

(No Model.)

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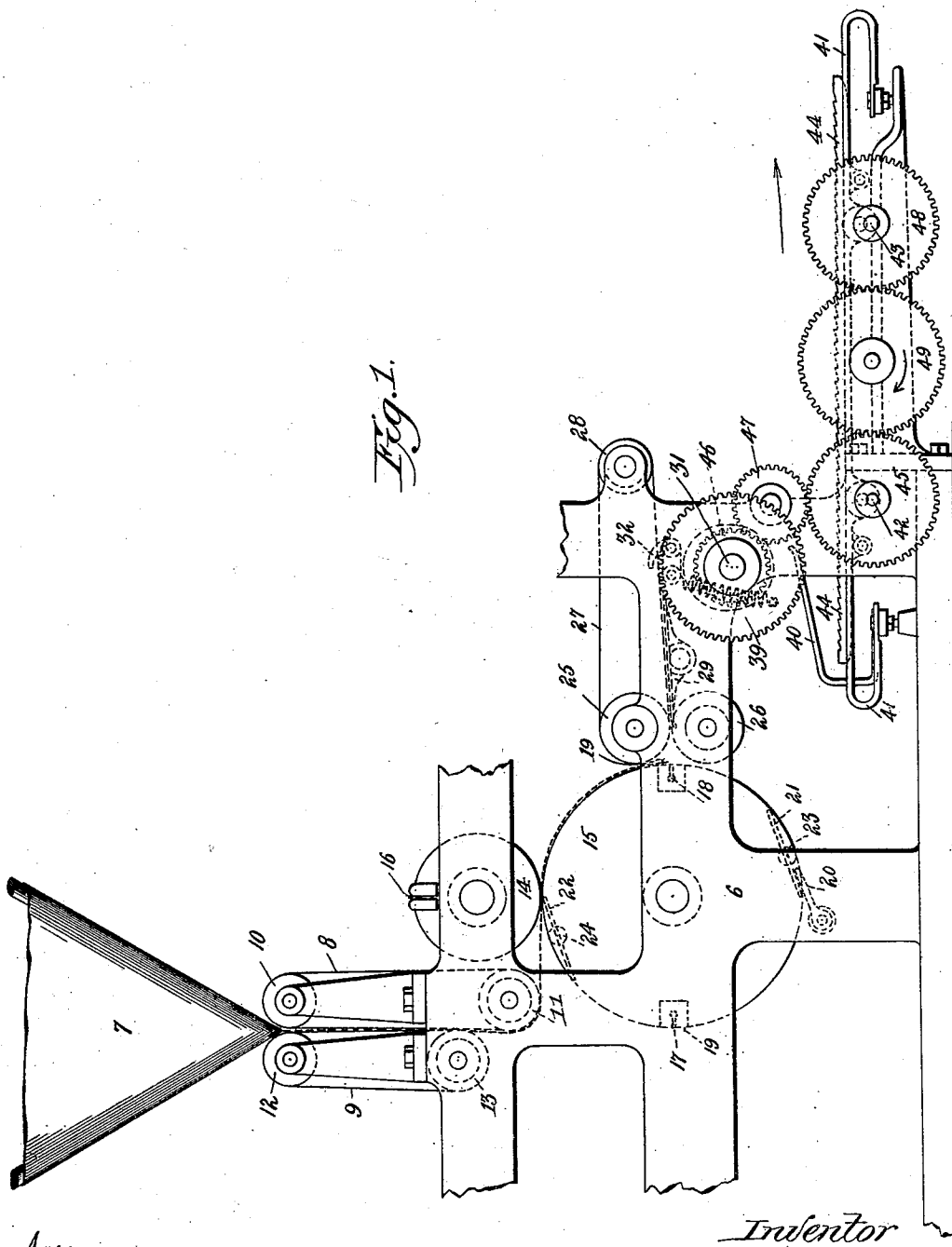
S. G. GOSS.

DELIVERY APPARATUS FOR PRINTING PRESSES.

No. 513,678.

Patented Jan. 30, 1894.

*Fig. 1.*



Witnesses:

*Wm. M. Rheem*  
*Wm. J. Hanning*

*Inventor*

*Samuel G. Goss*  
*by Bond, Adams, Richardson & Jackson,*  
*his Attorneys.*

(No Model.)

3 Sheets—Sheet 2.

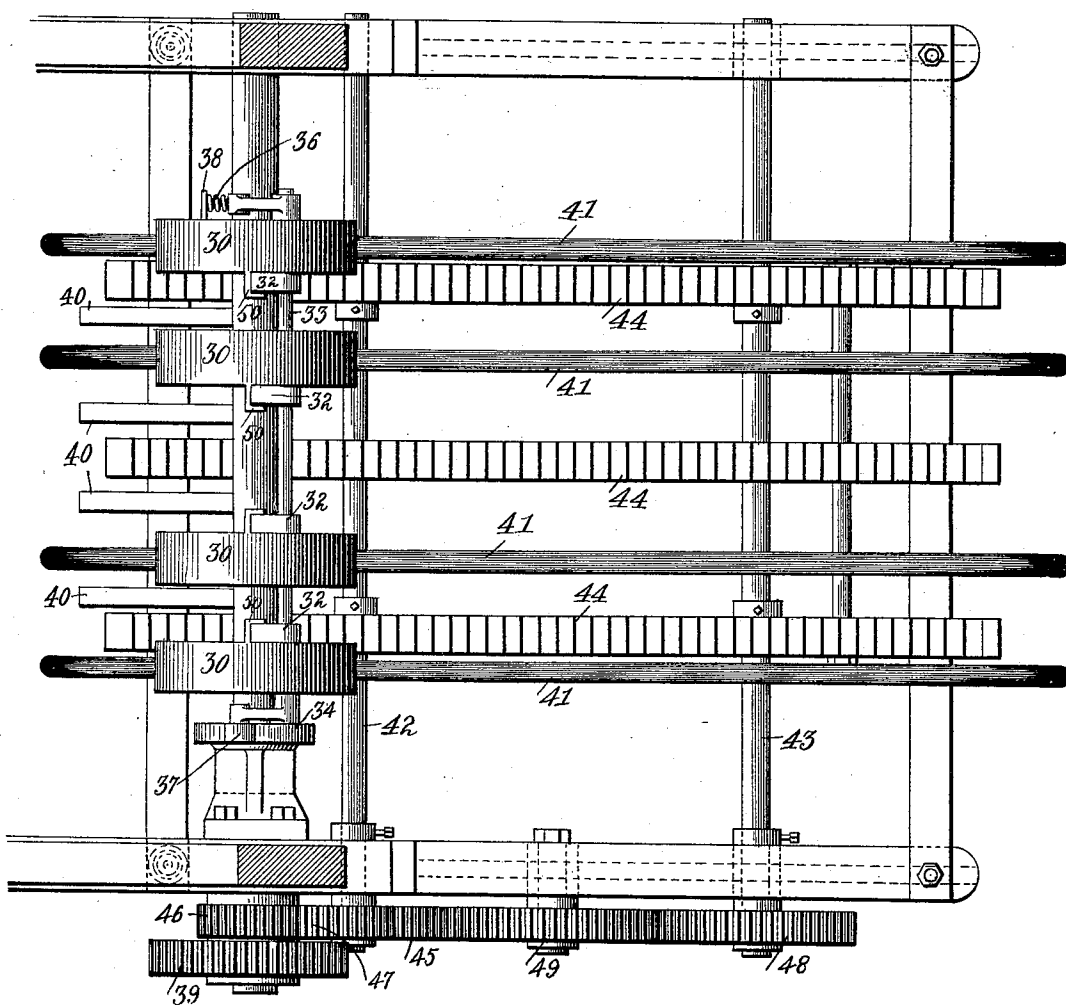
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*Fig. 2.*



*Witnesses:*

*Wm. M. Rheum*  
*Wm. L. Hamming*

*Inventor*

*Samuel G. Goss*

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(No Model.)

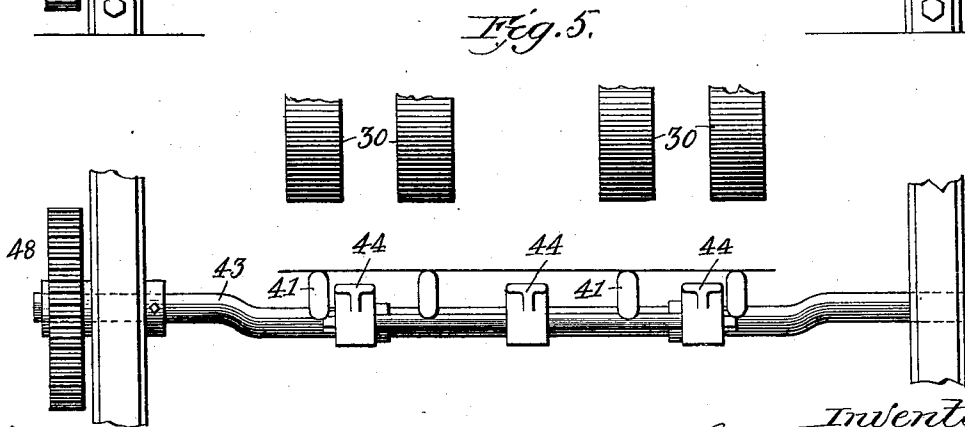
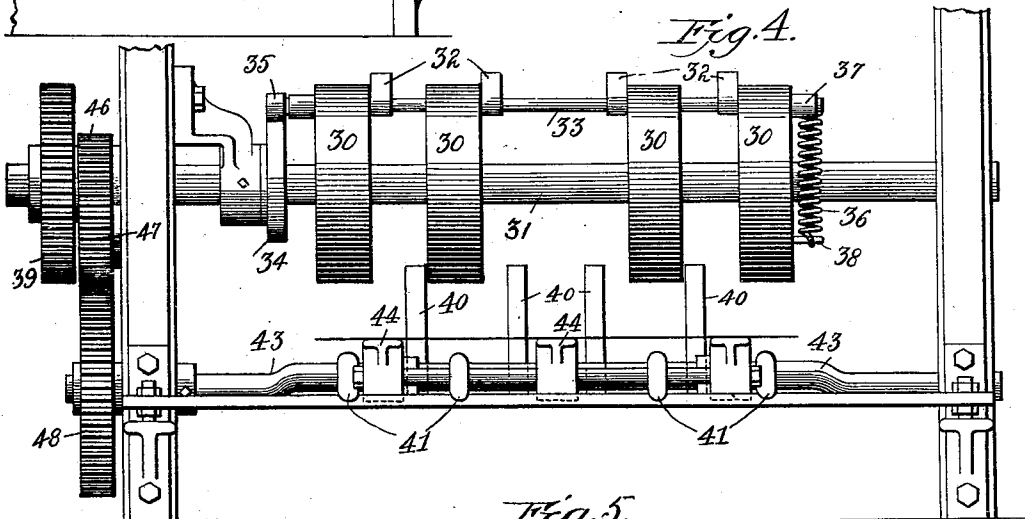
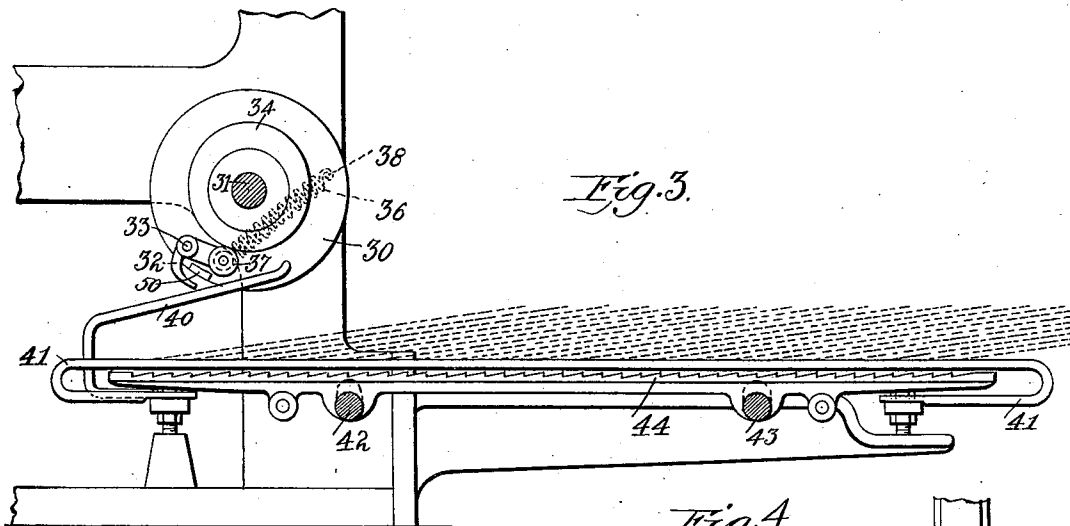
3 Sheets—Sheet 3.

S. G. GOSS.

DELIVERY APPARATUS FOR PRINTING PRESSES.

No. 513,678.

Patented Jan. 30, 1894.



Witnesses:

Wm. M. Rheem  
Wm. J. Fleming

Inventor  
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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. 513,678, dated January 30, 1894.

Application filed March 20, 1893. Serial No. 466,865. (No model.)

*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 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 a partial side elevation of a printing press having my improved delivery apparatus. Fig. 2 is an enlarged plan view of the delivery apparatus. Fig. 3 is a side elevation of the parts shown in Fig. 2. Fig. 4 is an end view of the delivery apparatus, as shown in Fig. 1; and Fig. 5 is a partial end view of the delivery apparatus as shown in Fig. 3.

My invention relates to delivery apparatus for printing presses, and particularly to apparatus for removing the sheets after they have been folded.

The object of my invention is to provide a new and improved means for removing the folded sheets from the press, which object I accomplish as hereinafter described and as illustrated in the drawings.

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

In the drawings,—6 indicates a portion of the frame of the machine, which is so constructed as to carry the different parts of the machine.

7 indicates a former, such as is usually employed for imparting a longitudinal fold to the web.

8, 9 indicate tapes running over pulleys 10 and 11, 12 and 13, which tapes receive the web from the former 7, and conduct it to cutting cylinders 14, 15. The cylinder 14 carries a blade 16, which is adapted to fit into grooves 17, 18 in the cylinder 15, the cylinder 14 being one half the circumference of the cylinder 15.

19 indicates pins placed near the grooves 17, 18, which pins impale the leading end of the web, serving to carry it around the cylinder.

20 indicates strippers located at the under side of the cylinder 15, and serving to release the end of the web from the pins 19.

21, 22 indicate folding blades mounted upon

shafts 23, 24 carried by the cylinder 15. The blades 21, 22 are operated by suitable mechanism to impart a transverse fold to the sheets severed from the web, and to carry the folded edges of the sheets between rollers 25, 26 located near the cylinder 15. Any suitable mechanism may be used for operating the folding blades 21, 22.

27 indicates tapes which pass around the rollers 25 and pulleys 28 mounted in the frame of the machine.

29 indicates guides which support the sheets as they move along with the tapes 27.

30 indicates delivery pulleys which are mounted upon the shaft 31, which pulleys are placed near one end of the guides 29 in position to receive the folded sheets from such guides.

32 indicates gripping fingers, which are mounted upon a shaft 33 carried by the pulleys 30. One gripping finger is placed adjacent to each pulley 30, and is adapted to be turned so as to project slightly above the surface of such pulley 30, and to be turned downward upon a lug 50 carried by such pulley to grip the leading end of the folded sheet and carry it around the pulleys. The fingers 32 are operated through a stationary cam 34 suitably mounted in the frame of the machine, upon which cam moves a roller 35 mounted upon the shaft 33. A spring 36 is provided at the opposite end of the shaft 33, to which it is connected at one end by a crank arm 37, the other end of the spring being connected to a pin 38 carried by one of the pulleys 30.

The construction of the pulleys 30, gripping fingers 32, and mechanism for operating such gripping fingers, is fully described in my Patent No. 495,483, dated April 18, 1893, and it will therefore be unnecessary for me to describe them more fully herein.

The shaft 31 is rotated through a gear wheel 39, driven by any suitable mechanism.

40 indicates strippers located under the pulleys 30, which strippers serve to strip the sheets from the pulleys 30 as the pulleys rotate, the gripping fingers 32 at that time being turned outward to release the leading ends of the sheets.

41 indicates a series of bars arranged under the pulleys 30, and extending a greater or less distance from the press, forming a table to

receive the sheets as they are stripped from the pulleys 30.

42, 43 indicate crank shafts arranged transversely in the frame of the press under the bars 41 and at right angles thereto.

44 indicates a number of serrated bars which extend parallel to the bars 41 and are mounted upon the crank shafts 42, 43. By the rotation of the crank shafts 42, 43, the bars 44 will therefore be moved backward and forward, rising during their forward motion and descending during their backward motion, it being understood that the term forward as herein used refers to the direction indicated by the arrow in Fig. 1. The crank shafts 42, 43 and bars 44 are so arranged that when the bars 44 are moved forward they will rise slightly above the surface of the bars 41, and when moved backward they will descend below the level of such bars. By this construction, when the shafts 42, 43 are rotated in the direction indicated by the arrow in Fig. 1, the sheets deposited upon the bars 41 will be advanced at short intervals, thereby causing them to be arranged as indicated in Fig. 3, each sheet overlapping the one before it. The crank shaft 42 is driven through a gear 45, which is driven from the gear 39 through intermediate gears 46, 47. The crank shaft 43 is driven by a gear 48, which in turn is driven from the gear 45 through an intermediate gear 49, as best shown in Figs. 1 and 2.

I do not wish to limit myself to the specific form of cutting and folding mechanism herein shown and described, nor to the specific devices shown for delivering the folded sheets upon the bars 41, as any other suitable mechanism for delivering the sheets upon the bars 41 may be used. Neither do I wish to limit myself specifically to the use of serrations on the bars 44, nor to the bars 41 as a table for receiving the folded sheets, as any other form of table which would permit of the forward motion of the sheets, and is provided with openings to permit the sheet moving devices to operate upon the sheets, could be used. I prefer, however, to use the bars 41 as that is the simplest and best construction at present known to me.

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

1. The combination with a support, and mechanism for superimposing sheets thereupon, of a sheet-advancing device arranged beneath the said support to simultaneously engage the edges of a number of the superimposed sheets, and means for operating the sheet-engaging device and imparting an intermittent progressive motion to the superimposed sheets, substantially as described.

2. A sheet-delivery apparatus, consisting

of a suitable sheet support on which sheets are superimposed, a sheet-advancing device arranged under the sheet support, and means whereby the device is caused to intermittently engage a number of superimposed sheets, thereby imparting an intermittent progressive motion thereto, substantially as described.

3. A sheet-delivery apparatus, consisting of a suitable sheet-support, and intermittently-acting sheet-advancing device for engaging a pile of sheets carried upon said support, and means whereby the device is operated and caused to simultaneously engage superimposed sheets of the pile, thereby imparting an intermittent progressive motion to the said pile upon the support, substantially as described.

4. The combination with supporting devices, and means for depositing sheets in a pile thereupon, of reciprocating mechanism located under the pile of sheets and having means for simultaneously engaging the sheets of the pile to impart an intermittent progressive motion to the said sheets upon the supporting devices, substantially as described.

5. The combination with supporting devices, and means for delivering sheets in a pile thereupon, of sheet-advancing bars arranged under the supporting devices, and means whereby the bars are caused to intermittently engage the sheets of the pile, thereby imparting an intermittent progressive motion to the said pile upon the supporting devices, substantially as described.

6. The combination with the bars 41, of crank shafts arranged transversely to said bars, sheet advancing bars mounted upon said crank shafts and arranged parallel to said bars 41, mechanism for rotating said crank shafts, and means for delivering sheets to said bars 41, substantially as described.

7. The combination with a support, and means for superimposing sheets thereupon, of devices arranged under said support, and means for intermittently reciprocating and raising and lowering said devices to cause them to engage and disengage a number of sheets and impart to the superimposed sheets an intermittent progressive motion upon the support, substantially as described.

8. A sheet delivery apparatus, consisting of a stationary sheet support, and means for simultaneously advancing a series of overlapping sheets upon said support, substantially as described.

SAMUEL G. GOSS.

Witnesses:

JOHN L. JACKSON,  
RALPH VAN DYKE.