

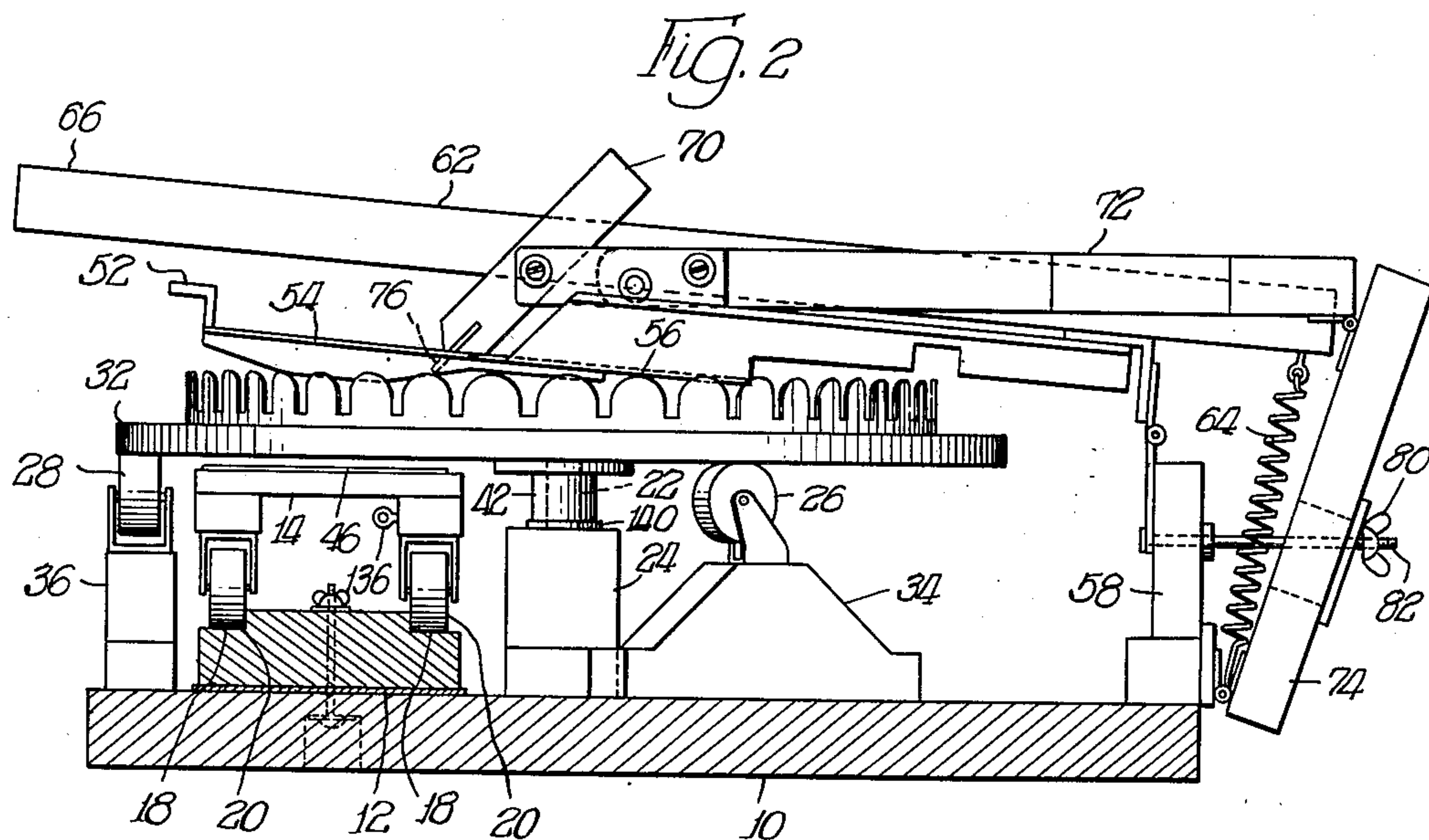
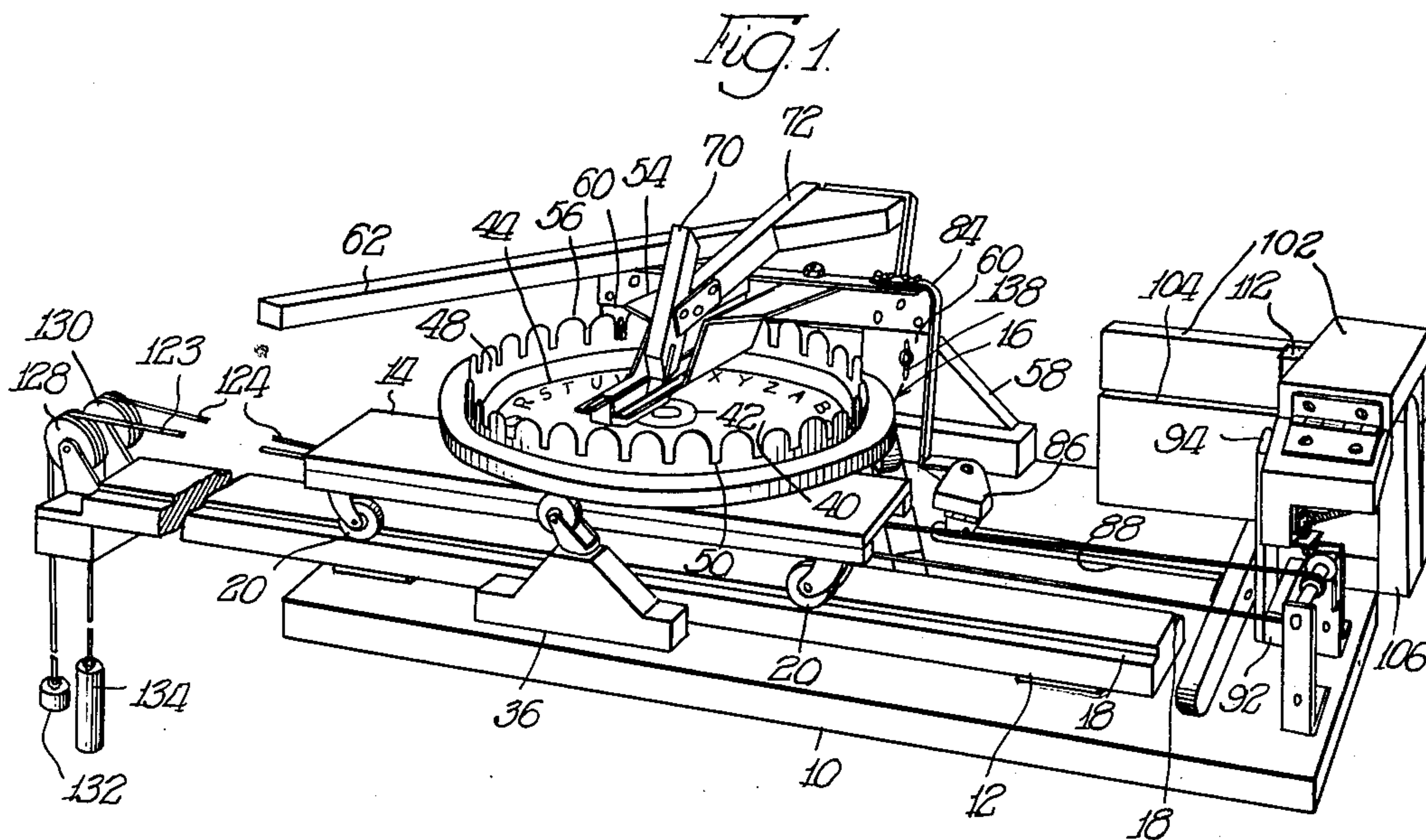
Feb. 6, 1951

H. R. FARWELL
SCREEN PRINTING APPARATUS

2,540,326

Filed Jan. 8, 1948

3 Sheets-Sheet 1



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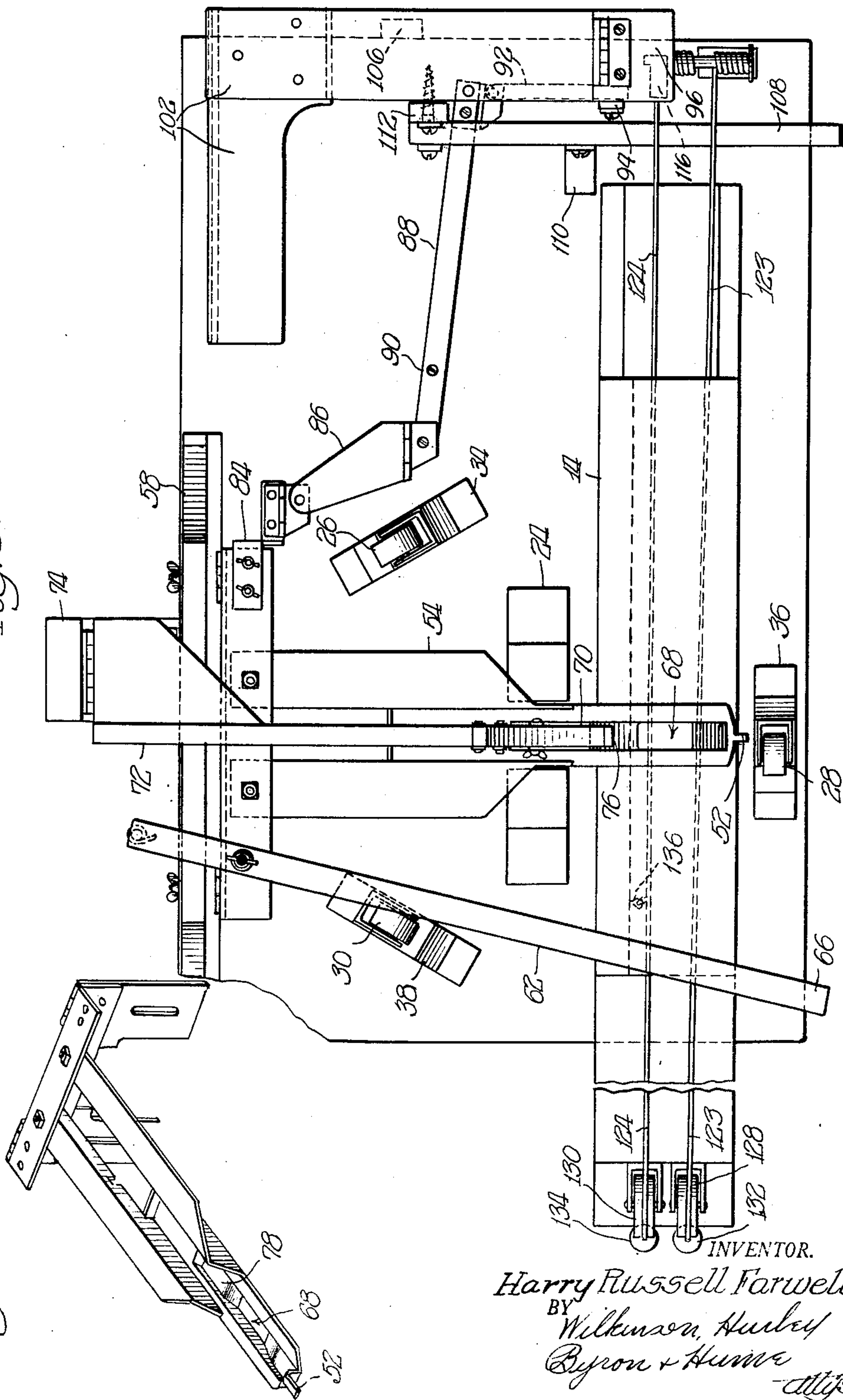
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Fig. 4

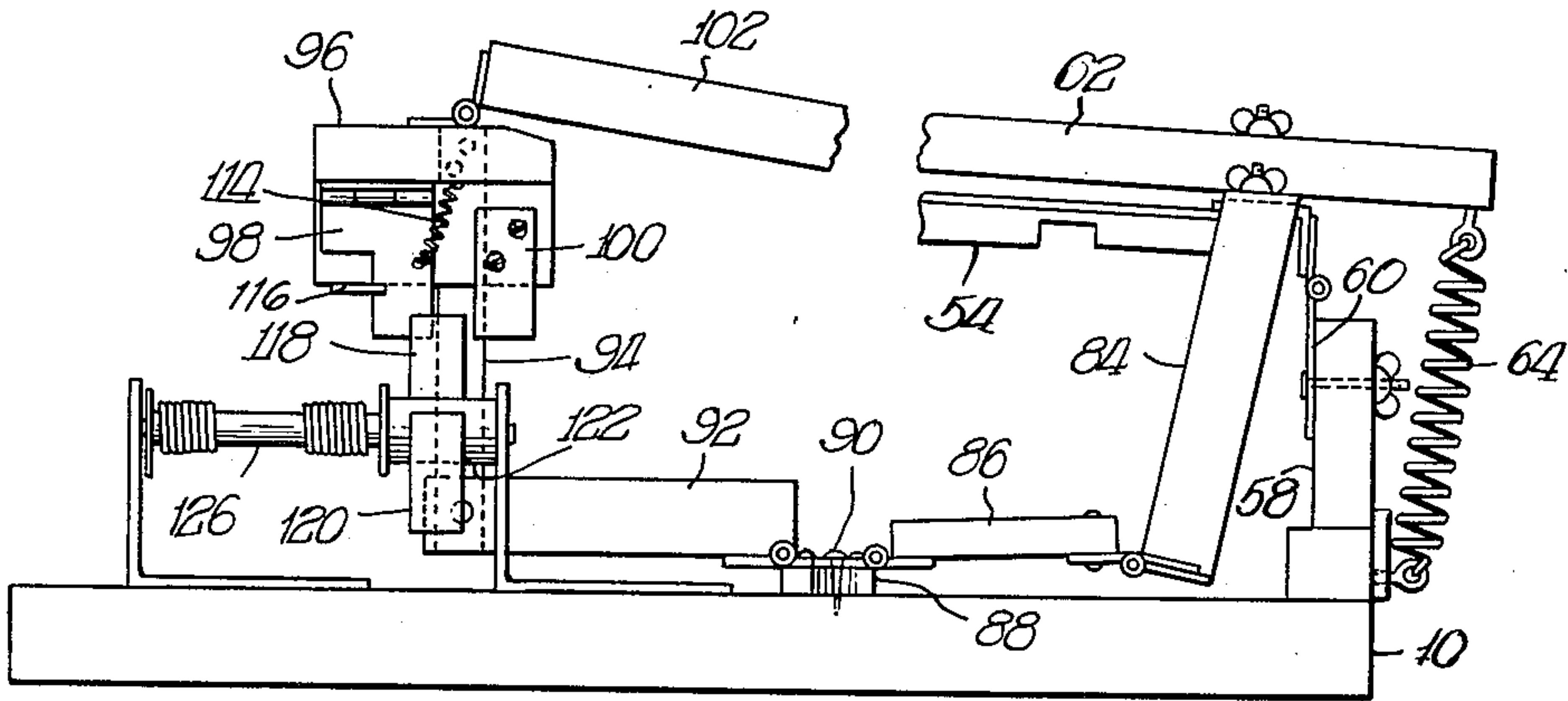


Fig. 5.

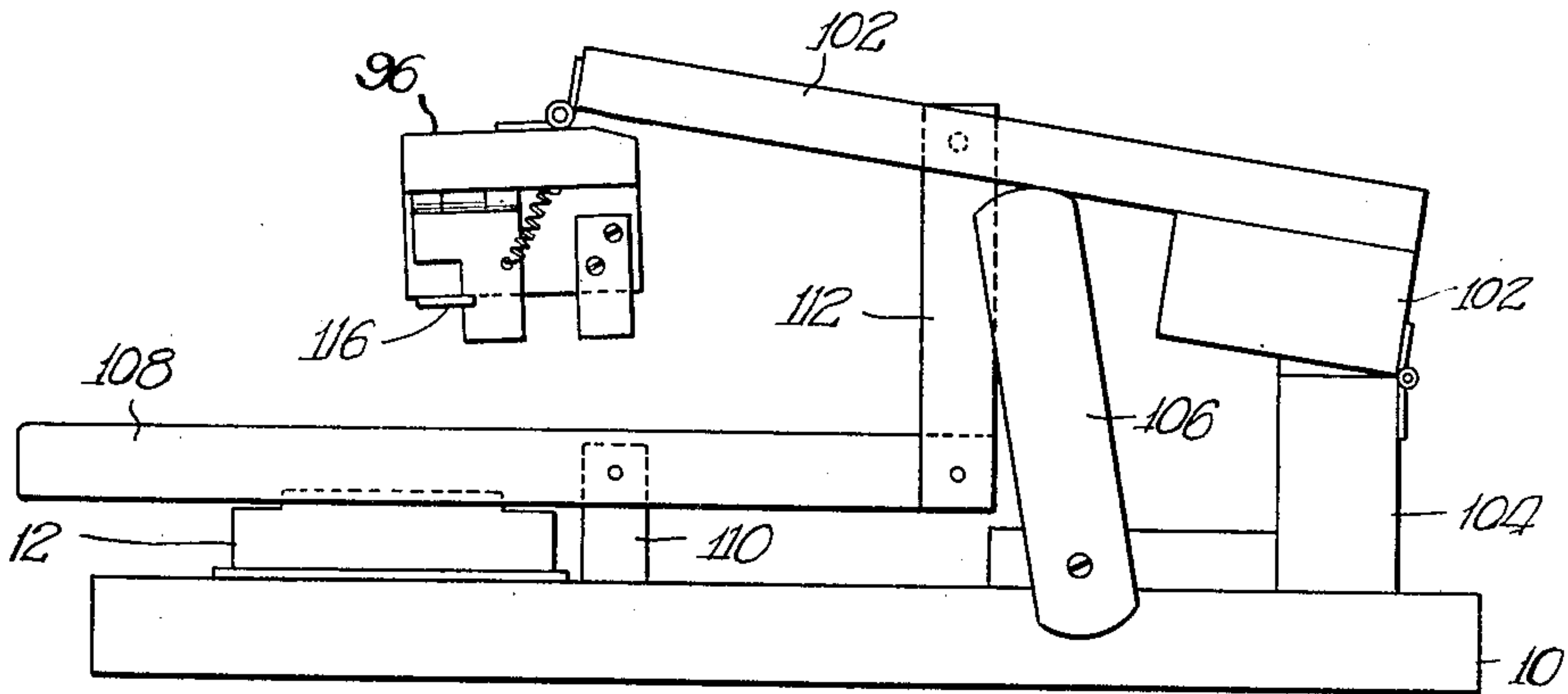
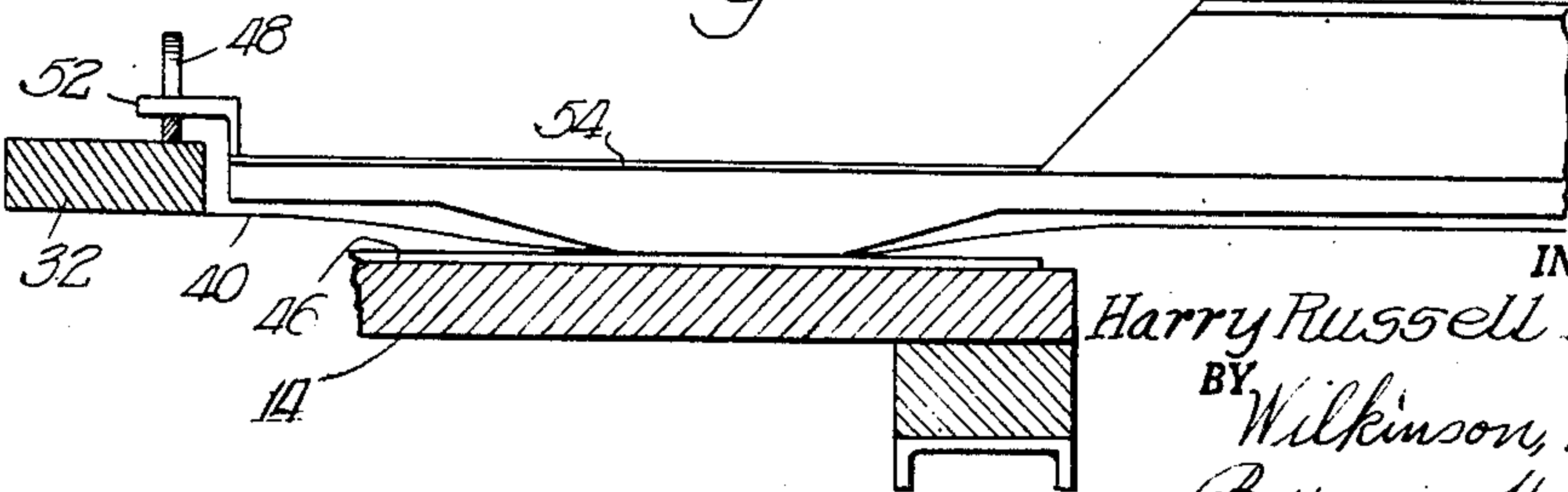


Fig. 6.



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UNITED STATES PATENT OFFICE

2,540,326

SCREEN PRINTING APPARATUS

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Application January 8, 1948, Serial No. 1,199

14 Claims. (Cl. 101—126)

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This invention relates to a screen printing apparatus, and, more particularly, to a screen printing apparatus in which a screen printing frame unit having plurality of characters thereon is so disposed that it may be readily utilized to print individually selected characters on a desired object.

Such a device is particularly useful where it is desired to print a large number of objects, each with different copy. The silk screen method of printing has not been adapted to this type of work in the past because of the necessity of preparing a separate screen for each object to be printed. Because of this fact, it has often been more economical to do such lettering or printing manually by brush, since the cost of preparing a separate stencil for each type of sign has been prohibitive.

Nevertheless, it would be highly advantageous to be able to utilize the silk screen type of printing in work such as sign printing since the finished product has many desirable qualities, such as uniformity of characters, long life and the like. Applicant has already invented one form of a device designed to permit the use of silk screen printing for this type of work. This form is disclosed in applicant's co-pending application, Serial No. 701,649, filed October 7, 1946, which matured into Patent No. 2,532,802, December 5, 1950. The invention which is the subject matter of this application however is believed to be a substantial improvement thereover, and more readily lends itself to being adapted to almost completely automatic operation.

Although the embodiment of the invention disclosed in the drawings is designed for manual operation, it can be readily seen that the device could be made at least semi-automatic with very little modification, and applicant does not wish to be limited in this disclosure to only the manually operated form shown.

It is therefore an object of this invention to provide a screen printing apparatus utilizing a rotatable silk screen printing frame having a plurality of characters thereon which provides means of quickly and accurately printing selected characters individually in the proper order and alignment on an object properly disposed thereon to conform to any desired copy.

It is a further object of this invention to provide a screen printing apparatus which has a movable printing base adapted to support an object to be printed, which base automatically moves the distance required to produce the proper spacing between individual characters after each such character is printed.

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It is an additional object of this invention to provide a screen printing apparatus which utilizes a substantially circular screen printing frame which is normally disposed in spaced relation to a printing base and which has a plurality of characters thereon, and which includes means for moving the portion of the screen containing a desired character into contact with the object to be printed disposed on the printing base, so that any desired combination of characters may readily be printed on that object.

It is still another object to provide a screen printing apparatus in which the screen printing frame may be easily and quickly removed for cleaning or replacement; which has an improved and simplified escapement mechanism which allows all spacing between individual characters to be produced automatically and which may be easily adjusted for different spacing as desired; which is simple in construction and operation; which may be produced at a relatively low cost; which forms each character in a uniform and accurate manner; and which can produce a volume of printed objects, each with different copy, at a fraction of the cost of printing them manually with a brush or with type.

Further objects and advantages of this invention will become evident as the description proceeds, and from an examination of the accompanying drawings which illustrate one embodiment of the invention and in which similar numerals refer to similar parts throughout the several views.

In the drawings:

Fig. 1 is a perspective view of a screen printing apparatus embodying the invention;

Fig. 2 is a fragmentary side elevation, partly in cross section, showing the movable printing base, the rotatable silk screen printing frame and the printing mechanism.

Fig. 3 is a plan view from above of the apparatus with the screen printing frame removed.

Fig. 4 is a fragmentary side elevation showing the escapement mechanism;

Fig. 5 is a fragmentary side elevation, partly in cross section, showing the control mechanism for releasing the escapement mechanism.

Fig. 6 is a fragmentary detail view in elevation and partly in cross section of the squeegee guide, the screen printing frame and the movable printing base, the guide and screen being shown in printing position.

Fig. 7 is a fragmentary perspective view of the squeegee guide.

Referring now to Fig. 1, the apparatus has a

rectangular supporting base 10 which may be adapted to be placed on a supporting table, or may be of any suitable table-like construction itself. This supporting base has the track 12 thereon extending in the direction of the longitudinal axis of the base and projecting beyond one end of the base a distance sufficient to allow the movable printing base 14 to be moved laterally in that direction so that it is clear of the rotatable silk screen frame indicated generally by the numeral 16. The track 12 has the two grooves 18 in the upper surface thereof along the two upper edges of the track. The rollers 20 secured to the printing base 14 at its four corners are adapted to ride in these two grooves 18 and to allow the printing base to be moved laterally along the track 12.

As shown in Figures 1 and 2, the circular silk screen frame 16 is mounted to rotate about the pin 22 which is, in turn, supported by the mounting block 24. The outer rim 32 of the frame 16 is also supported by the three rollers 26, 28 and 30, which are mounted on the mounting blocks 34, 36 and 38, respectively. The outer rim 32 serves as a support for the silk screen 40 which, in turn, has the hub 42 mounted at the center thereof. The silk screen 40 has a plurality of characters 44 disposed thereon in spaced relation having their vertical axes coincidental with radii of the frame 16. These characters may be letters disposed thereon in alphabetical order and punctuation marks, or the like. The silk making up the screen 40 is treated with a suitable compound so that it is impervious to the passage of liquid such as the usual printing mediums used in silk screen work, except in the areas defined by the characters 44. The screen 40, in addition, is drawn tautly across the rim 32, but is sufficiently flexible so that a portion of it may be depressed sufficiently to come into contact with an object properly placed on the movable printing base 14, such as the sign 46 shown in Fig. 2.

Adjacent the inner edge of the outer rim 32 of the screen printing frame 16 is the upstanding circular notched flange 48. The notches 40 are centered on the vertical axes of the characters 44 and are adapted to receive the aligning member 52 which protrudes from one end of the guide member 54. The flange-ports 56 which are disposed between notches 50 have their upper extremities rounded off and are so shaped that the notches 40 become progressively narrower toward their base, the bases being of a width sufficient to allow the aligning member 52 to fit snugly therein.

The guide member 54, which is shown in more detail in Figures 6 and 7, is pivotally mounted on the support 58, mounting plates 60 being slotted so that the guide member 54 may be adjusted to any desired heights within the limits of the slots. The control member 62 is secured to the rear of the guide member 54 and projects beyond the supporting member 58 and has the spring member 64 secured to the end which so projects beyond the supporting member 58. The other end of the spring member 64 is secured to the base of the supporting member 58, as best shown in Fig. 4. This arrangement insures that the guide member 54 is normally maintained in spaced relation to the silk screen frame 16 but the guide member may be moved into contact with the screen 40 by depressing the forward end 66 of the control member 62. As shown in Fig. 6, such a depression of the control member 62 will cause the guide member 54 to distort a portion of the

screen 40 sufficiently for the screen to be moved into contact with the sign 46 on the printing base 14.

The movement of the guide member 54 in an upward direction is limited by other members which are operatively connected to it, which members will subsequently be described.

At the same time the guide member 54 is so depressed the aligning member 52 must enter into one of the notches 50 in the flange 48 and when it has so entered into one of these notches, the character 44 which has its vertical axis aligned with that particular notch is automatically centered in the opening 68 in the guide member 54.

As shown in Fig. 2, the squeegee 70 is pivotally mounted on the arm 72 which is, in turn, pivotally mounted on one end of the arm 74, the opposite end of the latter arm being pivotally secured to the support member 58. The arms 74 and 72 are so disposed and the adjustable wing nut 80 on the bolt 82, which extends horizontally from the support 58 through the arm 74, is normally so adjusted that the tip 76 of the squeegee will rest in the well 78 of the guide member 54 when the squeegee 70 is moved to its rearmost position.

The rear end of the guide member 54 has the arm 84 secured thereto and extending downwardly toward the supporting base 10, as best shown in Fig. 4. The lower end of the arm 84 is pivotally secured to one end of the arm 86 extending substantially parallel with the supporting base 10 and the opposite end of this latter arm is pivotally secured to one end of the arm 88 which is, in turn, mounted to pivot on and parallel to the supporting base 10 around the pivot member 90. The opposite end of the arm 88 is pivotally secured to one end of the arm 92, the opposite end of which is pivotally secured to the arm 94. The opposite end of the arm 94 is rigidly mounted on the vertical arm of the L-shaped support member 96 which carries the stop members 98 and 100. The support member 96 is pivotally mounted to one end of the arm 102 which, as shown in Fig. 5, is pivotally mounted on the support member 104. The arm 102 normally rests on the fixed arm 106 which extends upwardly from the supporting base 10 but is adapted to be raised therefrom by a depression of the front end of the control member 108 which is pivoted on the support 110 mounted on the supporting base 10, and which has pivotally secured to its inner end the arm 112 which is, in turn, pivotally secured to the arm 102.

As described above, the spring member 64 normally urges the end 66 of the arm 62 in an upward direction and the tension of the spring can be adjusted by varying the screw eye in or out of the arm 62, which eye is best shown in Figures 2 and 4.

The stop member 98 is pivotally mounted on the horizontal arm of the L-shaped support member 96 and has one end of the spring member 114 secured thereto, the other end of the spring member being secured to the same arm of the support member 96 in such a way that the stop member is normally urged away from the vertical arm of this support member 96. The stop member 98 is limited in its pivotal movement in the direction it is urged by the spring member 114 by the stop member 116 which is mounted on the base of the vertical arm of the L-shaped support member 96. The stop member 100, on the other hand, is rigidly mounted on the vertical arm of the L-shaped support member 96 in spaced relation to the pivoted stop member 98.

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As shown in Figures 4 and 5, the support member 96 is normally supported by the arms 102 and 106 at a height which allows the stop members 98 and 100 to intercept the lugs 118 and 120 extending tangentially in opposite directions from diametrically opposite points on the surface of the escape member 122.

However, the supporting member 96 is adapted to be pivoted about the end of the supporting arm 102 by movement of a train of arms 84, 86, 88, 92 and 94, which are, in turn, activated by the control member 62 secured to the guide member 54. This pivotal movement of the support member 96 and which, in turn, causes a like pivotal movement of the stop members 98 and 100 allows the escape member 122 to rotate a predetermined amount between such pivotal movements. The escape member 122 is normally urged to rotate in a counterclockwise direction as viewed in Fig. 1 by the flexible lines 123 and 124 which are wound on the reduced portion 126 thereof and which extend over the pulleys 128 and 130 respectively which are mounted on the protruding end of the track 12. The weights 132 and 134 are secured to the ends of the two lines 123 and 124 respectively, the weight 134 being substantially greater than the weight 132. The line 130 is wound in a clockwise direction around the reduced portion 126 of the escape member 122 and the line 123 is wound in a counterclockwise direction thereon, as viewed in Fig. 1. In addition, the line 124 is secured to the underside of the movable printing base 14 at the eyelet 136 shown in Figures 2 and 3. Because of this arrangement the movable printing base 14 is normally urged toward the pulleys 128 and 130 and the escapement member 122 is urged to revolve in a counterclockwise direction, as viewed in Fig. 1.

When the supporting member 96, however, is at rest in its normal position (that is, when the outer end 66 of the control member 62 is in its uppermost position) one of the lugs 118 or 120 is intercepted by the stop member 98, as shown in Fig. 4. This prevents the escape member 122 from rotating which, in turn, prevents the movable printing base 14 from moving. However, when the outer end 66 of the control member 62 is depressed, the guide member 54 is pivoted downwardly; which, in turn, causes the lower end of the arm 84 to move rearwardly toward the support member 58; this, in turn, causes the arm 86 to also move in that direction; this causes the left end of the arm 88, as viewed in Fig. 1, to also move in that direction and since this arm is pivoted at 90, such a movement of the left end of the arm 88 causes the right end of the arm 88 to move in the opposite direction; this, in turn, causes the arm 92 to move toward the front end of the supporting base 10, as viewed in Fig. 1, which movement of the arm 92 causes the lower end of the arm 94 to pivot outwardly; this movement of the arm 94 causes the outer end of the supporting member 96 to pivot upwardly. This upward movement of the outer end of the supporting member 96 causes the stop member 98 to move out of registry with the lug (or 120) and moves the stop member 100 into registry with that lug. The stop member 98 having previously been held flush with the vertical arm of the support member 96 is now pulled away from that arm toward the horizontal arm by the spring member 114 until it is intercepted by the stop member 116.

When the outer end of the control member 62 is again allowed to resume its raised position

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which, in turn, causes the guide member 54 to pivot upwardly, the supporting member 96 pivots in the opposite direction, the movement being transmitted through the arms 84, 86, 88, 92 and 94 in substantially the same manner as previously described, but in the opposite direction. This pivoting of the support member 96 causes the stop member 100 to move out of registry with the lug 118 or 120, and since the stop member 98 has been pivoted away from the vertical arm of the support member 96 it no longer is in a position to intercept one of the lugs 118 and 120, and the escape member 122 is therefore allowed to rotate until the lug opposite to that released by the stop member 100 is intercepted by the stop member 98, the latter being pivoted toward the vertical arm of the support member 96 until it assumes the same position that it originally held before the initial movement of the control member 62. The rotation of the escape member 122, in turn, has allowed the movable printing base to move a predetermined distance toward the projecting end of the track 12, which distance is that desired between characters. If the control member 62 is subsequently depressed and released, the printing base 14 will again move the same predetermined distance, and this movement will occur until the printing base is moved out of association with the screen printing frame 16, or until the printing base abuts the pulleys 128 and 130.

If it is desired to change the distance that the printing base 14 moves in one half revolution of the escape member 122, this latter member may be easily and quickly replaced with one having a different diameter at the point where the two flexible lines are wound thereon. If greater spacing is desired, the escape member will have a larger diameter, whereas substituting one with a smaller diameter will reduce the size of the spacing.

If it is desired to move the printing base 14 other than by a depression and release of the control member 62, the escape mechanism can be released by a depression of the outer end of the arm 108, which, in turn, causes the arm 102 to be raised so that the stop members 98 and 100 are no longer in a position to intercept the lugs 118 and 120 on the escape member 122, as previously described.

In actual operation the operator of the device first places the material to be stenciled, such as a sign or the like, on the movable printing base 14. Any convenient method for holding the material to be printed on this base may be used, such as metal clips on the upper surface of the printing base, or by use of a vacuum or electromagnetic means, the latter being feasible when the object to be printed is of magnetic material. After properly adjusting the position of the object to be printed with reference to the marginal limits of the printing base, the operator depresses the control member 108 and the printing base 14 is then moved to the correct starting position.

A small quantity of slow drying silk screen printing ink has been placed in the well 78 in the guide member 54, and since the ink is highly viscous it is normally held from flowing toward the opening 68 in the guide member 54 by the lower end of the squeegee 76 which normally rests on the bottom of the well 78 near the opening 68 when not in use. Although the squeegee fits snugly in the trough 136 in the guide member 54, it is capable of being moved freely back and forth within the trough. With an ink supply so disposed in the guide member 54 and the object to

be printed in proper alignment with the screen printing frame 16, the operator may now rotate the screen 16 until the first desired character is substantially aligned with and directly below the guide member 54. The control member 62 may then be pressed which, in turn, will cause the guide member 54 to pivot downwardly toward the screen 40 and, as it does so, the aligning member 52 will enter into the notch in the flange 48 which is aligned with the character previously selected, as described above. As the aligning member 52 moves into registry with the base of this notch, the frame 16 will be automatically adjusted so that the character selected is in registry with the opening 68 in the guide member 54. When the guide member 54 comes into contact with the screen 40 and is subsequently further depressed, the portion of the screen 40 immediately adjacent the guide member 54 will be distorted in a downward direction, as shown in Fig. 6. Since the screen 40 is normally disposed only a relatively short distance above the object 46, such a downward distortion of the screen 40 will cause it to come into contact with this object, as shown in Fig. 6. The guide member 54 and the screen 40 will then be held in such a position through proper pressure on the control member 62, and when so held the operator of the apparatus may lift the squeegee 70 from the guide member 54 and move it in a forward direction until it is between the opening 68 and the aligning member 52. The squeegee is then lowered until the tip 76 thereof comes into contact with the base of the trough 136 immediately in front of the opening 68. The squeegee may then be moved rearwardly so that the tip 76 passes across the portion of the screen 40 exposed through the opening 68 and back to its original position in the well 78. When the squeegee tip 76 is lifted from the well 78 as described, a small amount of ink clings to it and a portion of this ink is subsequently forced through the screen 40 according to the configuration of the character in that portion of the screen framed by the opening 68.

It will be recalled that when the control member 62 is depressed the supporting member 96 is pivoted in such a way that the lug previously intercepted by the stop member 98 is moved into contact with the stop member 100. After the ink has been forced through the screen 40, as described, the control member 62 is allowed to return to its original position, which, in turn, allows the lug on the escape member 122 to escape from the stop member 100, so that the movable printing base 14 is allowed to move one letter space so that the object being printed is in position to receive the next character. This operation may be repeated as often as is necessary to print the desired characters on the object 46.

As previously mentioned, the normal height of the guide member 54 above the printing base 14 may be adjusted by shifting the plate 60 as desired by loosening the wing nuts 138. At the same time the height of the printing frame 16 may be adjusted by replacing the washer 140 with a washer of a different thickness. The frame 16 may also be removed from the apparatus for cleaning or the like by lifting it with its collar 42 from the pivot 22.

As previously stated, at least some of the operations of the apparatus may be rather readily made automatic, such as the required movement of the squeegee 70. It would be relatively easy to construct a device in which the movement of

the arm 72 and the squeegee could be made to take place automatically as soon as the control member 62 reached its lowest point. Such an arrangement would allow the operator to utilize his right hand entirely for adjustments of the frame 16 while simultaneously operating the control member 62 with his left hand. Obviously it also would be possible to modify the device so that the control member 62 could be operated with a foot pedal, and if the movement of the squeegee 70 were also automatic, then the operator would have both hands free to make adjustments in the position of the frame 16 or for any other desired activity.

In the drawing and specification, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. A screen printing apparatus comprising a supporting base, a movable printing base adapted to support an object to be printed, a screen printing frame unit rotatably supported at a plurality of points on the periphery thereof substantially parallel to and in closely spaced relation to said printing base, a plurality of characters on the screen of said frame unit, said screen being relatively flexible, guide means pivotally mounted on said supporting base adapted to bring a selected portion of said screen into contact with an object supported by said printing base, means for automatically aligning said selected portion of said screen with relation to said guide member and said movable printing base as said guide member is operated to move said selected portion into contact with said object, and means for causing a suitable printing medium to be deposited on said object through said portion of said screen in the form of one of said characters.

2. In a screen printing apparatus having a substantially circular screen printing frame unit rotatably supported at its periphery on a supporting base in close association with a movable printing base, the combination of a guide means pivotally mounted on said supporting base adapted to be moved into abutment with selected portions of the screen in said rotatable frame unit so that said portions are placed in any desired order on an object disposed on said movable printing base, a plurality of characters disposed in spaced relation on said screen coincident with radii of said frame unit, said portions each containing one of said characters and means activated by the movement of said guide means adapted to move said printing base a predetermined distance in a predetermined direction so that said portions of said screen are placed on said object at spaced intervals.

3. A screen printing apparatus comprising a supporting base, a movable printing base adapted to support an object to be printed, a substantially circular screen printing frame unit rotatably supported substantially parallel to and in closely spaced relation to said printing base, the screen in said frame unit being relatively flexible and having a plurality of characters in spaced relation thereon disposed coincident with radii of said frame unit, guide means pivotally mounted on said supporting base for selectively and individually distorting portions of said screen so that said portions are brought into contact with an object supported by said printing base, each

of said portions having a desired character included therein, and means activated by the movement of said guide means adapted to move said printing base a predetermined distance in a predetermined direction.

4. A screen printing apparatus comprising a supporting base, a printing base movably disposed on said supporting base, said printing base being adapted to support an object to be printed, a substantially circular screen printing frame unit rotatably supported substantially parallel to and in closely spaced relation to said printing base, a plurality of characters on the screen of said frame unit, a guide means pivotally mounted on said supporting base adapted to distort a selected portion of said screen so that said portion is brought into contact with an object supported by said printing base, means for automatically aligning said selected portion of said screen with relation to said guide member and said movable printing base as said guide member is operated to move said selected portion into contact with said object, and means for applying a suitable printing medium to said object through said selected portion of said screen in the form of one of said characters.

5. A screen printing apparatus comprising a supporting base, a printing base movably disposed on said supporting base and adapted to support an object to be printed, a substantially circular screen printing frame unit rotatably supported in spaced relation to said printing base, the screen in said frame unit being relatively flexible and having a plurality of characters in spaced relation thereon disposed coincident with radii of said frame unit, means for applying a suitable printing medium to an object on said printing base through selected portions of said screen, said portions each containing one of said characters, and a guide means for said applying means, said guide means being adapted to be moved against said selected portions of said screen to move said portions of said screen individually into contact with said object, said guide means being pivotally mounted on said supporting base normally in spaced relation to said frame unit.

6. A screen printing apparatus of the character described in claim 5, further comprising means adapted to normally urge said printing base to move in one direction on said supporting base, means operatively connected to said guide means adapted to permit said printing base to move a predetermined distance in said direction each time said guide means is moved against and released from contact with said portions of said screen.

7. A screen printing apparatus of the character described in claim 6, further characterized in that said means operatively connected to said guide means comprises a pair of spaced stop members, a pivotally mounted support for said stop members, means for converting the movement of said guide means into a pivotal movement of said support, and a rotatable escape member adapted to be normally held against rotation by one of said stop members, flexible means adapted to be wound on said escapement member and secured to said printing base so that movement of said supporting base causes said escapement member to rotate, said pivotal movement of said support for said stop members allowing said escapement member to rotate a predetermined amount.

8. A screen printing apparatus comprising a

supporting base, a printing base movably disposed on said supporting base and being adapted to support an object to be printed, a substantially circular screen printing frame unit rotatably supported in spaced relation to said printing base, a plurality of characters on the screen of said frame unit, a guide means pivotally mounted on said supporting base, tension means normally maintaining said guide means in spaced relation to said frame unit, a control member disposed on said guide means, said guide means being adapted to move a selected portion of said screen into contact with the object supported by said printing base when said control member is properly operated, means for applying a suitable printing medium to said object to said selected portion of said screen in the form of one of said characters, means adapted to urge said printing base to move in one direction on said supporting base and escapement means operatively connected to and activated by the movement of said guide means adapted to allow said printing base to move a predetermined distance in said direction when said guide means is so moved against and released from contact with said portion of said screen.

9. In a screen printing apparatus of the character described having a supporting base, a printing base movably disposed on said supporting base and adapted to support an object to be printed, and an escapement mechanism adapted to allow said printing base to move a predetermined distance when activated, the combination of a substantially circular screen printing frame unit rotatably supported in spaced relation to said printing base, a plurality of characters on the screen of said frame unit, a guide means adapted to move a selected portion of said screen into contact with an object supported by said printing base, means for applying a suitable printing medium to said object through said selected portion of said screen in the form of one of said characters, means normally urging said printing base to move in one direction on said supporting base and a pivotal connection between said escapement mechanism and said guide means adapted to operate said escapement mechanism so that when said guide means is operated to move a selected portion of said screen into contact with an object supported by said printing base, said printing base is thereafter permitted to move a predetermined distance in the direction it is normally urged to move.

10. In a screen printing apparatus of the character described having a supporting base, a printing base movably disposed on said supporting base and adapted to support an object to be printed, the combination of a circular screen printing frame unit rotatably supported at a plurality of points on its periphery substantially parallel and in closely spaced relation to said printing base, a plurality of characters on the screen of said frame unit, a guide means pivotally mounted on said supporting base adapted to move a selected portion of said screen including one of said characters into contact with an object supported by said printing base, a reservoir in said guide means adapted to hold a supply of a suitable printing medium, an opening in said reservoir adapted to expose the character on said selected portion of said screen, and means for applying said medium to said object through said opening and said selected portion of said screen in the form of said character, said last named means being pivotally mounted on said

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supporting base and adapted to normally rest in said reservoir in spaced relation to said opening.

11. In a screen printing apparatus of the character described having a supporting base, a printing base movably disposed on said supporting base and adapted to support an object to be printed, and an escapement mechanism adapted to allow said printing base to move a predetermined distance when activated, the combination of a circular screen printing frame unit rotatably supported at a plurality of points on its periphery substantially parallel and in closely spaced relation to said printing base, a plurality of characters on the screen of said frame unit, a guide means pivotally mounted on said supporting base adapted to move a selected portion of said screen including one of said characters into contact with an object supported by said printing base, a reservoir in said guide means adapted to hold a supply of a suitable printing medium, an opening in said reservoir adapted to expose the character on said selected portion of said screen, and means normally urging said printing base to move in one direction on said supporting base and connecting means between said escapement mechanism and said guide means adapted to control said escapement mechanism so that when said guide means is operated to move a selected portion of said screen into contact with an object supported by said printing base, said printing base is thereafter permitted to move a predetermined distance in the direction it is normally urged to move.

12. In a screen printing apparatus of the character described having a supporting base, a printing base movably disposed on said supporting base and adapted to support an object to be printed, and an escapement mechanism adapted to allow said printing base to move a predetermined distance when activated, the combination of a circular screen printing frame unit rotatably supported at a plurality of points on its periphery substantially parallel and in closely spaced relation to said printing base, a plurality of characters on the screen of said frame unit, a guide means pivotally mounted on said supporting base adapted to move a selected portion of said screen into contact with an object supported by said printing base, means for automatically aligning the selected portion of said screen with relation to said guide member and said movable printing base as said guide member is operated to move said selected portion into contact with said object, a reservoir in said guide means adapted to hold a supply of a suitable printing medium, an opening in said reservoir adapted to expose the character on said selected portion of said screen, and means normally urging said printing base to move in one direction on said supporting base and connecting means between said escapement mechanism and said guide means adapted to control said escapement mechanism so that when said guide means is operated to move a selected portion of said screen into contact with an object supported by said printing base, said printing base is thereafter permitted to move a predeter-

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mined distance in the direction it is normally urged to move.

13. In a screen printing apparatus having a supporting base, a movable printing base movably disposed on said supporting base and adapted to support an object to be printed and a screen printing frame unit having a plurality of characters thereon movably supported substantially parallel to and in closely spaced relation to said printing base, the combination of a guide means pivotally mounted on said supporting base adapted to move a selected portion of said screen including one of said characters into contact with an object supported by said printing base, a reservoir in said guide means adapted to hold a supply of a suitable printing medium, an opening in said reservoir adapted to expose the character on said selected portion of said screen, and means for applying said medium to said object through said opening and said selected portion of said screen in the form of said character, said last named means being pivotally mounted on said supporting base and adapted to normally rest in said reservoir in spaced relation to said opening.

14. A screen printing apparatus comprising a supporting base, a movable printing base movably disposed on said supporting base and adapted to support an object to be printed, a circular screen printing frame unit rotatably supported in spaced relation to said printing base, a plurality of characters on the screen of said frame unit, a guide means adapted to move a selected portion of said screen into contact with an object supported by said printing base, means for applying a suitable printing medium to said object through said selected portion of said screen in the form of one of said characters, means adapted to normally urge said printing base to move in one direction on said supporting base, a pivotally mounted dog support member, a dog rigidly secured thereto, a second dog pivotally mounted thereon, a dog stop member mounted on said support member, a resilient member normally urging said second dog against dog stop member, a rotatable escapement member normally adapted to be intercepted by one of said dogs, means operatively connecting said dog support member to said guide means so that said dog support member is pivoted when said guide means is moved and a control member adapted to move said dog support member at will so that said dogs are moved out of cooperative relation with said escape member.

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