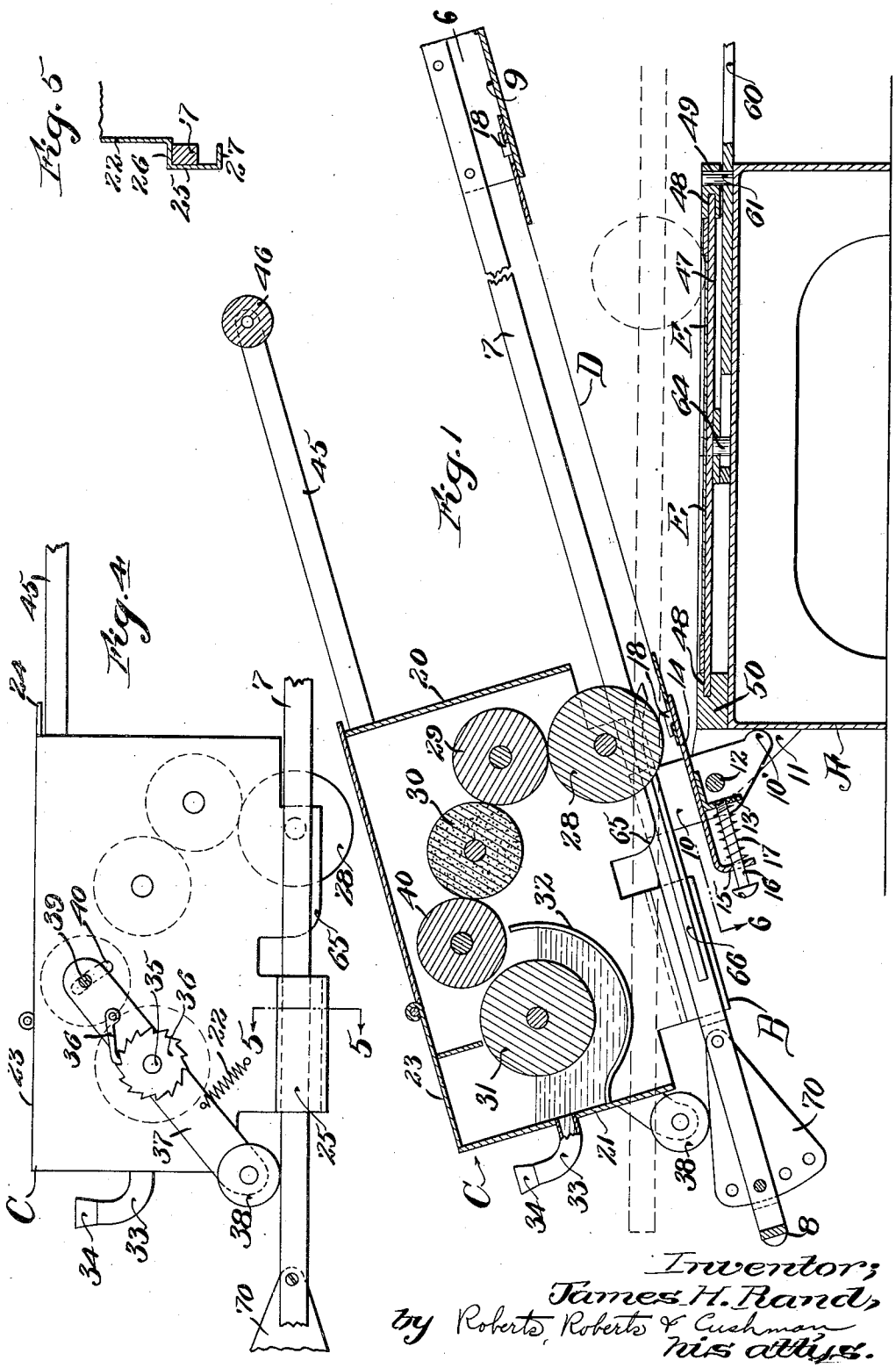
July 14, 1925. 1,545,926

J. H. RAND

STENCILING DEVICE

Filed April 14, 1922 3 Sheets-Sheet 1

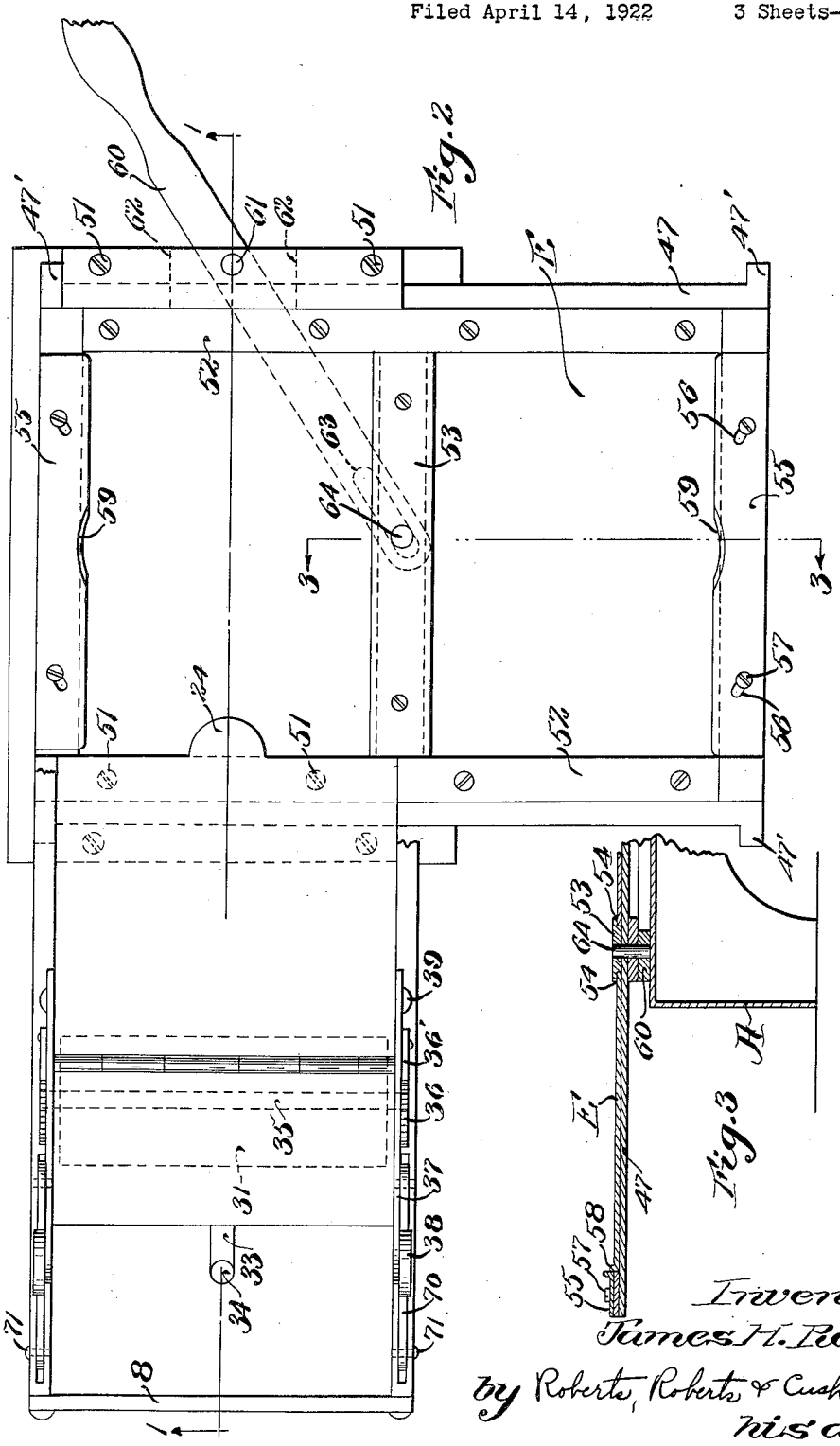


July 14, 1925. 1,545,926

J. H. RAND

STENCILING DEVICE

Filed April 14, 1922 3 Sheets-Sheet 2



Inventor:
James H. Rand,
by Roberts, Roberts & Cushman
his attys.

July 14, 1925. 1,545,926

J. H. RAND

STENCILING DEVICE

Filed April 14, 1922 3 Sheets-Sheet 3

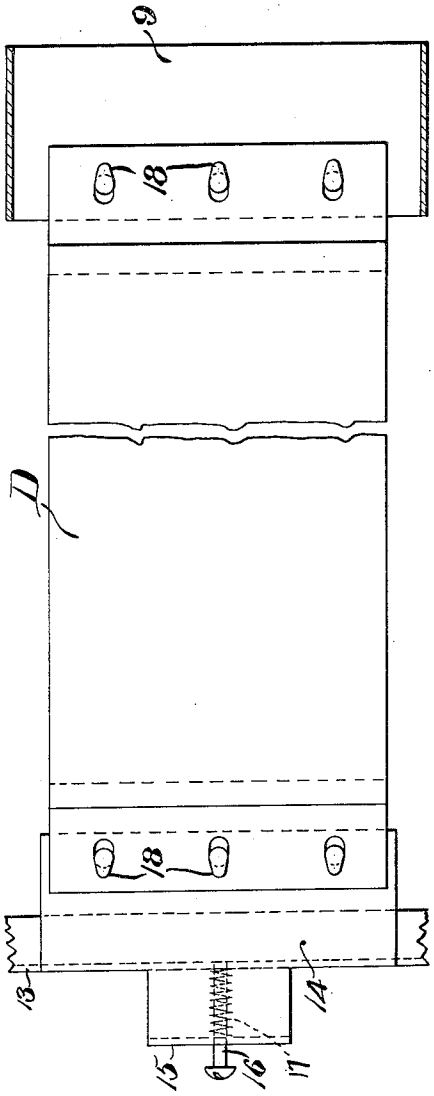


Fig. 6

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Patented July 14, 1925. 1,545,926

UNITED STATES PATENT OFFICE.

JAMES H. RAND, OF NORTH TONAWANDA, NEW YORK, ASSIGNOR TO RAND KARDEX COMPANY, INC., OF NORTH TONAWANDA, NEW YORK, A CORPORATION OF DELAWARE.

STENCILING DEVICE.

Application filed April 14, 1922. Serial No. 552,793.

To all whom it may concern:

Be it known that I, JAMES H. RAND, a citizen of the United States of America, and resident of North Tonawanda, in the county of Niagara and State of New York, have invented new and useful Improvements in Stenciling Devices, of which the following is a specification.

This invention relates to stenciling devices and more specifically to devices of this kind adapted to use the type of stencil sheet disclosed in my copending application, Serial No. 552,792 filed on April 14, 1922, but many of the features of the invention are capable of general application.

Objects of the invention are to prevent creases, folds and undue strains upon the stencil sheet which tend to rupture it prematurely and to produce breaks therein which result in blotched and imperfect work, to provide feeding means for stenciling fluid which may be adjusted to the needs of the stencil sheet operated on, to provide a holder for the sheets of material to be stenciled which shall position each sheet in exactly the same position beneath the stencil sheet, and in general to improve devices of this kind to the end that they may be easier to operate and may render more satisfactory service.

For the purpose of illustrating the invention one concrete embodiment thereof is shown in the accompanying drawings, in which:—

Fig. 1 is a vertical longitudinal sectional view of the device on the line 1—1 of Fig. 2;

Fig. 2 is a plan view with portions of the pivoted frame broken away;

Fig. 3 is a section on the line 3—3 of Fig. 2;

Fig. 4 is a side elevation of the frame of the carriage in operative position;

Fig. 5 is a section on the line 5—5 of Fig. 4; and

Fig. 6 is a section on the line 6—6 of Fig. 1.

The embodiment of the invention shown for the purpose of illustration comprises a base A, a stencil sheet supporting frame B pivoted to the base and a carriage C mounted for longitudinal reciprocation upon the frame, the entire device being portable and adapted to be placed upon a convenient table or desk when in use. The frame B consists of side pieces 7, front end plate 8, and rear connecting plate 9 and has downwardly extending brackets 10 fast to side pieces 7 which are pivoted to brackets 11 on base A by means of a pivot pin 12. Brackets 10 have stops 10′ for limiting the swinging movement of frame B in one direction and are connected by an angle iron 13. Slidably mounted upon the upper web of angle iron 13 is a plate 14 disposed in the plane of plate 9 and having a downwardly bent front flange 15 through an opening in which extends screw 16 fast in the other web of angle member 13. Surrounding screw 16 and confined between angle iron 13 and flange 15 is a coil spring 17 which normally maintains plate 14 forwardly disposed with flange 15 against the head of the screw. Upon the upper faces of plates 9 and 14 are spaced lugs 18 over which the reinforced ends of a stencil sheet D of the type described in my above mentioned copending application are adapted to be hooked, spring pressed plate 14 maintaining the stencil sheet under yielding tension.

Carriage C, which slides upon the side arms 7 of frame B, comprises a substantially rectangular structure having ends 20 and 21, sides 22, and a top 23, the forward portion of which is hinged to permit inspection of the interior, a projecting tab 24 being provided upon the front of the hinged portion for conveniently raising the same. Sides 22 are provided adjacent the front end of the carriage with guides in the form of flanged portions 25 which are generally U-shaped or channel-shaped, the upper and lower portions 26 and 27 enclosing the side members 7 of the frame with considerable clearness as indicated in Fig. 5 for a purpose to be later described. Within the carriage and mounted upon rods fast in the sides 22 of the carriage are rollers 28, 29, 30, 31. Roller 31 is contained in an ink reservoir 32 which is disposed at the front of the carriage and has a filling spout 33 extending outside thereof and provided with a stopper or other closing means 34. The pivot 35 for roller 31 extends outside the carriage on both sides and its extremities are provided with ratchet wheels 36 keyed thereto. Mounted upon the projecting portions of pivot 35 but between ratchets 36 and sides 22 are levers 37 having rollers 38 at one end, pawls 36′ adjacent ratchets 36 and a rod 39 connecting the other ends of the two levers, the rod passing through aligned slots 40′ in sides 22 of the

carriage. Upon rod 39 is mounted for rotation another roller 40 which completes the train or series by which ink is transferred from reservoir 32 to roller 28. As indicated in Fig. 1 roller 40 is slightly spaced from roller 31, but the heavy ink used bridges the gap between the two rollers. By roller 40 the ink is applied to roller 30 which is of felt and is adapted to be impregnated with ink. By the roller 30 the ink is applied to roller 29 which in turn distributes the ink to roller 28. The latter is the pressure roller for forcing the ink through stencil sheet D and is of rubber or rubber covered, rollers 31, 40 and 29 being of metal. For conveniently actuating the carriage rearwardly extending arms 45 are provided connected by a handle 46.

While the cards or paper E to be stenciled may be placed directly upon the top of base A, I prefer for convenience and speed in manipulating the device to provide a reciprocating slide holder 47 adapted to hold two cards. Slide 47 is in the form of an elongate rectangular plate as shown in Fig. 1, the edges of which fit in dovetail grooves 48 in guides 49 and 50, fast to the top of base A in any suitable manner as by screws 51. Stops 47′ on slide 47 are adapted to contact guides 49 and 50 to limit the movement of the slide. Since this device is intended to be used to produce cards for visible index devices it is desirable that the index material stenciled on the cards shall be accurately located. For this purpose I provide guide plates 52 on the sides of the slide 47 and a central partition plate 53 having undercut sides 54 to define the compartments for the cards (Fig. 3). The cards are retained under these undercut sides by means of end plates or retainers 55, preferably spring pressed, having angular slots 56, through which attachment screws 57 pass to hold the plates upon slide 46. Plates 57 have an undercut face 58 corresponding to the under-cuts in partition member 53. A portion of the shelf above the undercut on plates 57 is bent upwardly to form projections 59 for readily forcing the plates 55 back when the stencil cards are to be removed and new cards are to be inserted. Side members 52 terminate short of the ends of slide 47 to permit the outward diagonal movement of end members 55. Any desired means may be provided for normally maintaining end members 55 at their inward limit of movement.

To manipulate slide 47 back and forth a lever 60 is provided pivoted at 61 in guide 49 which is recessed as indicated at 62 to permit angular movement of the lever. The outer end of lever 60 receives in a slot 63 a pin or lug which is fast in partition member 53 and slide 47 and extends beneath the partition 53 and slide 47 as shown in Fig. 1.

In operation the user places cards of the proper size in the spaces provided therefor upon slide 47. He then grasps handle 46 and draws carriage C toward the rear of frame B holding the carriage C and frame B upwardly against its tendency to move downward as the heavy carriage moves beyond the pivot 12. When carriage C reaches the forward limit of its movement which may be determined by a suitable stop upon member 9 the user permits the frame B to swing down upon base A to dispose stencil sheet D over card E and roller 28 upon the stencil sheet. He then pushes the carriage forwardly with the parts in the position shown in Fig. 4, the roller 28 pressing upon a stencil sheet D and forcing the ink therethrough upon the card E on slide 47. As the carriage approaches the forward end of frame B cam members 65 on sides 22 having rounded forward edges contact cam projection 66 upon the side members 7 and lift the carriage C upwardly to the position shown in Fig. 1 taking roller 28 off of stencil sheet D before the latter reaches the reinforcing end of the stencil sheet. This vertical movement of the carriage C relative to frame B is permitted by the clearance between sides 7 and the parallel portions 26 and 27 of guide flanges 25.

During the forward movement of carriage C rollers 28, 29 and 30 have been rotated frictionally but roller 40 has been out of contact with roller 30 as shown in Fig. 4. As carriage C approaches the limit of its movement rollers 38 on lever arms 37 roll upwardly upon adjustable cam members 70 which are pivoted in sides 7 and are adjusted by inserting a pin in suitable openings. The swinging movement of levers 37 thus provided brings roller 40 into contact with roller 30 and moves pawls 36′ rearwardly across the ratchet teeth on ratchet wheels 36 so that when the carriage is again moved forwardly and lever arm 37 is drawn to its normal position through the action of spring 72, roller 31 is rotated to bring the ink into contact with roller 40. Since roller 40 contacts felt roller 30 only when lever arms 37 are actuated by the contact of rollers 38 with cams 70, which occurs at the extreme rearward movement of the carriage, merely enough ink is applied to roller 30 to compensate for the amount applied by roller 28 to stencil sheet D on each reciprocation. Roller 40 is turned slightly at each contact with roller 30 by reason of its swinging movement into touching relation therewith. It is further turned by the movement of roller 31 transmitted to it through the ink which bridges the gap between the two rollers.

From the foregoing it is clear that one of the features of the invention is the unique

arrangement by which the stencil sheet is supported at its ends only and maintained under a yielding tension. Since the roller 28 operates upon the sheet D from the fixed plate 9 toward the movable plate 14 no creases or folds are formed in the sheet. Furthermore by the provision of a stop means for the forward movement of the carriage and by reason of the cam projection 66 which lifts roller 28 from the stencil sheet D at the proper time there are no uneven strains on the latter which would tend to weaken it prematurely and cause it to break.

Another important feature of the invention is the arrangement of feed rollers by which an adequate supply of ink to the pressure roller is provided at all times, the adjustable cam member 70 permitting the supply to be regulated to meet the needs of each particular stencil sheet used. The holder 47 with its accurately disposed straight edges and its stop members positions all the cards to be stenciled in exactly the same position relative to the stencil sheet so that a uniform stenciled product results whereby an even and attractive appearance of the index material is produced when the cards are mounted on the index panels.

I claim:

1. A stenciling device comprising a base for supporting the material to be stenciled, a frame pivoted for swinging movement upon said base, spaced plates on opposite sides of said frame having lugs fitting in openings in a stencil sheet whereby the latter is supported on the frame, and an ink applying roller adapted to be pressed upon said stencil sheet.

2. A stenciling device comprising a base for supporting material to be stenciled, a frame mounted above said base, projections upon opposite sides of said frame cooperating with perforations in a stencil sheet whereby the latter is supported upon said frame in position to stencil the material, means for yieldingly tensioning the stencil sheet, and an ink applying roller adapted to be pressed upon said stencil sheet.

3. A stenciling device comprising a base for supporting the material to be stenciled, a frame pivoted for swinging movement upon said base, spaced plates on opposite sides of said frame having lugs fitting in openings in a stencil sheet whereby the latter is supported on the frame in position to stencil the material, one of said plates being slidable on said frame, resilient means for urging said movable plate outwardly, whereby the stencil sheet is yieldingly tensioned, and a carriage movable longitudinally of said frame and having an ink applying roller adapted to be pressed upon said stencil sheet.

4. A stenciling device comprising a movable carriage having a reservoir of stenciling fluid, a pressure roller adapted to apply the stenciling fluid, means actuated by said roller for supplying fluid thereto, and independently operated means for conveying fluid from said reservoir to said first named means.

5. A stenciling device comprising a movable carriage having a reservoir of stenciling fluid, a pressure roller adapted to apply the stenciling fluid, means actuated by said roller for supplying fluid thereto, and means actuated by movement of said carriage for conveying fluid from said reservoir to said first named means.

6. A stenciling device comprising a movable carriage, a roller on said carriage adapted to force stenciling fluid through a stencil sheet, a plurality of rollers in frictional contact for supplying fluid to said pressure roller, one of said rollers being of absorbent material, a reservoir of fluid on said carriage, lever arms on said carriage, means supported by said arms and arranged to intermittently transfer fluid from said reservoir to said roller.

7. A stenciling device comprising a movable carriage, a roller on said carriage adapted to force stenciling fluid through a stencil sheet, a plurality of rollers in frictional contact for supplying fluid to said pressure roller, a reservoir of fluid on said carriage, a roller in said reservoir, and means spaced from said last named roller and arranged to intermittently transfer fluid from said reservoir to said rollers.

8. A stenciling device comprising a movable carriage, a roller on said carriage adapted to force stenciling fluid through a stencil sheet, a plurality of rollers in frictional contact for supplying fluid to said pressure roller, a reservoir of fluid on said carriage, a roller in said reservoir, and a roller mounted in spaced relation to said last named roller for swinging movement about the axis thereof and arranged to intermittently contact one of said rollers to transfer fluid thereto from said reservoir.

9. A stenciling device comprising a movable carriage, a roller on said carriage adapted to force stenciling fluid through a stencil sheet, a plurality of rollers in frictional contact for supplying fluid to said pressure roller, a reservoir of fluid on said carriage, a roller in said reservoir, and means including a pawl and ratchet mechanism for said last named roller for intermittently transferring fluid from said reservoir to said rollers.

10. A stenciling device having a pressure roller for forming stenciling fluid through a stencil sheet, a reservoir of stenciling fluid in spaced relation to said roller, a series of rollers forming a train leading from said

reservoir to said pressure roller, and means intermittently actuated when said device is in use for causing said train of rollers to transfer fluid to said pressure roller.

11. A stenciling device having a movable carriage, a pressure roller thereon for forcing stenciling fluid through a stencil sheet, a reservoir of stenciling fluid on said carriage, a feed roller in said reservoir, means for conducting fluid from said feed roller to said pressure roller, means for intermittently rotating said feed roller, and means for adjusting the extent of said rotation.

12. A stenciling device having a movable carriage, a pressure roller thereon for forcing stenciling fluid through a stencil sheet, a reservoir of stenciling fluid on said carriage, a feed roller in said reservoir, means for conducting fluid from said feed roller to said pressure roller, means responsive to movement of said carriage for rotating said feed roller, and means for adjusting the extent of said rotation.

13. A stenciling device having a support for a stencil sheet, a carriage movable across said support having a pressure roller adapted to bear upon said stencil sheet, a reservoir of stenciling fluid on said carriage, a feed roller pivoted on said carriage and extending into said reservoir, means for conducting fluid from said feed roller to said pressure roller, and means responsive to movement of the carriage for controlling the rotation of said feed roller and hence the rate of feed of the fluid including a ratchet and pawl mechanism intermittently operated.

14. A stenciling device having a support for a stencil sheet, a carriage movable across said support having a pressure roller adapted to bear upon said stencil sheet, a reservoir of stenciling fluid on said carriage, a feed roller pivoted on said carriage and extending into said reservoir, means for conducting fluid from said feed roller to said pressure roller, and means responsive to movement of the carriage for controlling the rotation of said feed roller and hence the rate of feed of the fluid including a lever mounted upon the pivot of said feed roller and an adjustable cam on said support cooperating with said lever.

15. A stenciling device having a support for a stencil sheet, a carriage movable across said support having a pressure roller adapted to bear upon said stencil sheet, a reservoir of stenciling fluid on said carriage, a feed roller pivoted on said carriage and extending into said reservoir, means for conducting fluid from said feed roller to said pressure roller, and means responsive to movement of the carriage for controlling the rotation of said feed roller and hence the rate of feed of the fluid including a lever mounted upon the pivot of said feed roller, a pawl and ratchet connection between said lever and said feed roller, and an adjustable cam on said support cooperating with said lever.

16. A stenciling device comprising a support for a stencil sheet, a holder for sheet material to be stenciled mounted for reciprocation beneath said support, said holder having guide members defining compartments for said material and stop means for accurately positioning said compartments beneath said stencil sheet, and an ink applying roller adapted to be pressed upon said stencil sheet.

17. A stenciling device comprising a base, a frame pivoted to said base and adapted to support a stencil sheet, guide means on said base, a slide reciprocable in said guide means and serving as a holder for sheet material to be stenciled, said holder having guide means defining compartments for said material, a movable slide closing one end of each of said compartments to facilitate insertion and removal of said material, stop means for accurately positioning said compartments, beneath said stencil sheet, and a carriage movable longitudinally of said frame and having an ink applying roller adapted to be pressed upon said stencil sheet.

Signed by me at Boston, Massachusetts, this 20th day of March, 1922.

JAMES H. RAND.