

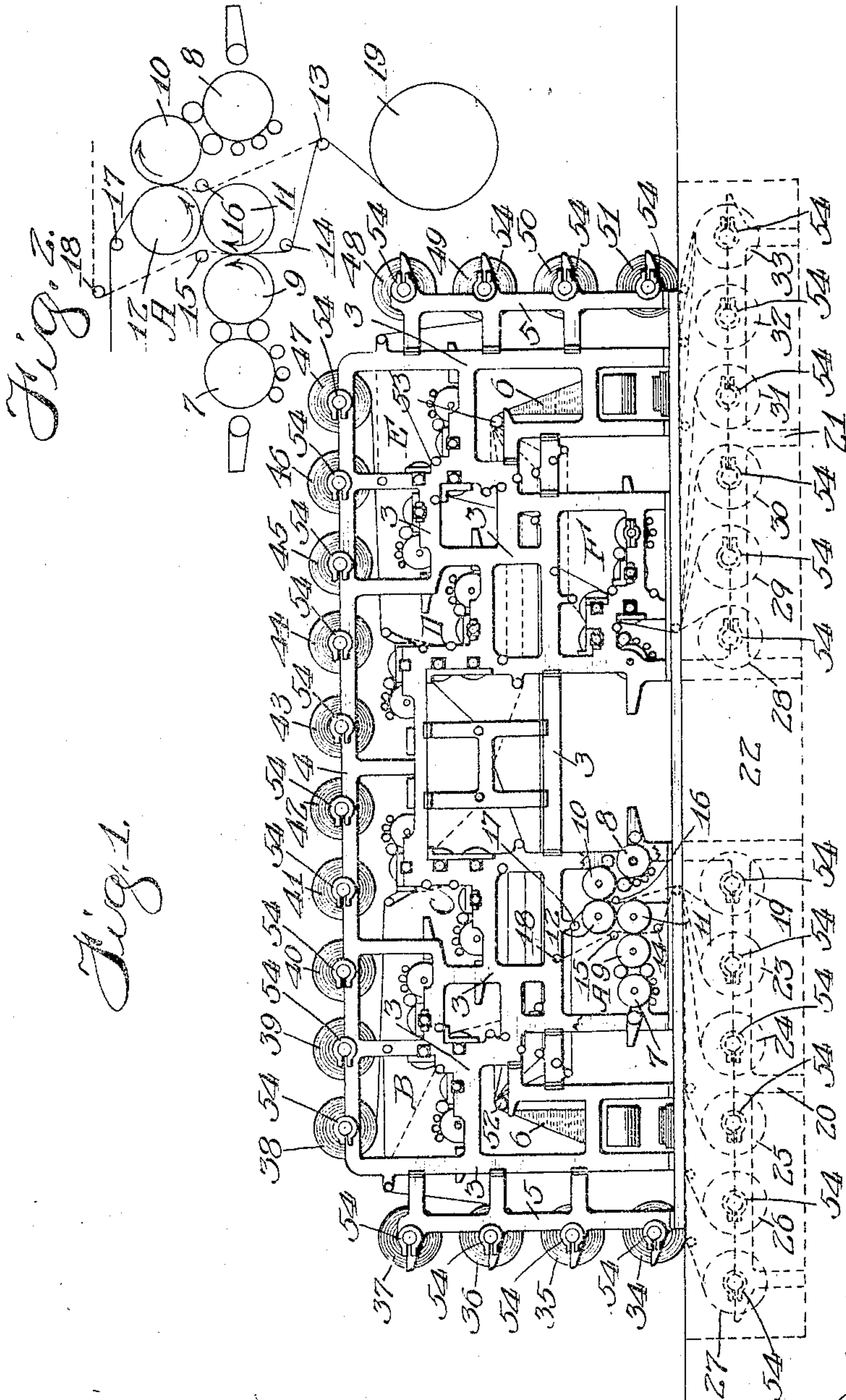
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S. G. GOSS.

MULTIROLL WEB PERFECTING PRINTING PRESS.

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MULTIROLL WEB-PERFECTING PRINTING-PRESS.

No. 836,750.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL G. GOSS, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have

invented certain new and useful Improvements in Multiroll Web-Perfecting Printing-Presses, of which the following is a full and complete specification, reference being had to the accompanying drawings.

My invention relates to multiroll web-perfecting printing-presses; and its object is to provide a new and improved multiroll web-perfecting printing-press so constructed and with the several printing mechanisms which compose it so located with reference to each other and to the folding and delivery mechanism that a sufficient number of rolls of paper to provide for the ordinary night run of such a press may be all mounted upon suitable supports connected with the press itself in such a way that as soon as one roll is used up the paper from another roll may be led immediately into the press without the necessity of changing rollers; and my invention particularly relates to a multiroll web-perfecting press so constructed that it may be practically surrounded by roll-supports adapted to hold rolls of paper to be supplied to the press as it runs.

That which I consider as new will be set forth in the claims.

In the drawings, Figure 1 is a side elevation of the press, partly broken away to show the arrangement of one of the printing mechanisms. Fig. 2 is a diagrammatic view of the lower printing mechanism exposed to view by the cutting away of the portion of the side frame of Fig. 1.

Referring to the drawings, 3 indicates the framework of the press, which supports a roll-frame 4, running the length of the press.

5 5 indicate roller-frames, which are located at each end of the press.

The press as shown is what is known as a "double-ender" and is provided with folding and delivery mechanisms 6, located at opposite ends of the press proper and facing in opposite directions inside the roller-frames 5.

As shown, the framework 3 contains six printing mechanisms, marked, respectively, A, B, C, D, E, and F. The printing mechanisms A and F are located in the bottom part of the framework 3 and are adapted to be fed from below, as hereinafter described. The

printing mechanisms B and E are located in the upper part of the framework 3 and toward each end of the press and are adapted to be fed, as hereinafter described, from the rolls at the respective ends of the press and also from certain of the rolls located above, as hereinafter described. The printing mechanisms C and D are located in the upper part of the framework 3 of the press, between the printing mechanisms B and E. Each of these printing mechanisms is composed of the usual printing-couples, consisting of two form-cylinders and two coacting impression-cylinders, with the usual inking mechanism. Referring to press A, and particularly to the diagrammatic view in Fig. 2, 7 8 indicate inking mechanisms of any well-known form and description. 9 10 indicate form-cylinders which are inked, respectively, by the inking mechanisms 7 8. 11 12 indicate impression-cylinders, which coact, respectively, with the form-cylinders 9 10. 13 14 15 16 17 18 indicate rollers over which the webs are guided through the printing mechanism.

Referring to Fig. 2, one course which the web may take is shown in solid lines and another course in dotted lines. As shown in solid lines, the web of paper from the roll 19 passes over roller 13 to the left, under roller 14, between form-cylinder 9 and impression-cylinder 11, partly around and over impression-cylinder 11, upward between form-cylinder 10 and impression-cylinder 12, where it receives its second impression, and thence over roller 17 toward the folder on the left-hand side of the press. The course in dotted lines shows the web as proceeding from the roll 19, partly around rollers 13 and 16, upward between form-cylinder 10 and impression-cylinder 12; thence over and partly around impression-cylinder 12, thence partially around impression-cylinder 11, thence upward between impression-cylinder 11 and form-cylinder 9 to the right of roller 15, over roller 18, whence it may be led away to the right to the folding and delivery mechanism on the right-hand side of the press. It is believed that this description will suffice to show the operation of the other presses, which, as has been said, are composed of the usual two pairs of printing-couples with appropriate inking mechanisms and so constructed that, by means of well-known roller mechanisms, the webs may

be led to the folder at either end of the press. As my invention in so far as this application is concerned does not relate to these details of the mechanism by which the webs may be led to the folding and delivery mechanism at either end of the press and as this may be accomplished by any well-known means, it is believed that it is unnecessary to further describe the other printing mechanism.

Referring to Fig. 1, 20 21 indicate frames located in a suitable pit 22 below the press and adapted to support a plurality of rolls of paper. 19 23 24 25 26 27 indicate rolls of paper supported on the roll-frame 20 upon the left-hand side of the median line of the press, and 28 29 30 31 32 33 indicate rolls of paper supported upon the roll-frame 21 upon the right-hand side of the median line of the press. The rolls 19 and 23 to 27, inclusive, are adapted to feed, by means of suitable rollers, into the printing mechanism A, and the rolls 28 to 33, inclusive, are adapted, by means of suitable rollers, to feed into the printing mechanism F. 34 35 36 37 indicate rolls of paper which are mounted in the roll-frame 5 at the left-hand end of the press and are all adapted to feed, by means of suitable rollers, into the printing mechanism B. 38 39 40 41 42 43 44 45 46 47 indicate rolls of paper which are supported upon the bars 4 upon the top of the press and are adapted to feed into the printing mechanisms C and D, rolls 38 to 42, inclusive, being generally fed into press C and rolls 43 to 47, inclusive, generally fed into press D by means of any suitable rollers. It is obvious, however, that if need be one or more of the rolls at either the left or the right hand end of the press may be fed into the presses D or C, respectively. 48 49 50 51 indicate rolls of paper which are mounted upon the roll-frame 5 at the right-hand end of the press and, by suitable rolls of ordinary construction and operation, are adapted to feed into press E.

Taking press A as an illustration, the roll 19 is first used and when it is exhausted the forward edge of the paper from roll 23 is drawn out and pasted to the rear end of the web from roll 19 and the press again set in operation. So when 23 is exhausted the press may similarly be supplied from roll 24 and then from rolls 25 26 27. It will be readily understood without further discussion that the other presses may also be supplied from the several rolls successively as the rolls are exhausted.

If it is desired to use the two ends of this double-ender press simultaneously to produce like products, for the sake of illustration the printing mechanisms A, B, and C will be so used as to direct their respective webs toward the folding and delivery mechanism 6 upon the left-hand end of the press, where they are superposed in registry over the roller 52 at the top of the folding

and delivery mechanism. Correspondingly, presses D, E, and F will direct their product toward the right-hand end of the press, as shown in dotted lines, where they are superposed in registry above the roller 53 at the top of the folding and delivery mechanism 6.

54 indicates tension devices on the several roll-supporting frames, one for each roll that is adapted to be placed in the machine. These tension devices are indicated conventionally and may be of any well-known and approved form or character and operate to supply the proper tension upon the rolls as the paper is fed into the press. It will be obvious that inasmuch as tension devices are supplied for each of the rolls which the press is designed to carry the rolls may be all mounted in position ready to have their product fed into the press, and when the rolls are all in position the press is practically surrounded above, below, and at both ends with rolls. It will also be obvious that as soon as the paper is run off from any one roll the lead end of the web of the next adjacent roll may be pasted upon the tail end of the paper from the exhausted roll without any moving of new rolls into position.

It will be obvious from the above description that all of the six presses may direct their product to the folding and delivery mechanism at the left-hand end of the press, as is indicated in solid lines in Fig. 1, or they may all direct their products toward the right-hand end of the press, as is indicated by dotted lines in Fig. 1. Inasmuch as these features of the press do not form a part of my present application, it is believed that no further discussion is necessary, and they will be understood from the above description.

It is well known that the changing of rolls in a press and the moving in of a new roll when one is used up occupies considerable time, and besides in order to have the rolls convenient, so that as little time as possible may be consumed in substituting new rolls, the press-room is necessarily encumbered by the rolls that are to be used. In my press as above described, however, it is obvious that at any suitable time before the run of the press begins a suitable number of rolls containing paper sufficient to supply the press for its entire run may be all placed in position and ready for use, and by locating certain of the presses in position to be fed from below, others from the end, and others from above these disadvantages in the loss of time and in the cumbering of the floor-space of the press-room are avoided.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a double-ender multiroll web-perfecting printing-press, the combination with a frame, a plurality of printing mechanisms mounted in said frame upon each side of the median line thereof and with an open space

between them, the printing mechanisms in each end of said frame being in the same vertical plane and having their printing-cylinders parallel, of a longitudinal folding mechanism at each end of said press and having its former facing outward toward the end of the press, a roll-supporting frame at each end of said press beyond said formers each adapted to support a plurality of rolls of paper the product of which may be directed into certain of said printing mechanisms, a roll-supporting frame above said press adapted to support a plurality of rolls of paper the product of which may be directed into others of said presses, a roll-supporting frame below said press adapted to hold a plurality of rolls of paper the product of which may be directed into others of said presses, and guide-rollers in said press-frame adapted to direct the perfected web from either of said printing mechanisms into either of said folding mechanisms, substantially as described.

2. In a double-ender multiroll web-perfecting printing-press, the combination with a frame, a plurality of printing mechanisms mounted in said frame upon each side of the median line thereof and with an open space between them, each of said printing mechan-

isms consisting of two pairs of printing-couples and being provided with guide-rollers whereby the web to be printed may be directed to either of said printing-couples for its first impression, of a longitudinal folding mechanism at each end of said press and having its former facing outward toward the end of the press, a roll-supporting frame at each end of said press beyond said formers each adapted to support a plurality of rolls of paper the product of which may be directed into certain of said printing mechanisms, a roll-supporting frame above said press adapted to support a plurality of rolls of paper the product of which may be directed into others of said presses, a roll-supporting frame below said press adapted to hold a plurality of rolls of paper the product of which may be directed into others of said presses, and guide-rollers in said press-frame adapted to direct the perfected web over either of said printing mechanisms into either of said folding mechanisms, substantially as described.

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