

July 11, 1967

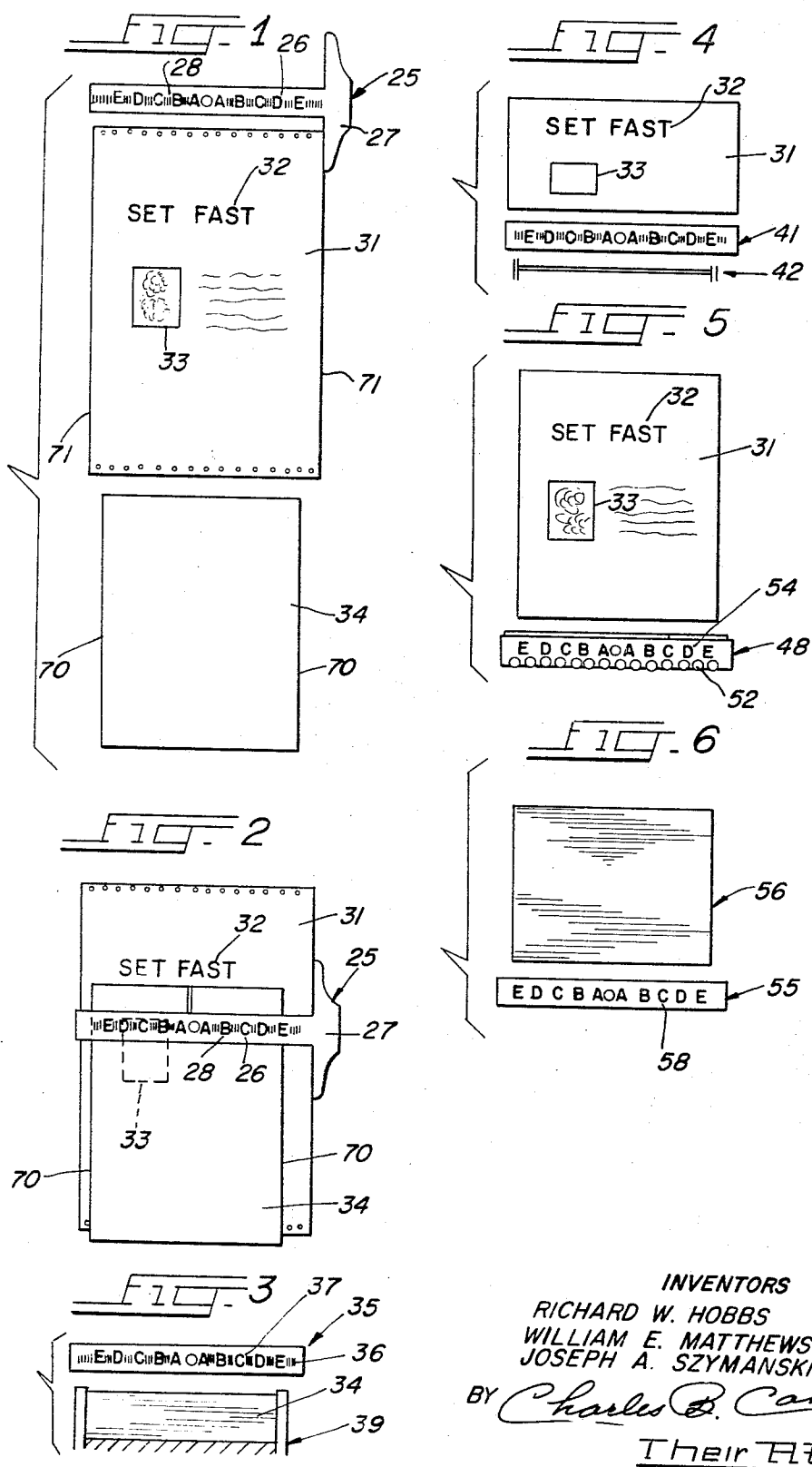
R. W. HOBBS ET AL

3,330,210

METHOD OF LOCATING PRINTING IMAGE ON COPY SHEETS

Filed Sept. 23, 1965

6 Sheets-Sheet 1



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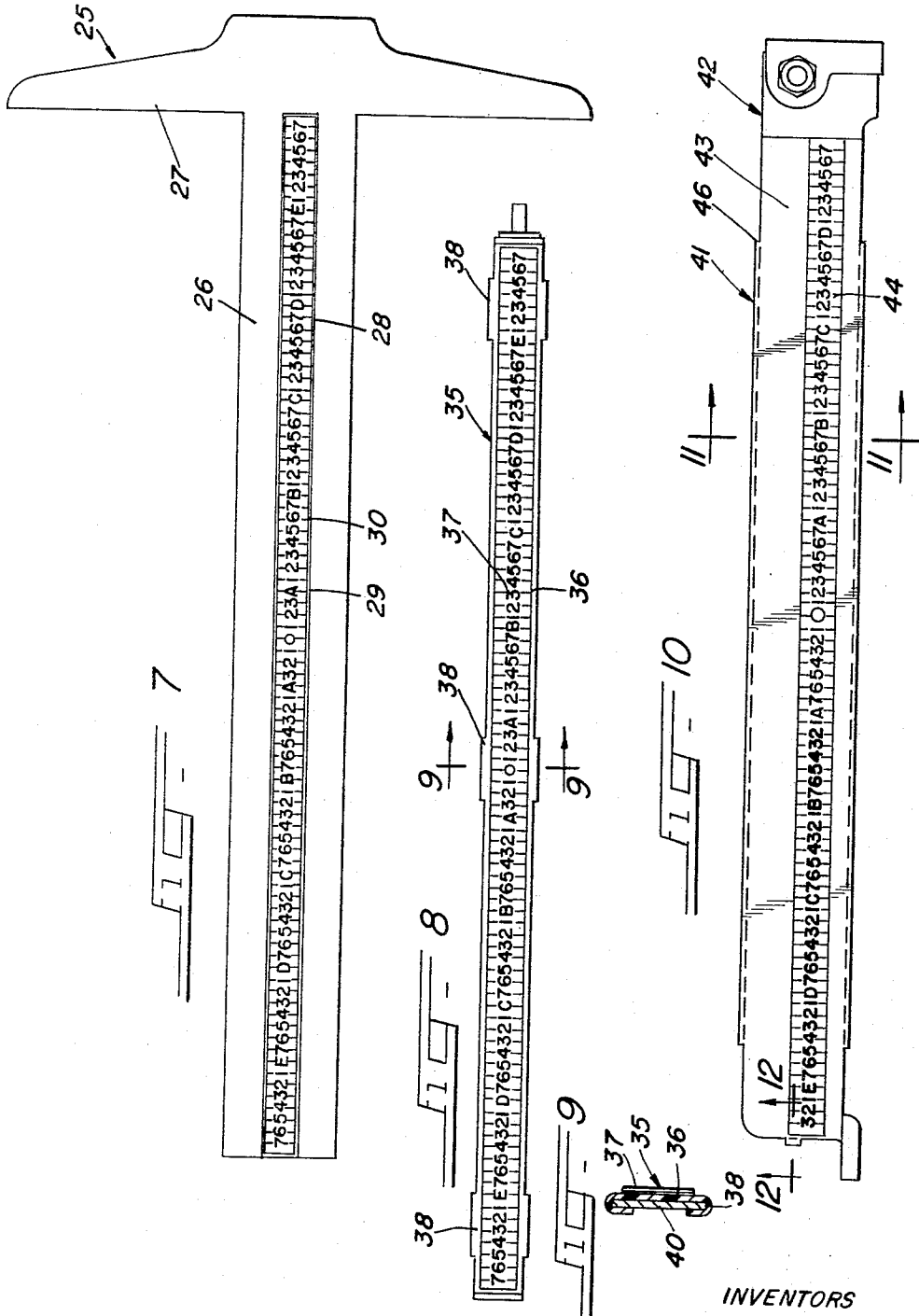
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METHOD OF LOCATING PRINTING IMAGE ON COPY SHEETS

Filed Sept. 23, 1965

6 Sheets-Sheet 2



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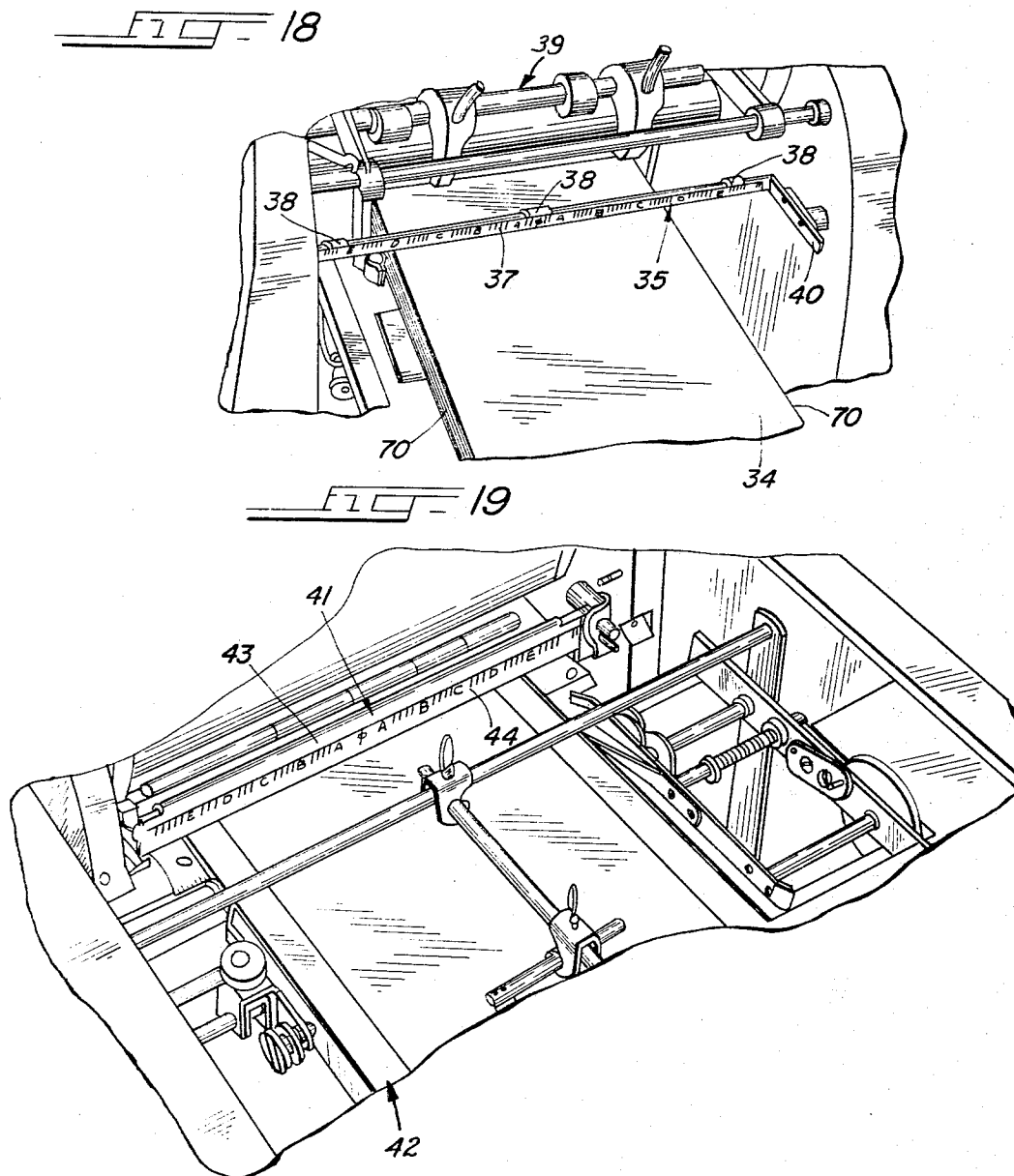
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METHOD OF LOCATING PRINTING IMAGE ON COPY SHEETS

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6 Sheets-Sheet 4



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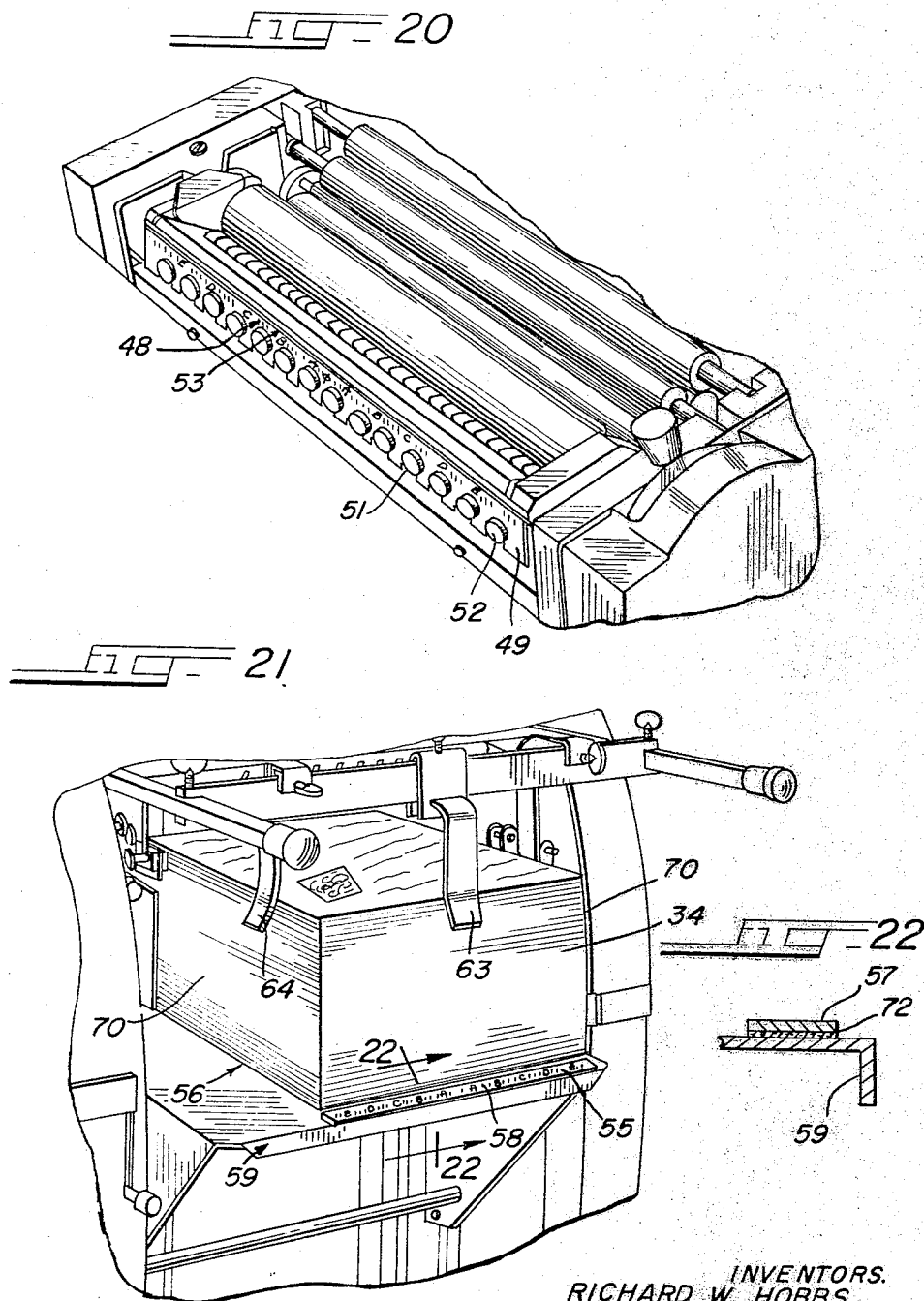
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METHOD OF LOCATING PRINTING IMAGE ON COPY SHEETS

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6 Sheets-Sheet 5



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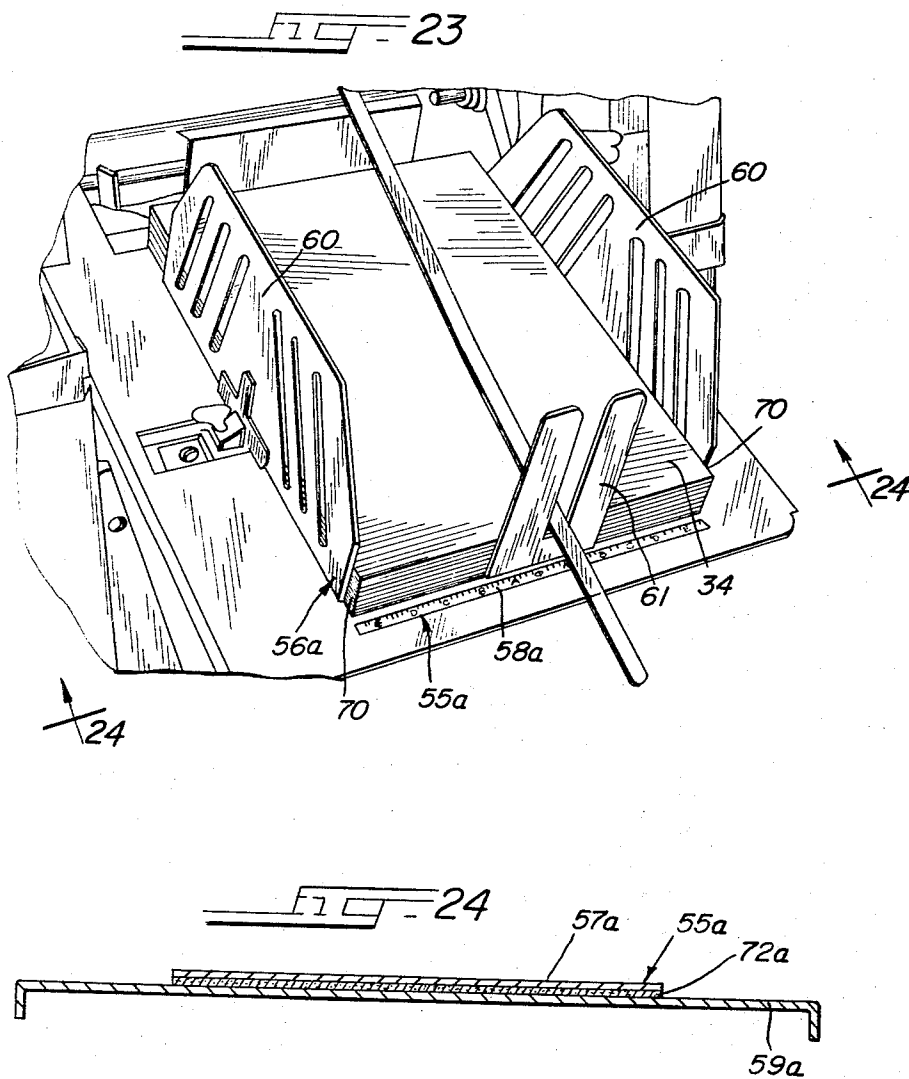
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METHOD OF LOCATING PRINTING IMAGE ON COPY SHEETS

Filed Sept. 23, 1965

6 Sheets-Sheet 6



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3,330,210 METHOD OF LOCATING PRINTING IMAGE ON COPY SHEETS

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3 Claims. (Cl. 101—426)

This invention relates to planographic printing apparatus and to a method for planographic printing.

More particularly, this invention relates to offset planographic printing apparatus in which a master planographic printing plate is mounted upon a plate cylinder, in operative relation to a so-called inking cylinder and an ink transfer cylinder, and sheets of copy paper are continuously fed under the plate cylinder for printing an image from the master planographic printing plate onto the copy sheets. Such offset planographic printing presses are well known in the art and are made by various manufacturers thereof.

One of the problems experienced in offset planographic printing is the make-up or make-ready time which is required for the operator to prepare the press for printing in relation to the image or images on the master planographic printing plate and to assure proper registry between the image or images on the master planographic printing plate and the various mechanical devices or instrumentalities which are commonly employed in such offset planographic printing presses and which are arranged at spaced intervals therein relative to the path or travel of copy sheets fed through the press including the paper sheet feed mechanism; the paper sheet jogger; the plate cylinder; the ink fountain unit, and other devices or instrumentalities, and this problem becomes particularly acute when changes are made from copy sheets of one size to copy sheets of another size.

An object of the present invention is, therefore, to provide a novel means and method for minimizing the make-up or make-ready time required to arrange an offset planographic printing press for printing.

Another object of the present invention is to provide a new and improved means and method for assuring proper registry and centering between the master planographic printing plate and the image or images thereon and the copy sheets fed through the press so as to obtain the desired proper registry and centering between the image or images on the master planographic printing plate and the copy sheets onto which the image is printed.

An additional object of the present invention is to provide in an offset planographic printing press a novel combination of a master scale unit for determining the position of an image on an offset planographic printing plate and a group of auxiliary scale units each embodying scale legends or indicia corresponding to those on the master scale unit and which auxiliary scale units are adapted to be positioned in relation to various devices or instrumentalities in the press which affect the movement or positioning of the copy sheets, or the operation of the linking mechanism to the end that the image on the master planographic printing plate will be properly centered and printed on the copy sheets in the same relative position which it has on the master planographic printing plate.

An additional object of the invention is to provide novel scale means for use in an offset planographic printing press for properly centering a stack of paper copy sheets in relation to the image or images on the master planographic printing plate to secure the desired uniform

centering of the image or images as printed on the copy sheets.

A further object of the present invention is to provide novel scale means and a novel method of properly positioning the various devices and instrumentalities of an offset planographic printing press which act in one way or another upon the copy sheets fed through the press so as to secure proper registry between all of such parts or devices in relation to the copy sheets to the end that the image on the master planographic printing plate will be printed on the copy sheets in the same relative position it occupies on the master planographic printing plate.

Other objects will appear hereinafter.

In the drawings:

FIG. 1 is an exploded plan view of a master offset planographic printing plate having an image thereon and showing a copy sheet onto which the image is to be printed, and showing a novel T-scale member of the present invention positioned upon the master offset planographic printing plate at the first step in the operation of offset planographic printing in accordance with the practice of the present invention;

FIG. 2 is a plan view illustrating the second step in the operation of offset planographic printing in accordance with the practice of the present invention, and in which a copy sheet is laid upon the master planographic printing plate and the novel T-scale member is laid over the copy sheet and over the T-scale member;

FIG. 3 is an exploded diagrammatic view showing one embodiment of the new auxiliary scale means of the present invention positioned in relation to the sheet feed mechanism at the feed-in end of an offset planographic printing press, according to the practice of the present invention;

FIG. 4 is a fragmentary exploded diagrammatic view showing one embodiment of the new scale means of the present invention positioned in relation to a sheet jogger mechanism of an offset planographic printing press, in the practice of the present invention;

FIG. 5 is an exploded diagrammatic view illustrating another embodiment of the novel scale means of the present invention associated with the ink fountain mechanism of an offset planographic printing press and illustrating the master planographic printing plate having an image thereon centered in reference to the ink fountain mechanism and one embodiment of the novel auxiliary scale means of the present invention;

FIG. 6 is an exploded diagrammatic view illustrating the sheet-receiving and sheet-stacking unit of an offset planographic printing press having another embodiment of the new auxiliary scale means of the present invention associated therewith;

FIG. 7 is a plan view of a typical embodiment of the master T-scale unit of the present invention;

FIG. 8 is a plan view of a typical embodiment of one form of the new auxiliary scale means of the present invention and which, in use, is attached to and mounted upon a part or instrumentality of the planographic printing press at the sheet feed-in end thereof;

FIG. 9 is a transverse sectional detail view on line 9—9 in FIG. 8;

FIG. 10 is a plan view of another embodiment of the auxiliary scale means of the present invention and which is particularly adapted for use with the sheet jogger mechanism of an offset planographic printing press;

FIG. 11 is a transverse sectional detail view on line 11—11 in FIG. 10;

FIG. 12 is a sectional detail view on line 12—12 in FIG. 10;

FIG. 13 is a plan view of another embodiment of one form of the auxiliary scale means of the present in-

vention and which is particularly adapted for use with the ink fountain mechanism of an offset planographic printing press;

FIG. 14 is a transverse sectional detail view on line 14—14 in FIG. 20 and showing the auxiliary scale means of FIG. 13 used in conjunction with the ink fountain mechanism of an offset planographic printing press;

FIG. 15 is a plan view of another embodiment of the novel auxiliary scale means of the present invention and which is particularly adapted for use in conjunction with the take-out end and sheet-stacking unit of the sheet-feeding mechanism of an offset planographic printing press;

FIG. 16 is a transverse sectional detail view on line 16—16 in FIG. 15 and illustrating the adhesive-coated backing and mounting strip of the auxiliary scale unit illustrated in FIG. 15;

FIG. 17 is a plan view of a modification of the novel scale means of the present invention as arranged in inches and in fractions of an inch, rather than in arbitrary scale divisions, as in FIGS. 1 to 8, 10, 13, 15, and 18 to 22, and which may be employed in place of the master T-scale unit or as part of each of the auxiliary scale units of the present invention;

FIG. 18 is a fragmentary perspective view of the rear or feed-in end portion of a typical offset planographic printing press showing a typical embodiment of one of the auxiliary scale units of the present invention and as illustrated in FIGS. 3, 8 and 9 in operative relationship thereto;

FIG. 19 is a fragmentary perspective view illustrating parts of the sheet jogger mechanism of a typical offset planographic printing press and showing another embodiment of the auxiliary scale means of the present invention, as illustrated in FIGS. 4, 10 and 11, associated with and mounted in operative relationship to the sheet jogger mechanism of the press;

FIG. 20 is a fragmentary perspective view of parts of the ink fountain mechanism of a typical offset planographic printing press and showing one embodiment of the new auxiliary scale means of the present invention, as illustrated in FIGS. 4, 13 and 14, mounted in operative relationship to the ink fountain mechanism and the so-called ink flow button control valve members embodied therein;

FIG. 21 is a fragmentary perspective view of the front or paper take-out end portion and sheet-stacking mechanism of a typical offset planographic printing press and showing one embodiment of the new auxiliary scale means of the present invention, as illustrated in FIGS. 6, 15 and 16, associated therewith;

FIG. 22 is a sectional detail view on line 22—22 in FIG. 21;

FIG. 23 is a fragmentary perspective view illustrating another form of the take-out or front end portion of an offset planographic printing press having the embodiment of the novel auxiliary scale means of the present invention, as shown in FIGS. 6, 15 and 16, associated therewith; and

FIG. 24 is a transverse sectional view on line 23—23 in FIG. 22.

The present invention embodies a novel scale means which includes a master T-scale member 25, as shown in FIGS. 1, 2 and 7 of the drawings, and which includes a main arm or body portion 26 and a cross arm or T-head 27 on which one embodiment of the master scale 28 of the present invention is provided. The master scale 28 is shown as being in the form of arbitrary primary scale units or divisions 29, which are indicated by letters of the alphabet, and subdivisions thereof which are indicated by numerals 30, which are spaced to the right and left of the center of the scale 28. Thus, for example, the primary scale divisions 29 may be one-inch in length and the subdivisions thereof fractions of an inch.

The master scale member 25 is intended for use with an offset master planographic printing plate 31 which may be of any type and of any material used in offset planographic printing and which may have an image reproduced thereon by any known image-forming method. Thus, for the purpose of illustration, the master planographic printing plate 31 is shown as having thereon an image 32 in the form of printed letters, or the like, and a picture image 33, which are merely illustrative of the types of images which may be carried by the master planographic printing plate 31.

As is well known in the art, the master planographic printing plate 31 may be of any suitable type and construction and is flexible to enable it to be mounted on the plate cylinder of an offset planographic printing press.

Paper copy sheets, on which the images 32—33 on the master planographic printing plate 31 are to be printed, are indicated at 34 in the drawings and each of such paper copy sheets has parallel side marginal edges 70.

In the practice of the present invention the master T-scale unit 25 is used properly to locate and center the relative positions of the images 32 and 33 on the master planographic printing plate 31 on and in reference to the marginal side edges 70 of the copy sheets 34, and thereafter, with the aid of the auxiliary scale units, properly to center certain of the various devices and instrumentalities embodied in an offset planographic printing press which operate upon the copy sheets 34, or upon the inking mechanism of the press, including the sheet-feed mechanism; the sheet jogger mechanism; the ink fountain mechanism; and the paper-stacking mechanism; to the end that the images 32 and 33 on the master planographic printing plate 31 will be printed upon the copy sheets 34 in the same relative positions and in the same relative intensities or shades of dark and light as they appear on the master planographic printing plate 31.

Thus, in the practice of the present invention, and in the first step in the new method of offset planographic printing in accordance therewith, the operator lays the master T-scale unit 25 on the image-bearing face of the master planographic printing plate 31, with the T-head or cross arm 27 against one longitudinal edge 71 thereof, to locate the positions of the images 32—33 thereon, in terms of the scale 28, and in reference to the marginal or side edges 71 of the master planographic printing plate 31. A specimen copy sheet 34 to be used is then laid over the printing face of the master planographic printing plate 31, and the copy sheet 34 shifted to left or right as may be necessary, in order roughly to center the images 32—33 in reference to the marginal side edges 70 of the copy sheet 34. The master T-scale unit 25 is then slid along the printing face of the master planographic printing plate 31 and over the roughly centered copy sheet 34 into the position in which the parts are shown in FIG. 2, whereupon a reading is taken on the master T-scale unit 25 relative to the position of the side marginal edges 70 of the copy sheet 34, for use in setting the various devices and instrumentalities in the press in relation to the master scale member 25—28 and in reference to the auxiliary scale units, as will be described presently.

Thus, it will be assumed in the following example that the marginal side edges 70 of the properly centered copy sheet 34, as disposed on the printing face of the master planographic printing plate 31, and as centered relative to the positions of the images 32—33 on the master planographic printing plate 31, lie between points E—3—E—3 on the scale 28 of the master T-scale unit 25 (see FIG. 7).

The various devices and instrumentalities in the offset planographic printing press can then be adjusted for the purpose of properly positioning them to assure that the word-image 32 and the picture-image 33 on the master planographic printing plate 31 will be printed in proper registry on the copy sheets 34 and in the same relative

positions as the images 32 and 33 occupy on the printing face of the master planographic printing plate 31.

To this end, the present invention provides a number of auxiliary scale units, which are comparable to and subordinate to the master scale unit 25, and for use in conjunction with the various devices and instrumentalities of an offset planographic printing press to assure that such various parts and devices may be properly positioned or adjusted to feed the copy sheets 34 therethrough in such position relative to the master planographic printing plate 31 that the images 32 and 33 thereon will be printed in proper registry and in the same relative positions on the copy sheets 34 as they are on the master planographic printing plate 31.

Such offset planographic printing presses are manufactured and sold by various manufacturers and typical embodiments thereof are illustrated and described in the so-called Reference Manual of the Addressograph-Multigraph Corporation of Cleveland, Ohio, for its Multigraph-Multilith Class 1250 Offset Duplicator (copyright 1957).

Thus, for example, the present invention provides an auxiliary scale unit 35 for use in conjunction with the feed-in end portion or sheet-feed mechanism 39 (FIG. 3) of an offset planographic printing press. This auxiliary scale unit 35 is shown in detail in FIGS. 8 and 9 of the drawings, and comprises an elongated body or scale-bearing member 36 having printed or otherwise inscribed thereon a scale unit 37 corresponding to the master scale unit 26 on the master T-scale unit 25. This auxiliary scale unit 35-36-37 is adapted to be attached by any suitable attaching means, such as a series of spaced U-shaped attaching clips 38, which are attached to the scale-bearing body 36 thereof, to any suitable part of the sheet-feed mechanism 39 of an offset planographic printing press, and, as shown in FIGS. 3 and 18 of the drawings. Thus, for the purpose of illustration, the auxiliary scale unit 35 is attached, by the clips 39, to the so-called U-shaped bail bar 40 of the sheet-feed mechanism 39 of an offset planographic printing press, by means of the spaced U-shaped attaching clips 38.

When the auxiliary scale unit 35 is thus attached to the U-shaped bail bar 40 of the sheet-feed mechanism 39, the sheet-feed mechanism 39 may be adjusted laterally (FIG. 18) so that the marginal edges of each of a stack of copy sheets 34 at the feed-in end of the press will occupy the same relative position in reference to the auxiliary scale unit 35, and hence to the sheet-feed mechanism 39, as the specimen copy sheet 34 has in relation to the master T-scale unit 25, as shown in FIG. 2, that is, the marginal edges 70 of the copy sheets 34 in the stack of copy sheets 34 (FIG. 18) will lie between points E-3 and E-3 on the auxiliary scale unit 35-36-37.

Hence, when the copy sheets 34 in the stack thereof (FIG. 18) are so disposed all of the copy sheets 34 will be fed into the press in position to have the images 32-33 on the master planographic printing plate 31 printed on the copy sheets 34 in properly registered and centered position.

The present invention also provides an additional auxiliary scale unit 41 (FIGS. 4, 10, 11, 12 and 19) which is especially adapted for use in conjunction with the sheet-jogger mechanism 42 of an offset planographic printing press, which is generally illustrated in FIG. 19 of the drawings.

The present invention also provides an auxiliary jogger scale unit 41 which includes an elongated body or scale-bearing member 43 having thereon a scale member 44, which may be secured to the body or scale-bearing member 43 in any suitable manner, as by means of an adhesive coated strip 45, which is attached to the rear surface of the body or scale-bearing member 43 (FIG. 11). The auxiliary jogger scale 44 corresponds to the scale 28 on the master T-scale member 25. The elongated body member 43 of the auxiliary jogger scale unit 41 has an elongated clamping clip 46 formed integrally therein, on its

rear surface (FIGS. 10 and 11) and by means of which the auxiliary jogger scale unit 41 may be detachably attached to a horizontally extending frame member 47 of the jogger mechanism 42, as shown in FIGS. 11 and 19 of the drawings.

When the auxiliary jogger scale 41 is thus positioned the sheet jogger mechanism 42 may be adjusted laterally so that the copy sheets 34 to be jogged will be properly centered thereby relative to the other devices and instrumentalities of the offset planographic printing press and relative to the images 32-33 on the master planographic printing plate 31 to assure that the copy sheets 34 will be fed from the jogger mechanism 42 into and through the printing press in such position as to print the images 32-33 carried by the master planographic printing plate 31 in properly centered and registered position on the copy sheets 34.

The present invention also provides an additional auxiliary scale unit 48, which is especially designed and adapted for use with the ink fountain mechanism 53 of an offset planographic printing press, as generally shown in FIGS. 5, 13, 14 and 20 of the drawings. This auxiliary scale unit 48 includes an elongated body or scale-bearing member 49 having thereon a scale 50 which corresponds to the scale 28 on the master T-scale unit 25. The body or scale-bearing member 49 of the auxiliary ink fountain scale unit 48 has a series of notches 51 formed in the lower edge portion thereof (FIG. 13), and these notches 51 are adapted for the reception of the screw-threaded shanks 51 of ink flow button control valve members 52, which are well understood in the art (FIGS. 14 and 20).

Thus, in the practice of the present invention, the auxiliary ink fountain scale unit 48 may be detachably mounted upon the ink fountain mechanism 53 of an offset planographic printing press by inserting the notched portions 51 in the lower marginal edge portion of the body or scale-bearing member 49 of the auxiliary scale unit 48 over the threaded shanks 73 of the ink flow button control valve members 52 and between the latter and the adjacent wall 54 of the ink fountain mechanism 53, as best shown in FIG. 14 of the drawings.

When so disposed, certain of the ink flow control button valve members 52 may be manipulated so as to control the flow of ink from the ink fountain mechanism 53 onto the inking cylinder, and thence by way of the transfer cylinder onto the master planographic printing plate 31 on the plate cylinder (not shown) so as to apply ink, as needed, and in such quantities as may be desirable or necessary for reproducing the word image 32 and the picture image 33 on the master planographic printing plate on the copy sheets 34 in the proper tones of dark and light, it being understood that the reproduction of the picture image 33 frequently requires a greater supply of ink than does the reproduction of the word image 32 so that the images will be printed in the proper shades of dark and light areas.

Thus, in the example given above, if it is assumed that the picture image 33 on the master planographic printing plate 31 lies between points D and B, left of the center O, on the scale 28 of the master T-scale unit 25, when the auxiliary ink fountain scale unit 48 is properly positioned on the supporting member 54 of the ink fountain mechanism 53, those of the ink flow button control valve members 52 which are disposed between the corresponding points D and B, left of center O, in the auxiliary ink fountain scale 48 may be opened to a greater extent than the other ink flow button control valve members 52 so as to supply relatively more ink from the ink fountain 53 to the ink roller, ink transfer roller, and thence to the area of the master planographic printing plate 31 in which the picture image 33 is disposed than is provided to other image-bearing areas of the master planographic printing plate 31, so as to assure that the picture or relatively dark image 33 on the master planographic printing plate 31

will be printed in a depth or dark area corresponding to the depth or dark area of the picture image 33 on the master planographic printing plate 31, whereas the word image 32 will be printed in a relatively lighter depth or shade.

Thus, suitable adjustments of the ink flow button control valve members 52 may also be made, as desired, to obtain the proper depth on the copy sheets 34 as to the printed image 32 on the master planographic printing plate 31.

The present invention also provides an additional auxiliary sheet-stacking scale unit 55, shown in FIGS. 6, 15, 16 and 21 of the drawings, and which is particularly adapted for use in conjunction with the sheet-stacking unit 56 at the feed-out end of an offset planographic printing press, as shown in FIGS. 21 and 22 of the drawings. This auxiliary sheet-stacking scale unit 55 includes a body or scale-bearing member 57 having an auxiliary scale 58 thereon which corresponds to the scale 28 on the master T-scale unit 25. The auxiliary sheet-stacking scale unit 55 has on the back thereof an adhesive strip 72 (FIG. 22) by means of which it is attached to any suitable stationary part 59 of the supporting frame of an offset planographic printing press so that the sheet-stacking mechanism 56 may be adjusted laterally to receive the printed copy sheets 34 in proper registry with the other parts or instrumentalities of the planographic printing press including the sheet-feed mechanism 39, the sheet jogger mechanism 41, the ink fountain mechanism 43, and other parts of the press.

A modification of the sheet stacking mechanism 56 is shown in FIGS. 23 and 24 of the drawings and those parts thereof which are comparable to or correspond to similar parts in the form of the invention illustrated in FIGS. 21 and 22 have been given the same reference numerals followed by the additional and distinguishing reference character *a*.

The form of the invention illustrated in FIGS. 23 and 24 of the drawings is substantially similar to that shown in FIGS. 21 and 22 of the drawings, except that in the form of the sheet stacking mechanism 56a shown in FIGS. 23 and 24 of the drawings, the sheet stacking mechanism 56a has a different form of guide means for receiving the printed copy sheets 34a and stacking them at the feed-out or front end of the offset planographic printing press, as is well understood in the art.

Thus, in the form of the invention illustrated in FIGS. 23 and 24 of the drawings the sheet stacking mechanism 56a has upright side guide walls 60 and an upright sheet stop arm 61 at the front thereof rather than the overhead sheet stack guide mechanism 56 and downwardly extending guide arms 63 and 64 therefor, as in the form of the invention illustrated in FIGS. 21 and 22.

A modification of both the master scale means and the auxiliary scale means of the present invention is illustrated in FIG. 17 of the drawings, wherein it is generally indicated at 65 and includes an elongated body 66 having thereon a scale 67 which includes primary scale divisions 68 and fractional scale divisions 69 which are comparable to the primary scale divisions and sub-scale divisions 29 and 30, respectively, on the master T-scale unit 25, and on the auxiliary scale units heretofore described, except that in this modification of the invention the scale divisions are in terms of inches and fractional parts thereof, rather than in terms of arbitrary major scale divisions, indicated by letters, and arbitrary sub-divisions of such major scale divisions, as in the form of the invention illustrated in FIGS. 1 to 16 and 18 to 24, both inclusive. Thus, the inch scale unit 65-67 may be adapted and used on both the master T-scale unit and all of the auxiliary scale units, in place of the master scale unit 28 and the auxiliary scale units heretofore described, and with the same results.

It will thus be seen from the foregoing description, considered in conjunction with the accompanying draw-

ings, that the present invention provides a novel planographic printing apparatus and method for use in offset planographic printing and thus has the desirable advantages and characteristics and accomplishes its intended objects including those hereinbefore pointed out and others which are inherent in the invention.

We claim:

1. A method of planographic printing utilizing scale devices for locating the position of an image on the printing face of a printing plate with respect to the side marginal edges of the printing plate and in relation to the side marginal edges of copy sheets on which the image is to be printed at a predetermined location thereon, comprising the steps of:

- (1) providing a separate master scale unit with scale indicia thereon;
- (2) positioning the master scale unit over the printing face of the printing plate to determine the location of the image thereon with respect to the side marginal edges of the printing plate and in relation to the said scale indicia;
- (3) positioning a copy sheet on the printing plate to overlie the said image thereon and roughly centering the copy sheet with respect to the image on the printing face of the printing plate and in relation to the side marginal edge of the copy sheet;
- (4) positioning the master scale unit over the said copy sheet and over the printing face of the printing plate with the said copy sheet resting on the printing face of the printing plate;
- (5) moving the said master scale unit over the copy sheet and over the printing face of the printing plate and reading the scale indicia on the master scale unit to determine the position in which the image is to be printed on the said copy sheet in relation to the side marginal edges of the copy sheet;
- (6) positioning an auxiliary scale means with scale indicia thereon identical with the scale indicia on the said master scale unit adjacent to and in cooperation with the sheet guide mechanism at the feed-in end of the planographic printing press;
- (7) placing the printing plate in the printing press;
- (8) placing the copy sheets in the said sheet feed mechanism of the printing press;
- (9) adjusting the said sheet feeding mechanism in accordance with the said indicia on the said auxiliary scale means; and
- (10) effecting movement of the said copy sheets through the press to effect printing of the image on the copy sheets in the same relative location with respect to the side marginal edges of the copy sheets as the location of the image on the printing face of the said printing plate bears in relation to the side marginal edges of the printing plate.

2. A method of planographic printing utilizing scale devices for locating the position of an image on the printing face of a printing plate with respect to the side marginal edges of the printing plate and in relation to the side marginal edges of copy sheets on which the image is to be printed as a predetermined location thereon, comprising the steps of:

- (1) providing a separate master T-scale unit with scale indicia thereon;
- (2) positioning the said master T-scale unit over the printing face of the printing plate to determine the location of the image thereon with respect to the side marginal edges of the printing plate and in relation to the said scale indicia thereon;
- (3) positioning a copy sheet on the printing face of the printing plate to overlie the said image thereon and roughly centering the copy sheet with respect to the image on the printing face of the printing plate and in relation to the side marginal edge of the copy sheet;

- (4) positioning the said master T-scale unit over the said copy sheet and over the printing face of the printing plate with the copy sheet resting on the printing face of the printing plate;
 - (5) moving the said master T-scale unit over the said copy sheet and over the printing face of the printing plate and reading the scale indicia on the said master T-scale unit to determine the position in which the image is to be printed on the said copy sheet in relation to the side marginal edges of the copy sheet;
 - (6) positioning an auxiliary scale means with scale indicia thereon identical with the scale indicia on the said master T-scale unit adjacent to and in cooperation with the sheet guide mechanism at the feed-in end of the planographic printing press;
 - (7) placing the printing plate in the printing press;
 - (8) placing the copy sheets thereon in the said sheet feed mechanism of the printing press;
 - (9) adjusting the said sheet feeding mechanism in accordance with the said indicia on the said auxiliary scale means; and
 - (10) effecting movement of the said copy sheets through the printing press to effect printing the image on the copy sheets in the same relative location with respect to the side marginal edges of the copy sheets as the location of the image on the printing face of the said printing plate bears in relation to the side marginal edges of the printing plate.
3. A method of planographic printing utilizing scale devices for locating the position of an image on the printing face of a printing plate with respect to the side marginal edges of the printing plate and in relation to the side marginal edges of copy sheets on which the image is to be printed at a predetermined location thereon, comprising the steps of:
- (1) providing a separate master scale unit with scale indicia thereon;
 - (2) positioning the master scale unit over the printing face of the printing plate to determine the location of the image thereon with respect to the side marginal edges of the printing plate and in relation to the said scale indicia;
 - (3) positioning a copy sheet on the printing face of the printing plate to overlie the said image thereon and roughly centering the copy sheet with respect to

- the image on the printing face of the printing plate and in relation to the side marginal edge of the copy sheet;
- (4) positioning the master scale unit over the said copy sheet and over the printing face of the printing plate with the copy sheet resting on the printing plate;
 - (5) moving the said master scale unit over the copy sheet and over the printing face of the printing plate and reading the scale indicia on the master scale unit to determine the position in which the image is to be printed on the copy sheet in relation to the side marginal edges of the copy sheet;
 - (6) positioning an auxiliary scale means with scale indicia thereon identical with the scale indicia on the said master scale unit adjacent to and in cooperation with the sheet guide mechanism at the feed-in end of the planographic printing press;
 - (7) positioning additional auxiliary scale means with scale indicia thereon identical to those on the said master scale unit in cooperative relationship with sheet jogger means and in cooperation with the ink fountain mechanism of the said printing press;
 - (8) placing the printing plate in the printing press;
 - (9) placing the said copy sheets in the said sheet guide mechanism of the printing press;
 - (10) adjusting the said sheet guide mechanism, said sheet jogger means and ink fountain mechanism in accordance with the said indicia on the said auxiliary scale means; and
 - (11) effecting movement of the said copy sheets through the press to effect printing the image on the copy sheets in the same relative location with respect to the side marginal edges of the copy sheets as the location of the image on the printing face of the said printing plate bears in relation to the side marginal edges of the printing plate.

References Cited

UNITED STATES PATENTS

1,202,531	10/1916	Kaddeland	101—365
2,226,302	12/1940	Aswad	33—184.5
2,516,613	7/1950	Bray.	

DAVID KLEIN, *Primary Examiner*.