

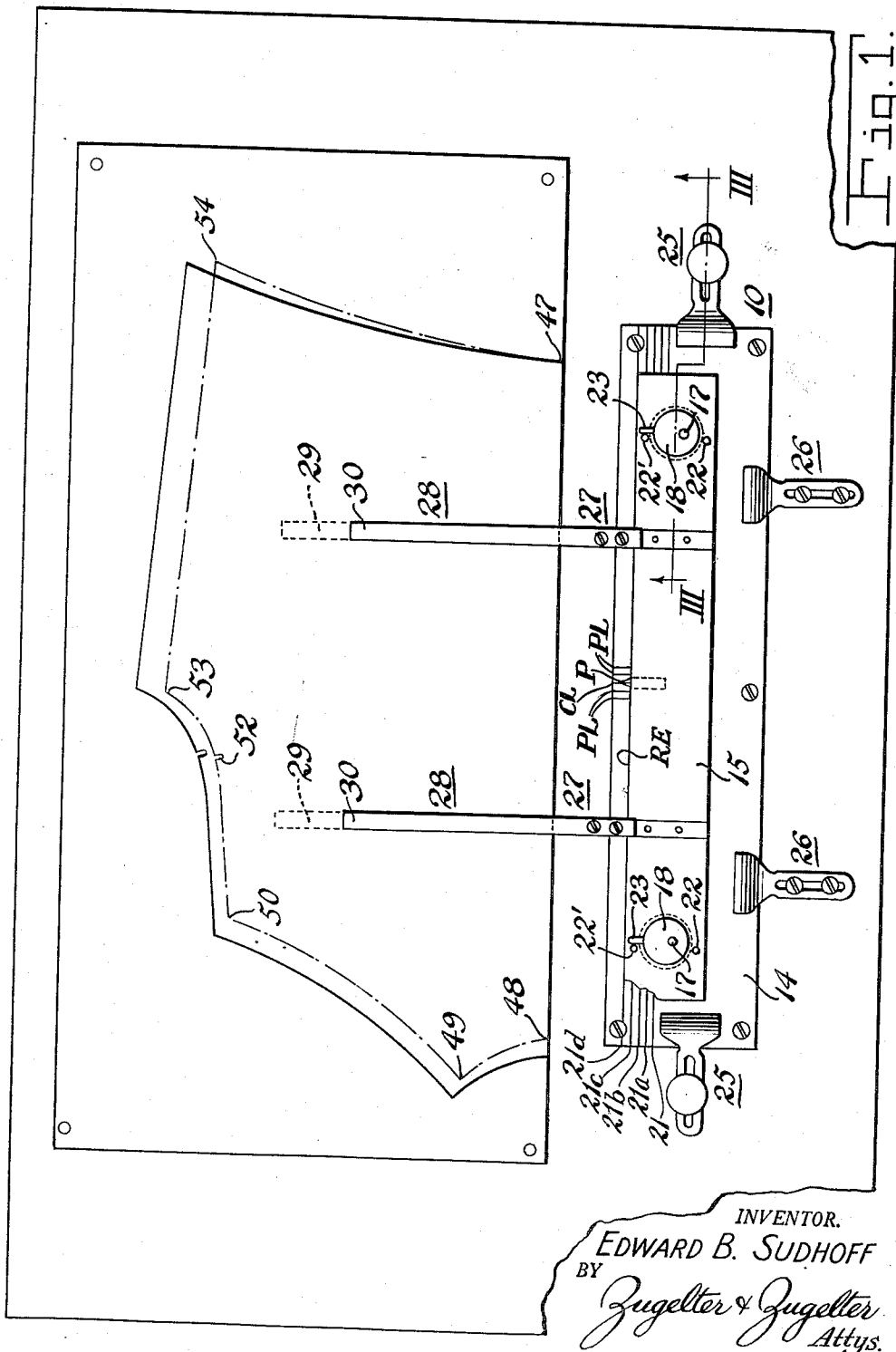
Sept. 25, 1951

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PATTERN LAYOUT DEVICE

2,569,265

Filed April 1, 1949

3 Sheets-Sheet 1



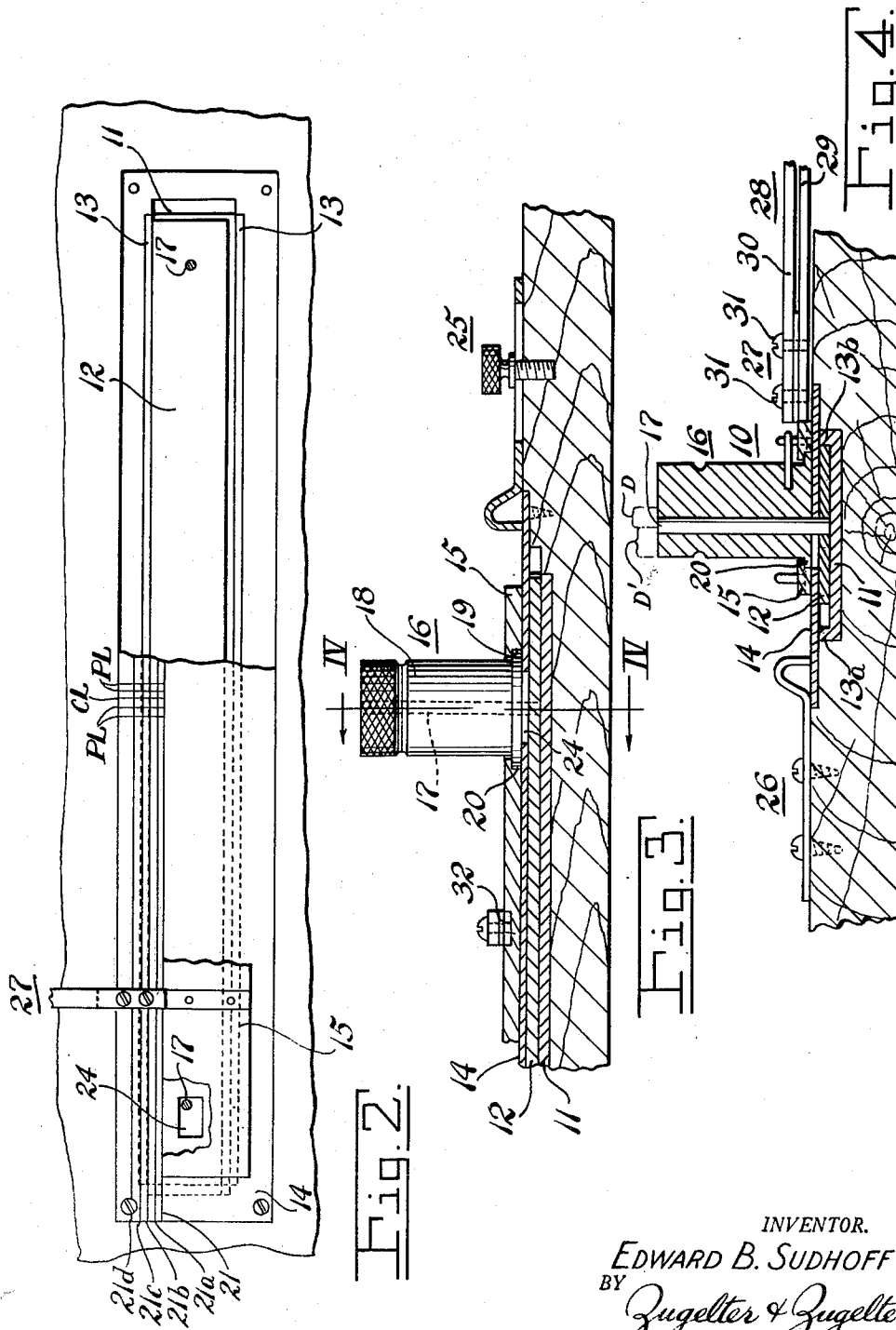
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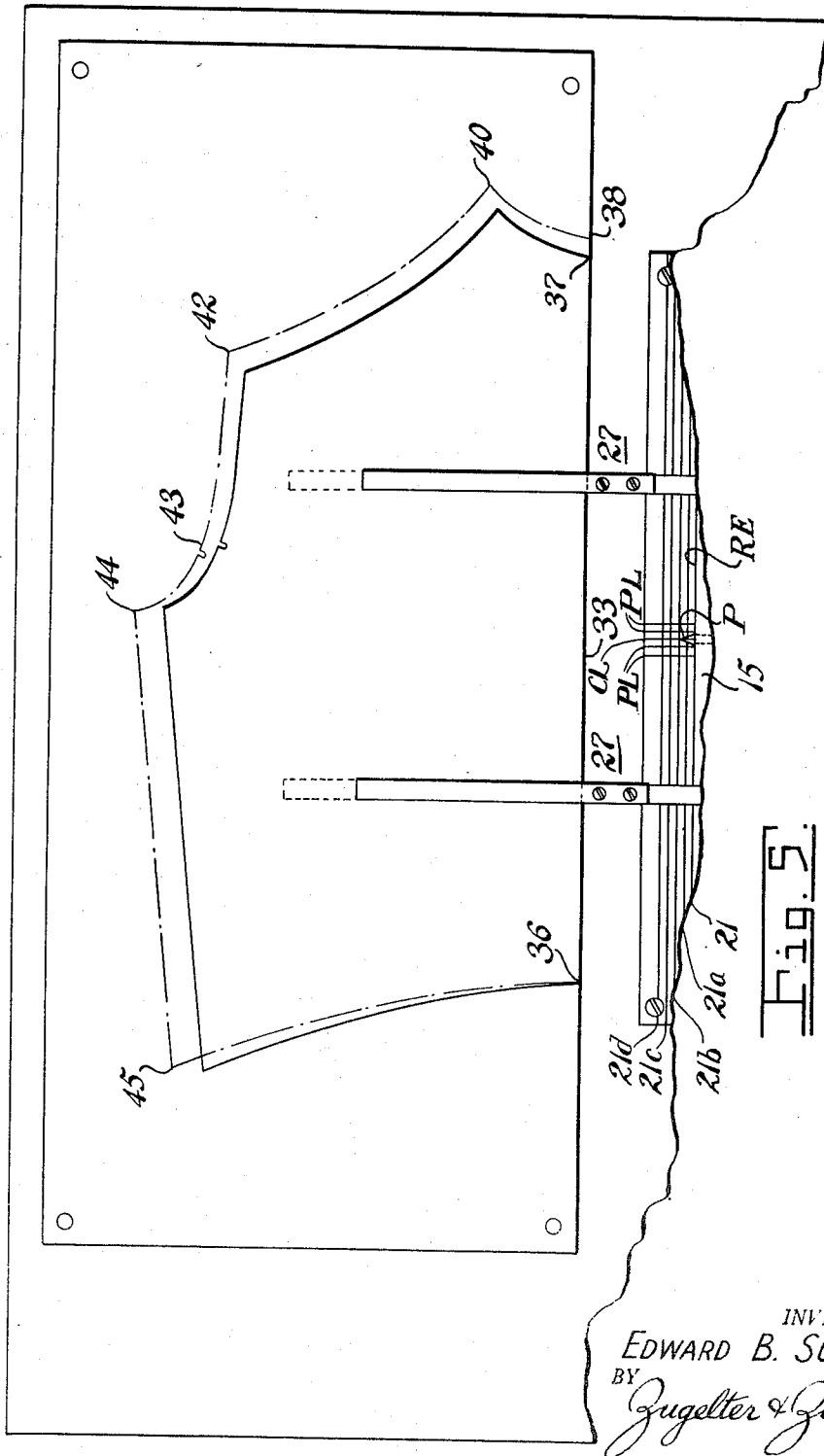
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UNITED STATES PATENT OFFICE

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PATTERN LAYOUT DEVICE

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8 Claims. (Cl. 33-12)

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This invention relates to a device for laying out patterns for clothes and more particularly relates to a device for holding a basic pattern and for moving the basic pattern controlled distances across a sheet of paper or the like to locate points for patterns of sizes larger or smaller than the basic pattern.

In the garment industry and particularly the ladies' garment and dress industry, it has been the practice in the past to lay out by hand the pattern for each size of garment individually. This is a time-consuming task, great skill is required to lay out each pattern properly, and there is considerable opportunity for error.

An object of this invention is to provide a device by means of which patterns may be either up-graded or down-graded in size with a high degree of accuracy and much saving in time.

A further object of this invention is to provide a simple and readily manufactured device by means of which a pattern can be kept in alignment upon a sheet of paper while the pattern is translated in the directions necessary for either up-grading or down-grading the size of the pattern.

A further object of this invention is to provide a device which is so constructed that a pattern-maker can up-grade or down-grade patterns with greater speed and accuracy than where strictly manual layout techniques are employed.

Another object of this invention is to provide an attachment for a pattern layout board or bench which is so designed that a pattern can be bodily translated measured distances in the required directions for producing patterns which are either larger or smaller in size.

Other objects and features of the invention will in part be obvious and will in part be apparent from the following description and the accompanying drawings, in which:

Figure 1 is a plan view of a pattern layout board and pattern layout device constructed in accordance with this invention, a pattern being shown attached to the device in position for down-grading in size;

Fig. 2 is a plan view of the pattern layout device illustrated in Figure 1, parts being broken away in order to show details thereof;

Fig. 3 is a view in section taken on line III—III in Figure 1;

Fig. 4 is a view in section on line IV—IV in Fig. 3; and

Fig. 5 is a plan view of the board and pattern layout device shown in Figure 1 with a pattern placed in position for up-grading in size.

The pattern layout device indicated generally at 10 comprises an elongated guide member 11 of channel form, an elongated plate 12 slidably disposed in the channel between the flanges 13a

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and 13b thereof, a stationary plate 14 which covers plate 12 and channel 11, and a movable plate or rule 15 that lies on top of plate 14. Plates 12 and 15 are disposed to move together being coupled together by means 16 for translating plate 15 in the manner required to lay out either an up-graded or down-graded pattern from a given pattern. The translating means comprises pins 17 secured to plate 12 adjacent the opposite ends thereof, and cams or knobs 18 which are rotatably disposed in round apertures 19 formed in plate 15. As shown, the knobs rest on stationary plate 14 and each knob is provided with a flange 20 that lies under plate 15. Movable plate 15 may be countersunk at the locations of the flanges 20 so that plate 15 will slide on stationary plate 14.

As shown in Figs. 1 and 4, pins 17 are located on a line parallel to the rule edge RE of plate 15 and knobs 18 are drilled to receive the pins. The openings in the knobs are offset from the center thereof a distance D measured from the center of the knobs to the center of the pins and the knobs are of such diameter that center of the pins are a distance D' from the outer surface of the knobs measured on a line passing through the centers of each knob and its associated pin. If plates 12 and 15 are moved bodily transversely of their major or longitudinal axes to a position where flange 13a or 13d is abutted by the adjacent edge of plate 12, and knobs 18 are turned in unison, either clockwise or counterclockwise from one to the other of stop pins 22 and 22', plate 15 will move across the stationary plate with the rule edge RE parallel to the parallel ruled lines 21 to 21d respectively. Lines 21 to 21d, as shown, are parallel and uniformly spaced and provide a guide whereby the parallelism of ruled plate edge RE may be observed and maintained and the amount of movement of plate 15 may be measured. The ruled lines PL extending perpendicularly to edge RE coact with pointer to indicate the position of the center of plate 15 with respect to the center line CL of the lines PL. As the knobs are turned the lower movable plate 12 will be translated longitudinally along the flange 13a of the channel member 11. While the operator turns knobs 18, he restrains them against displacement longitudinally of stationary plate 14, so that pointer P on plate 15 moves in a straight line transversely of plate 14 as shown (see Figs. 1 and 5). The amount of restraint is merely that required to overcome the frictional traction between the moving parts of the device.

The knobs are arranged to be turned through an arc of 180° and to limit turning thereof within these limits, pairs of stationary pins 22 and 22' secured to plate 15 and a stop pin 23 secured to

each knob are provided. Thus each knob may be turned 180° within the arc.

If plate 12 is in a position where it is in engagement with either flange 13a or 13b of channel 11, then by turning the knobs 18 180° from one stop pin to the other, the top plate 15 is translated crosswise of the stationary plate a predetermined distance, say, $\frac{3}{8}$ inch. Transverse shifting of plate 15 by merely turning the knobs provides only a part of the total translation required in up-grading or down-grading a pattern. To provide the additional translation required, the channel member 11 is made wide enough so that plates 12 and 15 and the knobs 18 may be shifted bodily transversely of the channel as well as longitudinally thereof.

In the design of patterns for ladies' dresses, blouses and other wearing apparel, the width between flanges of the channel should be one-eighth inch more than the width of plates 12 and 15, thus making possible a transverse translation of up to $\frac{1}{8}$ inch in addition to that obtainable by turning the knobs.

Translation longitudinally of the channel is also necessary and to accomplish this translation the channel is made longer than the plates 12 and 15 and a rectangular opening 24 is provided in stationary plate 14 to limit movement of the cam pins. The total amount of lateral and transverse translation may be preset by means of adjustable stops 25 and 26 secured to the board as shown in Figs. 1, 3 and 4.

The pattern from which another pattern is to be made, either up-graded or down-graded one size, is secured to the rule plate 15 by means of similar holders 27. Each holder comprises a spring-like member or clip 28. Each clip 28 (Figs. 1 and 4) includes spring strips 29 and 30, held together by screws 31. The lowermost spring strip 29 may be longer than upper spring strip 30. Lower strip 29 of each clip is mounted in a transverse slot 32 (Fig. 3), in the upper surface of movable plate 15 and secured thereto. The spring strips 29 and 30 are so formed that they grip the pattern when placed between them. The projecting end of the lower spring strip 29 supports the pattern in relation to the paper on which a pattern is to be drawn.

The operation of the device is illustrated in Figs. 1 and 5. In Fig. 1 the operations involved in down-grading a basic or reference pattern and in Fig. 5 up-grading is illustrated. It is believed down-grading will best be understood if up-grading is explained first. In each of these views the pattern to be up-graded or down-graded in size is illustrated by solid lines and the contour of the up-graded or down-graded pattern is indicated by dot-dash lines.

With reference to Fig. 5, the basic pattern is placed as shown in the mounting or holder clips 27 with edge 33 of the pattern parallel to the rule edge RE of plate 15. Rule plate 15 is translated laterally of the channel guide member 11 until the rule edge RE registers with rule line 21, and knobs 18 are turned to a position where pins 23 engage pins 22 on plate 15. When the parts have been so adjusted, a solid line is drawn on the pattern paper between points 36 and 37 of the basic pattern. Rule plate 15 and the knobs are moved bodily to the right until stop 25 is engaged. If the pattern is for a lady's blouse, the movement is $\frac{1}{8}$ " and a point 38 is marked on the paper. Knobs 18 are turned in unison counterclockwise until the rule plate 15 has been moved over to rule line 21a—a distance of $\frac{1}{8}$ "—and point 40

is marked on the paper. Next the knobs are turned until the basic pattern has been shifted over another $\frac{1}{8}$ "—to rule line 21b—whereby point 42 is located on the paper. Next the rule plate 15 and knobs 18 are shifted bodily to the left to the position where it was originally, so that the basic pattern is moved down $\frac{1}{8}$ " and point 43 is located. The rule plate 15 and knobs 18 are now moved bodily over to a position where plate 12 strikes the flange 13b of channel 11 adjacent rule edge RE and point 44 is located on the pattern paper, said movement over against flange 13b resulting in a translation "over" of $\frac{1}{4}$ " for point 44. Knobs 18 are again turned until the pointers 23 engage stop pins 22' and point 45 is located. By using the basic pattern as a template, the various points thus located are joined and a pattern which has been up-graded one size is laid out as indicated by the dot-dash lines.

To down-grade one size from a given pattern the procedure indicated by Fig. 1 is followed. In this case the pattern is turned end for end, and secured in the holders 28 as shown. The knobs 18 are turned to the position where pointers 23 engage the stops 22' and the rule plate 15 is translated bodily to the extreme "over" position. In this position point 47 is located; next the plate 15 and knobs 18 are translated bodily downwards $\frac{1}{4}$ " and point 48 is located; next the knobs are turned clockwise until the rule edge plate has been translated over $\frac{1}{8}$ " and point 49 is located; the knobs are again turned until the rule plate 15 has been translated over $\frac{1}{8}$ " and point 50 located. The rule plate 15 and knobs 18 are next moved bodily to translate the basic pattern up $\frac{1}{8}$ " and point 52 is located; next the plate and knobs are translated bodily to shift the basic pattern over $\frac{1}{4}$ " so that point 53 is determined and finally the plate and knobs are shifted to translate the pattern down $\frac{1}{8}$ " so that point 54 is established. By drawing a line connecting the points thus obtained the down-graded pattern is laid out as shown by the dot-dash lines.

From the foregoing description of the pattern layout device embodying the invention it will be apparent to those skilled in this art that various changes and modifications may be made in the arrangement of the component parts without departing either from the spirit or the scope of the invention. Therefore, what I claim as new and desire to secure by Letters Patent is:

1. A pattern layout device comprising an elongated stationary guide plate having stops along its longitudinal edges providing a predetermined spacing therebetween, an elongated movable plate disposed on said guide plate having parallel longitudinal edges, the width between said edges being a predetermined amount less than the spacing between the stops on said guide plate, a stationary plate disposed to cover said movable plate, a movable rule plate on said cover plate, said rule plate having circular apertures therein located at points on opposite sides of the middle portion thereof, rotatable cylindrical members disposed in said apertures, said cylindrical members having flanges on which said rule plate rests, and pin receiving bores extending upwardly from the bottoms thereof in parallel but spaced relation to the axis of rotation of said cylindrical members, and pins secured to the movable plate disposed under said cover plate and extending into the bores in said cylindrical members, there being openings in the cover plate through which said pins extend, said cylindrical members when turned about their axes acting with said pins to

effect shifting of said rule plate relative to said movable plate in a direction parallel to its longitudinal axis, and means for securing a pattern to said rule plate.

2. A pattern layout device comprising a rule plate having means for securing a pattern thereto, means for mounting said rule plate on a board or bench on which a pattern is to be laid out, cam means for translating said rule plate in measured increments laterally of its longitudinal axis in either direction, said rule plate and cam means being bodily translatable in either direction both longitudinally and transversely of the longitudinal axis of said rule plate, means limiting the extent of bodily translation of said rule plate and cam means transversely of the longitudinal axis of said plate, and adjustable stops for limiting the extent of translation longitudinally of said longitudinal axis of said plate.

3. A device according to claim 2, characterized by the fact that the cam means comprises a movable plate disposed below the rule plate, a pin adjacent each end of the rule plate secured to said movable plate and extending perpendicularly thereto, a cylindrical member rotatably mounted on said rule plate adjacent each of said pins, each of said cylindrical members having a bore for the reception of its associated pin, the bore being eccentric to the center of said cylindrical members, whereby, in response to rotation of said cylindrical members in unison, said rule plate is translated relative to said movable plate in a direction parallel to its longitudinal axis in either direction.

4. A device according to claim 2, characterized by the fact that the cam means comprises a movable plate disposed below the rule plate, means being provided for separating the rule plate from the movable plate, a pin adjacent each end of the rule plate secured to said movable plate and extending perpendicularly thereto, a cylindrical member rotatably mounted on said rule plate adjacent each of said pins, each of said cylindrical members having a bore for the reception of its associated pin, the bore being eccentric to the center of said cylindrical members, whereby, in response to rotation of said cylinders in unison, said rule plate is translated relative to said movable plate in a direction parallel to its longitudinal axis.

5. A device according to claim 2, characterized by the fact that the cam means comprises a movable plate disposed below the rule plate, a channel for receiving and limiting movement of said movable plate, and a separator plate between the rule plate and movable plate, a pin adjacent each end of the rule plate secured to said movable plate and extending perpendicularly thereto, a cylindrical member rotatably mounted on said rule plate adjacent each of said pins, each of said cylindrical members having a bore for the reception of its associated pin, the bores being eccentric to the centers of said cylindrical members, whereby in response to rotation of said cylinders in unison, said rule plate is translated relative to said movable plate in a direction parallel to its longitudinal axis.

6. A pattern layout control device adapted for mounting on a pattern layout board, comprising a stationary plate fixed to said pattern layout board, said stationary plate having a pair of spaced slots, each of said slots having a bearing surface parallel to the bearing surface of the other slot, a movable rule plate mounted above

and a movable plate mounted below said stationary plate, said rule plate having a pair of spaced circular openings positioned above the slots in the stationary plate, a cylindrical knob disposed in each opening, each of said knobs having a bore therein eccentric to its axis of rotation, a pin journaled in each bore, said pins extending through said slots and secured to said movable plate, and means for attaching a basic pattern to the rule plate, whereby the pattern can be translated measured distances in transverse and vertical directions as required to up-grade or down-grade the pattern.

7. A pattern layout control device adapted to be attached to a drawing board which comprises a stationary plate adapted to be fixed to the drawing board, said stationary plate having a pair of spaced slots, a rule plate mounted on said stationary plate and a movable plate mounted below said stationary plate, said rule plate having a pair of spaced circular openings positioned above the slots in the stationary plate, a cylindrical knob rotatably mounted in each opening, each knob having a bore extending upwardly from the bottom thereof and eccentric to its axis of rotation, a pin disposed in each of said bores, the lower ends of said pins being secured to the movable plate below said stationary plate, and means for attaching a basic pattern to the rule plate, turning of said knobs resulting in movement of said pins and rule plate transversely of the longitudinal axis of said rule plate.

8. A pattern layout control device which comprises a drawing board having an elongated slot, a channel positioned in said slot with flanges of the channel extending normally to the board, a movable bar positioned between the flanges of said channel, a stationary plate attached to said drawing board over said channel and having a pair of spaced slots adjacent the ends thereof, a movable rule plate on said stationary plate and having a pair of spaced circular openings positioned above the slots in the stationary plate, a cylindrical knob disposed in each opening and being rotatable therein, each knob having a bore therein eccentric to the axis of rotation thereof, a pin in each bore, said pins extending through the slots in the stationary plate and being secured to the movable plate in said channel, and means for attaching a pattern to the movable plate, whereby the pattern can be moved controlled distances in a direction laterally of the rule plate by rotation of the knobs, and the pattern can be moved controlled distances in directions corresponding to the longitudinal axis of the rule plate by bodily movement of said rule plate, movable plate and knobs.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,139,984	Leethem	May 18, 1915
1,579,702	Gottschalk	Apr. 6, 1926
1,996,966	Koppe	Apr. 9, 1935
2,091,262	Aster	Aug. 31, 1937

FOREIGN PATENTS

Number	Country	Date
255,486	Great Britain	Aug. 25, 1927