Oct. 17, 1939. R. X. PERRY 2,176,187

METHOD OF AND MEANS FOR PRINTING ADDRESSES OR THE LIKE

Filed April 21, 1938

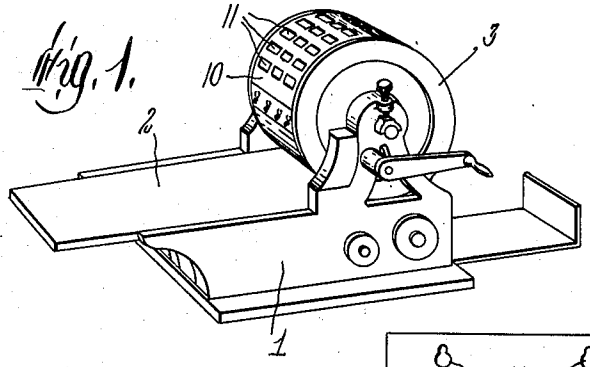


Fig. 1.



Fig. 8.

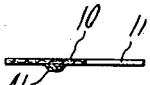


Fig. 9.

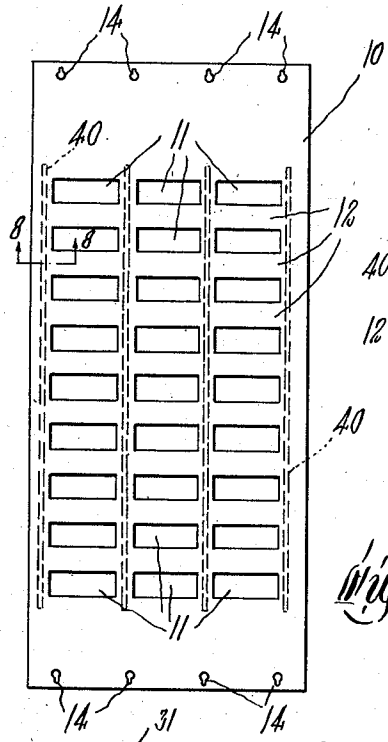


Fig. 2.

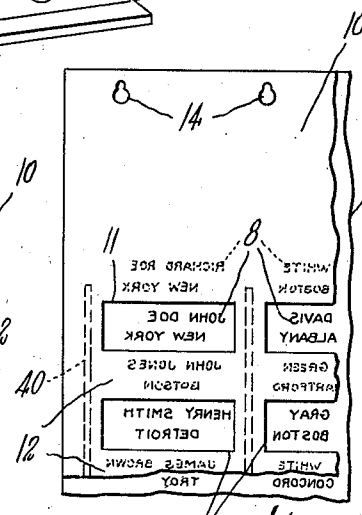


Fig. 3.

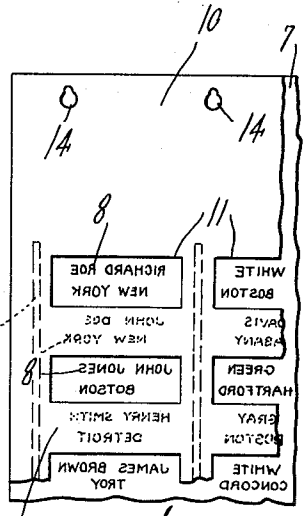


Fig. 4.

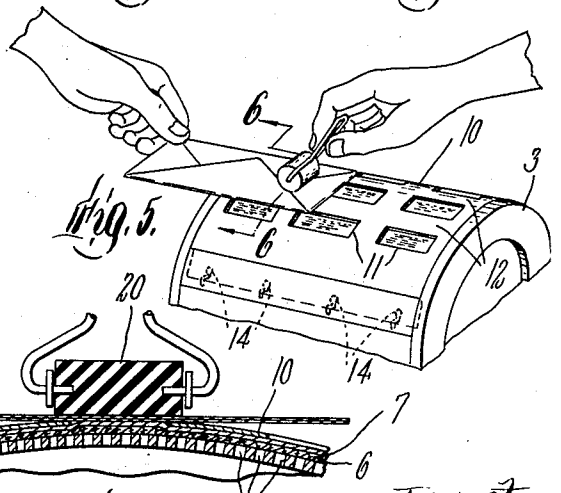


Fig. 5.

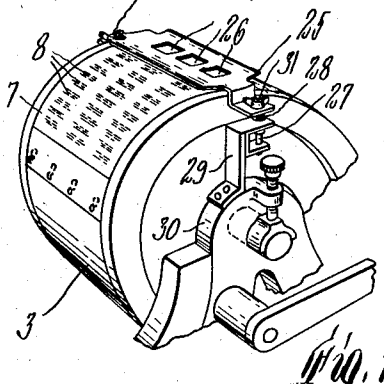


Fig. 7.

Fig. 6.

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METHOD OF AND MEANS FOR PRINTING ADDRESSES OR THE LIKE

Robert X. Perry, Gardner, Mass.

Application April 21, 1938, Serial No. 203,289

10 Claims. (Cl. 101—48)

There are various machines now in use for printing addresses or the like, but all those with which I am familiar are complicated and costly and so beyond the reach of many persons and organizations who must therefore resort to the laborious and slow method of writing each address individually by hand or typewriter.

One object of the present invention, therefore, is to provide a process and a mechanism by which addresses and analogous blocks of characters may be printed rapidly and expeditiously from a stencil, employing advantageously a duplicating machine for supporting the stencil in a convenient manner.

For a more complete understanding of this invention, reference may be had to the accompanying drawing in which

Figure 1 is a somewhat diagrammatic perspective view of a rotary duplicator of well known type which may be employed in practicing the invention.

Figure 2 is a plan view of a mask which may be employed.

Figures 3 and 4 are fragmentary views showing two selective relations between the mask of Figure 2 and a printing stencil.

Figure 5 is a fragmentary perspective view illustrating the printing of an address carried by the stencil.

Figure 6 is a detail section to a larger scale on line 6—6 of Figure 5.

Figure 7 is a fragmentary perspective of a duplicating machine showing a modified construction.

Figure 8 is a detail section on line 8—8 of Figure 2, but to a larger scale.

Figure 9 is a view similar to Figure 8, but showing a modification.

Referring to Figure 1, there is indicated a rotary duplicating machine of well-known form having a stand 1 provided with a platform 2 for receiving a supply of paper to be printed when the machine is used in its normal manner as a duplicator. This machine is provided with a drum or cylinder 3, the outer face of which, as shown best in Figure 6, is foraminous, being perforated as at 4, and supports on its outer face an ink pad 6. A supply of ink is placed within the cylinder and it passes through the perforations 4 into contact with the ink pad and provides a supply of ink thereto. Over this ink pad there is placed a stencil 7 having the characters to be printed cut therein, this stencil being of the well known type which may be cut on a typewriter.

For the present purposes the subject matter to be printed is arranged in groups of predetermined size and shape, as, for example, a considerable number of names and addresses, and these are arranged contiguously as shown at 8 in Figures 3 and 4. For convenience of the operator in properly locating the characters, the stencil may be marked off in areas suitable for these groups. It is usually desired to print from only one of these groups at one time, as, for example, when addressing envelopes one address group will be used for one envelope and another address group for another envelope. The machine is therefore not run in the usual manner in which it is employed when making duplicate copies, but instead means are provided for masking off around the area containing that group of characters which it is desired to print at one time, and the printing is effected locally on the envelope or other paper to which the impression is to be applied and by the characters of the selected group only.

In order to facilitate this action, a mask may be employed. Such a mask is shown detached in Figure 2, at 10, and is provided with spaced openings 11 of sufficient size to present the desired grouping of words for each printing. It is usual practice in machines of this type to provide on the periphery of the printing cylinder at one point a series of fastening elements, the stencils having mating elements so as to fix the angular position of the stencil on the rotary drum. Suitable clamps (not shown) are commonly employed for holding the other end of the stencil in position in such a way that the active portion of the stencil is held firmly against the outer face of the ink pad.

The mask 10 is employed to shield off those portions of the stencil immediately surrounding the word groups which it is desired to print, but in order that the stencil may be used to best advantage, the spaces 12 between the openings 11 in each column are made of sufficient width to bridge over an entire group of characters from which it might be desired to print at some other time. The mask cut-outs are thus spaced apart in one direction to expose certain non-contiguous printing areas of the stencil and to mask other areas, but by associating the stencil and mask in different predetermined relations all of the printing areas can be exposed for printing at various times. Thus, as shown in Figures 3 and 4, each of the imperforate portions 12 covers over one full group of characters such as a name and address, at the same time exposing the com-

plete groups in the same column at either side. In order that the mask may be properly related to the stencil so as to expose selectively all of the groups at one time or another, the mask itself may have fastening elements such as the slots 14 at each end, these slots being arranged to take over the same fastening elements on the drum as the stencil slots or fastening elements. The sets of elements 14 on the mask are shown as spaced differently from the next adjacent openings 11 at opposite ends thereof, the distances being so chosen that when one end portion of the mask is secured to the fastening elements on the printing drum, one alternate set of printing characters of the stencil is exposed, and when the other end of the mask is engaged with the fastening elements on the drum, those character groups of the stencil which were previously covered by the mask are then exposed. The end of the mask which is not engaged with the drum-fastening elements may be clamped in position by the stencil-clamping means.

Machines of this type are commonly provided with means for preventing rotation of the printing roll, and such means can be used advantageously in carrying out the method of this invention. The printing drum is turned to bring the desired character group of the stencil exposed through one of the openings 11 of the mask into convenient position for the operator, and the drum there held, and the operator then places an envelope or other paper upon which the printing is desired over the selected opening in the mask and progressively brings the paper to be printed into printing contact with the stencil. This may be done, for example, by the use of a rubber, or the like, roller 20, which may be passed over the top face of the mask, preferably lengthwise of the axis of the printing cylinder, which progressively presses the blank paper into printing contact with the stencil through the mask opening, this being shown in Figure 5. The operator will next place an envelope in the same manner over another convenient opening of the mask and print from the stencil thereunder in the same manner. By the use of a mask having its imperforate portions related to the groups of words on the stencil as hereinbefore described, the maximum number of groups of characters may be applied to the same stencil and thus effect an economy in the stencil material.

When a plain mask is used, it is found that the lower face of the mask over the imperforate portions 12 is likely to receive a smear ink coating from the stencil therebeneath. Where the stencil is made of material from which the ink can be readily cleaned, this may not be of great importance. The stencil also may become smeared, but it may be cleaned easily by rotating it in its normal manner for duplication and passing a few waste sheets through the machine.

The necessity for cleaning the mask and stencil may be avoided entirely, or to a large extent, however, by normally spacing the mask out of contact with printing areas of the stencil, except when printing contact with paper through a mask opening is being effected. For example, spacing elements may be secured preferably to the lower face of the mask between the printing areas. These elements, as shown in Figures 8 and 9, may be applied between columns of such areas and may comprise strips 40 (Figure 8) of paper or the like, preferably of progressively decreasing widths arranged in superposed relation to form spacing ridges of tapered width, or if desired, spacer strips 41 (Figure 9) formed wider at one side than the other may be employed, the wider faces being arranged next to the part to which these strips are secured, this as shown being the mask. A mask of thinner material is preferable where the spacer strips are used, the thickness of the strips being so proportioned relative to the stiffness of the mask as to cause the mask to spring away from the stencil when printing pressure is removed, but not so far as to initially space the outer face of the mask too far for proper printing through the mask openings. The tapered formation of the spacer strip facilitates bending inwardly of the mask material to contact the stencil at the margin of the cut-out when printing is effected.

Material suitable for the mask may be cardboard, rubber, fabric, thin metal, or the like, and for the usual size of printing cylinders or drums a thickness of one sixty-fourth to one thirty-second of an inch is usually quite satisfactory. The rollers for pressing the envelopes or other blank sheets into printing contact with the stencil through the mask openings may be either shorter or longer than the width of the rectangular opening through the mask. Soft rubber rollers which are longer than the width of the mask opening have been found generally more satisfactory, as these tend to give a light impression sufficient to show the desired printing without danger of smearing before becoming dry. When names and addresses are to be printed, it is usually possible to employ three columns within the standard stencil width, and as machines of this type are commonly employed where duplication of letters is desirable, this invention provides simple and cheap means for employing them in addressing as well as duplicating.

Instead of employing a mask applied with the stencil to the periphery of the printing cylinder, a mask of a more permanent character may be carried by the machine itself. For example, as shown in Figure 7, at 25 is illustrated a mask strip of rigid or semi-rigid material having openings 26 therein through which access may be had to the stencil groups of characters. This strip 25, as shown, is normally held spaced above the printing cylinder, being carried by a pair of rods 27 surrounded by coil springs 28 bearing between the under face of the stencil strip 25 and supporting brackets 29. These brackets may be secured to any suitable frame portion of the machine, as for example, to the top bearing 30 for the printing cylinder 3. Where this construction is employed the mask is normally held out of operative position so that it does not interfere with the normal use of the machine as a duplicator, but when it is desired to use it for address printing, or the like, the stencil carrying the desired addresses is secured over the ink pad and they are selectively brought into registry with the openings 26, whereupon the operator may place an envelope to be addressed over the stencil plate and by exerting downward pressure thereon, bring the envelope into printing relation to the stencil portion immediately therebeneath. By the use of a printing roller such as shown in Figure 5, or other suitable means, the stencil may be caused to be effective to print the address on the envelope. With this arrangement, care needs to be exercised in bringing the printing cylinder in proper angular position for the particular group of characters which it is desired to print, whereas where the mask is carried directly in

contact with the stencil, proper registration is automatically effected. As shown, the mask 25 is made slightly concave on its upper face to facilitate contact of the envelope or paper with the stencil, and to facilitate placing and removing the stencil the mask may be detachable at one or both ends. Wing nuts threaded on the upper ends of the rods 27 above the mask are shown for this purpose.

From the foregoing description of the method of this invention and certain embodiments by which it may be readily carried out, it should be evident to those skilled in the art that various modifications and changes might be made without departing from the spirit or scope of this invention as defined by the appended claims.

I claim:

1. The method which comprises forming a stencil with the desired groups of type thereon in predetermined areas, mounting said stencil on a convexed ink pad together with a mask having a cut-out exposing the desired group, and then applying a paper to be printed over said mask and effecting progressive contact substantially parallel to the axis of convexity of said paper on said stencil through said cut-out.

2. The combination with a stencil having in contiguous areas sets of characters to be printed, of a mask having cut-outs spaced apart in one direction to expose alternate areas of said stencil while masking the adjacent areas, and means for securing said mask relative to said stencil in either of two selected positions in one of which those areas are exposed which are covered when said mask is in the other selected position.

3. The combination with a stencil having in contiguous areas sets of characters to be printed, of a mask having cut-outs spaced apart in one direction to expose alternate areas of said stencil while masking the adjacent areas, said mask having means located between said cut-outs tending to hold said mask out of contact with masked printing areas of said stencil, and means for securing said mask relative to said stencil in either of two selected positions in one of which those areas are exposed which are covered when said mask is in the other selected position.

4. In combination with a stencil having arranged in spaced columns contiguous areas of printing characters, of a mask having cut-outs spaced apart in one direction to expose certain non-contiguous areas of said stencil while masking others of said areas when said mask is superposed on said stencil, and means for securing said mask superposed on said stencil in any of a plurality of predetermined relations to expose desired stencil areas through said cut-outs.

5. The combination with a stencil having arranged in spaced columns contiguous areas of printing characters, of a mask having cut-outs spaced apart in one direction to expose certain non-contiguous areas of said stencil while masking others of said areas when said mask is superposed on said stencil, means for securing said mask superposed on said stencil in any of a plurality of predetermined relations to expose desired stencil areas through said cut-outs, and spacer strips between said stencil and mask and lying between said spaced columns.

6. The combination with a stencil having arranged in spaced columns contiguous areas of printing characters, of a mask having cut-outs spaced apart in one direction to expose certain non-contiguous areas of said stencil while masking others of said areas when said mask is superposed on said stencil, means for securing said mask superposed on said stencil in any of a plurality of predetermined relations to expose desired stencil areas through said cut-outs, and spacer strips between said stencil and mask and lying between said spaced columns, said spacer strips being secured to said mask.

7. The combination with a stencil having arranged in spaced columns contiguous areas of printing characters, of a mask having cut-outs spaced apart in one direction to expose certain non-contiguous areas of said stencil while masking others of said areas when said mask is superposed on said stencil, means for securing said mask superposed on said stencil in any of a plurality of predetermined relations to expose desired stencil areas through said cut-outs, and spacer strips between said stencil and mask and lying between said spaced columns, said spacer strips being secured to said mask and tapering in width with the narrower portion adjacent to said stencil.

8. In a machine of the class described having a rotary foraminous ink-containing cylinder, an ink pad and a stencil secured to the periphery of said cylinder, said stencil having groups of characters arranged within areas of predeterminate size and shape, and a mask supported on said machine and normally yieldably spaced from said stencil and having an opening therethrough corresponding in size and shape to said areas and beneath which a selected area of said stencil areas may be presented, said mask being positioned to support a paper to be printed and being depressible to present an area of said paper defined by said mask opening into printing relation to said stencil.

9. In a machine of the class described having a rotary foraminous ink-containing cylinder, an ink pad and a stencil secured to the periphery of said cylinder, said stencil having groups of characters arranged within areas of predetermined size and shape, a mask having a cut-out through which said areas may be selectively exposed, and means removably supporting said mask normally yieldably spaced from said stencil and depressible theretoward.

10. The method of utilizing for printing addresses a duplicating machine of that type which has a foraminous rotary cylinder provided on its outer face with an ink pad, which comprises securing over said ink pad a stencil having the desired addresses cut therein in areas of predetermined sizes and shapes, masking off around the area containing the address desired to be printed, applying the paper to be printed over said masked portion and said area, and then while said cylinder is stationary applying pressure to the paper against said exposed stencil portion progressively lengthwise of the axis of said cylinder.

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