

No. 621,814.

Patented Mar. 28, 1899.

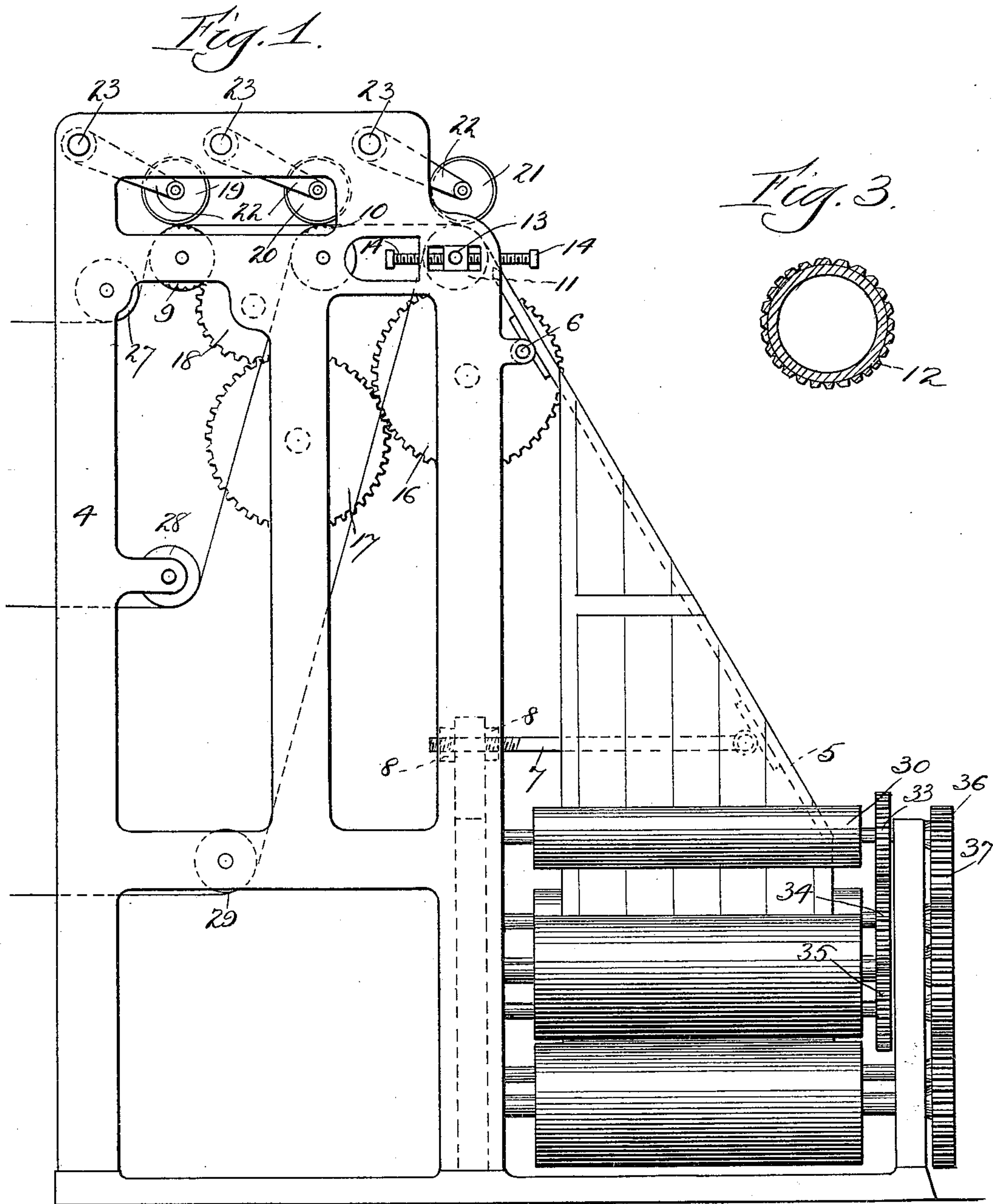
S. G. GOSS.

DELIVERY APPARATUS FOR PRINTING PRESSES.

(Application filed May 16, 1896.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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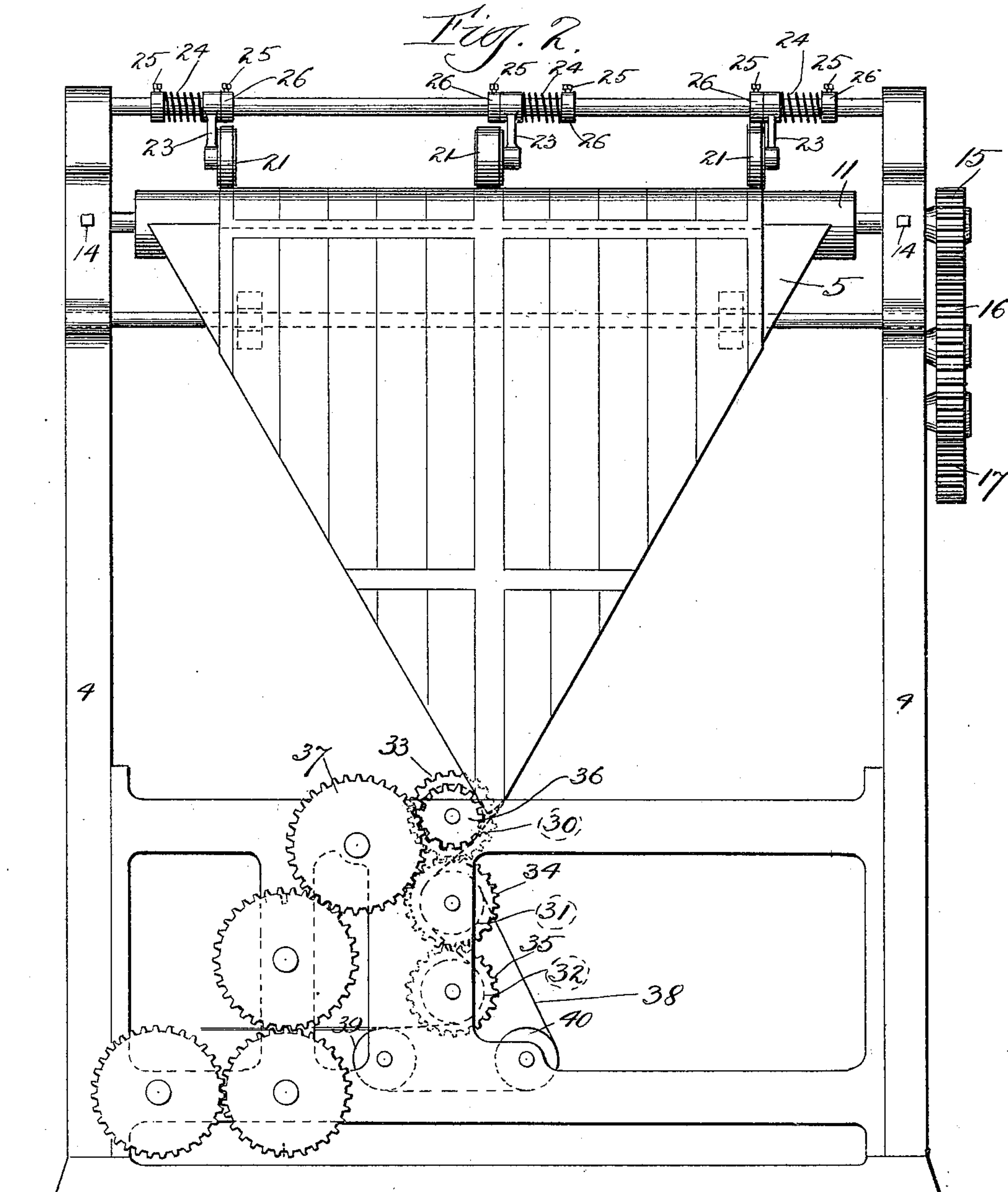
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UNITED STATES PATENT OFFICE.

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. 621,814, dated March 28, 1899.

Application filed May 16, 1896. Serial No. 591,803. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL G. GOSS, a citizen of the United States, residing in 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 side elevation. Fig. 2 is an end view. Fig. 3 is a sectional view showing one of the corrugated rollers.

My invention relates to delivery apparatus for web-perfecting presses, and has for its object to provide improved mechanism for conducting the web from the printing mechanism to the folding devices, and also improved mechanism for conducting the web from the longitudinal folder to the transverse folding mechanism.

I accomplish the object of my invention as hereinafter specified and as illustrated in the drawings.

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

Heretofore it has been customary in web-perfecting presses to employ a V-shaped former to impart a longitudinal fold to the printed web or webs when two or more webs were used, the webs being associated before passing over the former. For the purpose of conducting the webs to the former and over it it has been customary to use rollers arranged at or below the apex of the former, such rollers acting to grip and pull the web over the former, thereby keeping it taut and to a great extent preventing wrinkling. The delivery apparatus which forms the subject of this application operates on a principle different from that above described. In the first place, the web or webs are conducted to the former and held under the necessary tension by gripping mechanism arranged above or back of the base of the former, which grips the web or webs and holds them under the necessary tension. By thus conducting the webs to the former by tension applied between the printing mechanism and the former no great amount of tension is necessary below the apex of the former, and therefore the gripping-rollers usually provided at that point are dis-

carded, the necessary tension being preserved by a series of tension-rollers which are not in contact with each other, around which the longitudinally-folded web or webs pass on their way to the transverse cutting and folding mechanism. The result is that there is less danger of wrinkling or tearing the webs, and as they are not pinched there is no danger of marking or otherwise defacing the printed surfaces. The fold is completed when the web passes around the first tension-roller.

In the drawings, 4 indicates the frame of the press, which is of suitable shape to support the various parts.

5 indicates a V-shaped former pivoted at 6 to the frame of the press and braced by a rod 7, which is pivoted to the former and is secured to the press by nuts 8, as shown in Fig. 1, thereby providing for the adjustment of the apex of the former as may be necessary.

9 10 11 indicate a series of gripping-rollers arranged at the upper portion of the frame of the machine back of the base of the former. As best shown in Fig. 3, the rollers 9 10 11 are provided with corrugated surfaces 12 in order to enable them to grip the web more firmly.

As shown in Fig. 1, the shaft which carries the roller 11 is provided at its ends with blocks 13, which are laterally adjustable in suitable bearings by means of adjusting-screws 14 at opposite sides of the block, the object of which construction is to provide for adjusting the roller 11 laterally to correspond with the varying position of the base of the former effected through the adjustment of its apex. Instead of the devices shown for adjusting the roller 11 other equivalent mechanism may be used.

Each of the shafts which support the rollers 9 10 11 is provided with a pinion 15, which is of slightly less diameter than said rollers. The pinions 15 are driven by gears 16 17 18, the arrangement being such that the pinions 15 are driven at the same rate of speed as the webs, and consequently the surfaces of the rollers 9 10 11 move slightly faster than the webs.

19 20 21 indicate a series of elastic-surfaced rollers arranged to coact with the rollers 9 10 11, respectively, to grip the webs. Preferably

three rollers are provided opposite each of the rollers 9 10 11, as shown in Fig. 2. The rollers 19 20 21 are each supported by arms 22, mounted upon shafts 23, arranged in the frame of the machine, as shown in Figs. 1 and 2, and are provided with springs 24, by which a yielding downward pressure is exerted upon said arms 22. As shown in Fig. 2, the arms 22 may be adjusted laterally, as they are held in place by set-screws 25 in collars 26.

27 28 29 indicate guide-rollers around which the different webs are conducted before passing over their respective rollers 9 10 11, as shown in Fig. 1.

30 31 32 indicate a series of tension-rollers arranged below the former 5, as shown in Fig. 2, the roller 30 being adjacent to the apex of the former and at one side thereof, the rollers 31 32 being arranged a short distance apart and preferably in line with the roller 30. The number of these rollers may be varied, but I prefer to use three.

As shown in Figs. 1 and 2, the tension-rollers are geared together by gears 33 34 35, arranged on the ends of the shafts which support said rollers, said gears being all of the same size, so that the tension-rollers rotate at the same rate of speed.

36 indicates a pinion which is mounted upon the shaft which supports one of the tension-rollers, as 30, which pinion is of slightly less diameter than said tension-roller and meshes with a gear 37, by which it is driven. The speed of the gear 37 is the same as that of the paper, so that the tension-rollers are all driven slightly faster than the web or webs, the result being that sufficient tension is maintained through friction on the web or webs to prevent them from wrinkling.

In order that the folded webs may properly adjust themselves to the roller 30, the apex of the former is not at the true central line thereof; but the former is sheared off slightly

at one side at its apex, so that the crease of the folded web or webs passes slightly to one side of the apex of the former, the result being that when the folded web or webs pass around the roller 30 they may readily adjust themselves to the roller without wrinkling.

38 indicates tapes which pass around the rollers 31 32 and rollers 39 40 and serve to guide the longitudinally-folded webs around said rollers 31 32.

I have described in detail the construction of my improved delivery apparatus; but I do not wish to be limited to the specific details described, as many modifications thereof may be made without departing from the spirit of my invention.

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

1. The combination with an adjustable former, of positively-driven gripping-rollers arranged back of the former, means for adjusting said gripping-rollers to conform to the adjusted position of the former, and non-contacting tension-rollers below the apex of the former, substantially as described.

2. The combination with an adjustable former, of positively-driven gripping-rollers arranged back of the former, means for adjusting said gripping-rollers to conform to the adjusted position of the former, and non-contacting tension-rollers arranged below and to one side of the apex of the former, substantially as described.

3. The combination with an angularly-adjustable former, of positively-driven feeding mechanism arranged back of the former, and means for adjusting said feeding mechanism independently of the former to conform to the adjusted position of the former, substantially as described.

SAMUEL G. GOSS.

Witnesses:

JOHN L. JACKSON,
ALBERT H. ADAMS.