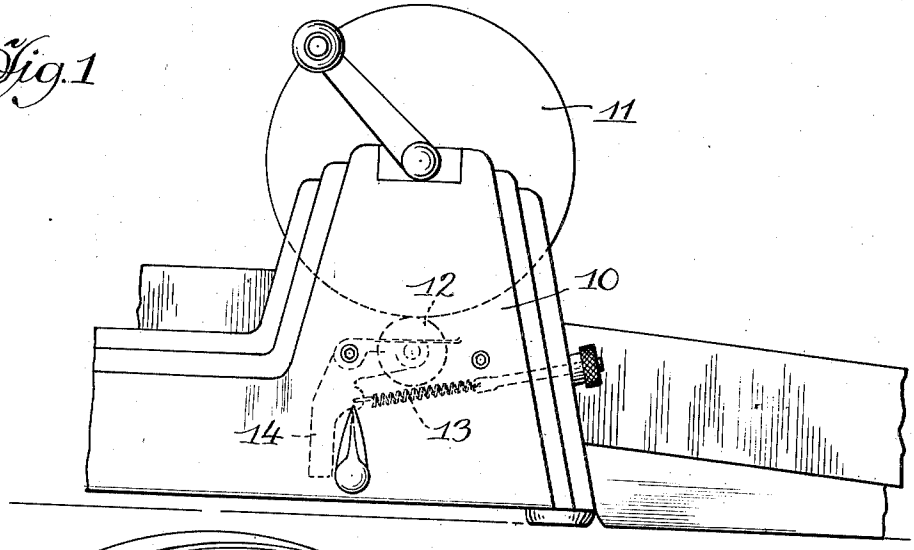
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STENCIL DUPLICATING MACHINE

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Fig. 1



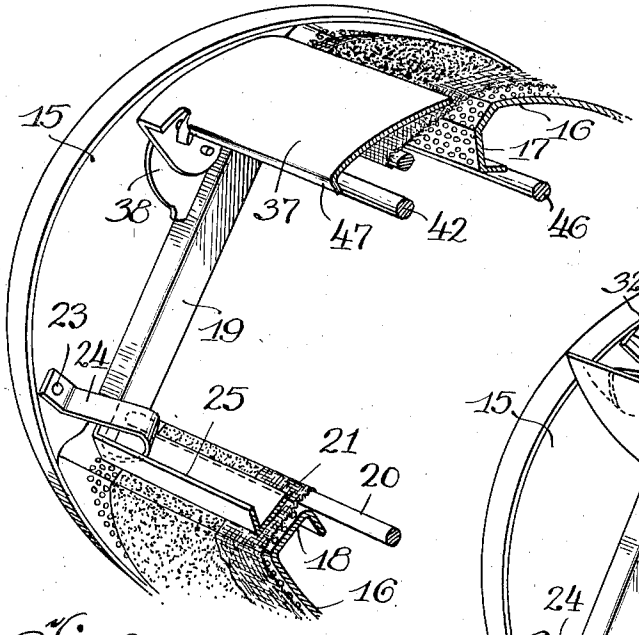


Fig. 2

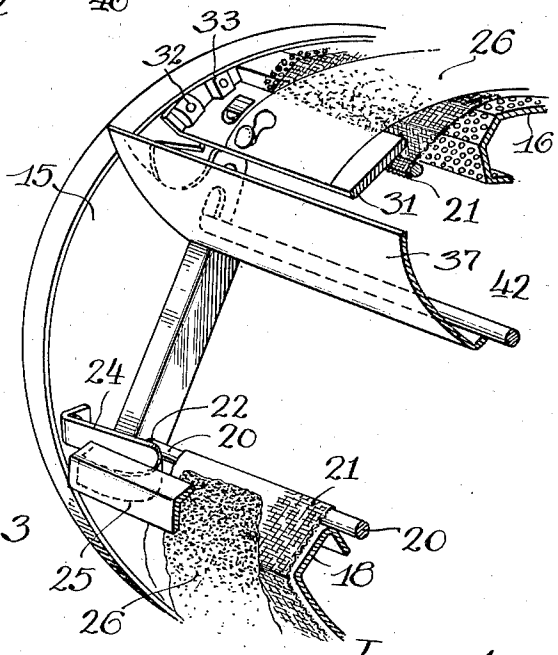


Fig. 3

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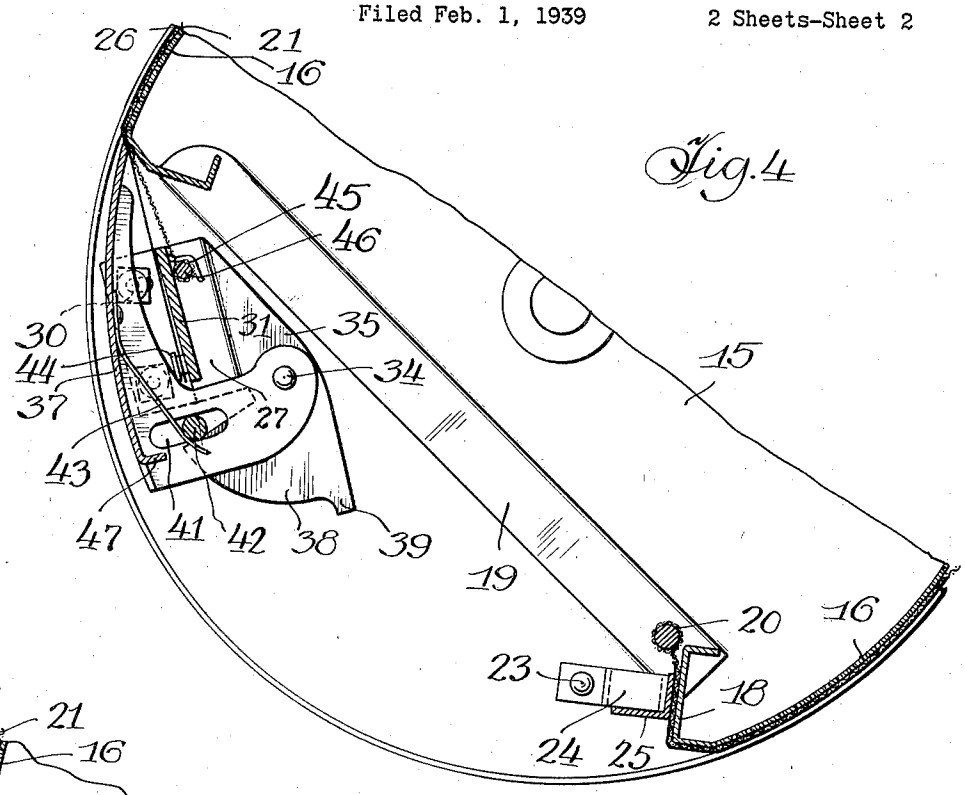


Fig. 4

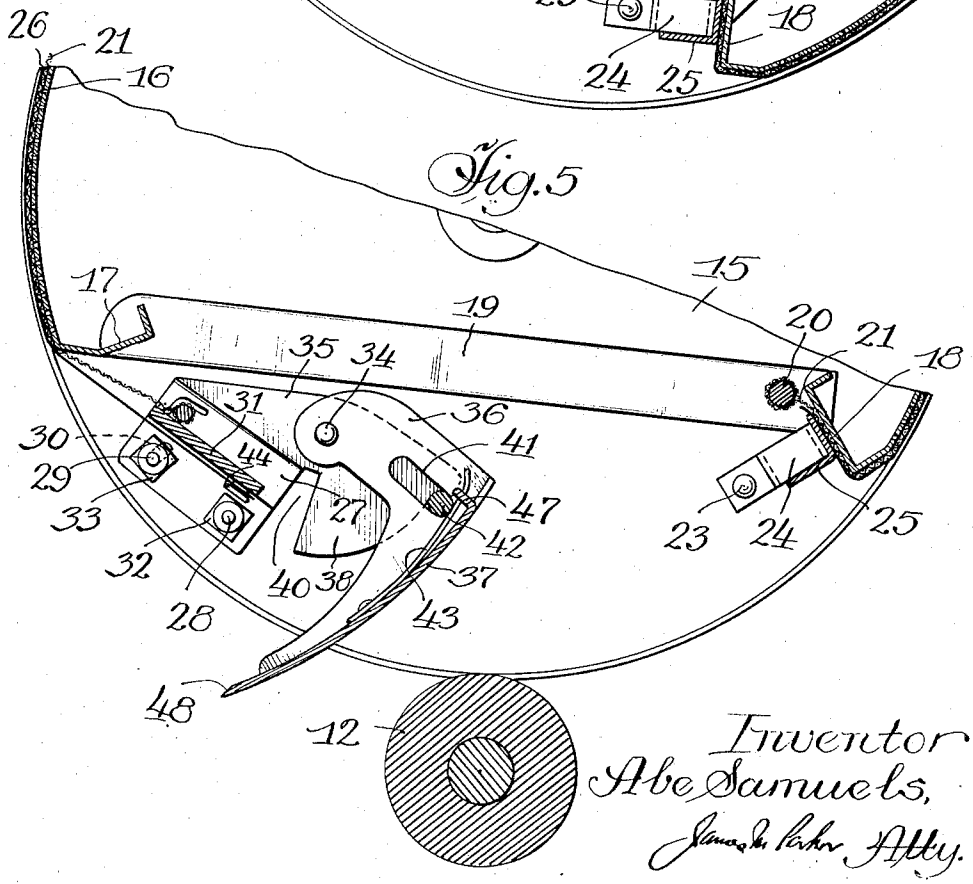


Fig. 5

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UNITED STATES PATENT OFFICE

2,235,778

STENCIL DUPLICATING MACHINE

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Application February 1, 1939, Serial No. 254,062

6 Claims. (Cl. 101—116)

This invention relates to improvements in stencil duplicating machines, and particularly to the stencil carrying drum thereof.

One of the objects of this invention is to provide a protective shield for the head of the stencil positioned adjacent the lead end of the drum segment and which arcuately tapers thereto, whereby the impression roller is gradually engaged and the initial shock of its tensioning means absorbed prior to its cooperative engagement against the stencil carried by the drum, so that tearing strains on the stencil head are eliminated and the life of the stencil preserved.

Another object relates to the construction and operation of the protector shield, whereby it may be simply and speedily opened for permitting the ink pad and stencil to be secured and the means for retaining it in such opened position during these operations; the simple, rapid and positive means for clamping it down into protective position; and the means for causing it to automatically close down and lock into protective position by normal operation of the duplicating machine in the event that it is inadvertantly left open.

A further object relates to the simple, rapid and positive means for securing the ink pad and stencil in place on the drum.

Other objects relate to the simplicity and ruggedness of construction, the minimum number of parts, the details and arrangements of their construction, and the economies thereof, which will be apparent from a consideration of the following specification and drawings, wherein:

Figure 1 is a fragmentary elevation of a stencil duplicating machine embodying my improvements.

Figure 2 is a fragmentary perspective view with parts broken away of the stencil carrying drum showing the protector clamp in closed position.

Figure 3 is a view similar to Figure 2, showing the protector clamp in opened position.

Figure 4 is a fragmentary section through the stencil carrying drum illustrating the protector clamp in closed position, and structural details thereof.

Figure 5 is a view similar to Figure 4, with the protector clamp in opened position.

Referring to the drawings, the stencil duplicating machine comprises generally the frame 10 carrying the drum 11 suitably journaled in the sides of its frame, and cooperating therewith is the impression roller 12 yieldably retained in peripheral engagement, as for example by the spring 13 acting on the roller mounting lever 14, as set forth in my co-pending application Serial No. 254,061 filed February 1, 1939, or by other suitable means.

The stencil mounting drum comprises the heads 15, only one of which is shown, and is provided with the usual foraminated segment 16 secured to the heads 15, terminating at its segmented ends in the inturned flanges 17 and 18. Extending substantially cordwise across the inner surfaces of the heads 15 between the flanges 17 and 18 are the angle bars or trenched inserts 19. These insert bars act as ink baffles, as a reinforcing member for both the heads 15 and the segment 16, and additionally serve to form an endwise engagement for at least the slide rod 20 carrying one end of the ink pad 21, by means of apertures 22 formed adjacent to the flange 18. Pivoted to the heads 15 at 23 by means of leg portions, are the laterally extending curved flat springs 24, retaining, by means of their double-backed portions, the angular transversely extending clamp bar 25. This clamp bar 25 is adapted to be swung on its pivotally mounted springs into pressure engagement with the face of flange 18 to securely clamp the lower end of the stencil 26, and to draw it and the pad 21 beneath it smoothly around the foraminated surface 16.

Mounted against each of the heads 15 adjacent the lead end of segment 16 is a bracket 27, pivotally engaged adjacent one edge at one point thereof by means of the threaded pin 28 and at another point by means of threaded pin 29 extending through a radial slot 30. Also fixedly mounted on these pins are the legs of the button bar 31 extending between the brackets 27. After the bracket has been suitably fixed in desired position by means of its pivot and slot arrangement, to compensate for wear, slight inaccuracies of manufacturing assembly, or other desirable adjustment, the lock nuts 32 and 33 are turned down to securely and fixedly hold the brackets and button bar. The button bar is provided with the usual stencil head engaging studs 44 on its upper surface, and on its under side is provided with lips 45, which may be struck out therefrom, forming a means whereby the ink pad rod 46 may be engaged.

Pivotally mounted at 34 to an inwardly offset portion 35 of brackets 27 are the bracket like legs 36 carrying the protector clamp 37 adjacent to its rearward edge. This protector clamp 37 is formed with a segmental surface and ex-

tends arcuately from a point inwardly of the periphery of the heads 15 arcuately to tangentially meet the segment 16 at its head end, when in closed position, and extends over and covers the button bar 31. The offset portion 35 of bracket 27 terminates in an arcuately edged portion 38 generated about the pivot 34, terminating at one side in the shoulder 39, the other side being spaced from the bracket 27 to provide the outwardly open slot 40. The leg 36 of clamp 37 is provided with the radial slot 41 in which is retained an end of the transversely extending locking rod 42. Fixedly secured to the under surface of clamp 37 adjacent its free end is the strip spring 43 which acts against the locking rod 42, and when the slots 40 and 41 are in registry the spring urges the rod 42 downwardly so as to hold the clamp 40 in locked position and to prevent free pivotal movement.

When it is desired to engage or disengage the stencil or ink pad at their respective points of engagement at the button bar 31, the locking rod 42 is manually gripped intermediate its length and raised in slot 41 out of slot 40 and the clamp 37 turned about its pivot 34, the rod 42 riding on the radial edge 38 until it strikes the shoulder 39, whereat it is additionally prevented from overriding by means of the lip 47 struck from the clamp 37. The button bar is thus uncovered, and the operator may freely carry out his operations in connection therewith, since the clamp will be maintained in opened position by reason of frictional pressure of the bar 42 against arcuate edge 38 by means of spring 43. After the ink pad and stencil head have been engaged to the button bar and it is desired to close the clamp to protective position, it is only necessary to turn the clamp about its pivot until its outer beveled edge 48 substantially tangentially meets the segment 16, whereat the slots 40 and 41 register and permit the rod 42 to enter the slot for locking engagement. In the event that the operator should inadvertently permit the clamp 37 to remain open and commence to rotate the drum in its normal counter-clockwise operative direction, the clamp will strike the roller 12 and automatically be pivoted to locked position.

It will thus be seen that by means of the protective clamp 37 which arcuately tapers to the surface of the ink pad and stencil carrying drum surface or foraminated segment 16, the impression roller 12 under its operative pressure is peripherally engaged by the surface of the clamp 37 before it is brought into peripheral cooperative pressure engagement with the stencil carrying surface of the drum. Thus the initial and abrupt shock of engagement of the impression roller is eliminated and distributed over the clamp, so that strain against the head of the stencil is eliminated to preserve its life, and at the same time shock to the machine in general is lessened to preserve and lengthen the life of its various structural parts.

Although I have shown and described certain features of my improvements for the purpose of illustration, it will be apparent to one skilled in the art that various changes may be made in the details and form of construction without departing from the spirit of my invention, and therefore, I do not wish to be restricted specifically thereto except as so limited by the appended claims.

What I claim is:

1. The combination with a stencil duplicating machine comprising a drum having a foraminated cylindrical segment surface adapted to support a stencil and an impression roller coacting in yieldable peripheral engagement therewith, of a protector clamp plate pivotally mounted on brackets therefor between the heads of said drum and extending arcuately to and terminating adjacent the lead end of said drum surface and adapted to progressively engage and depress said roller prior to its engagement with the drum surface and to bring it into smooth engagement therewith, and locking means carried by said plate engageable with means formed on said brackets.

2. The combination with a stencil duplicating machine comprising a drum having a foraminated cylindrical segment surface adapted to support a stencil and an impression roller coacting in yieldable peripheral engagement therewith, of a protector clamp plate pivotally mounted on brackets between the heads of said drum and comprising a cylindrical segment surface of lesser radius than said foraminated segment and extending to and terminating at the lead end thereof in substantially tangential relationship and adapted to bring said roller into smooth initial engagement therewith, locking means carried by said plate engageable with means formed on said brackets, and spring means for yieldably retaining said plate in locked and in outwardly pivoted relationship.

3. In a stencil duplicating machine comprising a drum having a foraminated cylindrical segment surface adapted to support a stencil and an impression roller coacting therewith in spring tensioned peripheral engagement, a protector clamp plate pivotally mounted between the heads of said drum and adapted to extend arcuately to the forward end of said segment and to initially gradually engage said roller and to cause progressive reaction against the springs thereof and to thereby bring said roller into smooth peripheral engagement with said drum, automatic lock means for holding said protector clamp in operative position when pivoted thereto, and release means for opening it outwardly of the periphery of said drum.

4. In a stencil duplicating machine comprising a drum having a foraminated cylindrical segment surface adapted to support a stencil and an impression roller coacting therewith in spring tensioned peripheral engagement, a protector clamp plate pivotally mounted between the heads of said drum and adapted to extend arcuately to the forward end of said segment and to initially gradually engage said roller and to cause progressive reaction against the springs thereof and to thereby bring said roller into smooth peripheral engagement with said drum, self-locking means for holding said protector clamp to operative position, manual lock release means, and frictional means for holding said clamp in inoperative outwardly pivoted position.

5. In a stencil duplicating machine comprising a drum having a foraminated cylindrical segment surface adapted to support a stencil and an impression roller coacting therewith in spring tensioned peripheral engagement, a protector clamp plate pivotally mounted between the heads of said drum and adapted to extend arcuately to the forward end of said segment and to initially gradually engage said roller and to cause progressive reaction against the springs thereof and to thereby bring said roller into smooth peripheral

engagement with said drum, automatic means for causing said protector clamp to become locked upon being pivoted into operative position, manual lock release means, and frictional means for holding said clamp in inoperative outwardly pivoted position, the said clamp being adapted from said latter position to be pivoted and automatically locked into operative position by engagement with said roller during operative rotation of said drum.

6. In a stencil duplicating machine, a drum having a segment surface adapted to support a stencil, brackets secured against the inner sides of the heads of said drum adjacent the lead end of said segment, an arcuate protector clamp plate pivotally secured to said brackets and adapted to extend in tapering relationship towards said segment end, and means for pivotally adjusting said brackets to cause said clamp to substantially merge with said segment.

ABE SAMUELS.