Dec. 1, 1931. H. P. ELLIOTT 1,833,937

STENCIL PRINTING MACHINE

Filed Sept. 30, 1927 2 Sheets-Sheet 1

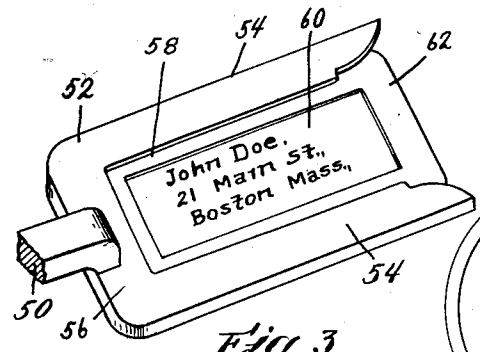


Fig. 3.

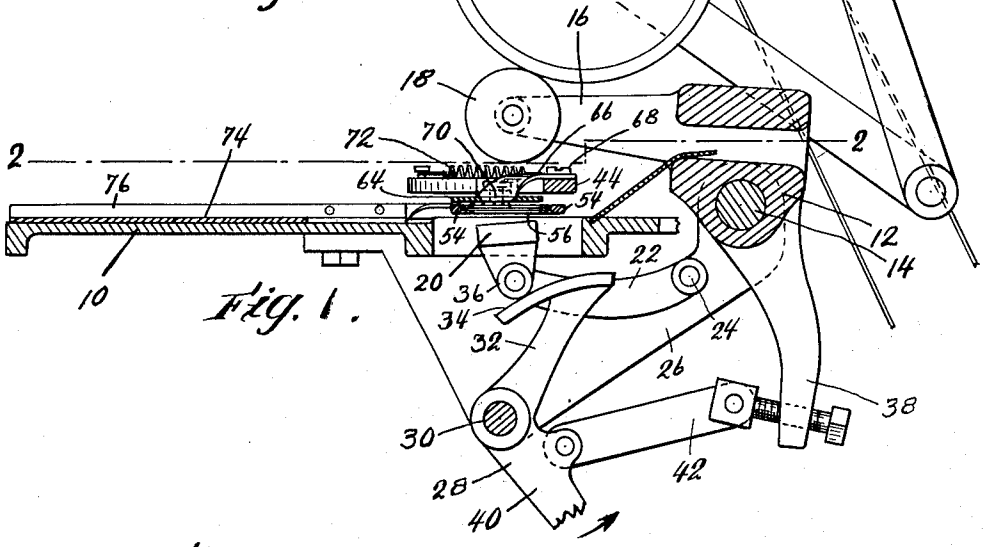


Fig. 1.

Fig. 5.

John Doe.	21 Main. St.,	Boston. Mass.,
Richard Smith.,	14 Market. St.,	Lynn. Mass.

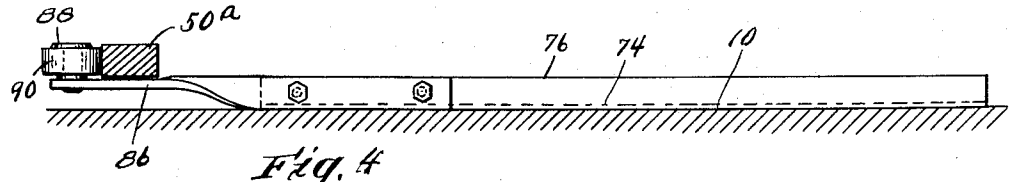


Fig. 4

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STENCIL PRINTING MACHINE

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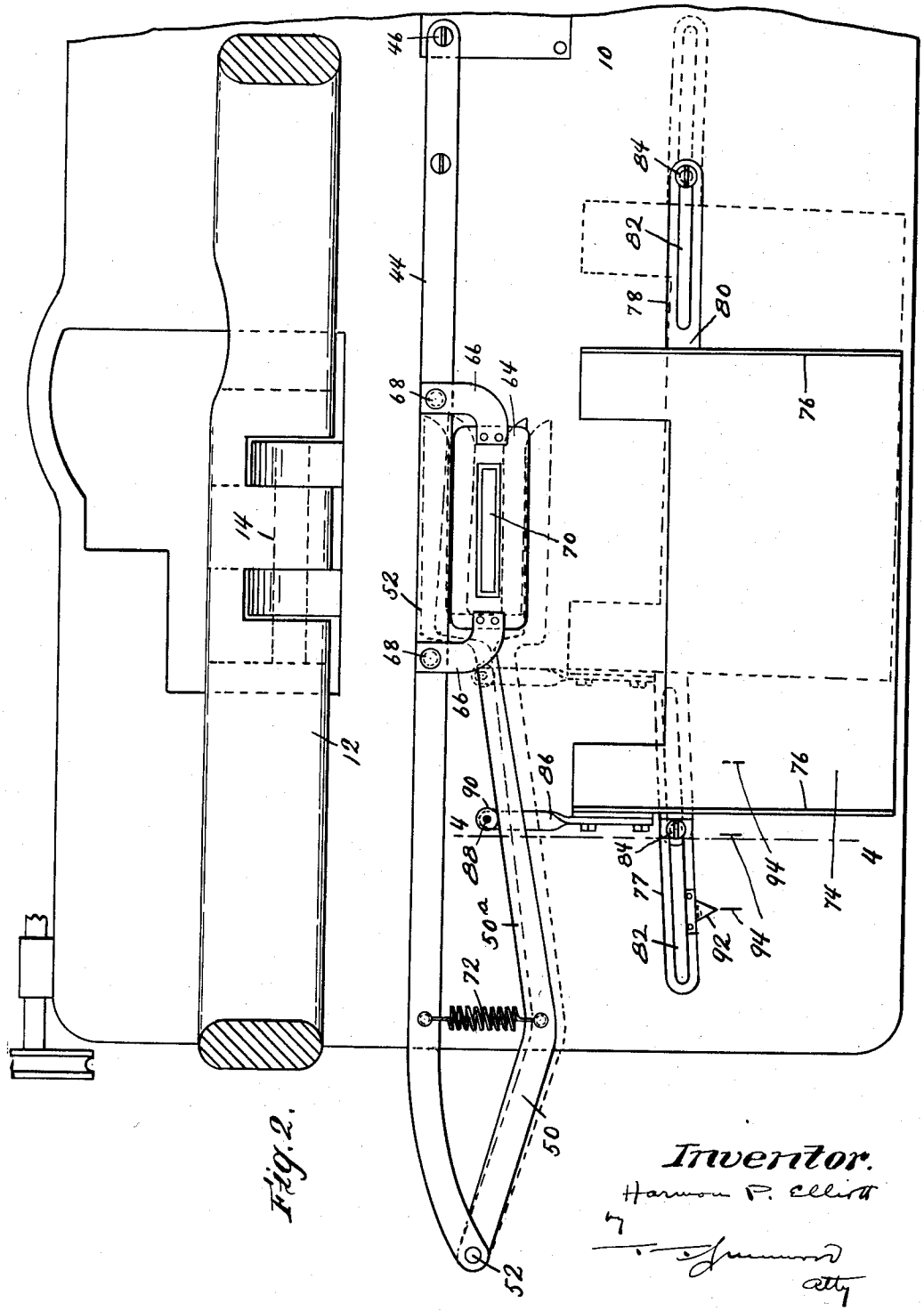


Fig. 2.

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Patented Dec. 1, 1931 1,833,937

UNITED STATES PATENT OFFICE

HARMON P. ELLIOTT, OF WATERTOWN, MASSACHUSETTS

STENCIL PRINTING MACHINE

Application filed September 30, 1927. Serial No. 223,160.

This invention relates to stencil printing, as addressing, machines.

A person's address is usually carried on a stencil to occupy three successive lines of the printing space thereof. For making out various lists from such stencils, it is desirable to print the addresses on a sheet in one consecutive line. Consequently one of the objects of this invention is the provision of a stencil printing machine that is arranged to receive stencils having several superimposed lines of printing characters and to print the characters in successive order on a single horizontal line on a paper sheet or the like.

A further object of the invention is the provision of a machine of the type above described wherein the mechanism for obtaining the single line printing of the several lines of stencil characters is operated manually.

A further object of the invention is the provision of the mechanism for obtaining such printing as an attachment which can be applied to existing stencil printing machines.

A yet further object of the invention is generally to improve the construction and operation of stencil printing or addressing machines.

Certain features of this invention are shown and claimed in my copending application Serial No. 223,159, filed September 30, 1927, which describes an automatic power operated machine adapted for the same general purpose and has claims covering the broader features of this invention.

Fig. 1 is a sectional transverse elevation through the essential elements of a stencil printing machine embodying the invention.

Fig. 2 is a plan view taken along line 2—2 of Fig. 1.

Fig. 3 is a perspective detail of a stencil holder.

Fig. 4 is a section taken along line 4—4 of Fig. 2.

Fig. 5 is a plan detail of a list showing the three lines of characters borne by the stencil printed in a single horizontal line.

The stencil printing machine here shown includes a horizontal table 10 which is suitably supported in elevated position by a frame not herein shown.

The printing mechanism includes a frame 12 horizontally disposed at the rear of the table and pivotally mounted on a shaft 14. Said frame is provided with a pair of forwardly extended arms 16 between which a printing roller 18 is journalled. A platen 20 is carried at the forward end of a lever 22 which is pivoted at 24 to a bracket 26 carried by and depending below the table 10. An operating bell crank lever 28 is pivoted to said bracket 26 on the shaft 30 and adapted for reciprocatory movements to effect the printing operation. The upper arm 32 of said bell crank lever is provided with a cam face 34 which engages the cam roll 36 carried by the platen supporting lever 32 for the purpose of raising the platen and supporting the paper sheet under the stencil during the printing operation. The frame 12 is provided with a depending arm 38 which is pivotally connected to the lower arm 40 of said bell crank by a link 42 so that as said bell crank lever is reciprocated to raise the platen the roller 18 is correspondingly depressed to force ink through the printing characters of the stencil and onto the paper sheet disposed therebelow.

The machine so far described is of more or less common construction.

In accordance with this invention a bar 44 is fixed at the right hand end thereof by a screw 46 to the table 10 and is disposed in elevated position thereabove immediately in the rear of the printing position or in the rear of the platen and printing roll and extends along the length of the table toward the left hand end thereof. Said bar, beyond the left hand edge of the table, is curved forwardly and has an arm 50 connected pivotally therewith by a pin 52. Said pivoted arm 50 extends over the top face of the table and toward the right hand side thereof and is provided with a stencil supporting frame 52 which is located at the printing position. Said frame is approximately U-shaped and has the opposed channeled side members 54 and the integral channeled connecting member 56 which is secured to the end of said

lever 50. The upper face of said frame is provided with an opening 58 therein through which the printing space 60 of the stencil 62 is exposed. The frame is provided with an opening to the channeled side members at the right end edge thereof by means of which stencils can be inserted manually in the frame for printing and removed therefrom after the printing operation has been completed. The side walls of the frame are adapted frictionally to retain the stencil in place against unintentional displacement during the printing operation.

A stencil mask is provided that is adapted to cover a portion of the stencil against contact with the printing roll 18 and is adapted to prevent the printing of any selected portion of the characters of the stencil. Said mask includes a flat metal plate 64 which is attached at its opposite and narrow edges to brackets 66 which are secured to the bar 44 by screws 68. The mask is provided with an elongated aperture or opening 70 therein which has a length that is approximately the length of the printing face of the stencil and which has a width sufficient to expose only one line of the stencil. The arm 50 is engaged by a retractile spring 72 the other end of which is fixed to said stationary bar 44 and is adapted, when permitted, to maintain said arm and the stencil holder and in a position wherein the lowermost line of characters borne by the stencil is exposed; and said mask-opening and said line is adapted to be approximately in the vertical plane through the axis of the printing roller 18 when said roller is in printing engagement with the stencil.

The stencil holder, with the stencil therein, is adapted to be moved horizontally forwardly and rearwardly beneath the mask to position the lines of printing characters of the stencil in succession beneath the opening in the mask. The paper sheet on which the stencil characters are recorded is also adapted to be moved laterally or to the left after each printing operation so as to bring a previously printed line to one side of and in horizontal alignment with the space which is adapted to receive the next line of characters.

The paper sheet is supported on a flat sheet supporting plate 74 which is movably disposed upon the table in front of the printing mechanism and is formed with upturned side edges 76 which provides abutments for the lateral edges of the sheet. Said plate is provided with ears or guide-members 77 and 78 which are composed of flat strips of material having upturned inner ends 80 that are riveted or otherwise fixed to the upturned sides 76 of the plate. Said ears are provided with elongated slots 82 therein and screws 84 are passed loosely through said slots and are screw threaded in the table 10 and thus provide an arrangement by which to guide the lateral, or right to left, movement of the plate. The plate in its movements is adapted also to move the stencil holder. To this end, the plate is provided with an arm 86 which is secured to the left hand side wall thereof and extends forwardly beneath the pivoted arm 50 and has an upstanding screw 88 at its forward end on which a cam roller 90 is journalled. Said spring 72 serves to maintain said arm in constant engagement with said cam roller 88 and the screws or pins 84 serve to hold the table from movement under influence of said spring. Said pivoted arm 50 is provided with an inclined portion 50*a* upon the rear face of which said cam roller 90 is adapted to ride. As a consequence, when said plate 74 is moved from the right to the left, the arm 50 is caused to have a corresponding movement beneath the mask 64 thus to position the lines of printing characters of the stencil in succession beneath the mask and in position to be recorded at the proper location on the sheet. The guide 77 of the sheet supporting plate 74 is provided with a pointer 92 and the table 10 is provided with a series of witness lines 94, one for each printing line of the stencil, to which said pointer is adapted to be moved to effect the printing of the superposed lines of the stencil in one consecutive line on the sheet. When the pointer 92 is opposite the right hand witness mark, the stencil holder is in its extreme forward position to print the top line of the stencil near the left hand margin of the paper sheet on the plate 84. When the pointer 92 is opposite the middle witness line 94, the arm 50 has been moved back into such position that the middle line of the stencil is under the opening of the mask 64 and the paper sheet has been moved toward the left so that the second line of the stencil will be printed in the same line with and at the right hand side of the previously printed line. When the pointer 92 is opposite the left hand witness line, the last line of the stencil will be printed.

The left hand guide member 77 of the sheet supporting plate 74 is inclined toward the left and also toward the front edge of the machine or at least the slot 82 is so inclined. As thus arranged, as the plate 74 is moved toward the left, it is caused to move slightly toward the front of the machine about the right hand pin 84 as a pivot so as to dispose the paper sheet at an angle beneath the stencil. This arrangement compensates for the various angularly related positions assumed by the stencil because of the swinging of its supporting arm 50 about its pivots and thus prints the three lines of the stencils in successive order in a straight line.

I claim:

1. A stencil printing machine adapted to print at one operation but one line of a sten-

cil having a plurality of printing lines includng means to hold the stencil in successive positions wherein successive lines of characters thereof are located successively in printing position, a paper support movable in the general direction of the lines of printing characters of the stencil, and means operated by the movable paper support to govern the position of the stencil.

2. A stencil printing machine having printing mechanism operable to print at one operation but one line only of a stencil having a plurality of lines of printing characters, a stencil holder arranged removably to hold successive stencils of a collection and reciprocable back and forth and movable into successive positions wherein the plurality of lines of printing characters are successively disposed in printing position, and supporting means for a paper sheet disposed below the stencil holder and movable in a direction approximately parallel with the printing lines of the stencil.

3. A stencil printing machine having a stationary mask provided with an opening having but one printing line of a stencil having a plurality of superposed printing lines, a stencil holder disposed beneath said mask and arranged removably to hold successive stencils of a collection and reciprocable back and forth and movable into successive positions wherein the several printing lines of the stencil are disposed successively beneath the mask-opening, printing mechanism operable on the stencil through said opening, and a support for a paper disposed below said stencil holder and mask and movable in a direction which is approximately parallel with the printing lines of the stencil.

4. A stencil printing machine having a printing member operable at one operation on one line only of a stencil having a series of superposed printing lines, a stencil holder movable to dispose the printing lines of the stencil one at a time into printing position with said printing member, sheet supporting means movable approximately at right angles to the line of movement of the stencil holder, and means operatively connecting said sheet supporting means with said stencil holder by which movements of said stencil holder are controlled by said sheet supporting means.

5. A stencil printing machine having printing mechanism operable at one operation on one line only of a stencil having a series of superposed printing lines, a stencil holder movable to dispose the printing lines of the stencil one at a time into the same printing position with the printing mechanism, sheet supporting means movable approximately at right angles to the line of movement of the stencil holder, and an operative interconnection between said sheet supporting means and stencil holder by which the movement of said sheet supporting means actuates and determines the position of said stencil holder.

6. A stencil printing machine having printing mechanism, a movable stencil holder, a movable sheet supporting means, and an operative connection between said sheet supporting means and stencil holder by which said sheet holding means governs the movements of said stencil holder.

7. A stencil printing machine having a fixed mask provided with an opening therein, a stencil holder disposed beneath and movable transversely of said mask, a movable sheet supporting means disposed below said stencil, and means responsive to the movements of said sheet holding means for determining the position of said stencil holder.

8. A stencil printing machine having the combination of a pivoted stencil holder, and a movable sheet holding means arranged to hold a sheet in a plurality of positions beneath said stencil holder and having an operative connection with said pivoted stencil holder arranged to move said stencil holder into positions corresponding with positions of said sheet holding means, whereby both are caused to move in a predetermined manner.

9. A stencil printing machine having the combination of a pivoted arm terminated in a stencil holder, and a movable sheet holding device having a cam engagement with said pivoted arm by which movements of said arm and holder are governed by movements of said sheet holding device.

10. A stencil printing machine having a fixed mask provided with an opening, a pivoted arm terminated in a stencil holder disposed beneath said mask, printing mechanism operable on said holder through the opening in said mask, a sheet supporting plate movable below said stencil holder, said arm having a section providing an inclined cam face, said sheet supporting plate having a cam follower riding upon said cam face, and means urging said arm against said cam follower.

11. A stencil printing machine having a fixed mask provided with an opening, a movable stencil holder disposed beneath said mask, printing mechanism operable on the stencil through the opening in said mask, a sheet supporting plate having oppositely extended slotted extensions, fixed guide pins disposed in said extensions by which said plate is supported for sidewise movement, and an operative connection between said plate and movable stencil holder by which movements of said holder are controlled by movements of said plate.

12. A stencil printing machine having a fixed mask provided with an opening, a pivoted arm terminated in a stencil holder disposed beneth said mask, and a movable sheet supporting device disposed below said

stencil holder characterized by having provision for sidewise movement and also for a sufficient angular movement to compensate for the angular displacement of the stencil beneath said mask to such an extent as to position the successive lines of printing characters of the stencil in one common horizontal line on the sheet supported by said stencil holding device.

13. A stencil printing machine having a fixed mask provided with an opening, a movable stencil holder disposed beneath said mask, printing mechanism operable on the stencil through the opening of said mask, a manually movable sheet supporting device having guiding means for the movements thereof, and operating means connecting said device with said movable stencil holder by which said stencil holder is operated through said sheet supporting device.

14. A stencil printing machine adapted to operate upon stencils having printing characters disposed in a plurality of superposed lines in the stencil and to print such characters on a sheet in successive order in the same horizontal line, said machine having a movable sheet supporting device adapted to assume a plurality of positions corresponding with the several superposed lines of the stencil, a movable stencil holder, means connecting said sheet supporting means with said stencil holder and operated by movements of said sheet supporting means arranged to move said holder into positions corresponding to selected positions of said sheet supporting means, and position indicating means cooperating with said sheet supporting device to indicate the proper setting thereof for the printing operation.

15. A stencil printing machine having a table, a supporting bar carried by and spaced above and extended across said table, a stencil mask carried by said bar provided with an opening therethrough, a pivoted arm extended generally along the length of said bar and terminated in a stencil holder disposed beneath said mask, printing mechanism carried by said table and adapted to operate on the stencil through the opening in said mask, means urging said pivoted arm for movement in one direction, a sheet supporting plate carried by said table and having guiding means to guide it for movement in a direction generally parallel with said bar, and a cam connection between said plate and pivoted arm by which the position of said stencil holder is controlled by the position of said plate.

In testimony whereof, I have signed my name to this specification.

HARMON P. ELLIOTT.