

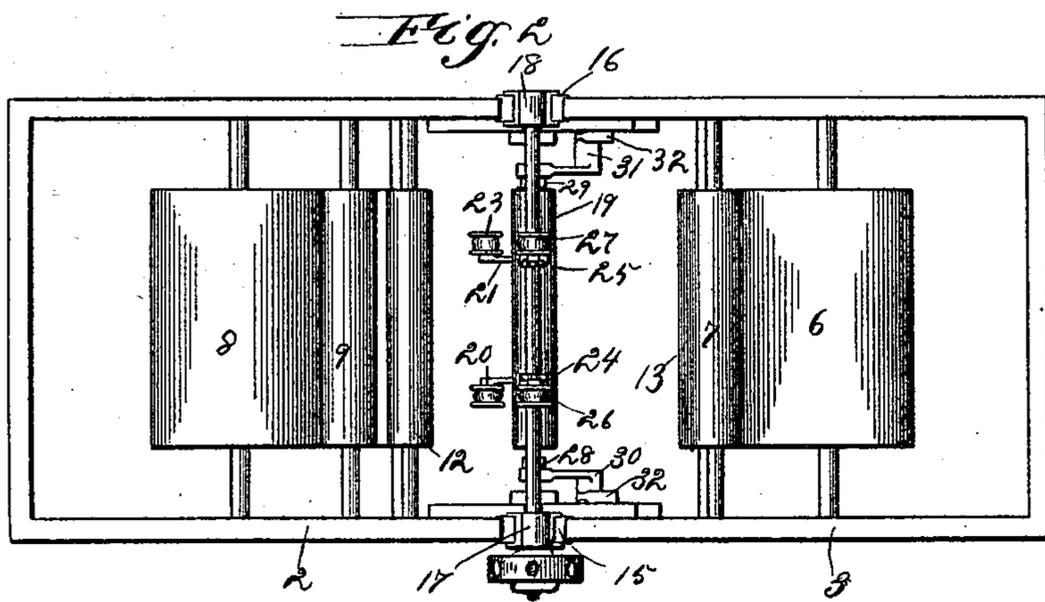
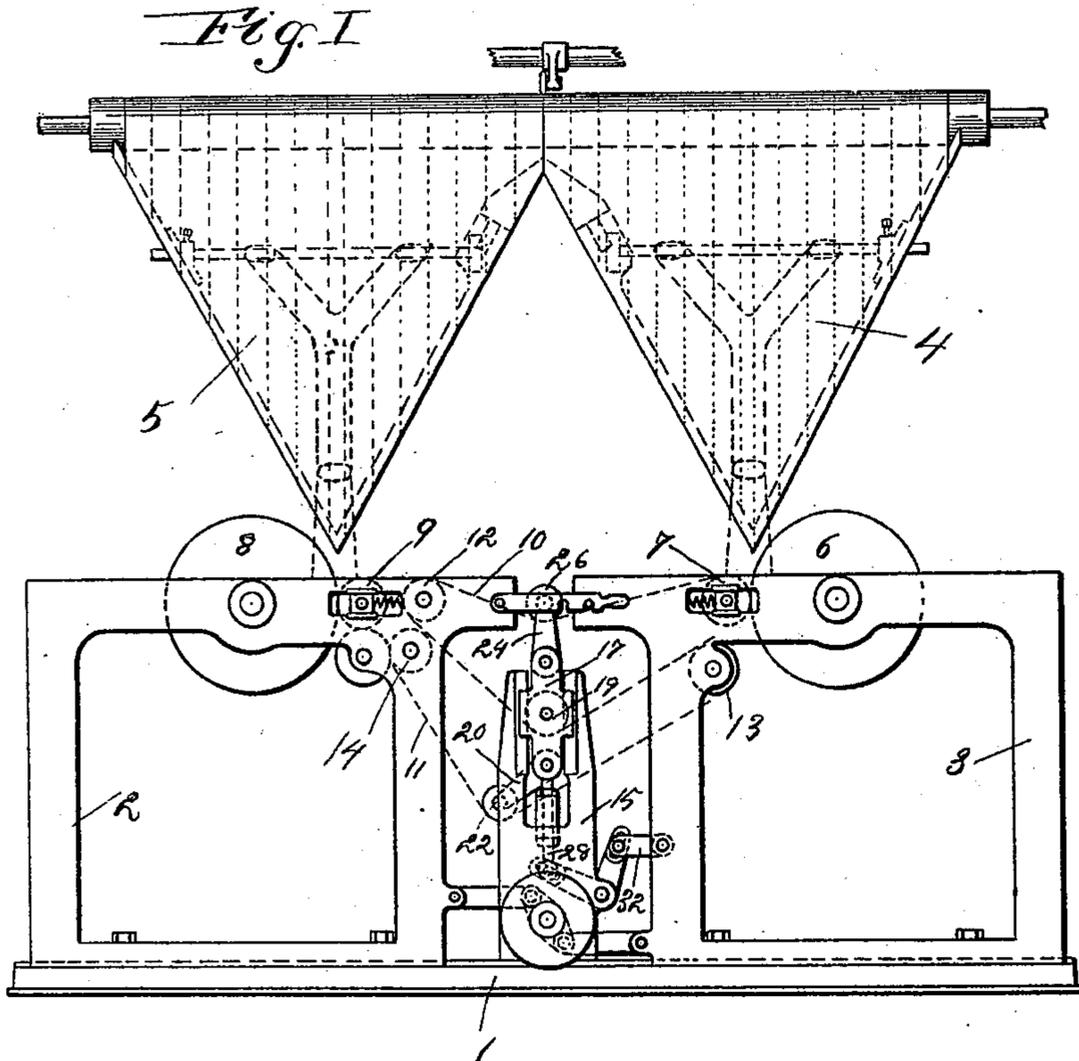
(No Model.)

S. G. GOSS.

DELIVERY APPARATUS FOR PRINTING PRESSES.

No. 518,241.

Patented Apr. 17, 1894.



Witnesses:

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# UNITED STATES PATENT OFFICE.

SAMUEL G. GOSS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE GOSS PRINTING PRESS COMPANY, OF SAME PLACE.

## DELIVERY APPARATUS FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 518,241, dated April 17, 1894.

Application filed August 30, 1892. Serial No. 444,552. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL G. GOSS, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Delivery Apparatus for Printing-Presses, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an end elevation showing my improved delivery apparatus; and Fig. 2 is a top or plan view.

My invention relates to delivery apparatus for perfecting presses, in which a plurality of formers is used and the webs from two or more formers are associated.

The object of my invention is to provide a new and improved delivery apparatus for use in such presses, which object I accomplish as hereinafter specified, and as illustrated in the drawings.

That which I regard as new will be pointed out in the claims.

In the drawings,—1 indicates the bed plate, upon which are mounted cutting and folding frames 2 and 3 movable toward each other. The frames 2 and 3 will in practice carry suitable folding apparatus, but as such folding apparatus may be of any known construction and constitutes no part of my present invention, I do not deem it essential to illustrate the same.

4, 5 indicate formers arranged over the frames 2 and 3, and preferably supported by said frames. The formers 4 and 5 may be otherwise supported if desired, however.

6, 7 indicate rollers adapted to receive the longitudinally folded web from the former 4. 8, 9 indicate similar rollers, adapted to receive the web from the former 5. The rollers 6, 7, 8 and 9 are mounted in the two frames 2 and 3, as shown, and the web from the rollers 6 and 7 is adapted to be conducted across and associated with the web delivered by the former 5, for which tapes 10 and 11 are provided. The tapes 10 pass over the roller 7 and tape rollers 12 carried by the frame 2; and the tapes 11 are carried by tape rollers 13 and 14 carried by the frames 3 and 2 respectively. The web from the former 4 passes between the rollers 6 and 7, and is thence carried by the tapes 10 and 11 to the rollers 8

and 9, passing over the roller 9, and being associated with the web from the former 5 as it passes between the rollers 8 and 9; the two webs will then pass together between the rollers 8 and 9, and may afterward be folded and delivered by suitable mechanism.

The formers 4 and 5 are adjustable toward each other in order to provide for printing wider or narrower sheets as may be desired, and the frames 2 and 3 are also adjustable toward each other, substantially as described in my application of even date herewith.

In order to provide for keeping the distance to be traveled by the web constant, the following apparatus is provided:

15, 16 indicate uprights or standards which rise at each side of the frames 2 and 3 and between said two frames.

17, 18 indicate boxes which are adapted to fit in suitable guides formed in the standards 15 and 16, in such manner that the boxes may be moved vertically.

19 indicates a roller, the opposite ends of which are journaled in the two boxes 17 and 18 so that it will be moved vertically as the boxes are moved. The tapes 10 and 11 pass under the roller 19, as shown in Fig. 1.

20, 21 indicate arms which are pivoted to the lower portion of the boxes 17 and 18, which arms are adapted to slightly swing and carry tape rollers 22, 23, around which the lower portions of the tapes 11 pass, as indicated by dotted lines in Fig. 1.

24, 25 indicate arms which are adapted to swing and are pivoted to the upper portion of the boxes 17 and 18, and carry tape rollers 26 and 27, under which pass the upper portions of the tapes 10, as shown by dotted lines in Fig. 1.

By the means described the boxes 17 and 18 can be adjusted, but the length of the tape pathway through which the sheets pass will be maintained constant, regardless of the position of the frames 2 and 3.

28, 29 indicate connecting rods which connect the boxes 17 and 18 with bell crank levers 30, 31, as shown in Figs. 1 and 2. The bell crank levers 30, 31 are pivotally mounted in suitable supports, and are connected to the frame 3 by connecting bars 32, as shown in Fig. 1. The extremities of the arms of the

bell-crank levers are slotted to loosely engage pins on the arms 32, for the purpose of permitting the slight play necessary, owing to the rotation of the arms of the lever in the arc of a circle. The arms 32 are fixed, and therefore when the arms of the bell-crank levers to which they are attached are operated there must be a loose connection between said arms 32, and the arms of the bell-crank lever S. The same remarks apply to the rods 28 and 29, and the arms of the bell-crank levers connected with said rods. By this construction when the frames 2 and 3 are moved toward each other the bell crank levers 30 and 31 will be operated to move the boxes 17 and 18 downward thereby moving the rollers carried by said boxes downward, and keeping the proper amount of tension on the tapes 10 and 11. When the frames 2 and 3 are moved away from each other the boxes 17 and 18 will be moved upward, thereby diminishing the tension upon the tapes 10 and 11 and permitting them to rise, as would be necessary by the separation of the frames 2 and 3; the tension, however, will be substantially the same. By this construction the length of the tapes is kept constant notwithstanding the movement of the frames 2 and 3. Any suitable mechanism may be used for operating the frames 2 and 3, and any suitable devices may be provided for adjusting the formers 4 and 5 when they are moved toward or away from each other to provide for printing narrower or wider webs.

That which I regard as my invention, and desire to secure by Letters Patent, is—

1. The combination of a series of formers adjustable toward and from each other, and web-associating devices movable with said formers for associating the webs received therefrom, substantially as described.

2. The combination of a plurality of formers adjustable toward and from each other, web-associating devices movable with said formers for associating the webs received therefrom, and means, substantially as described, for maintaining the length of the pathway through which the sheets pass constant to insure the proper register of the associated webs.

3. The combination with a plurality of supporting frames, rollers carried thereby, and means for adjusting said frames toward each other, of tapes for associating the webs delivered to said rollers, and devices for automatically keeping the distance to be traveled by the webs constant, substantially as described.

4. The combination with supporting frames adjustable toward each other, of tapes adapted to conduct a web from one of said frames to the other, and means for automatically keeping the length of the tape pathway through which the sheets pass constant, substantially as described.

5. The combination with frames adjustable toward each other, and tapes adapted to conduct the web from one of said frames to the other, of vertically movable rollers adapted to bear upon said tapes, supporting devices for said rollers, and means for adjusting said rollers as the frames are caused to approach or recede from each other, substantially as described.

6. The combination with frames adjustable toward each other, tapes 10 and 11, and tape rollers for supporting said tapes, of standards, boxes 17 and 18 adapted to move vertically in said standards, rollers 19, 22 and 26 carried by said boxes, said rollers 26, being laterally movable, and means for moving said boxes vertically as the frames are caused to approach or recede from each other, substantially as described.

7. The combination with frames 2 and 3 adjustable toward each other, and tapes adapted to conduct a web from one of said frames to the other, of standards, boxes 17 and 18 adapted to move vertically in said standards, rollers carried by said boxes adapted to bear upon said tapes, and the uppermost rollers being laterally movable, and bell crank levers 30 and 31 connected to said boxes and to one of said frames, substantially as described.

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Witnesses:

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