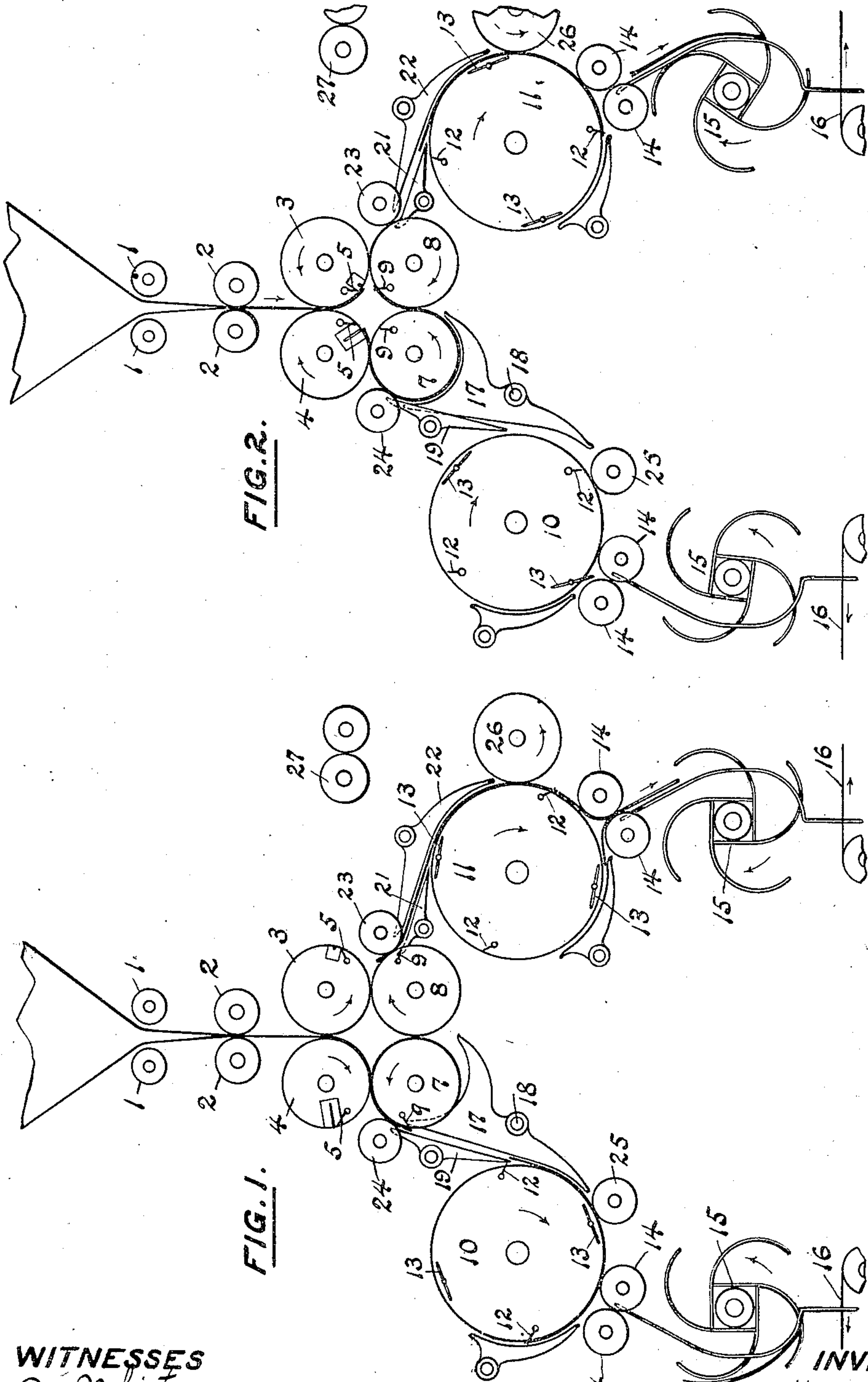


W. SPALCKHAVER.
FOLDING DELIVERY MECHANISM FOR PRINTING MACHINES.
APPLICATION FILED JAN. 15, 1909.

968,709.

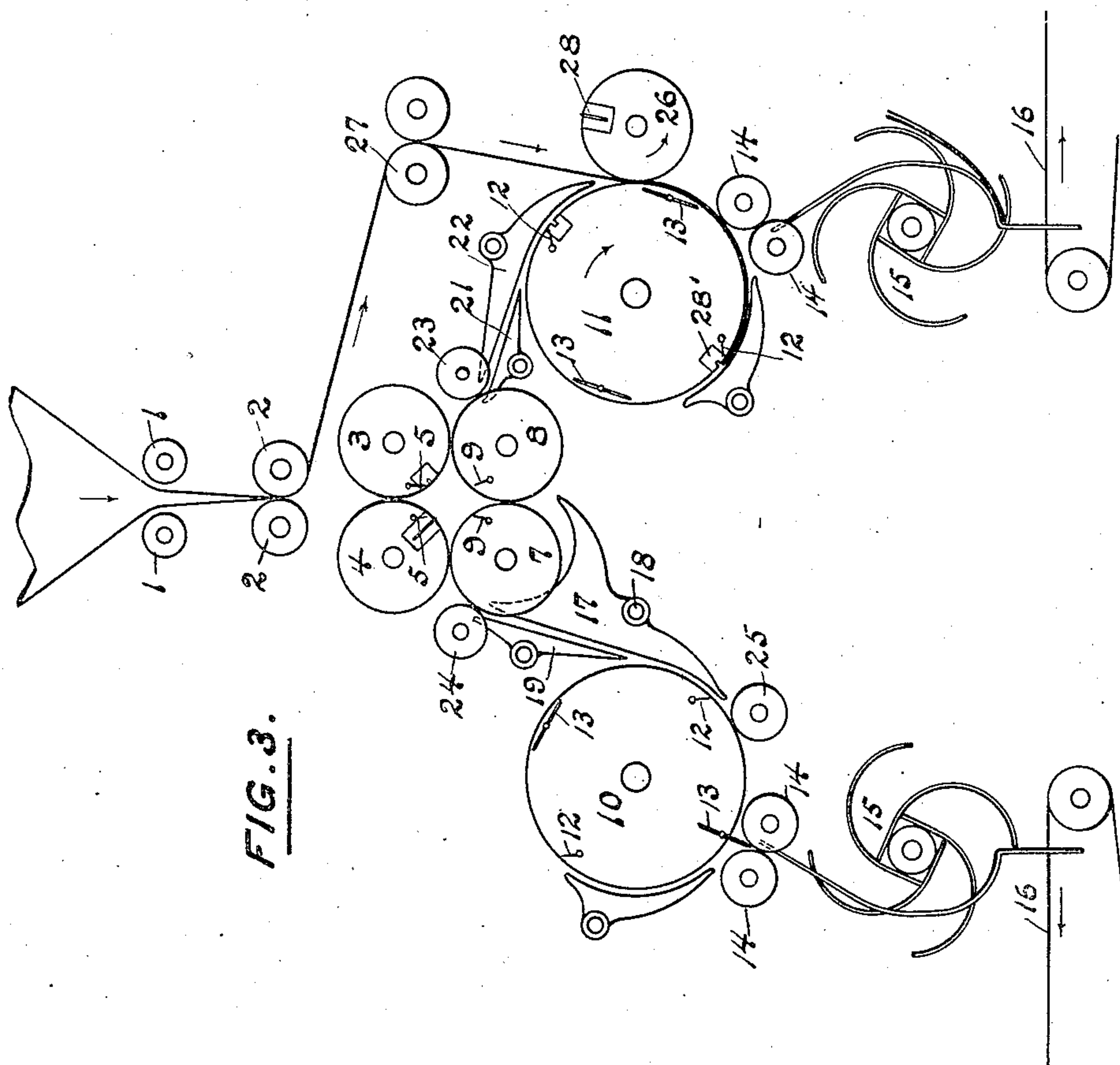
Patented Aug. 30, 1910.

2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

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FOLDING DELIVERY MECHANISM FOR PRINTING-MACHINES.

968,709.

Specification of Letters Patent.

Patented Aug. 30, 1910.

Application filed January 15, 1909. Serial No. 472,394.

To all whom it may concern:

Be it known that I, WILLIAM SPALCKHAVER, 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 Folding Delivery Mechanism for Printing-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to folding delivery mechanism for high speed web printing machines.

The invention has for its object to produce a delivery mechanism for web printing machines which shall be capable of disposing of the product of printing machines which are run at very high speeds and which shall also be capacitated to deliver products having a varying number of sheets, as may be desired.

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.

In the accompanying drawings, Figure 1 illustrates diagrammatically one form of delivery mechanism embodying the invention. Fig. 2 illustrates the construction shown in Fig. 1 but arranged to deliver a different product. Fig. 3 illustrates a modified form of the construction illustrated in Fig. 1.

Referring to the drawings, the delivery mechanism there shown will be arranged to receive a web or webs from a printing machine not shown. As illustrated, two pairs of web forwarding rolls 1 and 2 are shown which may operate in connection with any suitable web delivering construction, such, for instance, as a longitudinal folder.

Constructions embodying the invention will include a cutting mechanism which may be of any suitable type. As shown, the cutting mechanism consists of a pair of cylinders 3, 4, and these cylinders may, as indicated, be provided with suitable devices for seizing the end of the web, such, for instance, as pins, diagrammatically indicated at 5.

In constructions embodying the invention a transfer mechanism will be employed which operates upon the successive cuts or sheets produced by the cutting mechanism.

While this transfer mechanism may be varied in construction, in the best constructions and as shown, it will consist of transfer cylinders as 7, 8, these cylinders being provided with any suitable sheet taking devices, as, for instance, pins, diagrammatically indicated at 9. In the construction illustrated in Figs. 1 and 2, each of the transfer cylinders takes alternate sheets or cuts from the cutting mechanism.

Constructions embodying the invention will include rotary folders arranged to cooperate with the transfer mechanism. In the construction illustrated, two such rotary folders, 10, 11, are employed. Each of these folders has two sets of sheet taking devices, such, for instance, as pins, diagrammatically indicated at 12, and two folding off blades, diagrammatically indicated at 13. These folding blades may cooperate with suitable folding rollers, as 14, and the sheets may pass over these rollers to a suitable sheet receiving mechanism, as, for instance, a fly which delivers the sheets to traveling tapes 16.

In the best constructions embodying the invention, means will be provided by which the sheets taken by one of the transfer cylinders, when these cylinders are employed, may be sent either to its rotary folder or to the other transfer cylinder to be associated with the sheets taken by it, as may be desired. While these means may be varied, in the construction illustrated there is employed a switch 17 pivoted at 18, this switch, in the particular construction shown, cooperating with a sheet guide 19. There is also provided, in the construction illustrated, a pair of sheet guides 21, 22 which are arranged to guide the sheets from the transfer cylinder 8 to the folder 11. Suitable sheet holding rolls, as 23, 24, may be employed in connection with the transfer cylinders and suitable sheet holding devices, such as rolls 25, 26, and the ordinary sheet guides, may be employed in connection with the rotary folders 10 and 11.

With the construction so far described, and referring particularly to Fig. 1, the sheets forwarded by the forwarding rolls and after being cut by the cutting cylinders will be taken by the transfer cylinders in alternation and sent to the rotary folders. Each rotary folder in this arrangement takes care of one half of the product of the

printing mechanism and the construction as thus arranged is capable of operating in connection with machines whose printing cylinders run at very high speeds.

5 Instead of being arranged as illustrated in Fig. 1, the construction may be arranged as shown in Fig. 2. In this construction the switch 17 is shifted, so that the sheets taken by the transfer cylinder 7 instead of
10 being sent to the rotary folder 10 are carried around and transferred to the companion transfer cylinder 8, being associated on this cylinder with sheets taken by this cylinder from the cutting mechanism. The asso-
15 ciated sheets pass off, with this arrangement, to the folder 11, the left-hand folder being cut out.

Under certain circumstances, it may be desired to cut out the cutting cylinders, the
20 transfer cylinders and one of the folders and to lead the web directly to one of the folding cylinders. To effect this, a web guide, as 27, may be provided, this guide being so located as to permit the web to be led around
25 the cutting cylinders 3, 4 instead of through them. When this construction is employed, cutting devices for the webs should be provided. This may be readily done by providing the cylinder 26 with a knife, as 28,
30 and providing the cylinder 11 with two cutting woods, as 28'.

Changes and variations may be made in the construction by which the invention is carried into effect. The invention is not,
35 therefore, to be confined to the particular constructions herein shown and described.

What is claimed is:—

1. The combination with web forwarding means, of a cutting mechanism, a pair of
40 rotary folders, transfer cylinders intermediate the folders and cutting mechanism, said transfer cylinders being provided with sheet taking devices which take the sheets directly from the cutting mechanism, and
45 means whereby the transfer cylinders may be caused to send successive cuts to different folders or all the cuts to one folder.

2. The combination with web forwarding means, of a cutting mechanism, a pair of
50 transfer cylinders arranged to take alternate cuts from the cutting mechanism, a pair of rotary folders to which the sheets taken by the transfer cylinders are delivered, and a switch intermediate one of the folders
55 and its transfer cylinder arranged to direct the sheets on the transfer cylinder either to

the folder or to the companion transfer cylinder as desired.

3. The combination with web forwarding means, of cutting mechanism, a pair of ro- 60
tary folders, transfer cylinders intermediate the folders and the cutting mechanism, said cylinders being provided with sheet taking devices for taking the sheets directly from the cutting mechanism, and means includ- 65
ing a guide and cutting devices whereby the web may be led around the cutting mechanism and transfer cylinders and to one of the folders.

4. The combination with web forwarding 70
means, of a cutting mechanism, a pair of transfer cylinders each of said cylinders being arranged to take alternate cuts from the cutting mechanism, a pair of rotary folders, means whereby one of the transfer cylinders 75
may be caused to send its sheets to its rotary folder or to the other transfer cylinder as desired, and a guide and cutting devices whereby the web may be led around the cutting mechanism and to one of the folders. 80

5. The combination with web forwarding means, of a cutting mechanism, a pair of transfer cylinders each of said cylinders being arranged to take alternate cuts from the cutting mechanism, a pair of rotary folders, 85
means whereby the sheets on one of the transfer cylinders may be caused to pass either to the rotary folder of that cylinder or to the other transfer cylinder, and means including a guide and suitable cutting de- 90
vices whereby the web may be led around the cutting mechanism and to one of the folders.

6. The combination with web forwarding means, of a cutting mechanism, a pair of 95
transfer cylinders arranged to take alternate cuts from the cutting mechanism, a pair of rotary folders, a switch between one of the transfer cylinders and its folder arranged to send the sheets of that cylinder 100
either to the rotary folder or to the companion transfer cylinder as desired, and a guide and suitable cutting devices whereby the web may be led around the cutting mechanism and to one of the folders. 105

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

WILLIAM SPALCKHAVER.

Witnesses:

JEROME ULLMAN

RICHARD KELLY.