as to cause the points of the divider to stand at right angles to the legs, as shown in Fig. 5. The stems 5 are adapted to telescope within the sockets of the legs to allow of longitudinal adjustment and may be securely clamped therein by means of the set-screws 10, which pass through the ears 11 on either side of the slit 12 in the wall of the socket of the legs. To prevent the turning of the points within the sockets of the legs, especially when the points are adjusted as shown in Fig. 5, the stems are provided with longitudinal channels 13 in their opposed faces, adapted to receive a pin 14, projecting from the inner wall of the socket of the legs, as shown in Fig. 2, whereby the stems are allowed to slide longitudinally within the socket, but are held against turning therein. This feature is especially important where caliper-points 15 are used, for the reason that it is essential to hold said points so that they will stand in the plane of the legs of the divider, whether setting the points to take an outside diameter, as shown by solid lines in Fig. 4, or reversing the points to take an inside diameter, as shown by dotted lines in said figure. On reversing the points so as to take an inside diameter they are entirely withdrawn from the legs and are turned so as to cause said points to curve outwardly, the opposed channels in the stems of said points which receive the pins 14 allowing of this reverse movement of the points and holding them against accidental turning in either position. By reason of the extension of the points which may be attained and the adjustment of said points to a position at right angles to the legs an extensive range is given to the instrument, and the points when extended are so firmly screwed to the stems thereof as to prevent an accidental turning of said points when in use.

The stems 15 of the caliper-point is provided with a graduated scale, the purpose of which is to show the comparative depth at which the point enters the legs. When taking an interior diameter through an opening smaller than said diameter, it is necessary to remove one of the points before the instrument can be withdrawn. By means of the scale upon the point which remains in place the removed point may be inserted so as to correspond with the point remaining in place, and thereby show the diameter exactly as taken.

When it is desired to adjust the divider-points to the position shown in Figs. 3 and 5, the set-screws 7 are loosened, so as to enable the sleeves to be withdrawn from the stems, when said stems are inserted in the openings 9 and secured by tightening the screw 7, thereby enabling the use of the tool with the legs fully extended.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an instrument of the character described, the combination of the hinged legs having an extensible portion, a sleeve having a socket therein adapted to receive the end of

said extensible portion, said sleeve having an aperture transversely therethrough at right angles to and crossing said socket and adapted to receive said extensible portion, a screw passing through the wall of the sleeve, and communicating with said socket and said aperture, and a point screwed into the sleeve in axial alinement with said extensible portion.

2. In an instrument for the purpose set forth, the combination of the hinged legs having sockets therein, stems adapted to adjust longitudinally within said sockets, means for preventing a rotation of the stems within said socket, sleeves having axial sockets which receive said stems, said sleeves having apertures extending transversely through the walls thereof at right angles to said sockets adapted to also receive said stems, points mounted in said sleeves and a set-screw in the wall of the sleeves communicating with said socket and aperture.

In testimony whereof I sign this specification in the presence of two witnesses.

OSCAR STODDARD.

Witnesses:

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