

Dec. 28, 1943.

F. R. FORD

2,337,808

DUPLICATING MACHINE

Filed Dec. 11, 1941

2 Sheets-Sheet 1

FIG. 1.

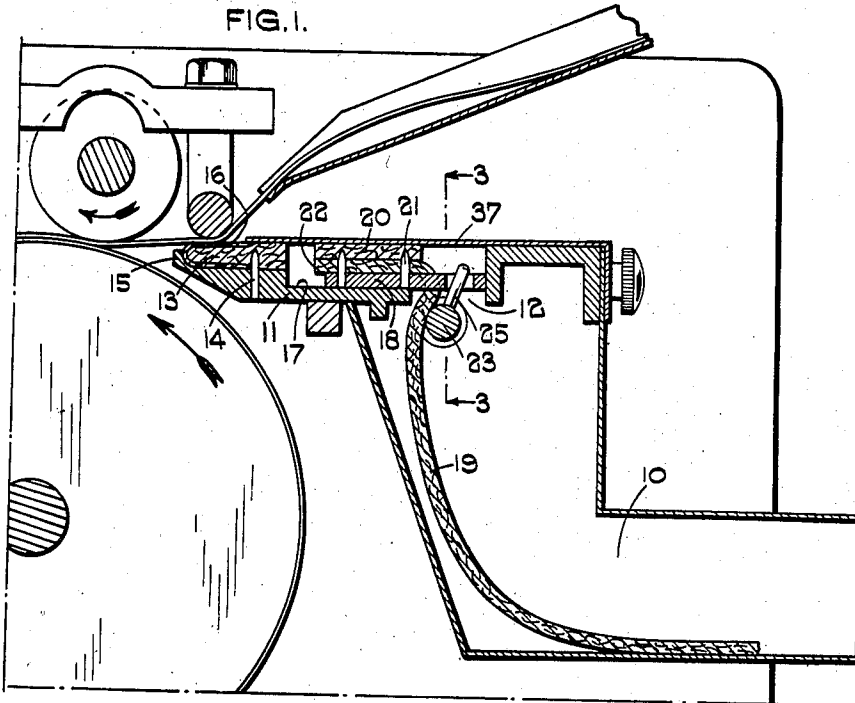
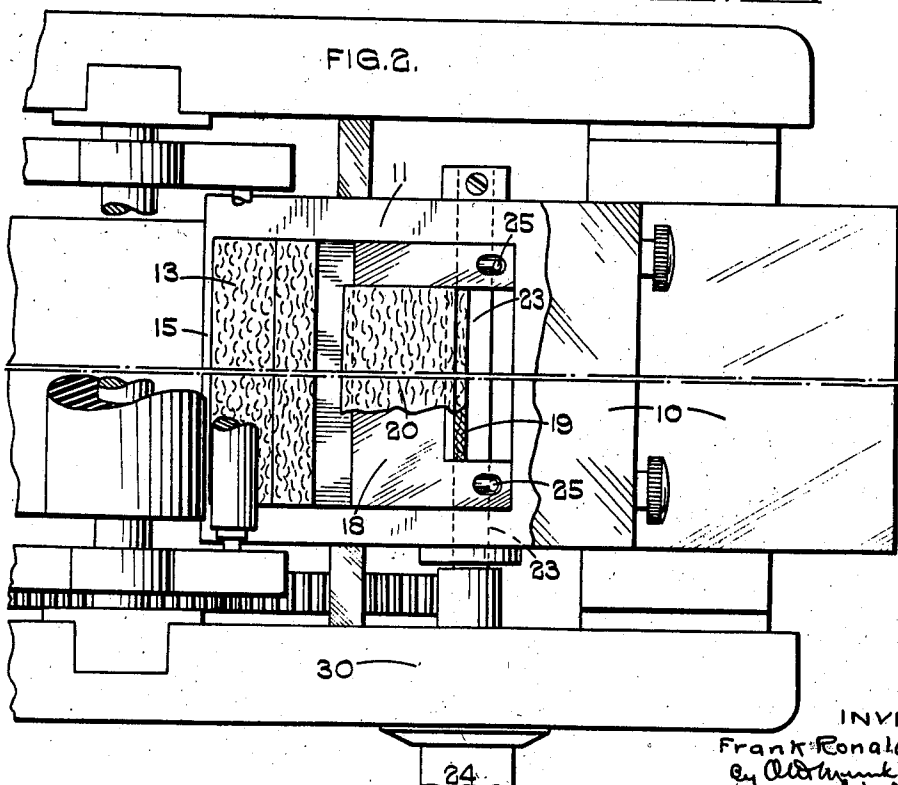


FIG. 2.



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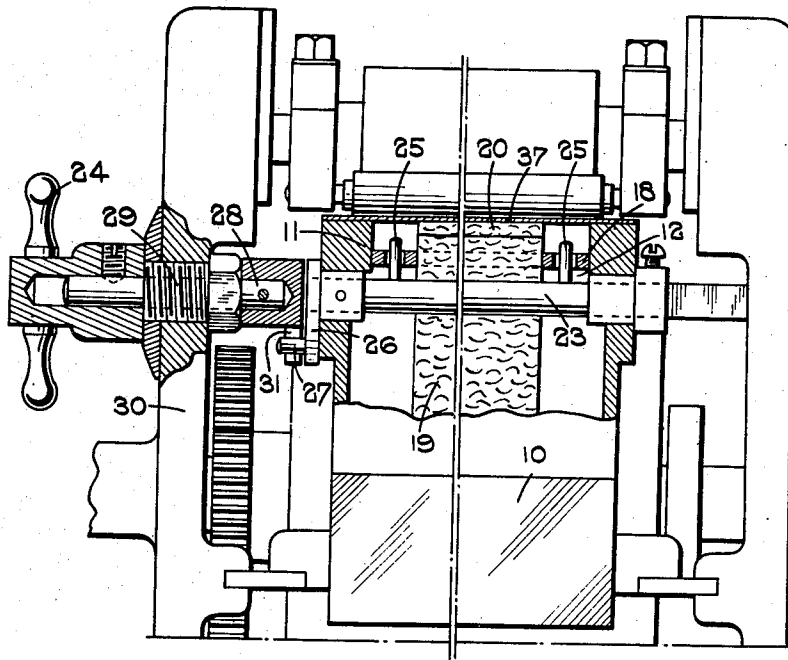
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DUPLICATING MACHINE

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2 Sheets-Sheet 2

FIG. 3.



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UNITED STATES PATENT OFFICE

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DUPLICATING MACHINE

Frank Ronald Ford, Sparkbrook, Birmingham,
EnglandApplication December 11, 1941, Serial No. 422,499
In Great Britain December 16, 1940

5 Claims. (Cl. 91—33)

This invention relates to duplicating machines of the kind in which a master sheet bearing the matter to be reproduced in reverse is mounted on a cylinder, and the copy sheets are moistened by means of a moistening pad and are then passed between the master sheet on the cylinder and the pressure roller.

The present invention relates particularly to the moistening means.

The moistening devices usually employed in machines of the type to which this invention relates, generally comprise a reservoir for the moistening liquid and a casing or tray for a moistening pad which may extend for the full width or any part or parts of the width of the copy sheet, the moistening liquid being conveyed to the pad from the reservoir by means of one or more wicks.

One of the objects of the present invention is to provide means whereby the amount of fluid fed to the moistening pad by the wick can be adjusted to suit working conditions. For instance, less fluid is required when reproducing on thin paper than when using thicker paper.

A further object of the present invention is to prevent waste of the moistening fluid by evaporation when the machine is out of use.

According to the present invention means are provided whereby contact between the wick and the pad can either be broken, or the pressure or intimacy of such contact adjusted.

For instance, the pad may be mounted on a tray or support in a fixed position, and that end or part of the wick which is to make contact with the pad to convey the fluid thereto may be movably mounted so that it can be moved in relation to the pad to effect the adjustment.

The contact between the wick and the pad may be an edge contact, i. e. the end edge of the wick may be brought into contact with the edge of the pad, or alternatively, the contact between the wick and the pad may take place between one side of the wick and the underside of the pad.

Referring to the drawings:

Figure 1 is a sectional view in side elevation showing one construction in accordance with this invention.

Figure 2 is a plan view with the cover removed from the moistening appliance.

Figure 3 is a section on line 3—3 of Figure 1.

In the construction shown the moistening fluid is contained in a tank 10, and extending across the top of the tank is a tray 11 in which is an opening 12 extending preferably for the full length of the tank.

At the front of the tray the pad 13 is located in a fixed position by means of pins 14 fixed in the tray and partially penetrating the pad but not penetrating quite to its upper surface. The tray may be provided with a lip 15 which extends upwardly around the lower part of the forward edge of the pad. The pad may be made of any suitable material and that part of it which is to make contact with the copy sheets may be covered with skin 16 or other suitable material.

The tray which holds the pad is of stepped formation, there being a step down adjacent the rear edge of the pad, and slidably mounted on the lower step 17 is a plate 18 which is adapted to carry on its upper surface the upper end of the wick 19. The wick 19 extends downwardly through the opening 12 in the tray into the moistening fluid in the tank, and its upper end is taken through an opening in the said sliding plate 18 and lies on the upper surface of the plate and extends to the edge thereof, or slightly beyond if desired. An additional thickness 20 of absorbent wick material may be mounted upon that part of the wick which lies on the sliding plate 18, and the said part of the wick and the additional thickness of material may be retained in position on the sliding plate 18 by pins 21 mounted in the sliding plate 18 and extending upwardly through the wick and into but not through the additional thickness of absorbent material on the top of the wick.

Means are provided whereby the plate 18 carrying the wick and the additional thickness of absorbent material may be slidden on the tray towards and away from the adjacent edge of the moistening pad, such means allowing the end edge 22 of the wick and one edge of the additional thickness 20 of absorbent material to be brought into contact with the edge of the moistening pad 13, or such contact can be entirely severed by moving the sliding plate away from the moistening pad.

It will be understood that the material of the wick and the additional absorbent material thereon and the moistening pad will usually be of a fibrous nature so that it is possible to effect an adjustment in the intimacy of the contact between the contacting surfaces of the pad on the one hand and the wick, and the additional moistening material on the other. For instance, the fibres at the contacting surfaces can be brought very lightly into contact to provide for a minimum supply of moistening fluid to the pad. If more fluid is required in the pad then the sliding plate is adjusted very slightly to make the con-

tact between the wick and its additional thickness of absorbent material and the pad more intimate. For a maximum supply the sliding plate is adjusted so that the contacting surfaces of the absorbent materials are in pressure contact. Contact can, of course, be entirely severed by moving the sliding plate 18 away from the pad, in which case the pad will receive no moistening fluid at all.

Any suitable device may be provided for adjusting the sliding plate 18. For instance a pin 23 may be mounted in the tank and may extend therethrough from side to side, and this pin may be operated by a suitable knob or handle exterior to the tank. The pin 23 is provided with crank arms 25 within the tank and these crank arms extend through openings in the sliding plate 18 so that when the pin is turned the plate is slidden at right angles to its length.

The operating knob may be mounted directly on the end of the pivot bar, or alternatively as shown, the end of the pin 23 exterior to the tank may be provided with a crank 26 having a crank pin 27, and for operating this crank a rotatable pin 28 is mounted in the adjacent side frame 30 of the machine. If this latter construction is adopted the side frame may be provided with a bearing 29 through which the said operating pin extends, and on the inner side of the frame 30 the pin is provided with a slotted crank 31 engaging the crank pin 27 associated with the pin 23. On the outer side of the frame 30 is provided an operating handle 24.

The tray 11 is provided with a thin sheet metal or other cover 37 which is removable.

What I claim then is:

1. In a duplicating machine of the kind referred to, moistening means for the copy sheets comprising a tank for containing moistening liq-

uid, a tray having an opening in its base, an absorbent pad on the tray, a wick having one end on the tray, and extending through said opening into the tank, and means for moving the end of the wick on the tray into and out of contact with the pad.

2. In a duplicating machine of the kind referred to, moistening means for the copy sheets comprising a tank for containing moistening liquid, a tray having an opening in its base, an absorbent pad fixed on the tray, a carrier plate slidably mounted on the tray, a wick having one end attached to the carrier plate and extending through said opening into the tank, and means for sliding said carrier plate on the tray to move the wick into and out of contact with the pad.

3. Moistening means according to claim 2 having a pin extending through the tank, an operating member for turning the pin, and a crank arm on the pin, engaging with the carrier plate, for sliding said plate on the tray.

4. Moistening means according to claim 2 having a step on the tray, the pad being disposed on said step, and an additional thickness of absorbent material secured to the part of the wick which is attached to the carrier plate.

5. In a duplicating machine of the kind referred to, moistening means for the copy sheets comprising a tank for containing moistening liquid, a tray having an opening in its base, an absorbent pad on the tray, a wick having one end on the tray, and extending through said opening into the tank, a pin extending through the tank, an operating pin in the side frame of the machine, a coupling operating between the operating pin and the pin in the tank, and a crank arm on the pin, a step on the tray for sliding said plate on the tray.

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