Nov. 28, 1944. G. C. AVERY 2,363,490

REVERSING ATTACHMENT FOR DUPLICATING MACHINES

Filed April 18, 1942

Fig. 1.

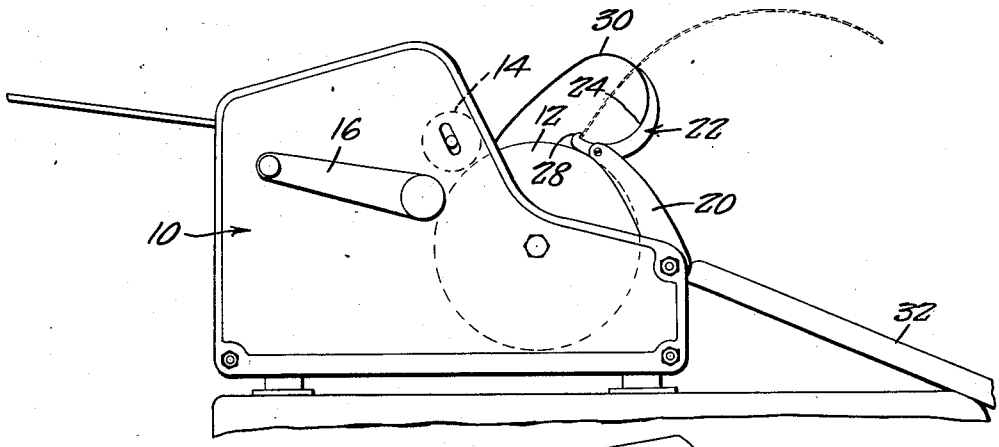


Fig. 2.

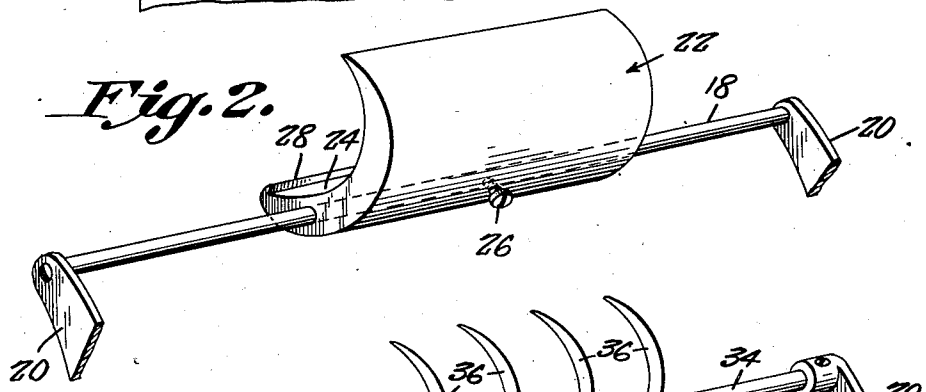


Fig. 3.

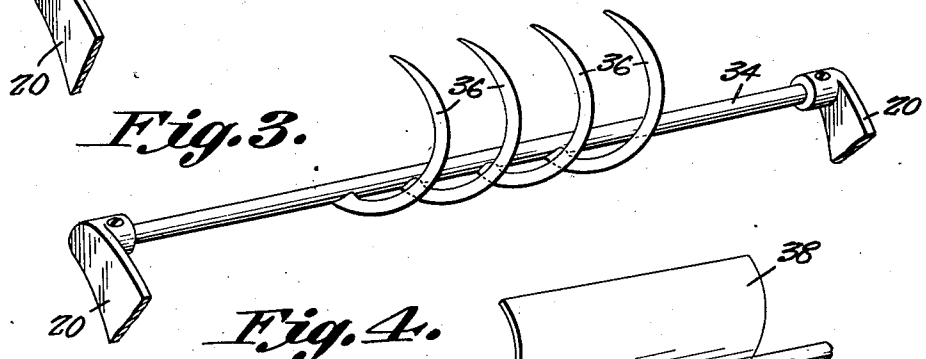
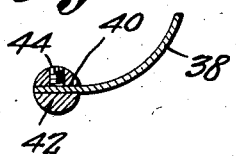


Fig. 4.

Fig. 5.



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REVERSING ATTACHMENT FOR DUPLICATING MACHINES

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Application April 18, 1942, Serial No. 439,568

6 Claims. (Cl. 101—132)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

My invention relates to duplicating machines and more particularly to rotary stencil or master sheet machines employing a rotatable drum and an impression roller between which and the drum is fed sheets of paper to receive impressions from the stencil or master sheet on the drum and has among its objects and advantages the provision of an improved sheet reversing attachment.

Many types of duplicating machines are so devised as to deliver the copy sheets face down in the receiving tray. Thus the impressions are hidden from view and it is necessary to pick up a sheet from time to time in order to observe the condition of the copy sheets. While such machines are highly efficient with respect to their duplicating work, the face-down delivery of the copy sheets makes it difficult to keep a consistent check on the quality of the work.

Accordingly, an object of my invention is to provide an attachment for duplicating machines which is so designed as to effectively reverse the copy sheets during their emergence from the machine to deliver the copy sheets in face-up positions in the receiving tray.

In the accompanying drawing:

Figure 1 is an end view of a conventional duplicating machine illustrating my invention applied thereto;

Figure 2 is a perspective view of the attachment;

Figure 3 is a perspective view of a modified form of attachment;

Figure 4 is a perspective view of a further modification; and

Figure 5 is a cross sectional view of the structure of Figure 4.

In the embodiment selected for illustration, I make use of a duplicating machine 10 incorporating the usual stencil or master sheet drum 12, impression roller 14 and manually actuated crank 16. Such machines include a stripper bar 18 supported on bars 20. This bar parallels the drum 12 and strips the impressed copy sheets from the drum. Copy sheets emerging from the machines have a forward edge margin of considerable width which is free from the drum and projects tangentially of the drum to pass over the bar 18 for subsequent engagement therewith to strip the impressed area of the copy sheet from the drum.

My invention comprises a sheet-reversing member 22 having a sheet-engaging face 24 of substantially semicircular contour opening in the direction of the copy sheets emerging from the machine. The member 22 is bored for the reception of the bar 18 and is fixedly secured thereto by a setscrew 26.

Because of the face 24 and the location of the member 22 in the path of the emerging copy sheet, a copy sheet engaging the face 24 is deflected downwardly and backwardly and brought into engagement with a rib or abutment 28 which prevents further relative sliding movement between the sheet and the member. Upon such engagement between the sheet and the abutment, further emergence of the sheet causes the latter to bow upwardly, as at 30, and fold over the upper edge of the member 22, with the result that the sheet will be completely reversed as it is discharged from the machine to fall face up in the receiving tray 32.

Figure 3 illustrates a modified form wherein the original stripper bar 34 is provided with a plurality of curved fingers 36 having the function of the body 22, the chief difference residing in the fact that the copy sheets have abutting engagement with the bar 34 so that the latter has the function of the rib 28.

Figure 4 illustrates a thin sheet metal attachment 38 bent to shape and having an edge margin inserted in a slot 40 in the stripper bar 42. The attachment is made secure by setscrews 44, and the stripper bar functions as an abutment for the copy sheets.

Without further elaboration, the foregoing will so fully illustrate my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. In a duplicating machine, the combination of an impression sheet supporting drum, an impression roller coacting with the drum, a curved barrier located in the path of copy sheets emerging from between the drum and the impression roller for bending the copy sheets back upon themselves, and an abutment associated with said curved barrier engageable with the forward edges of the copy sheets to cause the latter to bow upwardly and invert as they emerge from the machine.

2. In a duplicating machine, the combination of an impression sheet supporting drum, an impression roller coacting with the drum, a curved barrier located in the path of copy sheets emerging from between the drum and the impression roller for bending the copy sheets back upon

themselves, and an abutment associated with said curved barrier engageable with the forward edges of the copy sheets to cause the latter to bow upwardly and invert as they emerge from the machine, said curved barrier comprising a body having a curved sheet deflecting face, with said abutment located at one edge of said face.

3. In a duplicating machine, the combination of an impression sheet supporting drum, an impression roller coacting with the drum, a curved barrier located in the path of copy sheets emerging from between the drum and the impression roller for bending the copy sheets back upon themselves, an abutment associated with said curved barrier engageable with the forward edges of the copy sheets to cause the latter to bow upwardly and invert as they emerge from the machine, said barrier comprising a plurality of curved fingers, and a bar supporting the fingers and constituting said abutment.

4. In a duplicating machine, the combination of an impression sheet supporting drum, an impression roller coacting with the drum, a curved barrier located in the path of copy sheets emerging from between the drum and the impression roller for bending the copy sheets back upon themselves, an abutment associated with said curved barrier engageable with the forward edges of the copy sheets to cause the latter to bow upwardly and invert as they emerge from the machine, said curved barrier comprising a sheet bent to curved contour, a slotted bar, one edge margin of said sheet being disposed in said slot, and means fixedly securing the sheet to the bar.

5. A duplicating machine comprising a stationary frame, a rotatable cylinder, a roller cooperating with said cylinder and adapted to bring a copy sheet into pressure contact with a master sheet on said cylinder, a transverse rod disposed in front of and spaced from said cylinder and forming part of said frame, a guide plate mounted on said rod and extending upwardly therefrom and having a curved inner face, and a stop mounted on said rod opposite the end of said curved inner face, said guide plate and said stop serving to deliver said copy sheet from the machine printed face upwards.

6. In a machine of the character described, the combination with ejecting means for ejecting thin paper copy sheets from the machine comprising rotatably mounted rollers rotating in opposite directions; and reversing means for reversing the sheets comprising a member having its lower end on a level less than the length of the copy sheets below the ejecting means, said member having an abutment at its lower end facing the ejecting means, said member extending upwardly and outwardly away from the ejecting means with its top no higher than the line of the tangent to the sheets at the point of emergence from said ejecting means; said ejecting means including means for applying continuous force to rotate said rollers at sufficient speed and for sufficient time for the leading edge of each of the copy sheets to strike said abutment and at sufficient speed and for sufficient time thereafter that the trailing edge of each copy sheet will be thrown over the top of said member.

GORDON CAMPBELL AVERY.