

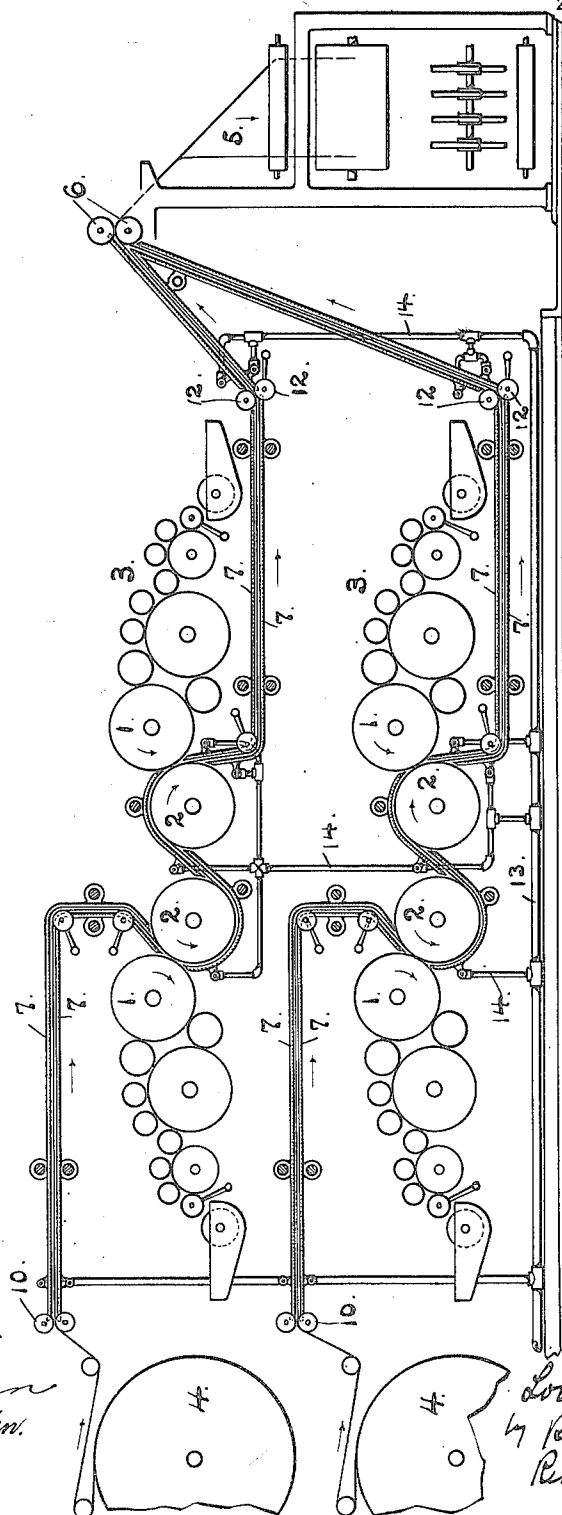
L. A. SCHMIDT.
DIRECTING AND ADVANCING DEVICE FOR PAPER HANDLING MACHINES.
APPLICATION FILED MAY 9, 1912.

1,161,346.

Patented Nov. 23, 1915.

2 SHEETS—SHEET 1.

—FIG. 1.—



WITNESSES.

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INVENTOR.

Louis A. Schmidt
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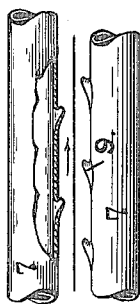
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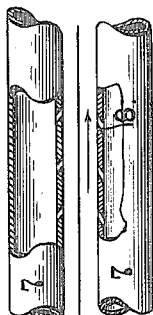
Patented Nov. 23, 1915.

2 SHEETS—SHEET 2.

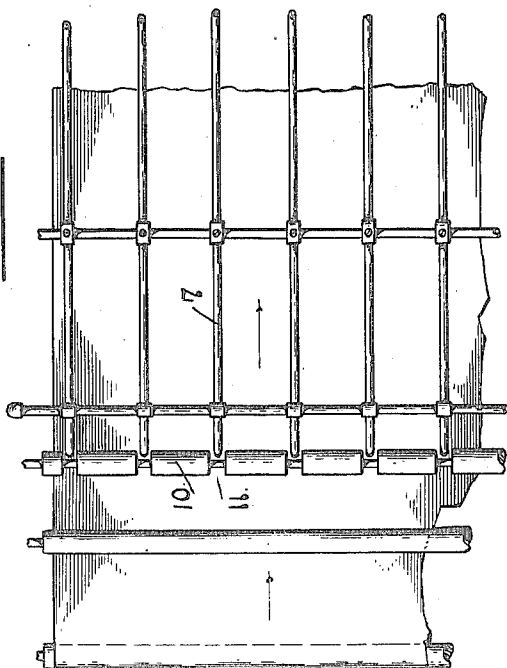
—FIG.4.—



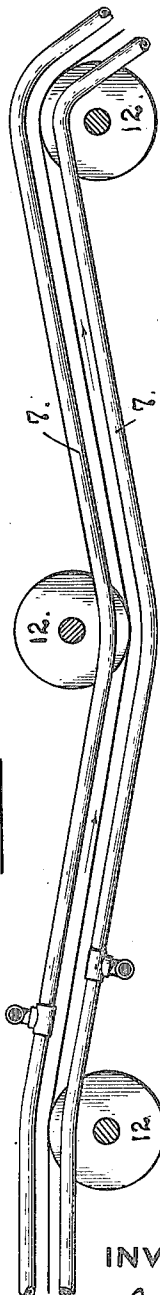
—FIG.3.—



—FIG.2.—



—FIG.5.—



WITNESSES.

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UNITED STATES PATENT OFFICE.

LOUIS A. SCHMIDT, OF NEW YORK, N. Y., ASSIGNOR TO R. HOE AND CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

DIRECTING AND ADVANCING DEVICE FOR PAPER-HANDLING MACHINES.

1,161,346.

Specification of Letters Patent.

Patented Nov. 23, 1915.

Application filed May 9, 1912. Serial No. 693,114.

To all whom it may concern:

Be it known that I, LOUIS A. SCHMIDT, a citizen of the United States, residing at New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Directing and Advancing Devices for Paper-Handling Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to improvements in a directing and advancing device for paper handling machines, said device being particularly adapted for use in rotary web printing machines.

In rotary web printing machines as now ordinarily constructed, it is customary to employ tapes and guides for directing and advancing the web through the machine. The principal function of the tapes is to assist in threading the machine either when the machine is started up or when the web breaks. The tapes, however, are objectionable for a number of reasons, among which may be mentioned the fact that the tapes have a tendency to become too taut in damp weather and too slack in dry weather. If they happen to move at a surface speed which varies from that of the web they are liable to smut or blur the freshly printed paper. Again the tapes necessarily move constantly during the operation of the machine.

The object of this invention is to produce an improved directing and advancing device for web printing and other web handling machines which shall be free from the objections incident to the use of tapes and which is advantageous in other respects.

With this and other objects not specifically referred to in view, the invention consists in certain constructions and in certain parts, improvements and combinations as will be hereinafter fully described and then specifically pointed out.

Referring to the drawings, Figure 1 illustrates in diagrammatic side elevation a double deck rotary printing machine embodying the invention. Fig. 2 is a partial plan view of a part of the construction shown in Fig. 1. Fig. 3 is a detail view illustrating the construction of the guide and directing device employed illustrated in Fig. 1. Fig. 4 represents a modified form of the construc-

tion illustrated in Fig. 3. Fig. 5 is a side elevation of a construction which may be employed under certain conditions.

Referring to the drawings, 1 and 2 illustrate the printing and impression cylinders respectively of usual construction, and 3 indicates the inking mechanism. The web rolls are indicated at 4, and the usual type of longitudinal folder at 5. The associating rolls for the folder are indicated at 6.

Machines embodying the invention will employ means for directing blasts of air against the paper at a series of points, the direction of these blasts corresponding with the direction of movement of the paper. While the construction of the blast directing device may be varied, in the particular construction illustrated, there is provided a plurality of pipes 7 constituting air channels, these pipes being provided with ports 8 so arranged as to direct blasts of air against the paper. It is important that the blasts of air should be in the same general direction as the movement of the paper, so that the impingement of the blasts upon the paper will tend to advance it. This may be accomplished, as indicated in Fig. 3, by arranging the ports diagonally so that the air blasts will impinge against the web at an acute angle thereto, or the ports may be provided with hoods, as 9, as shown in Fig. 4, the result being substantially the same in either case. When propelling rolls are employed, such, for instance, as the roll 10 (see Fig. 2) the rolls should be cut away, as indicated at 11, so that the ends of the channels may be bored close to the axis of the roll.

In the best constructions embodying the invention, the air channels will be arranged above and below the paper path, as illustrated.

Where a long stretch of the web in the machine occurs, it is customary to employ bending rolls, such as indicated at 12, to assist in controlling the movement of the web, and more particularly to prevent vibration. Where such rolls are employed, the channels should be bent as indicated in Fig. 5.

Air under pressure may be supplied to the channels in any suitable way. In the particular construction illustrated, a main pipe 13 is employed for this purpose, this pipe having branches, such as are indicated

at 14, leading to various points in the channel. This main pipe 13 will be connected to any suitable source of air under pressure.

As has been indicated, the channels should
5 be arranged to conform to the path of the web through the machine, and where necessary, as, for instance, where they follow around the cylinders, should be curved as illustrated.

10 While the particular construction described is advantageous in connection with printing machines, it will be understood that the invention is applicable to paper handling machines.

15 Changes and variations may be made in the construction by which the invention claimed is carried into effect. The invention claimed, therefore, is not to be confined to the particular construction herein described and illustrated in the accompanying drawings.

What is claimed is:—

1. A directing and advancing mechanism for paper handling machines, said mechanism comprising air channels which extend
25 along and are relatively stationary with respect to the moving paper and are arranged to extend continuously above and below the path of the paper, said channels being pro-

vided with ports arranged to deliver blasts of air against the paper in the direction of movement thereof and by which it is moved. 30

2. In a rotary web printing machine, the combination with the cylinders thereof, of a plurality of hollow guides extending continuously along the web path, said guides 35 having a series of ports arranged to deliver blasts of air against the paper in the direction of its movement and by which it is moved, and pipes for supplying air under pressure to said guides. 40

3. In a rotary printing machine, in combination with the cylinders thereof, a plurality of upper and lower hollow guides extending continuously along the path of the paper, said guides being provided with ports 45 for delivering blasts of air against the paper in the direction of its movement and by which it is moved, and pipes for supplying air under pressure to the guides.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing witnesses. 50

LOUIS A. SCHMIDT.

Witnesses:

RICHARD KELLY,
HAROLD M. TILLINGHAST.