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ROTOGRAVURE PRINTING MACHINE

Filed March 22, 1930

Fig. 1.

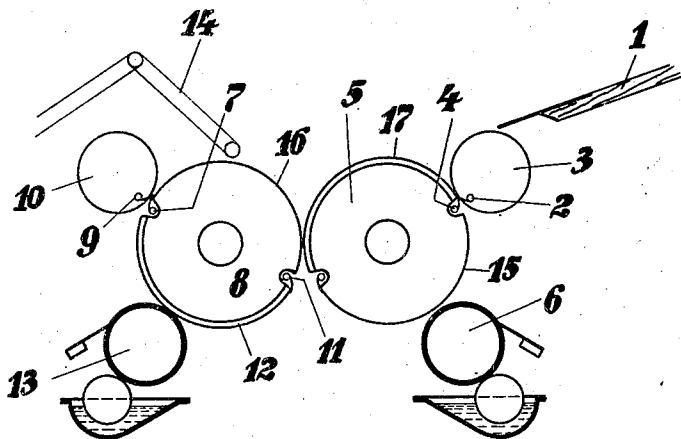
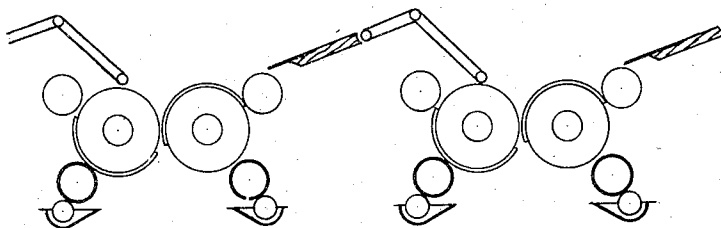


Fig. 2.



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ROTOGRAVURE PRINTING MACHINE

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The object of this invention is a perfecting sheet-fed rotogravure printing machine in which the impression which the sheet initially receives upon one of its sides is subjected to a drying process before the sheet is printed upon the other side, with a view to produce multicolor prints by coupling this machine with a second one of similar design and working the two machines in conjunction. In the novel machine the feed board is disposed above the first impression cylinder and foregrippers or other equivalent means convey the sheet thence to special delivery members, a delivery cylinder, delivery grippers or the like in such manner that, contrary to usage, the "perfecting side" of the sheet is printed first, the sheet is next carried around a drying drum and after receiving another impression from the second form cylinder upon the other side is delivered, last printed side face up. The term "perfecting side" is here used to indicate the under side of the sheet (while on the feed board, previous to printing). A machine is thus evolved which comprises a great number of perfectly similar parts, thus lending itself peculiarly to the serial mode of manufacture. Agreeable to the purpose both impression cylinders are disposed on the same level and the form cylinders obliquely below them.

Fig. 1 is a side view of a preferred form of the novel machine.

Fig. 2 is a side view of a multicolor press showing two units thereof.

The sheet arriving from feed board 1 is gripped by the grippers 2 of the delivery cylinder 3 and passed by them to grippers 4 of the impression cylinder 5. While passing form cylinder 6 it receives an impression upon the perfecting side. Grippers 4 then seize it and pass it to the grippers 7 of impression cylinder 8 which convey it to the grippers 9 of the drying drum 10. Drying drum 10 takes the sheet round once, printed side up. The sheet is thereupon transferred to the second set of grippers 11 of impression cylinder 8 and while passing between surface section 12 of the impression cylinder and form cylinder 13 receives an impression upon its other side, whereupon it is delivered.

During the entire delivery motion the newly printed side of the sheet remains face up. The circumference of both the impression cylinders 5 and 8 is, as shown in the drawing, about double the length of the sheets; the circumference of the cylinders 3, 6, 10 and 13 about single sheet length. The non-printing surface sections 15 and 16 of the impression cylinders 7 and 8 lie slightly lower than the printing surface sections 12 and 17, as shown in the drawing.

The sheet may be conveyed from the feed board to grippers 2 in various ways, for instance, foregrippers may be provided which seize it from the feed board in order to pass it to the grippers 2. Or cylinder 3 may be a so called stop cylinder performing one complete revolution during one half revolution of the impression cylinder 5 and standing still during the second half revolution of the impression cylinder, thus enabling the sheet to be fed to the cylinder during its stoppage. Or a rotating or swinging set of grippers may be provided in place of the stop cylinder; the essential feature being that in any case the sheet is conveyed to the first impression cylinder 5 in such manner that the perfecting side of the sheet receives the first impression by contacting with form cylinder 6.

In Fig. 2 is shown a multicolor press comprising a plurality of units, operating side by side, each printing a different color and similar in all other respects to the unit shown in Fig. 1. It will be understood that any number of such units may be used in a series to produce the desired multicolor printing.

What I claim is:

1. A rotogravure printing machine comprising two form cylinders of equal diameter, a first and second impression cylinder mounted on the same level and double the size of the form cylinders, a feed board, a conveyor between said feed board and said first impression cylinder adapted to deliver a sheet to said first impression cylinder in such a manner that the side of the sheet toward the feed board is first printed, a drying cylinder cooperating with said second impression cylinder and upon which the sheet is supported with

its printed side out, said sheet thereafter being delivered to said second impression cylinder for another printing operation, and a sheet ejector arranged at the upper side of the second impression cylinder and adapted to receive the sheet from said second impression cylinder with its freshly printed side upward.

2. A perfecting sheet fed rotogravure printing machine comprising two form cylinders, two impression cylinders mounted on the same level and of double the diameter of said form cylinders, grippers on said impression cylinders, a feed board, means for conveying sheets from said feed board to the grippers of the first of said impression cylinders for a first printing operation, said first impression cylinder adapted to deliver the printed sheet directly to the second of said impression cylinders, a drying cylinder, means on said drying cylinder for receiving the sheet from said second impression cylinder, said sheet thereafter being delivered to said second impression cylinder for a second printing operation, and means above said second impression cylinder for receiving and conveying away the printed sheet.

In testimony whereof I have affixed my signature.

HANS FISCHER.