May 20, 1941. F. E. BOUGHTON 2,242,286

RULING APPARATUS

Filed Oct. 6, 1938

Fig. 1

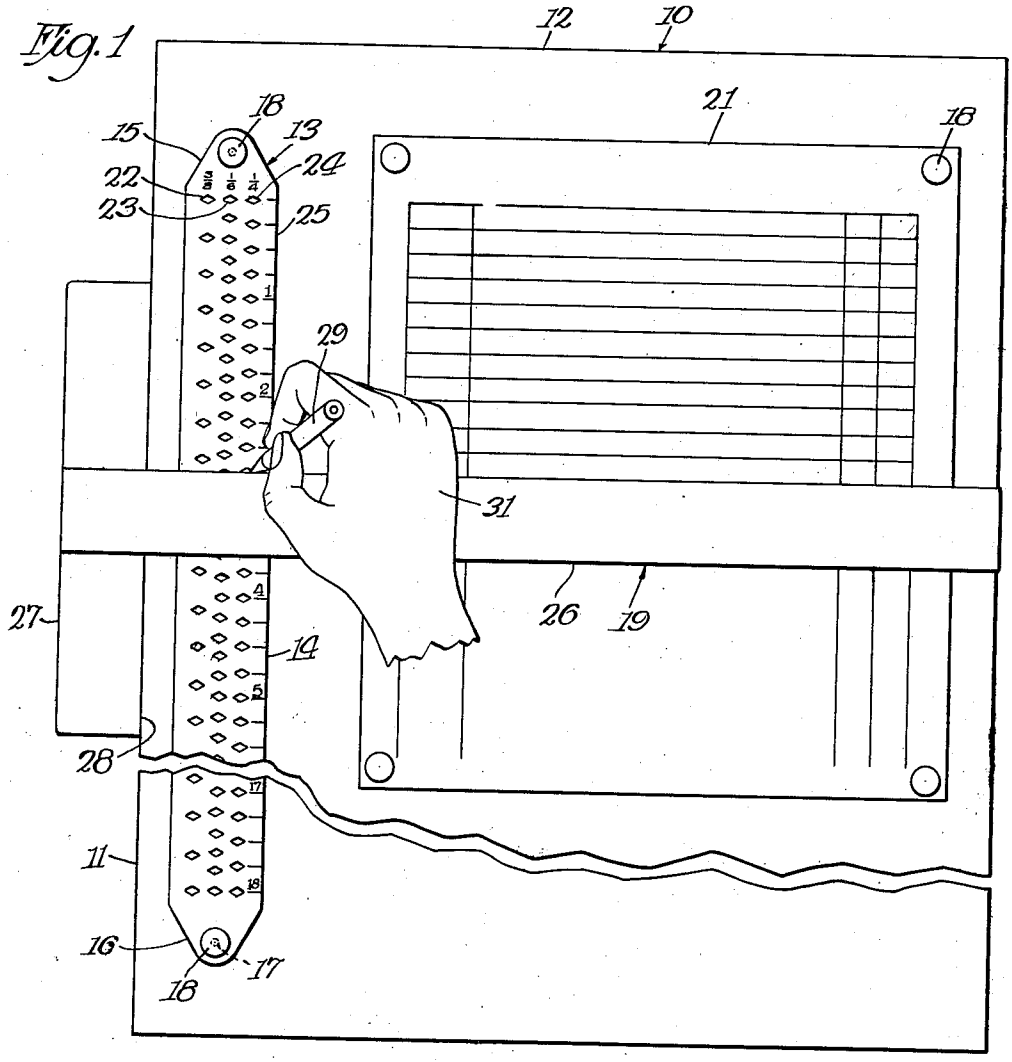


Fig. 2

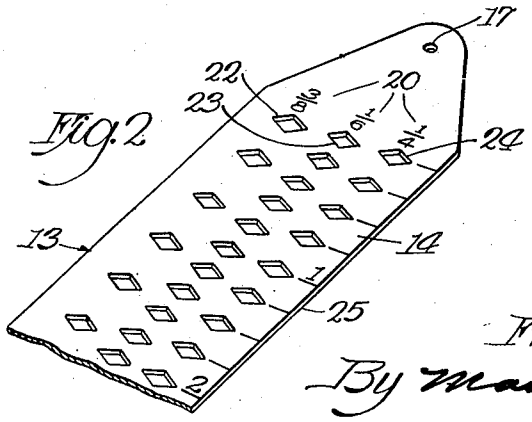
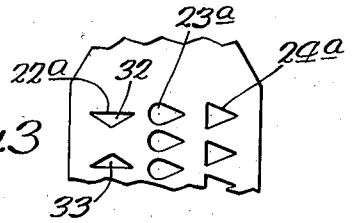


Fig. 3



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2,242,286

RULING APPARATUS

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Application October 6, 1938, Serial No. 233,563

4 Claims. (Cl. 33—76)

This invention relates to spacing mechanism and more particularly to rules that are especially adapted for use in making ruled forms, layouts, and the like.

One of the objects of the invention is the provision of a new and improved spacing mechanism for use in different printing processes and that may be used in various other relations where lining or spacing is required.

Another object of the invention is the provision of a new and improved spacing rule having novel means for centering an instrument capable of making a point or line such as a pen, pencil, stylus, engraving tool, or other device preparatory to making rules, forms, layouts, and the like.

A still further object of the invention is the provision of a new and improved spacing rule that is simple in construction, inexpensive to manufacture, easily applied and removed from a table or drawing board, efficient and accurate in use, and is of such thinness of material as not to interfere with the use of a T-square over the same when in position on a table or drawing board.

Other and further objects and advantages of the invention will appear from the following description, taken in connection with the accompanying drawing, in which

Fig. 1 is a plan view of the device shown in position on a drawing board for ruling a sheet of paper;

Fig. 2 is a perspective view on an enlarged scale of one end portion of the rule; and

Fig. 3 is a plan fragmentary view showing a slightly modified form of the openings through the rule.

In the various printing processes and in numerous other relations, it is necesary or desirable to rule sheets of paper or the like with parallel lines equally spaced apart. These lines may extend longitudinally of the sheets or transversely thereto or both and in many instances there are a large number to the sheet. It is common practice in ruling the sheet to employ a rule having the required graduations to the inch and indicate by dots on the paper the proper graduations and with a T-square draw lines through these points or dots. This is often a long tedious task and is extremely difficult if accuracy is required as in printing processes and the like.

The present invention seeks to eliminate these difficulties by the provision of means whereby work of this general nature may be expeditiously and accurately accomplished even by a novice or by one not skilled in the use of drawing instruments.

While the device is especially useful in printing processes of various kinds such as offset printing (planographing), multilithing, lithographing, mimeographing, duplicating (stencil, spirit and gelatine) engraving, typewriting, and direct printing, it is understood that it may be used in various arts where parallel lines, or ruling of various forms are useful or desirable.

Referring now to the drawing, the reference character **10** designates a drawing board which may be of the usual or any well known construction having the straight edges **11** and **12** along at least one side and one end of the board. A spacing rule made in accordance with the present invention is shown at **13** and comprises an elongated body portion **14** having its ends **15** and **16** provided with openings **17** through which thumb tacks **18** may extend for attaching the rule to the board **10**, as shown in Fig. 1 of the drawing.

The rule is of any suitable material such as metal, fiber, paper, plastic, cellulose, or any like material that may be provided with suitable openings, as will presently appear. The rule is made thin so that a T-square may be moved over the same without interfering with the ruling of the lines on the sheet of paper or other material **21**. Any suitable thickness may be employed, that shown being about .012 of an inch thick, but it may be from .010 to .020 of an inch or even thicker or thinner so long as it does not interfere in any way with the proper ruling of the paper or other material with the use of a T-square.

The rule is provided with a plurality of rows of openings extending lengthwise thereof, the openings of each row being spaced uniformly apart but spaced differently from those of the other rows. Any suitable number of rows may be employed. In the form of the construction selected to illustrate one embodiment of the invention, three rows **22**, **23** and **24** are shown. For convenience in use the openings of the row **22** are spaced ⅜ of an inch apart, those of row **23** are ⅙ of an inch apart and those of row **24** are ¼ of an inch apart, these being the standard spacings used in the various printing, typing and reproducing processes, but it is evident that different spacings may be employed. The proper indicia is employed to indicate these spacings, as shown at **20** in Fig. 2. Since these spaces are the ones usually employed in typewriting, print-

ing, duplicating, engraving and like processes, they are selected for the purpose of illustration only. These openings may be of any suitable form or shape but each is provided with converging edges for centering or positioning the instrument used for making the lines. A pen, pencil, stylus, engraving tool, or other instrument may be used in ruling the paper or the like.

For convenience in use, these lines converge toward one or both sides of the rule although it would operate equally as well if they converged toward one or both ends of the rule or in any other direction. Obviously the lines or edges of all the openings in any row should all converge in the same direction so as to insure uniformity in using the rule. As shown the openings are diamond shape with their major axis extending transversely to the longitudinal axis of the ruler. One or both edges of the rule may be graduated in inches and fractions thereof if desired, as shown at **25** in Figs. 1 and 2 which would be useful in checking the work.

The T-square **19** is of the usual or any well known construction comprising a blade **26** having its edges straight and the head **27** having a straight edge **28** which is adapted to engage the straight edge **11** or **12** of the drawing board **10**.

It is obvious that the instrumentality **19** need not be an actual T-square, although it is convenient to refer to it by that name in explaining the invention. All that is necessary is that it include a blade providing a straight edge and have a right-angularly related head which can be engaged with and slid along a side of a drafting board or its equivalent.

In the operation of the device, the spacing rule and the sheet or member to be ruled are secured to the board **10** by the conventional thumb tacks **18** with the edges parallel with those of the board and with the spacing rule adjacent one edge of the board and at a right angle to the direction in which the lines are to be drawn. The ruling instrument **29** held by the hand **31** of the operator is then placed in the opening and moved toward the converging edges of the opening, which as shown in Fig. 1, is toward the right, until the instrument centers after which the blade of the T-square is moved into engagement with the instrument. While the T-square is being held in position, the instrument is moved over to the sheet and then moved along the edge of the blade of the square to make a line on the sheet. The T-square is then moved toward the bottom of the sheet, the instrument centered in the next opening in the same row and the next line drawn in the same manner. If it is desired to draw lines lengthwise of the sheet, the spacing rule is secured along the top or bottom of the sheet and the T-square moved along the top or bottom of the board and the lines made with the instrument in the manner described above.

In Fig. 3 is shown a modified form of the spacing rule. In this form of construction, the openings in the row **22***a* are triangular with the base angles toward the top and bottom as they appear in this figure. The opening **32** has its base toward the upper end of the figure and the base of the triangular opening **33** is toward the lower portion of the figure. The openings in row **23***a* are more or less pear-shaped with the lines converging toward the right side of the structure shown in Fig. 3, and the openings of row **24***a* are in the form of triangles with the apex turned toward the right, as shown in Fig. 3. It is evident these openings may be of any suitable size and contour and the edges converge in any direction.

While the construction shown is especially useful in the various printing processes it is understood that this is by way of example only as the device may be used in numerous other relations, as for instance in ruling sheets, note books, etc. for tabulating data and other information collected by students, teachers, scientists, experimenters and the like.

The rule itself is inexpensive and is so designed that it may be readily applied by the use of thumb tacks or the like to any board, table or the like. It may be of any desired length and width to meet the requirements of any particular use for which it is adapted. It is preferably thin enough not to interfere with the conventional use of a T-square although it is evident that with the use of the rule points may be made indicating where the lines are to be drawn and the lines drawn after the rule is removed in which event the thickness of the rule may not be so important. For the sake of accuracy, however, the rule should be very thin, as otherwise the pencil point would not properly center in the converging edges of the openings.

It is thought from the foregoing, taken in connection with the accompanying drawing, that the operation and construction of my device will be apparent to one skilled in the art, and that changes in size, shape or proportion may be made without departing from the spirit and scope of the appended claims.

I claim as my invention:

1. In a ruling apparatus of the class wherein a T-square is moved to successive parallel positions over a sheet of drawing paper mounted on a drafting board, the combination with said T-square of a spacing rule having a row of spaced ruling instrument centering openings therethrough extending longitudinally of the rule, each opening having edges converging toward a point and intersecting on an imaginary line extending transversely of the rule for centering the point of the ruling instrument, said rule being mounted on the board parallel to one edge thereof, and said T-square having its head movable along the named edge of the board so that its blade will extend across the rule and the drawing paper and will be successively positioned by engagement with the point of the ruling instrument centered in said openings.

2. In ruling apparatus of the class wherein a T-square is moved to successive parallel positions over a sheet of drawing paper mounted on a drafting board, the combination with said T-square of a spacing rule having a plurality of parallel rows of ruling instrument centering openings therethrough extending longitudinally of the rule, the openings of each row being equally spaced apart and being spaced differently from the openings of the other rows, and each opening having edges converging toward a point and intersecting on an imaginary line extending transversely of the rule for centering the point of the ruling instrument, said rule being mounted on the board parallel to one edge thereof, and said T-square having its head movable along the named edge of the board so that its blade will extend across the rule and the drawing paper and will be successively positioned by engagement with the point of the ruling instrument centered in said openings.

3. In a ruling apparatus of the class wherein a T-square is moved to successive parallel positions over a sheet of drawing paper mounted

on a drafting board, the combination with said T-square of a spacing rule having a row of spaced ruling instrument centering openings therethrough extending longitudinally of the rule, each opening having edges converging toward a point and intersecting on an imaginary line extending transversely of the rule for centering the point of the ruling instrument, said rule being formed of relatively thin, flat material and being mounted on the board parallel to one edge thereof, and said T-square having its head movable along the named edge of the board so that its blade will extend across the rule and the drawing paper and will be successively positioned by engagement with the point of the ruling instrument centered in said openings.

4. In ruling apparatus of the class wherein a T-square is moved to successive parallel positions over a sheet of drawing paper mounted on a drafting board, the combination with said T-square of a spacing rule having a plurality of parallel rows of ruling instrument centering openings therethrough extending longitudinally of the rule, the openings of each row being equally spaced apart and being spaced differently from the openings of the other rows, and each opening having edges converging toward a point and intersecting on an imaginary line extending transversely of the rule for centering the point of the ruling instrument, said rule being mounted on the board parallel to one edge thereof and being formed of relatively thin, flat material, and said T-square having its head movable along the named edge of the board so that its blade will extend across the rule and the drawing paper and will be successively positioned by engagement with the point of the ruling instrument centered in said openings.

FRANK E. BOUGHTON.