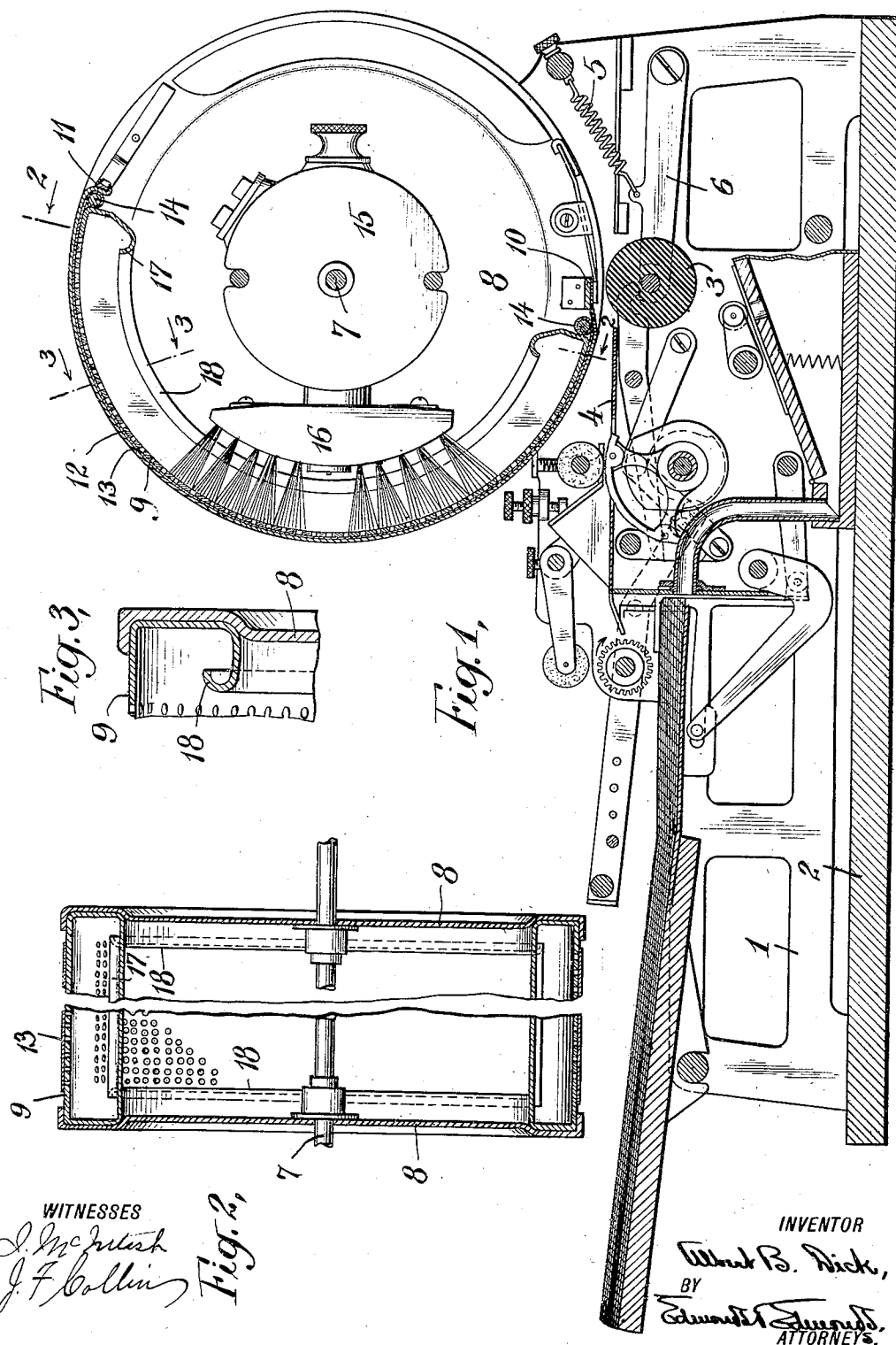


A. B. DICK.
STENCIL DUPLICATING MACHINE.
APPLICATION FILED AUG. 5, 1912.

1,057,808.

Patented Apr. 1, 1913.



WITNESSES
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Fig. 2,

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UNITED STATES PATENT OFFICE.

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STENCIL-DUPLICATING MACHINE.

1,057,808.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Original application filed June 10, 1912, Serial No. 702,653. Divided and this application filed August 5, 1912. Serial No. 713,236.

To all whom it may concern:

Be it known that I, ALBERT B. DICK, a citizen of the United States, residing at Lake Forest, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Stencil-Duplicating Machines, of which the following is a specification, this being a division of an application filed by me on June 10, 1912, and serially numbered 702,653.

This invention relates to machines for printing multiple copies from a suitable stencil. The invention is directed to the provision of certain improvements in the construction of machines of this character whereby the apparatus is made more convenient to use due to the prevention of the flow of ink from the stencil-carrier when the drum is at rest.

The invention resides in the provision of certain improvements in the construction of the drum used in a stencil-duplicating machine. In machines of this type, as heretofore constructed, the drum has commonly been formed from two heads between which is a foraminated stencil-carrier, this carrier extending but a portion of the way around the cylindrical surface of the drum. In order to use such a machine, ink is applied to the inner surface of the carrier and passes through the openings therein to the pad and the stencil-sheet on the exterior of the carrier. The ink usually employed on such machines is quite thin and for this reason when the operation of the machine is discontinued and the drum remains at rest, the ink is quite apt to flow from the stencil-carrier upon other parts of the machine, particularly the heads of the drum, from which parts it spreads in one way or another so that operation of the machine is rendered uncleanly and the printed copies are often soiled. In accordance with the present invention, the inconvenience and additional labor resulting from such spreading of the ink is entirely prevented. This is done by the provision of ink-receiving members within the drum of the machine and extending entirely around the stencil-carrier so that when the machine is at rest, the ink flowing from the stencil-carrier will be caught in these ink-receiving members irrespective of the position of the drum.

The preferred embodiment of the invention is illustrated in the accompanying drawing in which—

Figure 1 is a longitudinal section of the machine. Fig. 2 is a section of the drum on line 2—2 of Fig. 1, broken away in part, and Fig. 3 is a sectional detail view on line 3—3 of Fig. 1.

Referring to these drawings, the machine illustrated consists of two parallel side-frames 1, mounted upon a suitable base 2, and having a drum mounted for rotation between them. This drum is adapted to have a stencil-sheet secured upon its cylindrical surface and it coacts with a pressure-roller 3 mounted directly below the drum. The sheets to be printed upon are fed between the drum and the pressure-roller over a suitable feed-board or support 4. The sheets may be fed into position by hand or by a suitable automatic mechanism. An automatic feeding mechanism is shown in Fig. 1 but this forms no part of the present invention and therefore it need not here be described in detail. Suitable means are provided for rotating the drum and the pressure-roller 3 is raised into coaction with the drum and lowered away from the drum in accordance with the rotation of the drum as is common in machines of this character. In the present instance springs 5 are shown connected to the frames 1 and to arms 6 pivoted on the frames and carrying the roller 3, these springs being arranged to raise the roller to operative position. A suitable cam on one of the heads of the drum may be employed for depressing the pressure-roller to its inoperative position.

The drum is mounted upon a shaft 7 and consists of two parallel heads 8 and a foraminated sheet of metal 9 which constitutes the stencil-carrier. This stencil-carrier extends but a portion of the way around the cylindrical surface of the drum as shown in Fig. 1. Adjacent to one end of the stencil-carrier, means are provided for securing one end of a stencil-sheet to the drum. In the present instance, this means consists of a bar 10 extending between the heads of the drum and provided with studs which enter slots in the stencil-sheet. The opposite end of the stencil is secured in position by means of a bail 11 pivotally mounted upon the heads of the drum. When the

stencil-sheet 12 is mounted in position upon the carrier 9, it overlies an ink-pad 13. This ink-pad may be secured in position in any suitable manner as by having loops in its ends through which pass rods 14 whose ends are received in suitable sockets upon the heads of the drum. Any suitable means may be provided for supplying ink to the inner surface of the carrier 9. The ink may be supplied by hand and spread around upon the surface of the carrier by a suitable brush. In the present instance I have shown an ink-receptacle 15 and brush 16 mounted within the drum and adapted to be moved longitudinally and circumferentially with respect to the drum, by means of a suitable handle.

The ink used on machines of this type is comparatively thin and is apt to flow from the carrier upon other parts of the machine, particularly the inner surface of the heads of the drum. This is the more apt to occur because, when the operation of the machine is discontinued, the drum may be left in any position of its rotational movement. I have, therefore, so constructed the drum as to preclude such objectionable flow of the ink as a result of which the operation of the machine is made far more cleanly. This means consists in the provision of ink-receiving members extending entirely around the stencil-carrier, that is, across the drum at each end of the stencil-carrier and along each of the lateral edges of the carrier.

By reference to Fig. 1 it will be seen that at each end the metal of the carrier 9, or a strip of metal connected to the carrier, is bent inwardly of the drum and then curled outwardly toward the carrier, as shown at 17. In this way a trough is provided extending across the drum at each end of the stencil-carrier 9. Fig. 2 is a section through these two longitudinal troughs. At the lateral edges of the stencil-carrier, the latter, or a part secured thereto, is similarly bent inwardly and curled to form a trough, as shown at 18 in Figs. 2 and 3. These troughs at the lateral edges follow the curvature of the drum, as shown in Fig. 1, and at their ends they are connected to the longitudinal troughs 17 so that a continuous trough or ink-receiver is provided extending entirely around the stencil-carrier. By reason of this provision, no matter in what position the drum is left when operation of the machine is discontinued, the ink remaining upon the stencil-carrier cannot flow beyond the walls of the ink-receiver. Its flow is restricted so that it cannot spread upon the parts of the machine where it would be apt to soil the hands of the operator or the sheets being imprinted upon and thus make the use of the machine inconvenient and time-consuming. Furthermore, ink which flows from the stencil-carrier when the ma-

chine is not in operation is not necessarily wasted for when it is desired to resume operation of the machine the ink so collected in the receiver may be caused to flow back upon the stencil-carrier and may be spread around upon the carrier by a suitable brush.

Having described my invention, what I claim as new therein and desire to secure by Letters Patent of the United States is:

1. In a stencil-duplicating machine, a drum having a foraminated stencil-carrier thereon extending around a portion of the cylindrical surface of the drum, and an ink-receiver within the drum comprising members extending entirely around but not over the interior surface of said carrier, there being open space between the members of said receiver to permit application of an inking device to the interior surface of the carrier, substantially as set forth.

2. In a stencil-duplicating machine, a drum comprising two heads, a stencil-carrier extending between the heads and about a portion of the cylindrical surface of the drum and having its interior surface exposed, and two ink-receiving members extending between said heads, one at each end of the stencil-carrier, and curved in cross-section to form troughs which catch and hold ink flowing from the carrier when the drum is at rest, substantially as set forth.

3. In a stencil-duplicating machine, a drum comprising two heads, a stencil-carrier extending between the heads, and two ink-receiving members within the drum extending along the lateral edges of the carrier but not over the interior surface thereof, there being open space between said members to permit application of an inking member to the interior surface of the carrier, substantially as set forth.

4. In a stencil-duplicating machine, a drum comprising two heads, a stencil-carrier extending between the heads, and two ink-receiving members on said heads curved in the direction of their length and extending along the lateral edges of the carrier but not over the interior surface thereof, there being open space between said members to permit application of an inking member to the interior surface of the drum substantially as set forth.

5. In a stencil-duplicating machine, the combination of a drum having a foraminated stencil-carrier thereon extending about a portion of the cylindrical surface of the drum, said drum being open on one side between the ends of the carrier, means for rotating the drum, a pressure-roller coacting with the drum, an inking device within the drum supported concentrically with the drum and adapted to contact with the interior surface of the carrier to apply ink thereto, and means for restricting the flow of ink from said stencil-carrier upon the

portions of the drum supporting the carrier, substantially as set forth.

6. In a stencil-duplicating machine, the combination of a rotatable drum having a pair of heads and a stencil-carrier extending between the heads, a pressure-roller coacting with the drum, a support concentric with the drum, an inking device mounted thereon and adapted to contact with the interior surface of the carrier to apply ink thereto, and means for restricting the flow of ink from said carrier upon said heads when the drum is at rest, substantially as set forth.

7. In a stencil-duplicating machine, a drum having a foraminated stencil-carrier thereon extending about the cylindrical surface of the drum, a shaft concentric with the drum, an inking device mounted on said shaft and adapted to engage the interior sur-

face of the stencil-carrier to apply ink thereto, and an ink-receiver within the drum extending around said carrier, substantially as set forth.

8. In a stencil-duplicating machine, a drum having a foraminated stencil-carrier thereon extending about the cylindrical surface of the drum, an inking device mounted within the drum and movable axially of the drum in contact with the interior surface of the stencil-carrier, and an ink-receiver within the drum extending around the carrier, substantially as set forth.

This specification signed and witnessed this 29th day of July, 1912.

ALBERT B. DICK.

Witnesses:

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