(No Model.) 2 Sheets—Sheet 1.

S. G. GOSS.

DELIVERY APPARATUS FOR PRINTING PRESSES.

No. 459,961. Patented Sept. 22, 1891.

Fig. 2.

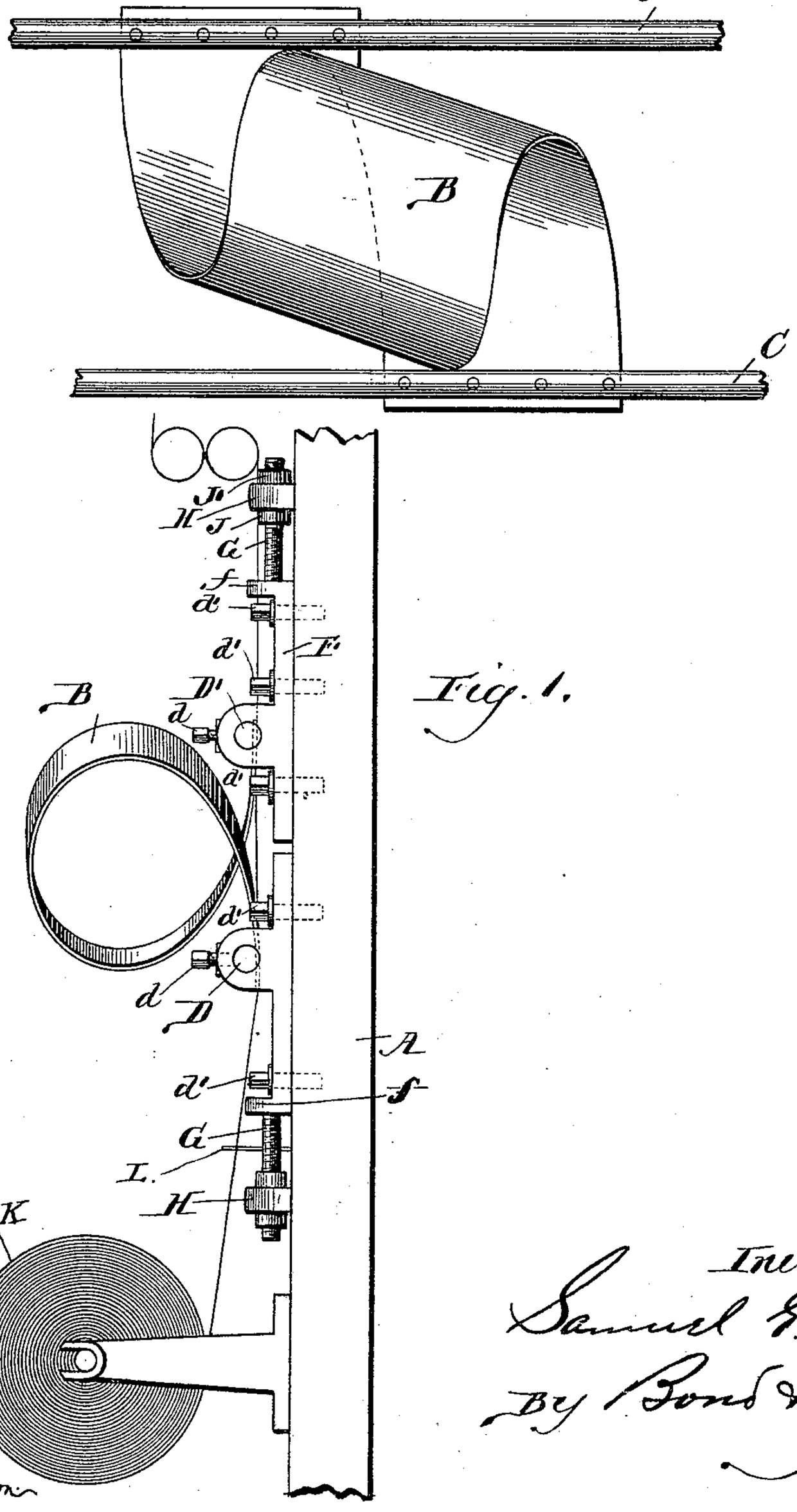

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

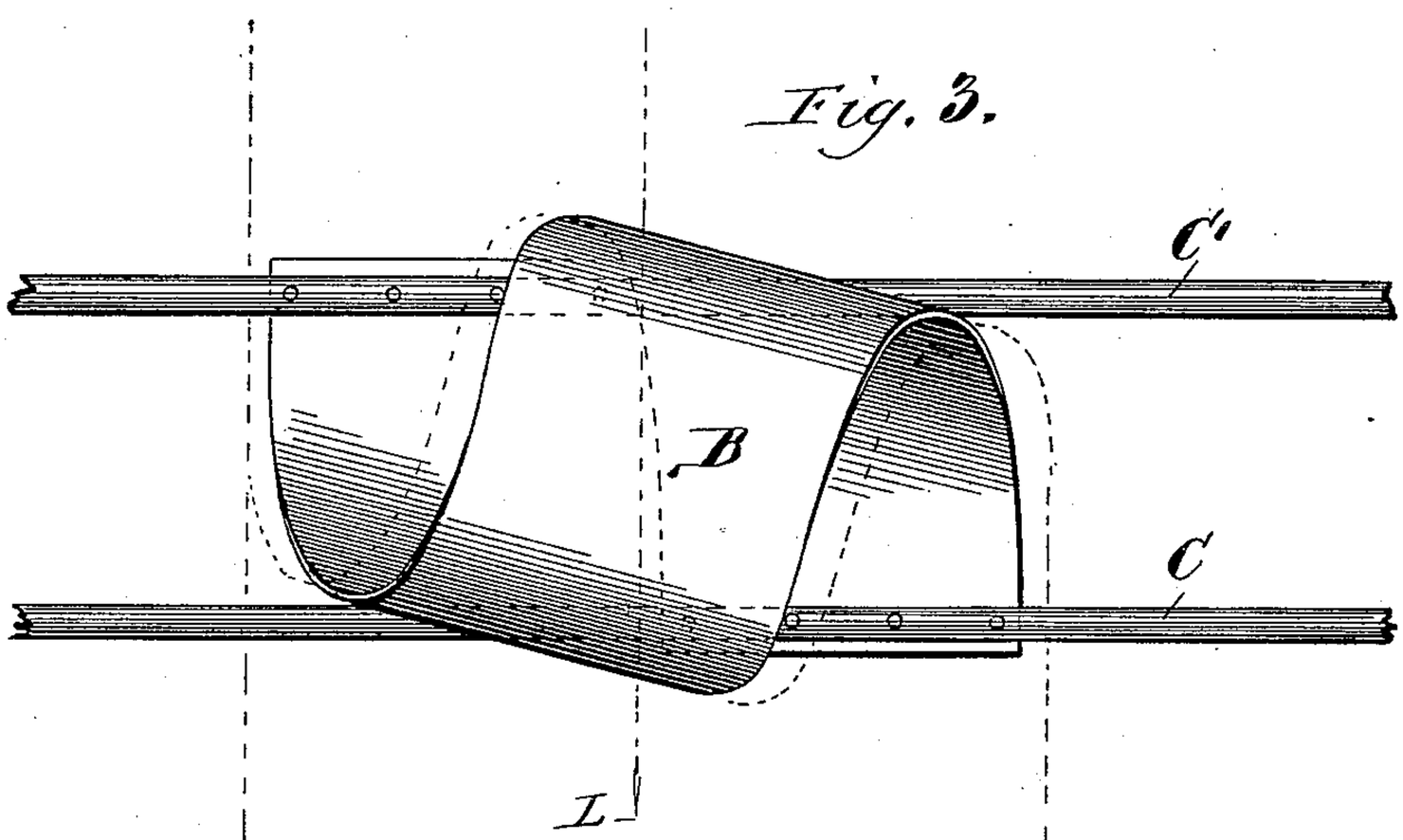

Fig. 4.

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. 459,961, dated September 22, 1891.

Application filed April 25, 1891. Serial No. 390,390. (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 side elevation of a portion of a printing-press having my improved apparatus. Figs. 2 and 3 are top or plan views of my improved device, showing different phases of the adjustment; and Fig. 4 is a top or plan view showing the method of making the different adjustments.

My invention relates to delivery apparatus for printing-presses which are designed to print a web of paper upon both sides and to longitudinally slit the web and transfer one of the webs thus formed over upon the other, so that the webs may be cut into sheets and folded together, as in a newspaper.

My invention more particularly relates to printing-presses which are provided with a transfer-guide consisting of a thin sheet of steel or other suitable metal, which is bent into a spiral shape, substantially as shown and described in my former patents, Nos. 432,035 and 432,036. In printing-presses having transfer-guides of this description much difficulty has been experienced in regulating the transferring of the paper webs so that the web which was transferred from one side of the press over upon the web at the other side of the press would register properly with the web upon which it was transferred. As in presses of this kind the web is also severed transversely to form sheets, it is evident that it is very necessary that the webs should register properly, so that there may be no irregularity in the cutting and folding of the paper. It also quite frequently happens that it is desired to print sheets of different widths upon presses of this kind, and it is therefore desirable that there should be some means of adjusting the transfer-guide laterally, so that it will be adapted for such use.

The object of my invention is to provide a novel transfer-guide for printing-presses of this description which may be adjusted either longitudinally or transversely of the press, so that the web may be adjusted in either direction, as may be necessary to make it register properly. I accomplish this object as illustrated in the drawings and as hereinafter specified.

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

In the drawings, A A′ represent portions of the frame of a printing-press, upon which frame various portions of the machinery are adapted to be supported. Only such parts of the machinery are herein shown as are essential to a full understanding of my present invention.

B indicates a transfer-guide, which consists of a thin piece of flexible steel or other suitable metal bent into spiral shape, as indicated in the drawings. The transfer-guide B is firmly secured at its ends to parallel rods C C′, as best shown in Figs. 2, 3, and 4, which rods extend across the press and are mounted at their opposite ends in suitable bearings D D′ mounted on the frame A A′. The rods C C′ are each screw-threaded at one end and are provided with nuts E E′, adapted to screw on the rods, one of the nuts E E′ being preferably placed on each side of the bearings D or D′ at one end of the rods. The bearings D D′ at the ends of the rods opposite to those on which are fitted the nuts E E′ are provided with set-screws *d d*, which are preferably located at the top of the bearings and are adapted to be screwed down upon the rods C C′ to firmly secure them in position.

The bearings D D′ are mounted upon the frame of the printing-press by means of slotted plates F F′, which are adapted to slide longitudinally of the frame and are held in place by means of screws *d′*, which project through the slots in the plates F F′ and are screwed into the frame of the press. Each screw *d′* is provided at the top with a cap which is somewhat larger than the slot in the plate through which it projects and is thereby adapted to hold the plate in position on the frame.

Each plate F F′ is provided at one end with a shoulder *f*, in which is fixed a screw G. The screws G extend longitudinally of the frame of the press and parallel with it and

at their outer ends pass through rings H, as best shown in Fig. 4, which are secured to the frame of the press.

Nuts J J′ are provided, one being placed upon each screw G on each side of the ring H, through which the screw passes, so that by screwing the nuts J J′ upon the screws G the bearings D D′ may be adjusted longitudinally of the press at any desired point. By this construction the bars C C′ may be separated from or drawn toward each other, so as to increase or diminish the space between the bars and thereby contract or expand the transfer-guide B.

K indicates a roll of paper consisting of a continuous web.

L indicates a knife of any suitable construction which is adapted to slit the web longitudinally as it passes from the roll.

By the construction shown the transfer-guide B is adapted to be used to transfer webs of paper of varying widths, as the guide may be readily altered to suit the width of the paper. When it is desired to print sheets of ordinary width, the transfer-guide is adjusted to about the position shown in Fig. 3, the width of the paper being indicated by the dotted lines. When it is desired to adjust the transfer-guide for transferring wider webs of paper, the set-screws *d d* are loosened, and by means of the nuts E E′ upon the opposite ends of the rods C C′ the rods C C′ are moved transversely of the frame of the printing-press and in opposite directions, so that the ends of the transfer-guide are moved away from each other. The screws *d d* may then be tightly screwed down upon the rods C C′ to hold them more firmly in position. When arranged in this manner, the transfer-guide may be used with much wider webs of paper, as indicated by dotted lines in Fig. 4.

In presses of the class herein referred to, which are commonly used for printing newspapers, it is necessary that one web should be transferred over upon another, so that the two sheets cut from the web may be folded together, and in such cases it is absolutely necessary that the printed page upon the web which is so transferred should register with the printed page with which it is intended to be folded, so that the proper parts of the newspaper will be folded together. In the construction here shown the rods C C′ may be separated from or drawn toward each other by means of the adjusting-screws G, as above described, and the curvature of the transfer-guide diminished or increased. By thus diminishing the curvature of the transfer-guide the transferred web will be transferred and deposited upon the other web at a point farther forward, as the distance which it will have to travel will be diminished as the diameter of the transfer-guide is lessened, the distance which the other web travels remaining the same. By increasing the curvature of the transfer-guide the transferred web will be placed upon the other at a point farther back, as it will have to travel farther, while the distance which the other web travels will remain the same. By carefully operating the adjusting-screws G the curvature of the transfer-guide may be very readily and accurately regulated, and the longitudinal registering of the different printed pages may be made much more perfect.

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

1. The combination, with the frame of a printing-press, of a contractible and expansible spiral transfer-guide for use with paper of different widths, substantially as described.

2. The combination, with the frame of a printing-press, of an adjustable spiral transfer-guide and means for adjusting the guide to adapt it for use with paper of different widths, substantially as described.

3. The combination, with the frame of a printing-press, of an adjustable spiral transfer-guide and means for varying the curvature of the spiral guide for the purpose of regulating the registering of the printed page upon the transfer-web with the page upon the web upon which it is transferred, substantially as described.

4. The combination, with the frame of a printing-press, of a flexible spiral transfer-guide secured at its ends to rods C C′, mounted in the frame of the press, said rods being adapted to be adjusted lengthwise, so as to permit of the ends of the transfer-guide being moved toward or away from each other in a line parallel with the axis of the transfer-guide, substantially as and for the purpose specified.

5. The combination, with the frame of a printing-press, of a flexible spiral transfer-guide secured at its ends to rods C C′, mounted in the frame of the press, said rods being adapted to be separated from or drawn toward each other to vary the curvature of the transfer-guide, substantially as and for the purpose specified.

6. The combination, with a spiral transfer-guide and rods C C′, to which the ends of the transfer-guide are secured, of bearings D D′ for the ends of the rods C C′, and nuts E E′, adapted to screw upon the ends of the rods C C′ for adjusting said rods in their bearings, substantially as described.

7. The combination, with a spiral transfer-guide secured at its ends to rods C C′, of bearings D D′ for the ends of said rods, said bearings being mounted upon slotted plates F F′, adjustably secured upon the frame of the press, and adjusting-screws G for adjusting the plates F F′ longitudinally of the frame of the press, substantially as described.

SAMUEL G. GOSS.

Witnesses:
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ALBERT H. ADAMS.