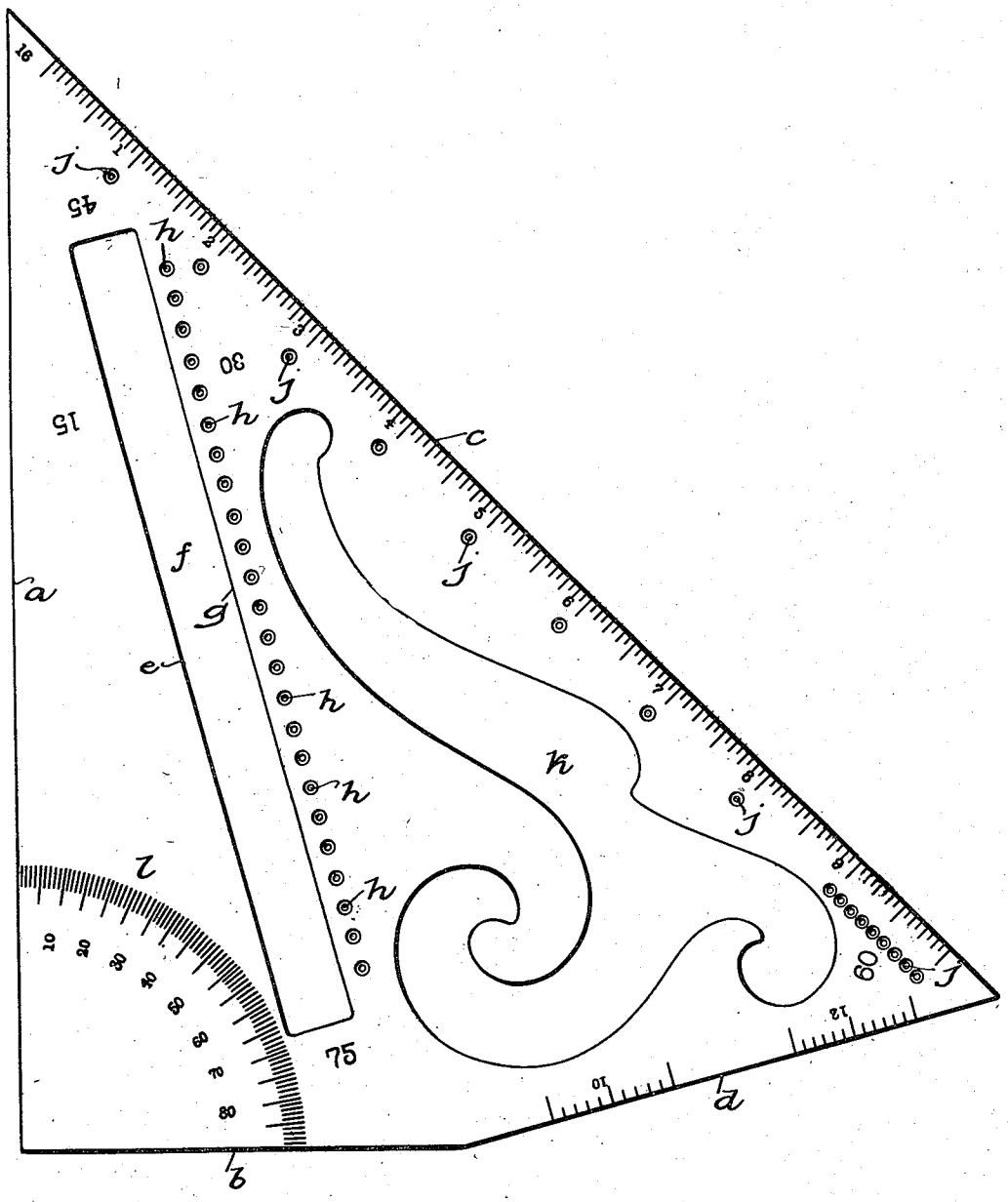
E. J. EARLY.

DRAFTING APPLIANCE.

APPLICATION FILED JAN. 6, 1914.

1,171,329.

Patented Feb. 8, 1916.



Witnesses—
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UNITED STATES PATENT OFFICE.

EARL J. EARLY, OF PHILADELPHIA, PENNSYLVANIA.

DRAFTING APPLIANCE.

1,171,329. Specification of Letters Patent. Patented Feb. 8, 1916.

Application filed January 6, 1914. Serial No. 810,557.

To all whom it may concern:

Be it known that I, EARL J. EARLY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Drafting Appliances, of which the following is a specification.

One object of my invention is to provide a draftsman's "angle", which in itself shall embody the characteristics and be capable of use in the place of such instruments as a thirty-and-sixty degree triangle, a forty-five degree triangle, a lettering instrument, a section liner, a protractor, a compass, an irregular curve and one or more scales, etc.

It is further desired to provide an instrument having the above characteristics, which shall primarily be convenient to manipulate, easy to understand and use, and at the same time relatively inexpensive to manufacture.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which: the figure is a plan of a drafting instrument constructed according to my invention.

In this drawing, the preferred form of my drafting instrument is shown as consisting of a flat body of material of about one-sixteenth of an inch in thickness, and preferably flexible as well as transparent, although for some purposes it may be made of opaque material, without departing from my invention.

The instrument has four sides, of which that indicated at *a* is at right angles to the side *b*, while the side *c* extends at an angle of forty-five degrees to said first side. The fourth side *d* extends at an angle of one hundred and sixty five degrees to the line *b* and at an angle of sixty degrees to the line *c*. Immediately adjacent to and parallel with the longest side *c* of the instrument illustrated, I provide a series of graduations constituting a scale, in this instance having a length of substantially ten inches divided into sixteenths, while immediately adjacent the side *d* I provide two one-inch scales, of which one is divided into tenths of an inch and the other into twelfths.

In the body of the instrument, I form an elongated, relatively narrow rectangular opening *f*, one of whose sides *e* lies at an angle of fifteen degrees to the side *a* of the instrument and consequently at an angle of thirty degrees to the side *c*, the opening preferably being so placed that the line of the side *e* passes through the point of intersection of the sides *a* and *c*. Immediately adjacent and substantially parallel with the second long side *g* of the opening *f* is a line of holes *h*, preferably tapering from one face of the instrument to the other and preferably placed a uniform distance of one-fourth of an inch apart. A second series of holes *j* is arranged in a straight line adjacent to and parallel with the side *c* of the angle, being for the most part one inch apart, although immediately adjacent the angle *c*—*d* they are spaced one-eighth of an inch apart for a distance of one inch.

In the angular space defined by the sides *c* and *d*, I provide an irregularly shaped recess *k*, whose outline is made up of a continuous series of irregular curves, while between the sides *a* and *b* I provide a quadrant *l* of degree graduations preferably though not necessarily laid off from the point of intersection of these sides as a center and numbered at intervals of ten degrees.

The sheet material preferably employed by me is transparent celluloid, so that when it is desired to draw a line at any angle, say forty-three degrees to a given line, the instrument may be placed over this latter line in such a position that it passes through the point of intersection of the sides *a* and *b* and also through the graduation of the protractor corresponding to forty-three degrees. The desired line may then be drawn by running a pencil along the side *a*.

It is noted that the line of holes *h* is particularly useful in cross-sectioning drawings, for if the instrument be placed with its side *a* in engagement with the edge of a T-square or any other temporarily fixed straight edge, the point of the pencil may be successively placed in these holes and said instrument as a whole moved alternately in opposite directions across the drawing, with the result that a series of cross-section lines one-sixteenth of an inch apart may be quickly drawn. Obviously, by altering the position of the instrument on the straight edge, section lines with other spacings may be drawn.

To those skilled in the art, it will be apparent that by use of the above instrument and a suitable guiding straight edge, it is possible to quickly draw one or any number of lines at angles to said edge which vary by intervals of fifteen degrees from zero to

one hundred and eighty degrees, for by suitably applying said instrument to the straight edge in different positions, lines at any or all of these angles may be laid down. Moreover, by placing a pin in one of the holes *j* and thereby pivotally holding the instrument, a pencil may be placed in another one of said holes and thereafter swing about the pin as a center to draw circles whose diameters may vary from one-fourth of an inch to twenty inches.

Other advantages of the tool will be apparent to those skilled in the art in which it is designed for use, and while I preferably make it in the form shown in the drawing, the protractor, for example, may be differently arranged or omitted in case it should be desired to construct a device of opaque material, without departing from my invention.

I claim:—

1. A drafting instrument consisting of a four-sided piece of sheet material whose internal angles are forty-five degrees, sixty degrees, ninety degrees and one hundred and sixty-five degrees respectively, the last-named angle lying between the sixty and ninety degree angles.

2. A drafting instrument consisting of a four-sided piece of sheet material whose internal angles are forty-five degrees, sixty degrees, ninety degrees and one hundred and sixty-five degrees respectively, the last-named angle lying between the sixty and ninety degree angles, said piece having formed in it an elongated opening having a straight side and a line of uniformly spaced holes formed immediately adjacent and parallel to said side.

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

EARL J. EARLY.

Witnesses:

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