

July 21, 1936.

H. V. BALL

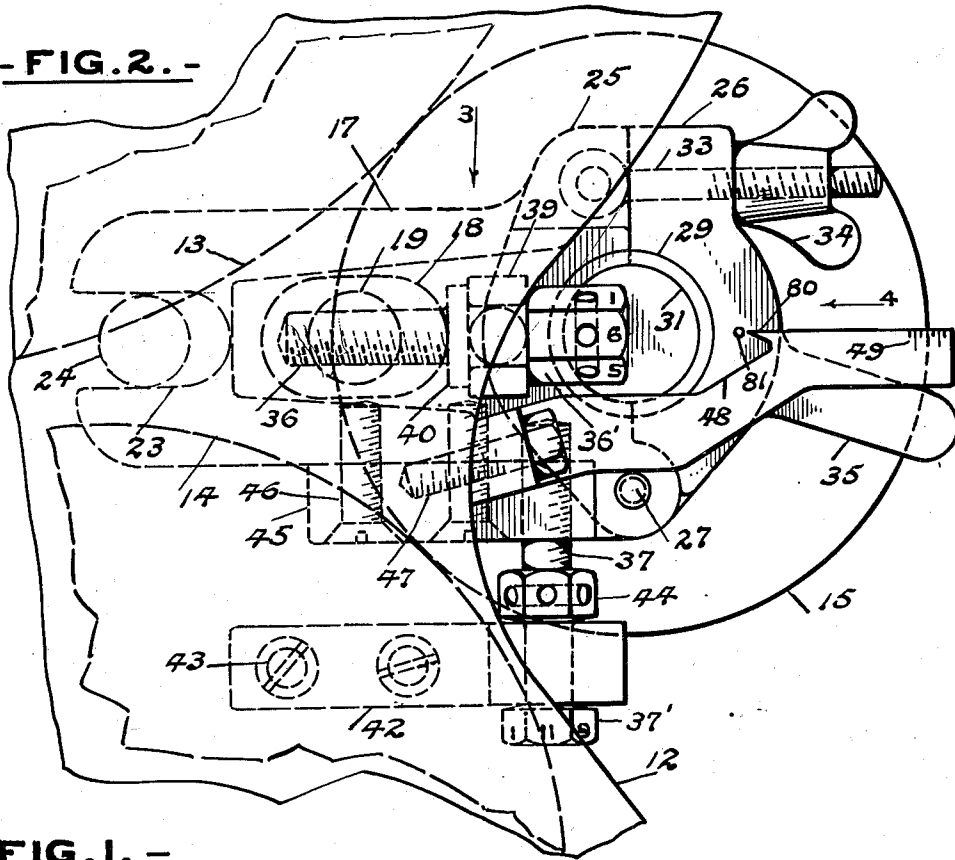
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INKING MECHANISM FOR PRINTING MACHINES

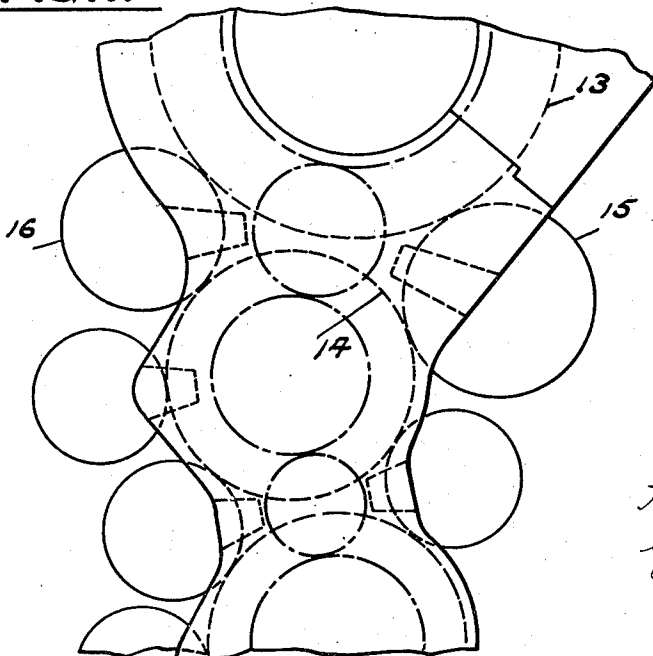
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-FIG. 2.-



-FIG. 1.-



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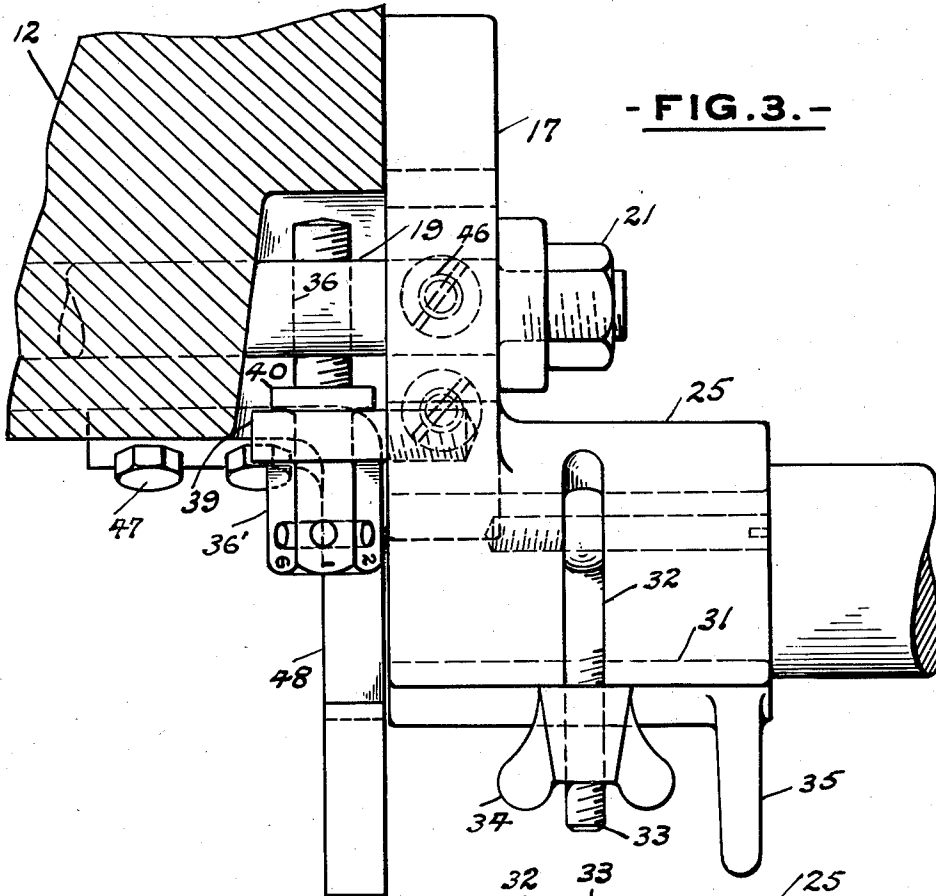
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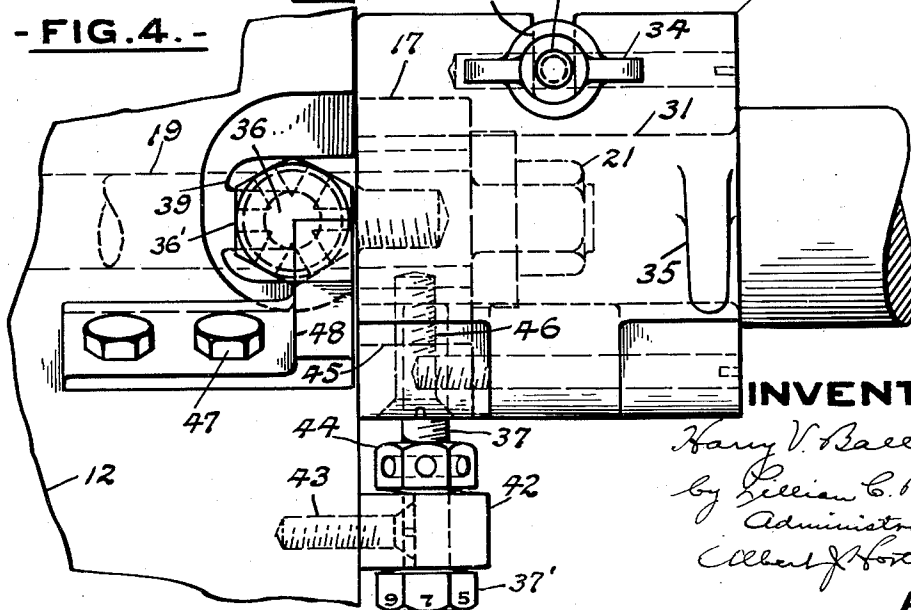
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- FIG. 4. -



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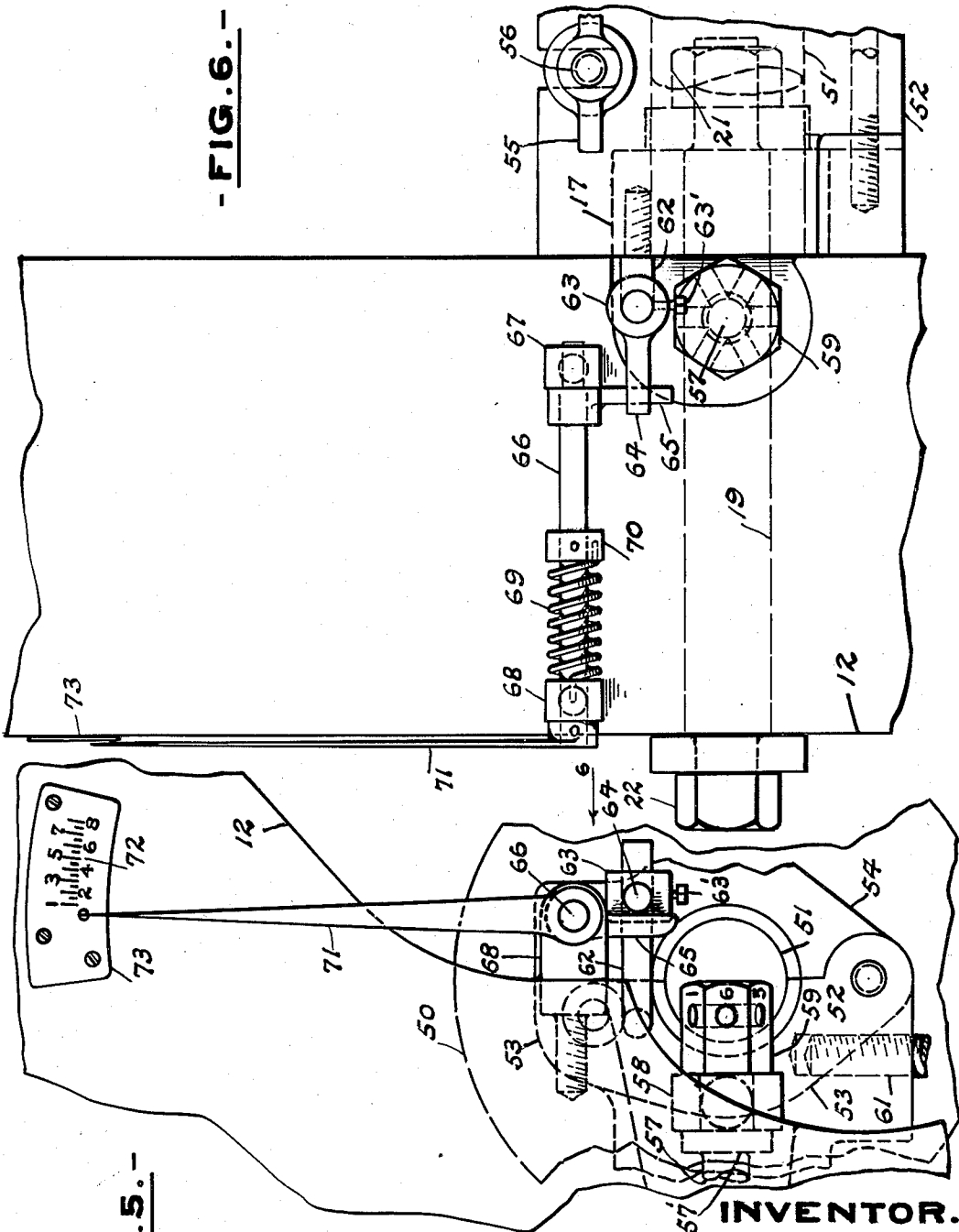
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INKING MECHANISM FOR PRINTING MACHINES

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- FIG. 6.-



- FIG. 5.-

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UNITED STATES PATENT OFFICE

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INKING MECHANISM FOR PRINTING MACHINES

Harry V. Ball, deceased, late of Bedford, Mass.,
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Hoe & Co., Inc., New York, N. Y., a corporation
of New York

Application February 6, 1935, Serial No. 5,179

5 Claims. (Cl. 101—352)

This invention in general relates to printing machines and more particularly to inking mechanism therefor, having for its object the provision of a novel improved micrometer form roller setting gauge or indicating means, particularly designed and adapted to permit an accurate positioning of each form roller relatively to the adjacent form and ink distributing cylinders, while indicating the diameter of the roller in immediate use.

It is also an object of the invention to provide a micrometer gauge and adjusting means for a form roller of generally improved construction, whereby the device will be simple, durable and inexpensive in construction, as well as convenient, practical, serviceable and efficient in its use.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts, and in the details of construction hereinafter described and claimed.

The preferred embodiments of the invention are illustrated in the accompanying drawings, wherein:

Figure 1 is a fragmentary diagrammatic representation of a printing machine, showing an arrangement of inking mechanism for which the invention is suited;

Figure 2 is a side elevational view of the device, certain portions of the printing machine being shown fragmentarily;

Figure 3 is a fragmental top plan view of the arrangement partly in section, as seen in the direction of the arrow 3 of Figure 2;

Figure 4 is a fragmental front elevational view as seen in the direction of the arrow 4 of Figure 2;

Figure 5 is a view similar to Figure 2 of a modified form of the invention; and

Figure 6 is a fragmental front elevational view as seen in the direction of the arrow 6 of Figure 5.

Referring now to the drawings, 12 designates the frame of a printing machine whereon the form and ink distributing cylinders 13, 14 respectively are rotatably supported. Form rollers 15, 16 arranged adjacent the cylinders 13 and 14 for coaction therewith, may be supported by similar means, the roller 15, for example, being rotatably mounted in a roller socket or member 17 having a slot 18 adapted to receive a stud 19 protruded through the said slot and arranged in the frame 12. The socket member 17 is held in position by the stud 19 which in turn is held in position on the frame by nuts 21, 22. The said

member 17 is provided at its inner end with a slot or opening 23 which slidably receives a second stud 24 also fastened to the frame, the member 17 also being formed with a widened portion or head 25, to which a cap 26 is hingedly connected at 27. The cap and head form in conjunction a socket which receives a split bushing 29 wherein the shaft or journal 31 of the form roller 15 is rotatably supported. The cap 26 is provided with a groove 32, receiving the stem of a link 33 hinged to the head 25 and adapted to receive a wing nut 34 which serves to retain the cap against the head when the shaft of the roller is operatively supported in the socket. The cap 26 is further provided with a handle 35 to manipulate same.

In order to adjust the socket member 17 in horizontal and vertical planes and relatively to the coating form and ink distributing cylinders, a pair of adjusting screws or members 36, 37 are provided. The adjusting screw 36 which has an operating head 36' of hexagonal configuration whose facets are provided with numbers as indicated, the purpose of which will be set forth hereinafter, is threaded transversely through the stem of the stud 19 and is rotatably supported in a poppet 39 fastened to the frame, the said adjusting screw 36 being normally held against axial movement relatively to the poppet 39 by a collar 40 fastened to the stem of the screw, and by the said hexagonal head, both collar and head abutting opposite sides of the poppet 39. The other adjusting screw 37, which also has a hexagonal head 37' provided with facet having numbers, is arranged in a plate 42 fastened by screws 43 to the frame 12 and has a lock nut 44 arranged on the stem thereof and normally engaged against the plate 42. It will, of course, be understood that the other form roller 15 shown, may be adjusted by means (not shown) similar to those employed for the adjustment of the roller 16. The upper end of the adjusting screw 37 is threadedly engaged in a member or plate 45 which is secured to the socket member 17 by screws 46. Removably fastened to the frame 12 by screws 47, is a laterally extending and normally fixed bracket 48, provided with a scale 49 and having its upper edge in register with a line passing through the axis of the adjusting member 36, said scale 49 serving as a means for indicating the size or diameter of the form roller actually being used, while the numbers on the head of the adjusting member or screw 36 serve to conveniently and approximately indicate the extent of the "flats" created on those portions of the roller 15 which

are in engagement with the cylinders 14, 15, it being understood that each partial turn of the adjusting screw 36, equivalent to bringing another facet or number into view, will cause, after the
5 initial superimposing of the roller 15 on the said cylinders, "flats" of predetermined extent or value. In similar fashion, the operating head 37', with its numbered facets, is turned so that the roller may be adjusted vertically in order to
10 centrally position same in the space adjacent the coacting cylinders 13, 14. It will be noted that both of the operating heads are provided with pockets to accommodate suitable operating tools.

The upper edge of the bracket 48 which has
15 a finger or projecting portion 80 is adapted, at its extremity, to register with a suitable mark which, for example, may be a pin 81 arranged on the cap 26, so that when the finger 80 is over or immediately adjacent to the said pin, and the
20 upper edge of the horizontally positioned bracket substantially in register with the axis of the member 36, as mentioned above, then the roller 15, when of the size or diameter shown in Figure 2, will be "centered" between and juxtaposed against
25 the respective peripheries of the cylinders 12 and 13. As indicated above, the adjusting member 36 is employed for horizontal or bodily adjustments of the roller 15, and the adjusting member 37 for vertical adjustments of the same. In the
30 above form of the invention, it will be observed that when it is desired to adjust the form roller 15 towards or away from the coacting cylinders 13 and 14, the nut 21 will first be loosened after which the adjusting screw 36 will be turned by
35 means of a suitable tool, thereby bodily moving in a horizontal plane the bracket 17 and consequently the form roller 16 carried thereby. As the said form roller moves in a horizontal plane towards and away from the adjacent cylinders,
40 as illustrated in Figure 2, the scale 49 on the bracket 48, as the outermost point of the periphery of the said form roller moves over or relatively to the said scale, will, in addition to giving an accurate indication of the size of the
45 roller actually in use, indicate the exact degree of adjustment or extent of movement of the roller towards and away from the cylinders 13 and 14.

Referring to the modified form of the invention shown in Figures 5 and 6, 50 designates a
50 form roller which is rotatably supported in a bushing indicated generally at 51, arranged in a socket 52 which may be of the general character of the one described above, the said socket 52 having a head portion 53 to which is hingedly
55 connected a cap 54, lockably secured to the head 53 by a wing nut 55, threadedly engaged on a stem 56 hingedly connected to the said head. The socket 52 which rotatably supports the form roller 50, is adjustable in a horizontal plane relatively to the adjacent form and ink distributing
60 cylinders (not shown), by an adjusting screw 57, rotatably supported in a poppet 58 fastened to the frame 11 of the machine and having a collar 57' and an operating head 59, each of which latter
65 abut against opposite sides of the poppet 58, thus preventing axial movement of the said adjusting screw. The head 59 of the adjusting screw 57, which has numbered facets as in the form shown in Figures 1 to 4 inclusive, is similarly
70 provided with pockets for the reception of a suitable operating tool. Vertical adjustments of the form roller 50 are obtained by an adjusting screw 61, of the same type as adjusting screw 37.

In order to operate a micrometer gauge fastened to the frame 12 and hereinafter described,

an L-shaped member 62 secured to the socket 52 is provided, the said member receiving a collar 63 which is held in place on the member 62 by a set screw 63'. The said collar 63 is provided with an extension or member 64, engaged by a
5 finger 65 which in turn is carried on a shaft 66 mounted in poppets 67, 68 secured to the frame 12. The shaft 66 is preferably biased by a spring 69 arranged thereon, one end of the spring being anchored to a collar 70 fastened to the shaft
10 66, the other end of the spring being fastened to the poppet 68. At the outer end of the shaft 66 an indicating arm or needle 71 is fastened, the extremity of the said arm being adapted to move over a calibrated scale 72 provided on a
15 plate 73 fastened to the frame 12.

The operation of the modified form of the invention shown in Figures 5 and 6 is similar to the other form of the invention, it being observed that the comparatively long indicating arm 71,
20 in passing over the scale 72, will show in amplified form the extent of adjustments made. The spring 69 on the shaft 66 whereon the indicating arm 71 is fastened, will tend to bias the said shaft so as to prevent undue looseness or lost
25 motion in the elements connected thereto, the spring also serving to normally return the indicating arm to the zero position of the scale.

It will be understood that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiments be considered in all respects as illustrative and not restrictive, reference being had to the claims rather than to the foregoing
35 description to indicate the scope of the invention.

What is claimed is:

1. In a device of the character described, the combination of a frame, a form cylinder and an ink distributing cylinder rotatably supported on
40 the frame, a socket horizontally and vertically adjustable relatively to the said cylinders, a form roller rotatably supported by the socket, and indicating means connected to said socket whereby the diameter of rolls of various sizes may be ascertained and their operative positioning relatively to the said cylinder accurately determined.

2. In a device of the character described, the combination of a frame, a form cylinder and an ink distributing cylinder rotatably supported on
50 the frame, a socket horizontally and vertically adjustable relatively to the said cylinders, a form roller rotatably supported by the socket, indicating means for denoting the relative diameters of rollers of different size when inserted in said
55 socket, and other means for denoting the degree of flats produced on said roller when engaged with said cylinders.

3. In a device of the character described, the combination of a frame, a form cylinder and an ink distributing cylinder rotatably supported on
60 the frame, a socket horizontally and vertically adjustable relatively to the said cylinders, a form roller rotatably supported by the socket, a scale secured to the frame, and other means arranged
65 on a portion of said socket for coaction with said scale to indicate the relative diameters of various rolls when inserted in said socket and for denoting the accurate centering of the roller relatively to the said cylinders.

4. In a device of the character described, the combination of a frame, a form cylinder and an ink distributing cylinder rotatably supported on
70 the frame, a socket horizontally and vertically adjustable relatively to the said cylinders, a form

roller rotatably supported by the socket, indicating means and a marker for denoting various sizes of rollers and the correct positioning of same relatively to said cylinders, means for adjusting said socket in at least two different planes and for indicating the degree of flats produced on said roller when engaged with the cylinders.

5
10 In a device of the character described, the combination of a frame, a form cylinder and an ink distributing cylinder rotatably supported on

the frame, a socket horizontally and vertically adjustable relatively to the said cylinders, a form roller rotatably supported on the socket, and indicating means on the socket and the frame, whereby adjustment of the socket whether in a horizontal or vertical plane will be denoted by the said indicating means.

LILLIAN C. BALL,
Administratrix of the Estate of Harry V. Ball,
Deceased.