Oct. 18, 1955 M. W. LAINE 2,720,706

DRAFTING TEMPLATES

Filed May 14, 1952 2 Sheets-Sheet 1

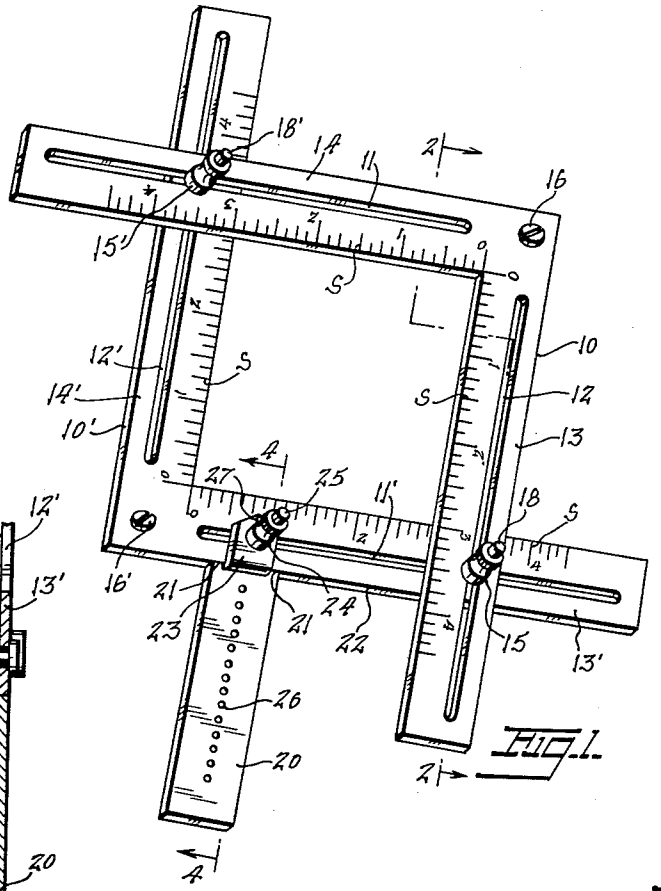


FIG. 1.

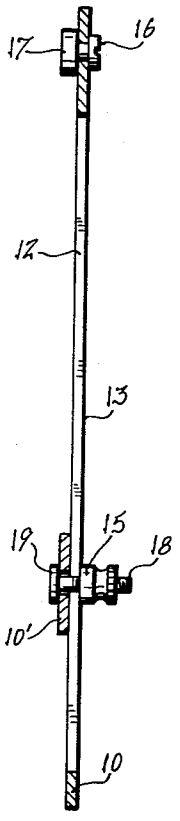


FIG. 2.

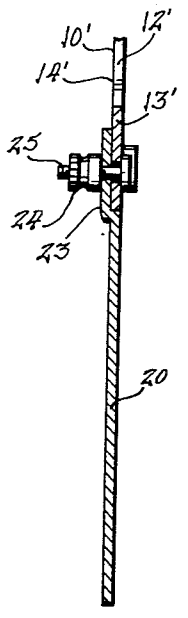


FIG. 4.

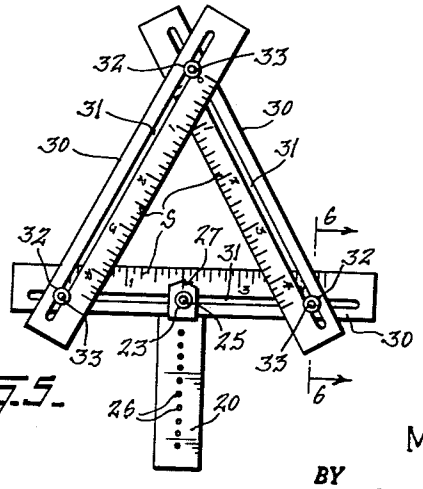


FIG. 5.

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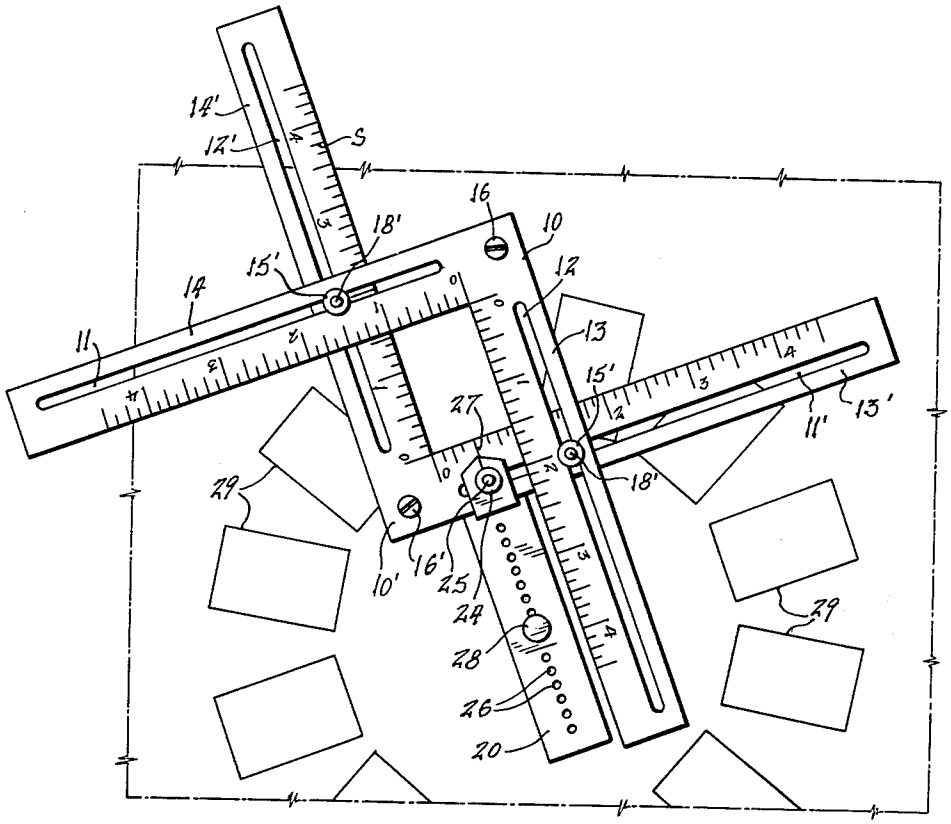


Fig. 3.

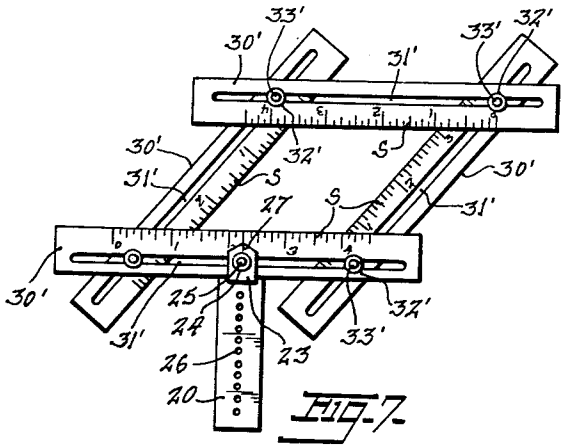


Fig. 7.

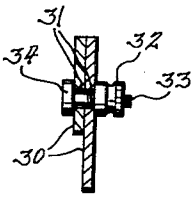


Fig. 6.

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DRAFTING TEMPLATES

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Application May 14, 1952, Serial No. 287,723

4 Claims. (Cl. 33—95)

This application relates to drafting instruments and particularly concerns a novel drafting template.

In drafting work it is often necessary to draw many rectangles and squares of the same or various sizes as for organization charts, electrical schematic diagrams, and many other purposes. In conventional practise, a draftsman requires the use of a T square, ruler or scale, pencil, ink and ruling pen when ink tracings are to be made. To draw two rectangles at two separate places on a sheet the draftsman must first scale the horizontal dimension and mark it in with a pencil. Then using a T square and triangle he erects a perpendicular by scaling to the second dimension and marking or drawing it in pencil. Then by moving his T square and triangle twice more, he finishes the other two sides, all in pencil. Then he must rule in either the two vertical or horizontal lines first with ruling pen and ink (making two more moves with his triangle or T square) and after waiting several seconds for the ink to dry, he finishes by ruling in the last two parallel sides. He must use care in the use of his pen so that the corners meet exactly, do not over-run and that his instruments do not slip while ruling. To make another identical rectangle elsewhere on the sheet he must duplicate the above described procedure and unless great care is taken the two rectangles will not be exactly alike. The entire procedure is slow and requires a great deal of skill for proper execution.

With a template device embodying my invention the use of pencil, scale and triangles is eliminated. By merely setting two right angle sections comprising the template at desired scale markings and tightening them in position the template is ready for drawing as many identical inked rectangles as desired.

There is no waiting for the ink to dry. The rectangles have perfectly square corners, all drawn in a single continuous motion. Use of a pencil is unnecessary. Perfect rectangles and squares can be drawn with my device even by novices in a small fraction of the time now required by conventional methods. As an additional feature the device makes it possible to draw a plurality of rectangles disposed on the arc or circumference of a circle which is extremely useful in preparing layouts in postage stamp albums, photograph albums, etc. This difficult drafting operation is rendered easy and rapid and results are accurate and uniform.

It is therefore an object of the invention to provide a drafting template for drawing a plurality of rectangles and squares of various dimensions more easily and quickly than has heretofore been possible.

It is a further object to provide a drafting template for drawing rectangles disposed on the circumference of a circle.

It is a further object to provide a drafting device for drawing a rectangle in ink in one continuous motion.

For further comprehension of the invention and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various

novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of the device embodying the invention.

Fig. 2 is a sectional view on lines 2—2 of Fig. 1.

Fig. 3 is a plan view illustrating the device as used for drawing a plurality of rectangles on a portion of the circumference of a circle.

Fig. 4 is an elevational sectional view of the radial arm of the device taken on lines 4—4 of Fig. 1.

Fig. 5 is a plan view of a modified form of the invention.

Fig. 6 is a sectional view on lines 6—6 of Fig. 5.

Fig. 7 is a plan view of another modified form of the invention.

The device shown in Figs. 1, 2, 3, and 4 comprises two identical squares **10** and **10'** having perpendicularly disposed slots **11** and **12** and **11'** and **12'** extending substantially the entire length of each arm **13**, **14**, **13'** and **14'** of the square. Each arm is marked with a scale in units of length starting with zero (0) at the inside corner of the square. A screw **16** is fastened to a nut **17** adjacent the outside corner of the square on a line with the slots **11** and **12**. The purpose of the nut is to elevate the back of the square above the surface of a drawing sheet when in use. Instead of a screw and nut, a depression or a tongue may be struck out at the corner of the square to elevate the back of the square. The squares are assembled together by thumb nuts **15** and **15'** and screws **18** and **18'** passed through the slots **12** and **11'** and **11** and **12'** respectively to form a rectangle bordered on all sides by the scale markings on the arms of the squares. The head **19** of each screw **18** and **18'** is flattened and equals in thickness that of the nut **17**, so that in use the entire body of the template is raised above the surface of the drawing sheet.

A bar **20** is provided which serves as a radial arm for the device. The bar is provided with shoulders **21** which bear on the outside surface **22** of the arm **13'**. The end of bar **20** has an offset end portion **23** as shown in Fig. 4. Thumb nut **24** and screw **25** holds bar **20** to the arm **13'**. The bar **20** is slidable along the arm **13'** with the screw **24** passing through slot **11'**. The head **25'** of screw **25** has the same thickness as the nut **17** and screw head **19** disposed on both sides of screw **25**. A plurality of aligned holes **26** are provided in bar **20**, each of which holes serve as a center of rotation for the device when a pin is passed through it to a drawing board beneath. A mark **27** is placed at the end of offset portion **23** to assist in accurately locating bar **20** along scale S on arm **13'**. If it is only desired to draw a plurality of rectangles of the same or different sizes not disposed on the circumference of a circle the bar **20** may be removed from the assembled squares.

To draw on a sheet a series of rectangles located on the circumference of a circle, the bar **20** is moved until mark **27** is located at a desired point on the scale S. Thumb nut **24** is tightened. The squares **10** and **10'** are adjusted to form the desired size rectangle and thumb nuts **15** and **15'** are tightened. A tack or pin **28** (Fig. 3) is inserted in one of holes **26** to serve as a center of rotation and the template is placed on a drawing board over the sheet. The template is now ready for use. In Fig. 3 is shown a plurality of rectangles **29** as they would appear while being drawn with the aid of the template, all disposed along the circumference of a circle with pin **28** at its center. It is particularly important to note that each rectangle is made directly in ink without lifting the template from the drawing sheet.

Since the bottom surface of the template is raised up

off the surface of the sheet ink cannot smear as it is applied and as the template is swung on an arc to the next rectangle's position.

When a plurality of rectangles are desired to be drawn all lying on a straight line, a ruler or straight edge is placed adjacent the line and the template is placed so that the outer edge of scale S of arm **14'** lies just above the line. A rectangle can then be drawn in one continuous motion. The template is then moved along the straight edge a desired distance and another rectangle is drawn. Arm **13'** may be placed in contact with the straight edge if bar **20** is removed. If a thin straight edge guide, T square, or ruler having a thickness less than that of template elevating nut **17** and screw head **19** is used, then the template can be slid along the straight edge with any of the arms of the square lying above the guide and with the guide contacting the elevating nut **17** and screw-head **19**.

In Figs. 5 and 6 are shown a modification of the invention in which a plurality of arms **30** having slots **31** are joined by thumbnuts **32** and screws **33**. Each screw **33** has a flat head **34** for raising the template above the surface of a drawing sheet. Bar **20** with holes **26** is attached to one arm **30** by thumbnut **24** and screw **25**. A plurality of triangles of the same or different shapes and sizes may be drawn with this form of template. The triangles may be drawn disposed around the circumference of a circle by use of radial bar **20**.

In Fig. 7, the arms **30'** are shown attached by screws **33'** and **32'** to form a parallelogram. Bar **20** likewise provides means for drawing parallelograms disposed in a circle.

It is also possible by employing the principles heretofore disclosed to construct templates for drawing polygons of any desired shape and size, in accordance with the invention.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A drafting template for use with a drawing sheet comprising a plurality of superimposed flat L-shaped scaled squares, each square having a slot disposed on a medial line substantially the entire length of each arm of the square, means for adjustably fastening said squares together in rectangular formation, said means projecting a predetermined distance from one side of said squares, means projecting from the corners of the squares a distance equal to said predetermined distance for raising the squares above the surface of the drawing sheet whereby smearing of ink on the sheet is prevented, said template having a flat bar perpendicularly disposed with respect to one arm of the squares, and adjustable fastening means for positioning said bar along said one arm, said bar having a plurality of aligned holes disposed substantially the entire length of the bar whereby the entire template may be rotated with any of said holes serving as a center of rotation.

2. A drafting template in accordance with claim 1 in which said bar has an end portion offset from the plane of the bar and abutting said one arm.

3. A drafting template in accordance with claim 2 in which said fastening means projects beyond the plane of said one arm a distance equal to said predetermined distance.

4. A drafting template for use with a drawing sheet comprising a plurality of L-shaped squares superimposed to form a rectangle with plural means projecting from the corners of the rectangle for raising the squares a predetermined distance above the sheet to prevent smearing of ink on the sheet, said template including a flat bar perpendicularly attached at one end to one side of said rectangle, said bar being slidable along said side, said bar being provided with at least one hole for rotating the template parallel to said drawing sheet.

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