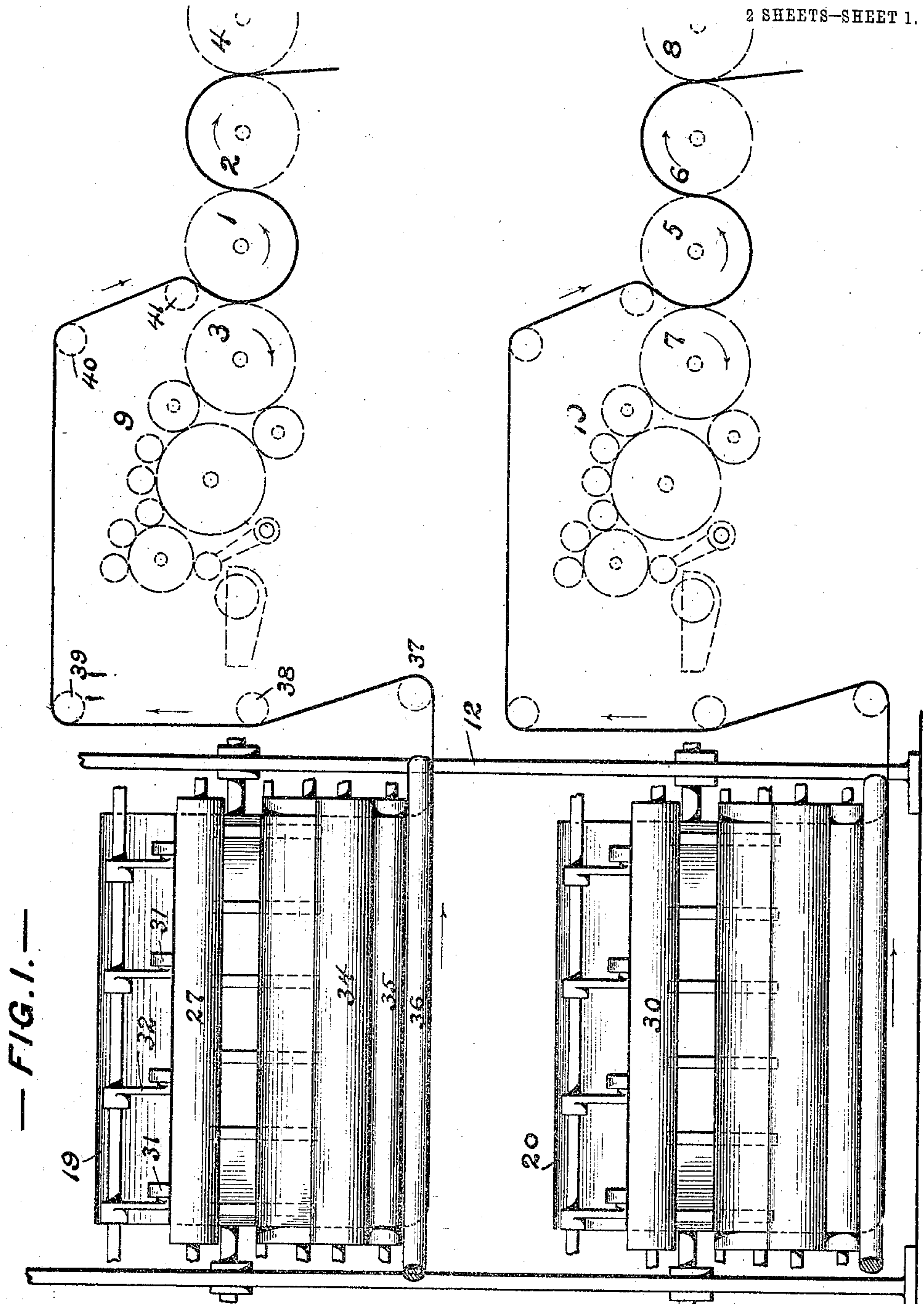


E. W. COOPER.
WEB ROLL SUPPORT FOR PRINTING MACHINES.
APPLICATION FILED MAR. 15, 1909.

995,587.

Patented June 20, 1911.

2 SHEETS—SHEET 1.



— FIG. 1. —

WITNESSES.

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A. White

INVENTOR.

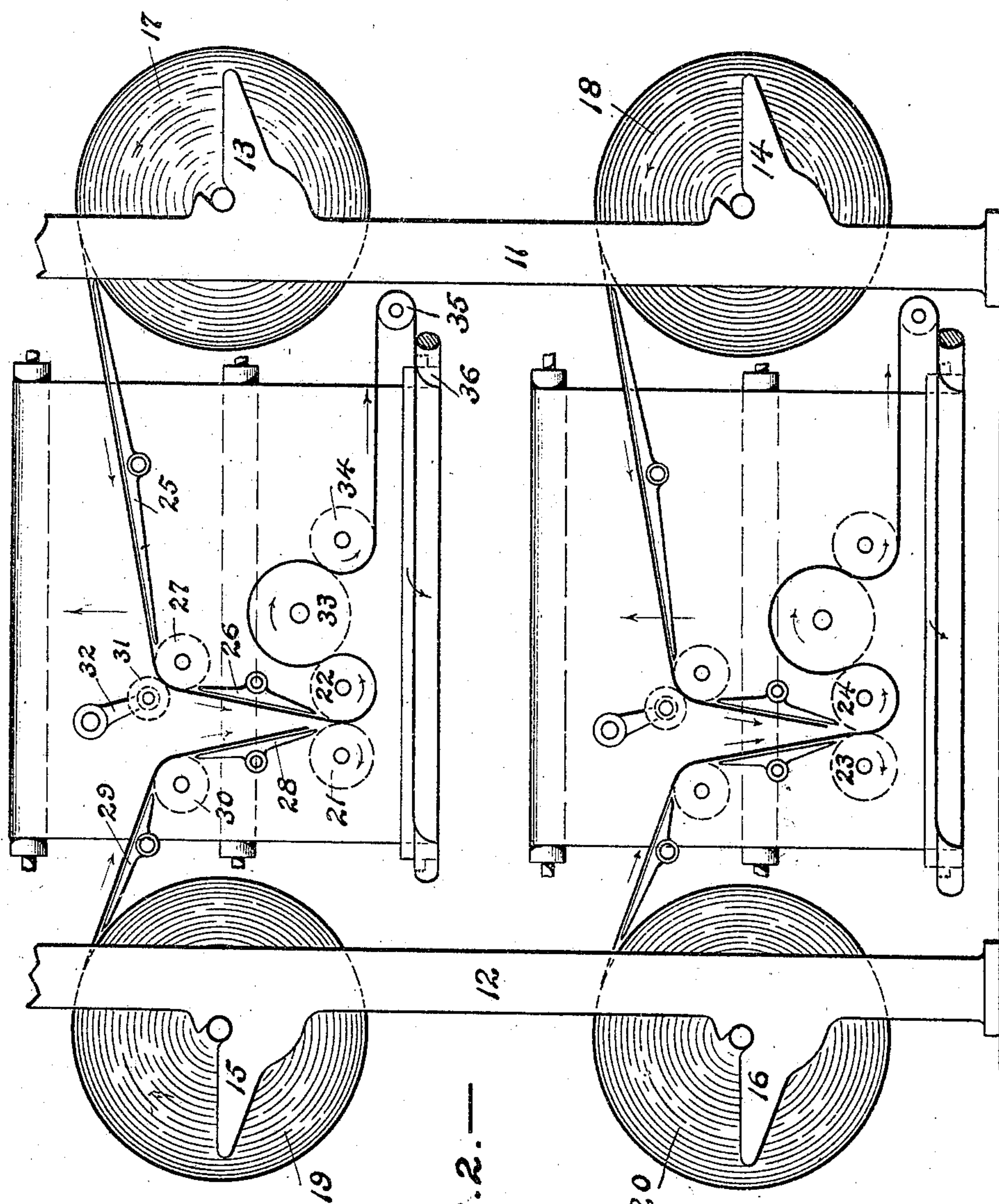
Ellis W. Cooper
by Philip P. Sawyer, Rice & Kennedy
ATT'YS

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2 SHEETS—SHEET 2.



—FIG. 2.—

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UNITED STATES PATENT OFFICE.

ELLIS W. COOPER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO R. HOE AND CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

WEB-ROLL SUPPORT FOR PRINTING-MACHINES.

995,587.

Specification of Letters Patent. Patented June 20, 1911.

Application filed March 15, 1909. Serial No. 483,362.

To all whom it may concern:

Be it known that I, ELLIS W. COOPER, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Web-Roll Supports 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 improvements in web roll supports for printing machines.

Webs are supplied to printing machines from rolls containing a core on which the web of paper is wound, the machines containing suitable supports in which these cores are mounted. In the ordinary course of operation, it is necessary, when the paper is exhausted from a roll, to stop the machine while a new roll is hoisted into place. This stoppage of the machine causes a loss of time and consequent loss of product.

It is the object of this invention to produce an improved web roll support for use in printing and similar machines which is of such a character that web may be continuously supplied to the machine from successive rolls.

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 accompanying drawings—Figure 1 is a side elevation of a printing machine embodying the invention, the printing mechanism being diagrammatically illustrated. Fig. 2 is an end elevation of the roll support shown in Fig. 1.

The machine which has been selected for the purpose of illustrating one embodiment of the invention is a printing machine employing two webs, the printing mechanism being arranged in superposed decks, as is common, although it is to be understood that the invention is not limited to use with such machines.

In the machine illustrated, the impression cylinders of the upper deck are marked 1 and 2, the printing cylinders 3 and 4. The impression cylinders of the lower deck are marked 5 and 6, and the printing cylinders 7 and 8. An inking mechanism of ordinary type, marked 9, is shown as cooperating

with the cylinder 3, and a similar inking mechanism, marked 10, is shown as cooperating with the cylinder 7. Suitable inking mechanisms will also, of course, be employed for the cylinders 4 and 8, but illustration of the same is omitted as being unnecessary for the purposes of the present invention.

Machines embodying the invention will include a plurality of roll supports, and also will include means whereby the webs from at least two rolls on such supports may be guided to a single printing mechanism. In the best constructions embodying the invention, furthermore, the roll supports will be so arranged that the axes of the rolls on the supports will be at an angle to the axes of the cylinders of the printing mechanism. In the particular construction illustrated, there is provided a frame embodying a pair of uprights 11, and a similar pair of uprights 12. The uprights 11 are provided with two pairs of supporting brackets 13, 14 and the uprights 12 with a similar pair of supporting brackets 15, 16, these brackets being shown as arranged on the outside of the uprights and as supporting the cores of web rolls 17, 18, 19 and 20. It will be observed that not only are the uprights stationary but the supporting brackets which are carried by them are stationary on the uprights, and the construction is such that a roll of paper may be loaded on each pair of brackets independently of the loading of the other pair. In other words, a roll is not loaded onto one pair of uprights and then transferred to the other pair.

Machines embodying the invention will include pressing devices and in the best constructions embodying this invention, these pressing devices will comprise rolls. In the particular machine illustrated, the pressing devices for the upper pair of web rolls comprise rolls 21, 22 and those for the lower pair of web rolls comprise rolls 23, 24. It will be observed that these pressing rolls are located between the web rolls and so that the webs from the rolls may be readily led thereto. Any suitable devices may be employed to direct the web from the rolls to the pressing devices. As illustrated, the web from the roll 17 is led to the pressing rolls 21, 22 by means of web guides 25, 26, a roll 27 being located between these guides. Similarly, the web from the roll 19 is led to the pressing rolls 21, 22 by guides 28, 29, a roll

30 being located between these guides. The rolls 27 and 30 will usually be driven rolls, as is common in this class of mechanism. If desired, means may be employed to hold the web against the rolls 27, 30. In the particular machine illustrated, a roll 31 is employed for this purpose, this roll being mounted on a swinging arm 32, so that it may be caused to cooperate with either the roll 27 or the roll 30, as desired. The mechanism for directing the webs from the rolls 18 and 20 to the pressing devices 23 and 24 is, in the machine shown, a duplicate of that already described, and a specific description of it is, therefore, unnecessary.

Means will be employed for guiding the web from the pressing rolls to the printing mechanism. These means may be of any suitable type and will, of course, be varied in accordance with the variations of the constructions in which the invention is embodied. In the particular machine illustrated, these web guiding devices include driven rolls 33, 34, 35, and a bar 36, the bar operating to effect the change in the direction of travel of the web made necessary by the angular disposition of the axes of the web rolls with respect to the axes of the printing cylinders. After leaving this bar, the web passes over the usual guides, such as 37, 38, 39, 40 and 41 between the cylinders 1 and 3. The guiding means employed in connection with the pressing cylinders 23, 24 are duplicates of those just described and a specific description of them is, therefore, unnecessary. The roll 33 may, if desired, be covered with rubber, or any other suitable material, to increase its driving effect on the web.

The operation of the mechanism, when it is desired to feed web from a new roll into the machine, is as follows: Assuming that the machine employing the couples 1, 2, 3, 4 has been running on web drawn from the roll 17 and that the web is nearly exhausted, the web is started from the roll 19 and its leading edge pasted. This pasted edge is then advanced down the guide 28 in close proximity to the rolls 21, 22. Just as the last of the web from the roll 17 is passing between the pressing rolls, the pasted edge of the web from the roll 19 is advanced into contact therewith, and the pressure of the rolls causes this pasted edge to adhere to the web from the roll 17. The web from the roll 19 is then led through the machine by the web from the roll 17. After the web from the roll 17 has been exhausted, the nipping roll 31, if employed, is swung over into contact with the roll 30.

It will be seen that the construction makes it possible to obtain the web for the machine alternately from one web roll or the other, and to do this without stopping the machine. Further, by arranging the rolls, so that their axes stand at an angle to the printing mechanism it is possible to hoist a web roll into place in its support without interfering with the web which is running from a web roll on any other support.

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

What is claimed is:—

1. In a rotary printing machine, the combination with a plurality of web roll supports, said supports being arranged so that the axes of the rolls are at an angle to the axes of the cylinders of the printing machine, of pressing devices between which the webs from the rolls on the supports may be led, and web guiding means between said pressing devices and the printing mechanism.

2. In a rotary printing machine having its cylinders arranged in a plurality of decks, the combination with a pair of roll supports for each deck, said supports being arranged so that the axes of the rolls are at an angle to the axes of the cylinders, of rotary pressing devices for each pair of roll supports, means for directing the web from the roll supports of each pair to the pressing devices of that pair, and web guiding devices between the pressing devices and the decks.

3. In a rotary printing machine having the cylinders arranged in a plurality of decks, the combination with two pairs of stationary uprights, of a plurality of pairs of roll supports carried by the uprights, each pair of uprights carrying a pair of roll supports for each deck, the uprights and supports being arranged so that the axes of the rolls are at an angle to the axes of the cylinders, a plurality of sets of presser rolls, one set for each deck, located between the uprights, and means for directing the web from each pair of roll supports of each deck to the presser rolls of that deck.

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

ELLIS W. COOPER.

Witnesses:

F. W. H. CRANE,

GEO. V. WILLIAMSON.