

May 15, 1934.

V. L. PISTOCCO

1,958,766

APPARATUS FOR PRODUCING DISPLAY CHARACTERS

Filed Dec. 15, 1932

4 Sheets-Sheet 1

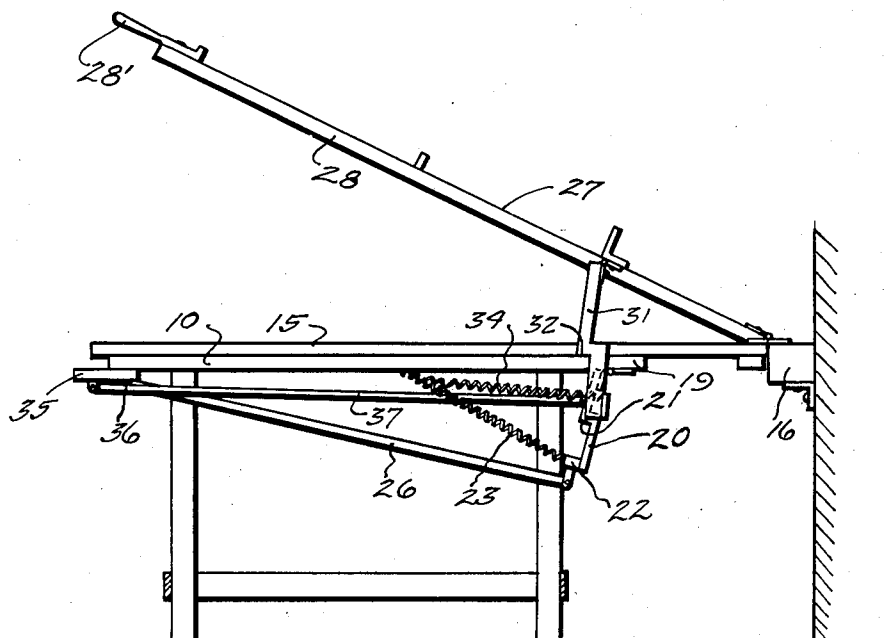


Fig. 1

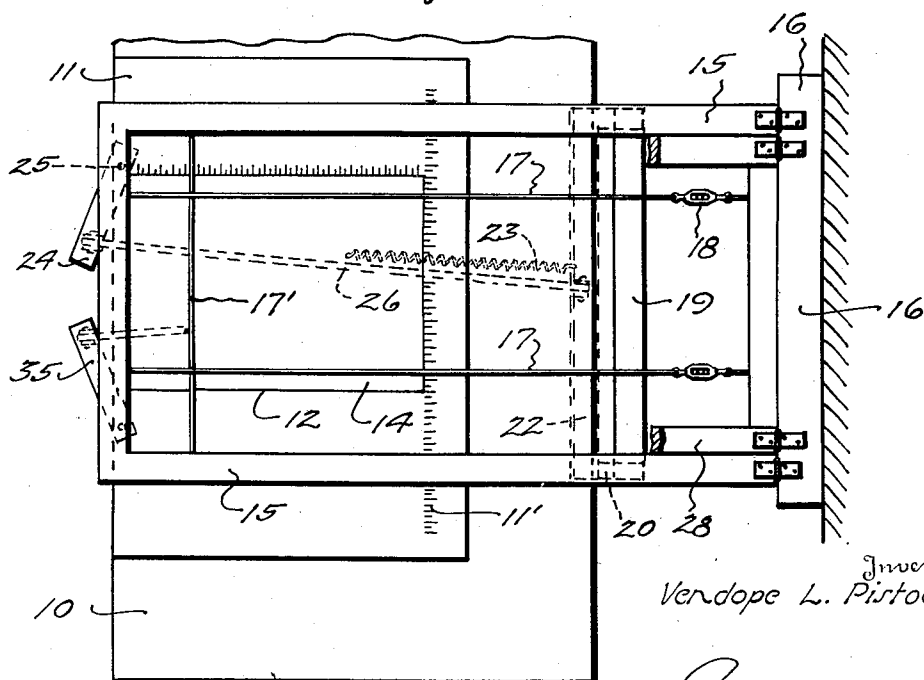


Fig. 3

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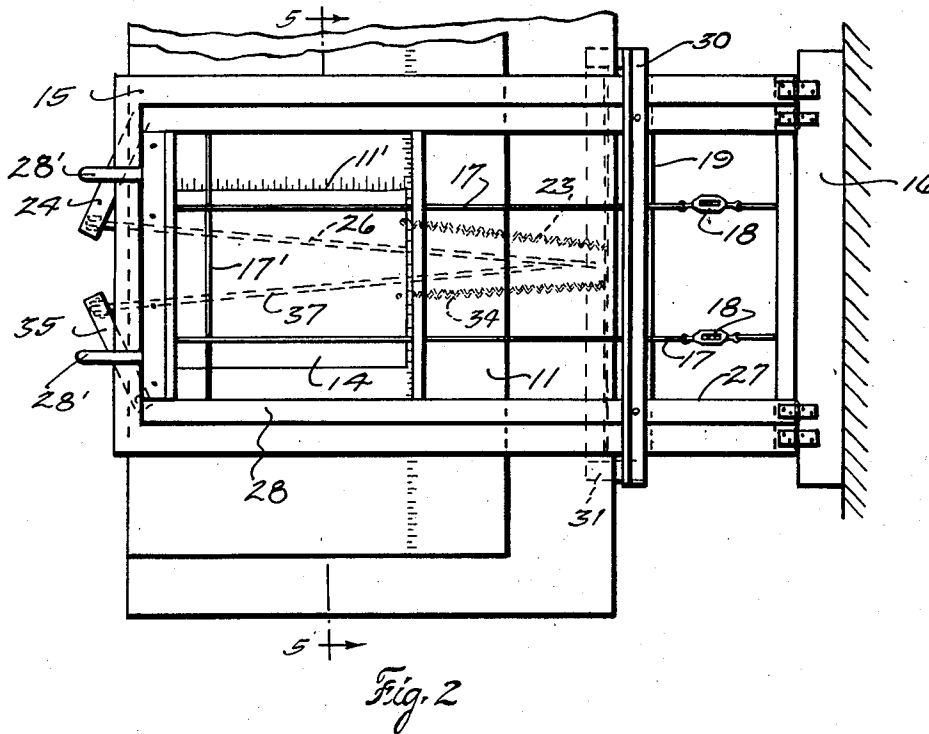
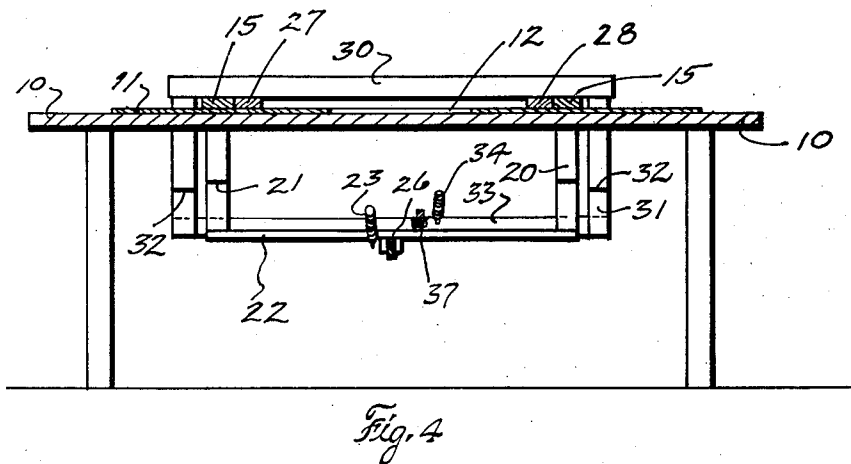
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4 Sheets-Sheet 2



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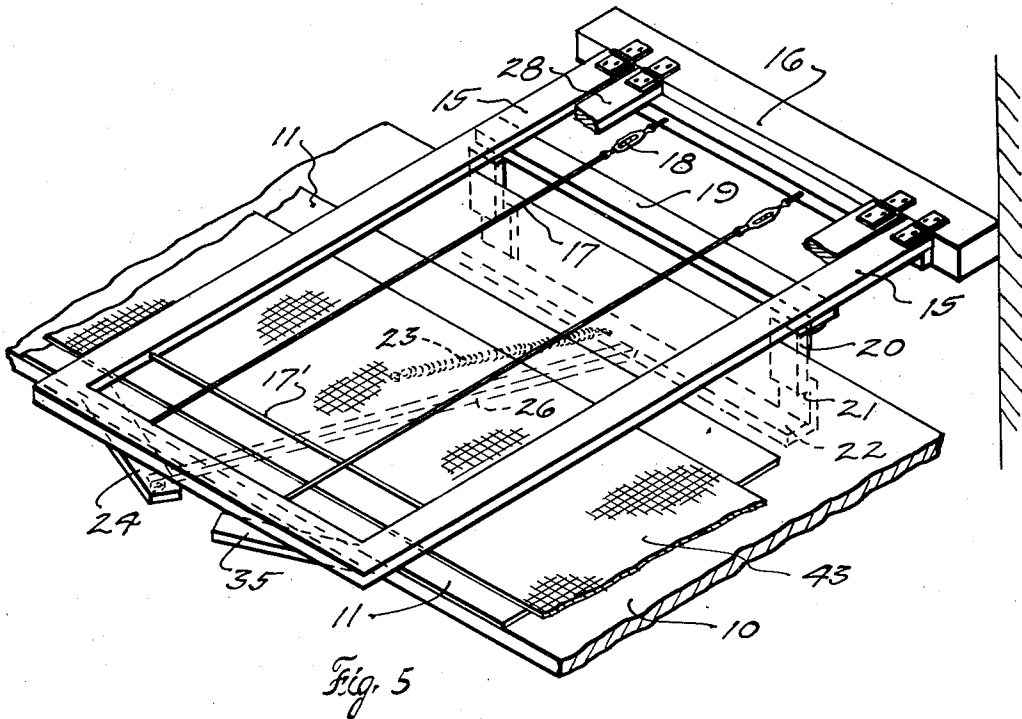
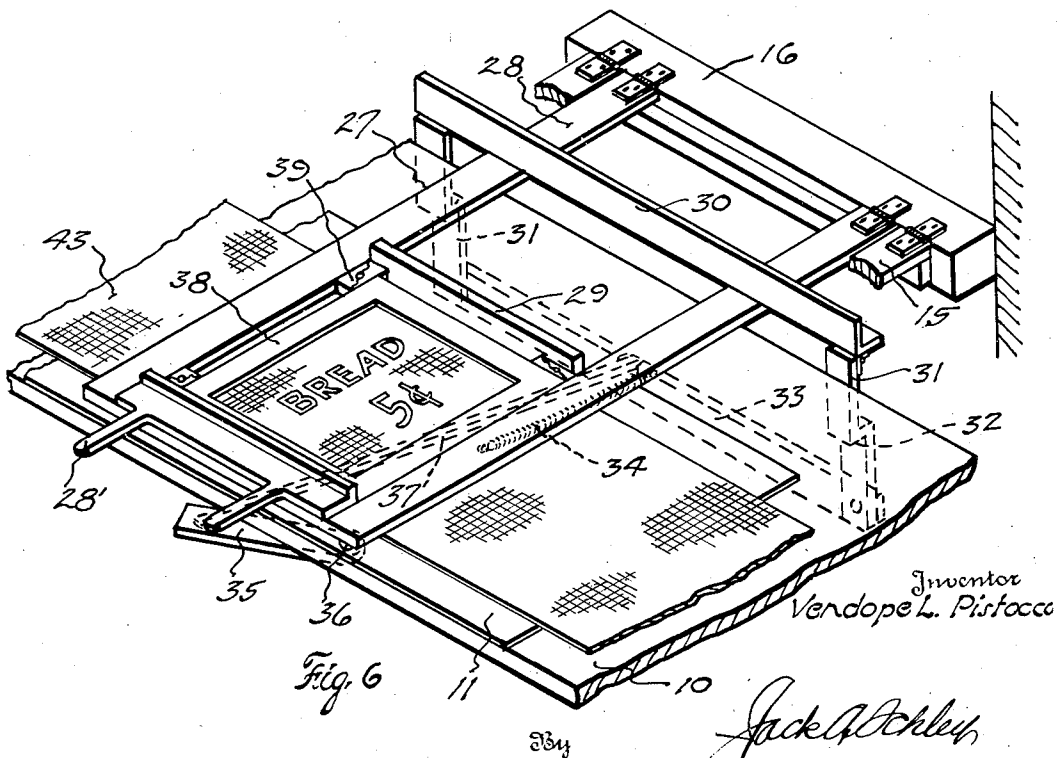
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APPARATUS FOR PRODUCING DISPLAY CHARACTERS

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4 Sheets-Sheet 3



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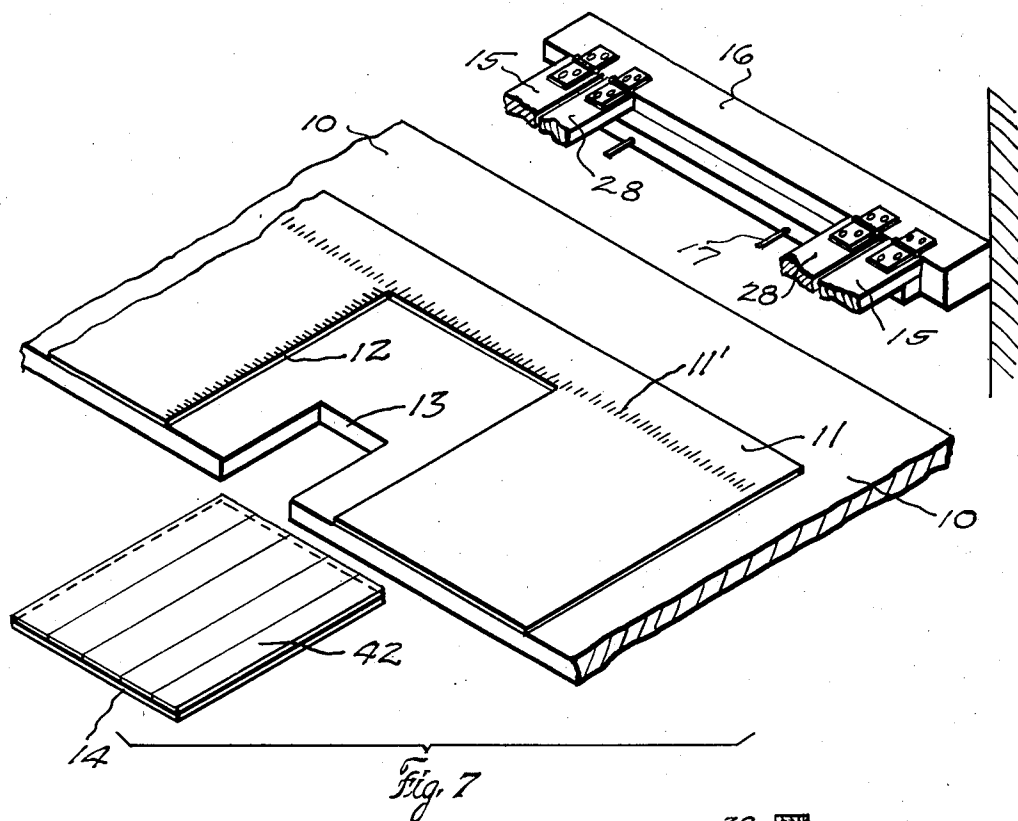
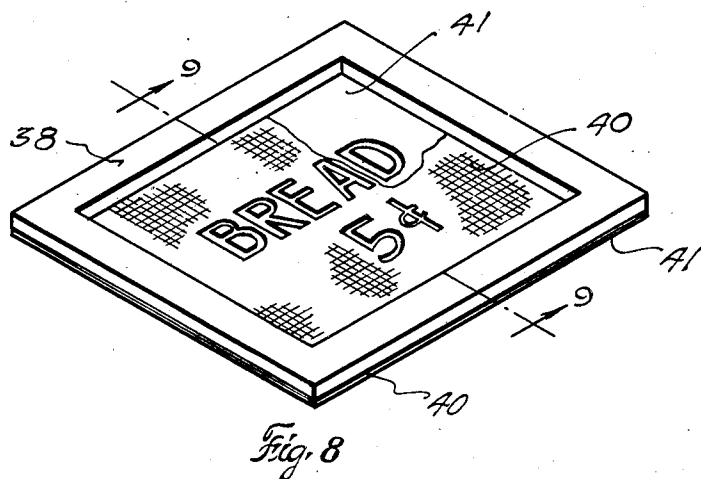
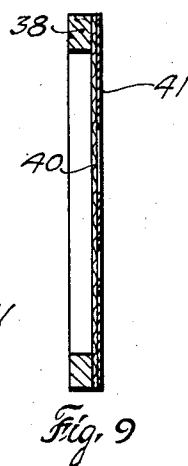
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APPARATUS FOR PRODUCING DISPLAY CHARACTERS

Filed Dec. 15, 1932

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

1,958,766

APPARATUS FOR PRODUCING DISPLAY CHARACTERS

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Application December 15, 1932, Serial No. 647,373

14 Claims. (Cl. 101—126)

This invention relates to new and useful improvements in apparatuses for producing display characters.

One object of the invention is to provide an improved apparatus whereby characters, such as letters, figures, symbols, objects and the like, may readily, expeditiously and economically be produced with plastic material or paint upon pervious or foraminous or impervious surfaces, whether rough or smooth.

A further object of the invention is to provide an improved apparatus for producing characters, consisting of a holddown member and a stencil carrier, each operating independently of the other so that the holddown member will remain in position to hold the medium upon which the characters are produced in position while the stencil carrier is raised after the production of the characters is completed, thereby preventing distortion of the edges of the characters and assuring sharp lines.

Another object of the invention is to provide an improved apparatus having means for supporting a medium and rigidly holding said medium in position beneath a stencil, whereby characters, such as letters, figures, symbols, objects, and the like, may be produced upon said medium.

Still another object of the invention is to provide an improved apparatus for producing characters having removable supporting means for the medium, upon which the characters are produced, whereby said medium may be removed easily and immediately after the characters have been produced, without danger of ruining said characters.

A particular object of the invention is to provide an improved apparatus for producing characters and consisting of a hinged frame for holding down the medium, upon which the characters are produced, together with a hinged stencil carrier adapted to swing into the said frame; the frame and the carrier each being provided with latches to hold said frame and said carrier in a raised position out of the way when not in use, but in such a position that they may quickly and easily be swung down over the medium.

A construction designed to carry out the invention will be hereinafter described together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings in which an example of the invention is shown, and wherein:

Figure 1 is a side elevation of an apparatus constructed in accordance with the invention,

Figure 2 is a plan view of the same,

Figure 3 is a view similar to Figure 2 and showing only a portion of the stencil carrier,

Figure 4 is a transverse vertical sectional view taken on the line 4—4 of Figure 2,

Figure 5 is an isometric view of the apparatus showing only a portion of the stencil carrier,

Figure 6 is an isometric view of the apparatus showing only a portion of the holddown frame,

Figure 7 is an isometric view of a portion of the apparatus, the stencil carrier and the holddown frame being broken away,

Figure 8 is an isometric view of the stencil carrier, and

Figure 9 is a vertical sectional view of the same.

In the drawings the numeral 10 designates a table, or other support, having a mat 11, or any suitable positioning member, mounted thereon. The mat is provided with a rectangular recess 12 and the table has an opening 13 within the recess. A rectangular plate or back 14 is removably mounted in the recess 12 over the opening 13. The back is of such size and thickness as to have a free fit in the recess 12 and lies substantially flush with the top surface of the mat, so as to be easily and quickly inserted in and removed from the recess. The mat may be provided with suitable scales 11' for use in positioning the work.

A holddown frame 15, preferably made of wood to make for lighter construction, is hinged at its rear end to a cross head 16, and is adapted to swing vertically over the mat 11, as shown in Figure 3. The frame is provided therein with longitudinal wires 17, which are positioned to overlie the back 14. Turnbuckles 18 serve to hold the wires taut. A transverse wire 17' is secured within the frame near its forward end and extends across the wires 17. The frame has a supporting cross bar 19 fastened to its underside just beyond the rear edge of the table 10 and latches 20 are hinged to the bar and depend therefrom.

Each latch is offset to form a shoulder 21 which will engage the top of the table, when the frame is swung upwardly, to hold said frame in its elevated position. The lower ends of the latches are connected by a transverse bar 22. For holding the latches in constant engagement with the rear edge of the table, a coiled spring 23 has one end fastened to the center of the bar 22 and its other end secured to the underside of the table. It is obvious that when the frame is swung upwardly the shoulder 21 of each latch will engage

the top of the table to hold the frame in its elevated position. The spring 23 will hold the latches in engagement with the table and prevent the frame from being swung downwardly.

5 For releasing the latches 20 and permitting the operator to swing the frame downwardly, I mount a release lever 24 to the underside of the table at the forward edge thereof, on a pin 25. It is noted that the lever 24 projects beyond the edge of the table so that the operator may lean against said lever with his body to swing the same, thereby leaving his hands free for other operations. A pitman 26 has one end pivotally secured to the outer end of the lever 24 and its other end pivoted to the connecting bar 22. It is easily seen that as the lever 24 is swung inwardly the pitman 26 will swing the latches 20 rearwardly on their hinges, to disengage the shoulders 21 from the table and permit the frame 15 to be lowered over the table 10.

20 A stencil carrier 27 consists of a yoke 28 which is hinged at its rear ends to the cross head 16. Handles 28' on the forward end of said yoke make for convenience in raising and lowering the same. The yoke is adapted to swing vertically over the table 10 into the holddown frame 15, as clearly shown in Figures 2 and 4. A header 29 connects the sides of the yoke 28 about midway thereof and this header, together with the sides and front of the yoke, comprises the stencil support. A transverse hanger bar 30 is secured to the top of the yoke just beyond the rear edge of the table 10 and the ends of said bar overhang the sides of the yoke sufficiently far to provide space between said ends and said sides for the sides of the holddown frame 15.

Latches 31, similar to the latches 20, depend from the outer ends of the hanger bar 30 and are hinged thereto. Each latch is provided with a shoulder 32 which engages the table top, when the carrier is swung upwardly, to hold said carrier in an elevated position. A cross bar 33 connects the lower ends of the latches and a coiled spring, having one end secured to the center of the bar and its other end secured to the underside of the table, holds the latches in constant engagement with the edge of the table.

40 A release lever 35, similar to the lever 24, is pivoted on a pin 36 to the underside of the table 10 at the forward edge of the same. The lever projects beyond the edge of the table and can be swung by the body of the operator. A pitman 37 has one end pivoted to the outer end of the lever 35 and its other end secured to the center of the cross bar 33, which connects the lower ends of the latches. The operation of the latches 31 is the same as that of the latches 20 and a detailed explanation is deemed unnecessary.

50 The stencil carrier 27 supports a stencil frame which is held within the carrier by means of locking quoins 39. The stencil frame is readily removable so that a different stencil can easily be substituted therefor. The stencil frame (Figures 8 and 9) has its underside covered with a sheet 40 of coarse open mesh material and the stencil 41 is fastened against the underside of this sheet and is preferably secured to the underside of the frame 38. In this way the stencil forms a bottom for the stencil frame and the sheet 40 overlies said stencil. I have shown the sheet 40 of screen wire, as is now commonly used in doors and windows, but the invention is not to be so limited. So long as the sheet 40 permits a passage of the compound used to form the characters, the requirements will be satisfied.

In operation the holddown frame 15 and the stencil carrier 27 are swung to their raised positions and held so by the shoulders of the latches 20 and 31 engaging the top of the table. The back 14 is positioned within the opening 12 and a strip or strips of tissue paper 42, or equivalent material, are laid on the back 14. After the tissue paper has been placed in position the medium 43, on which the characters are to be formed, is placed upon the mat 11 with the tissue strip 42 under the portion where the characters are to be located. The scales 11' on the mat 11 may be used in positioning the medium.

I have illustrated the medium 43 in the form of a woven mesh fabric, such as ordinary screen wire, which is used for doors or windows. However, any pervious or foraminous medium may be employed, or an impervious medium might be used. As the purpose of the tissue paper is to prevent those portions of the characters which penetrate the wire fabric from adhering to the back 14, it is obvious that where the supporting medium is impervious the tissue paper will not be required and the medium could be supported on any flat surface.

100 The supporting medium 43 having been placed in position, the release lever 24 is swung by the operator, who leans his body against said lever, to release the latches 20 and allow the holddown frame 15 to be swung down over the medium 43. The taut wires 17 and 17' within the frame 15 hold the medium securely in place. The release lever 35 is then operated to release the latches 31 and permit the stencil carrier 27 to swing down into the frame 15, thereby positioning the stencil above the medium 43.

110 With the stencil in place, a quantity of compound or composition of which the characters are to be formed is deposited in the stencil frame 38 on top of the sheet 40. The operator, by means of a squeegee or flat blade, spreads the compound so that it passes through the openings in the stencil 41. The thickness of the stencil controls the thickness of the character which is formed on the upper side of the medium 43, and thus by regulating the thickness of said stencil, the desired characters may be obtained. Where the medium 43 is of a foraminous or pervious nature, portions of the compound will pass therethrough and engage the tissue paper strip 42, thus forming the characters on the under side, as well as upon the upper side of the medium. However, the thickness of the characters on the under side of the medium will be much less than the thickness on the upper side, unless a very thin stencil is used.

120 In order to get the best results, a composition or compound such as I have described in my co-pending application Serial No. 625,629, filed July 29, 1932, is preferably used, but it is to be understood that any compound or composition suitable for the purpose may be employed.

130 After the characters have been formed on the medium 43, the stencil carrier 27 is swung upwardly to remove the stencil. The shoulders 32 of the latches 31 engage the top of the table to hold the carrier in its raised position. It is noted that during the raising of the carrier, the wires 17 and 17' in the frame 15 hold the medium 43 in place, thereby preventing distortion of the edges of the characters and assuring sharp lines when the stencil is removed. The frame 15 is then swung upwardly and the shoulders 21 of the latches 20 engage the table top to hold said frame in this position. The medium 43 is then removed.

The characters on the medium, being moist and comparatively heavy, must be supported and, therefore, the operator places one hand under the back 14 and the other hand on top of the medium, so that when the medium is removed the back 14 will underlie the characters and support them.

The medium 43, together with the back 14, which supports the characters, is then set aside to dry. Another back 14 is placed within the opening 12 in the mat 11 and the operation, as has been hereinbefore set forth, is repeated.

The description which has been given recites more or less detail of a particular embodiment of the invention, which is set forth as new and useful, however, I desire it understood that the invention is not limited to such exact details of construction, because it is manifest that changes and modifications may be made, within the scope of the appended claims, without departing from the spirit of the invention.

What I claim and desire to secure by Letters Patent, is:

1. In an apparatus for producing display characters, a support for a medium, a movable frame adapted to be moved vertically over the support and medium for holding said medium in position on the support, a stencil, and means for positioning the stencil above the medium whereby plastic material may be passed through the stencil onto the medium to form characters on said medium.

2. In an apparatus for producing display characters, a table for supporting a medium, a movable frame adapted to be moved vertically over the table and medium for holding said medium in position, a stencil, and means for positioning the stencil above the medium, whereby characters may be produced on said medium by passing plastic material through said stencil onto said medium.

3. In an apparatus for producing display characters, a support, a movable frame adapted to move vertically over the support for holding a medium in position on said support, a movable stencil carrier having a stencil therein adapted to move vertically over said medium within the frame, whereby the stencil within the carrier is positioned above the medium.

4. In an apparatus for producing display characters, a support for a medium, a hinged frame adapted to swing down over the medium for holding the same against upward displacement, a latch secured to said frame and positioned so as to engage the support when the frame is in a raised position to hold the frame in said elevated position, a stencil, and means for positioning said stencil above the medium, whereby characters are produced on the medium by passing a plastic material through said stencil onto said medium.

5. In an apparatus for producing display characters, a support for a medium, a hinged frame adapted to swing down over the medium for holding the same against upward displacement, a latch secured to the frame and positioned to engage the support when the frame is in a raised position for holding said frame in its elevated position, means for releasing the latch, and a movable stencil carrier having a stencil and adapted to be moved vertically over the medium within the frame, whereby the stencil within the carrier is positioned above the medium.

6. In an apparatus for producing display characters, a support, a movable frame adapted to move vertically over a medium and the support

for holding said medium against upward displacement from said support, a movable stencil carrier having a stencil therein adapted to be moved vertically within the frame over said medium, whereby the stencil within the carrier may be positioned above the medium and plastic material may be passed through said stencil onto the medium to form plastic characters on said medium.

7. In an apparatus for producing display characters, a table, a hinged frame adapted to swing down over the table and a medium for holding the medium against upward displacement, a latch carried by the frame for engaging the top of the table to hold the frame in a raised position, means for releasing the latch, a hinged stencil carrier having a stencil therein adapted to swing down over the medium within the frame, a latch secured to the carrier for engaging the top of the table to hold the carrier in a raised position, and means for releasing the latch to permit the carrier to swing down over the medium, whereby the stencil within said carrier is positioned over the medium.

8. In an apparatus for producing display characters, a support for a medium, a hinged frame adapted to swing down over the medium for holding the same against upward displacement, a latch secured to said frame and positioned so as to engage the support when the frame is in a raised position to hold the frame in said elevated position, and a movable stencil carrier having a stencil adapted to be moved vertically over the medium within the frame, whereby the stencil within the carrier is positioned above the medium.

9. In an apparatus for producing display characters, a support for a medium, a movable frame adapted to be moved vertically over the support and medium for holding said medium in position on the support, and a movable stencil carrier having a stencil therein adapted to be moved vertically within the frame over the medium, whereby the stencil within the carrier may be positioned above said medium and plastic material may be passed through said stencil onto the medium to form plastic characters on said medium.

10. In an apparatus for producing display characters, a table for supporting a medium, a movable frame adapted to be moved vertically over the table and medium for holding said medium in position, and a movable stencil carrier having a stencil therein adapted to be moved vertically within the frame over the medium, whereby the stencil within the carrier may be positioned above said medium and characters may be produced on said medium by passing plastic material through said stencil onto said medium.

11. In an apparatus for producing display characters, a support, a movable frame adapted to move vertically over the support for holding a medium in position on said support, and a hinged stencil carrier having a stencil therein adapted to swing down over the medium within the frame, whereby the stencil within said carrier is positioned over the medium.

12. In an apparatus for producing display characters, a support, a movable frame adapted to move vertically over a medium and the support for holding said medium against upward displacement from said support, and a hinged stencil carrier having a stencil therein adapted to swing down over the medium within the frame,

whereby the stencil within said carrier is positioned over the medium so that plastic material may be passed through said stencil onto the medium to form plastic characters on said medium.

- 5 13 In an apparatus for producing display characters, a support for a medium, a hinged frame adapted to swing down over the medium for holding the same in position on said support, a latch secured to said frame and positioned so
10 as to engage the support when the frame is in a raised position to hold the frame in said elevated position, a hinged stencil carrier having a stencil therein adapted to swing down over the medium within the frame, a latch secured to the carrier for engaging the top of the table to hold the carrier in a raised position, and means for

releasing the latch to permit the carrier to swing down the medium, whereby the stencil within said carrier is positioned over the medium.

14. In an apparatus for producing display characters, a support having a cut out portion in which a medium may be placed, a movable frame adapted to be moved vertically over the support and medium for holding said medium in position on the support, a movable stencil carrier having a stencil therein adapted to be moved vertically within the frame over the medium, whereby the stencil within the carrier may be positioned above said medium and plastic material may be passed through said stencil onto the medium to form plastic characters on said medium.

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