No. 612,967. Patented Oct. 25, 1898.

S. G. GOSS.

COUNTING APPARATUS FOR PRINTING PRESSES.

(Application filed June 17, 1897.)

(No Model.) 4 Sheets—Sheet 1.

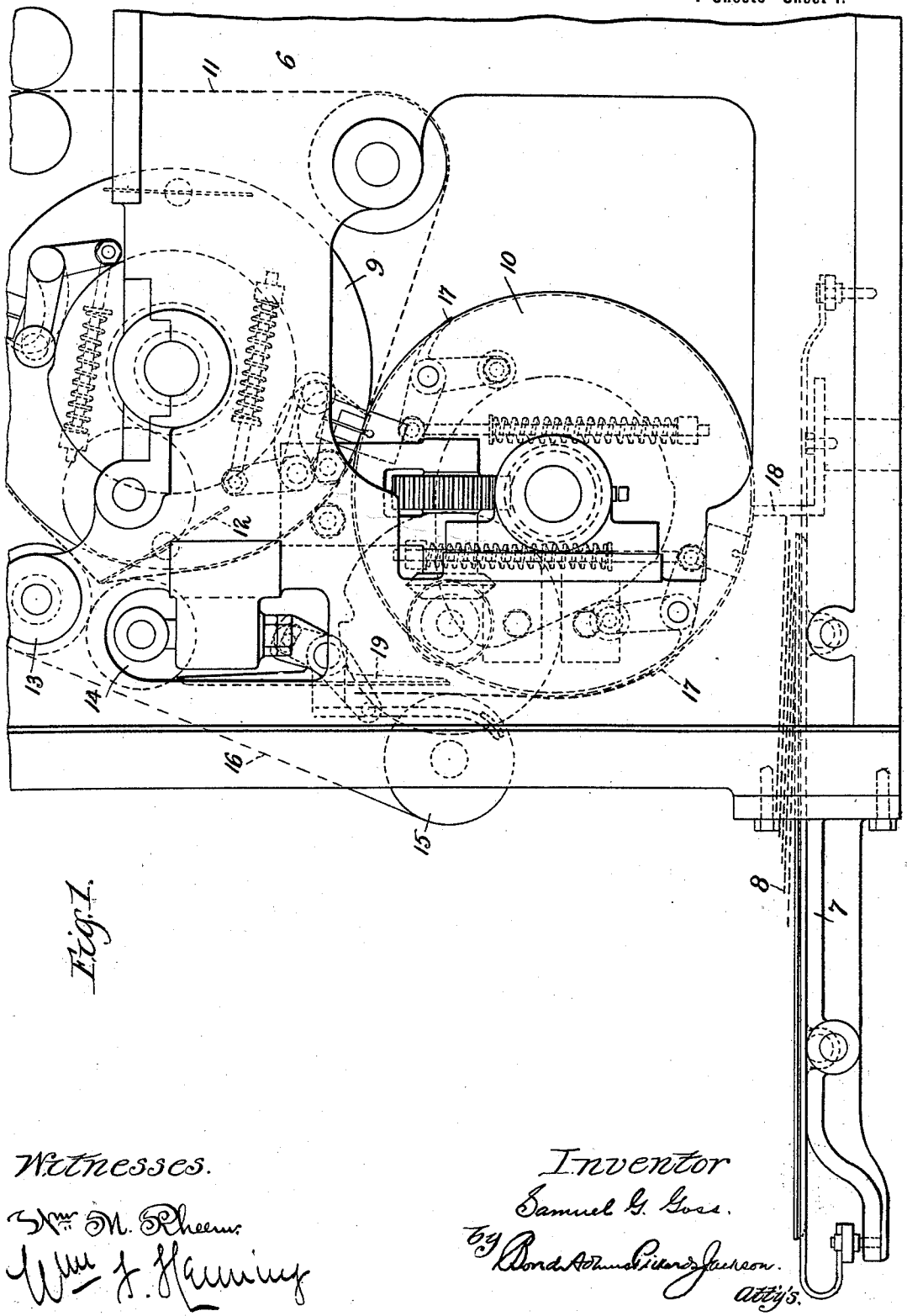

Fig. 1.

Witnesses.

Wm. N. Rheem.

Wm. F. Fleming

Inventor

Samuel G. Goss.

by Bond Adams Richardson & Jackson.

Atty's.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(No Model.) 4 Sheets—Sheet 2.

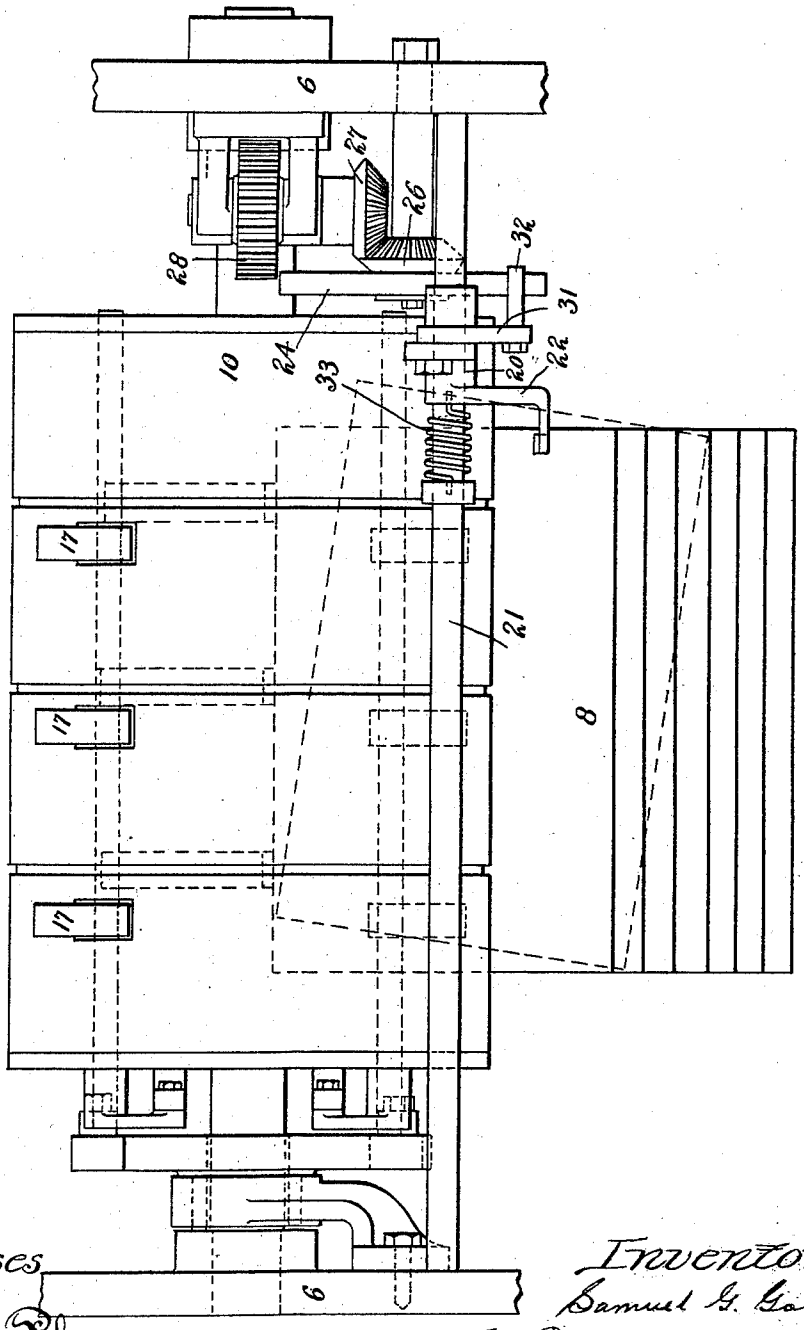

Fig. 2.

Witnesses
Wm. H. Rheem
Wm. F. Fleming

Inventor
Samuel G. Goss.
By Bond & Thurston, Pierson & Jackson.
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(No Model.) 4 Sheets—Sheet 3.

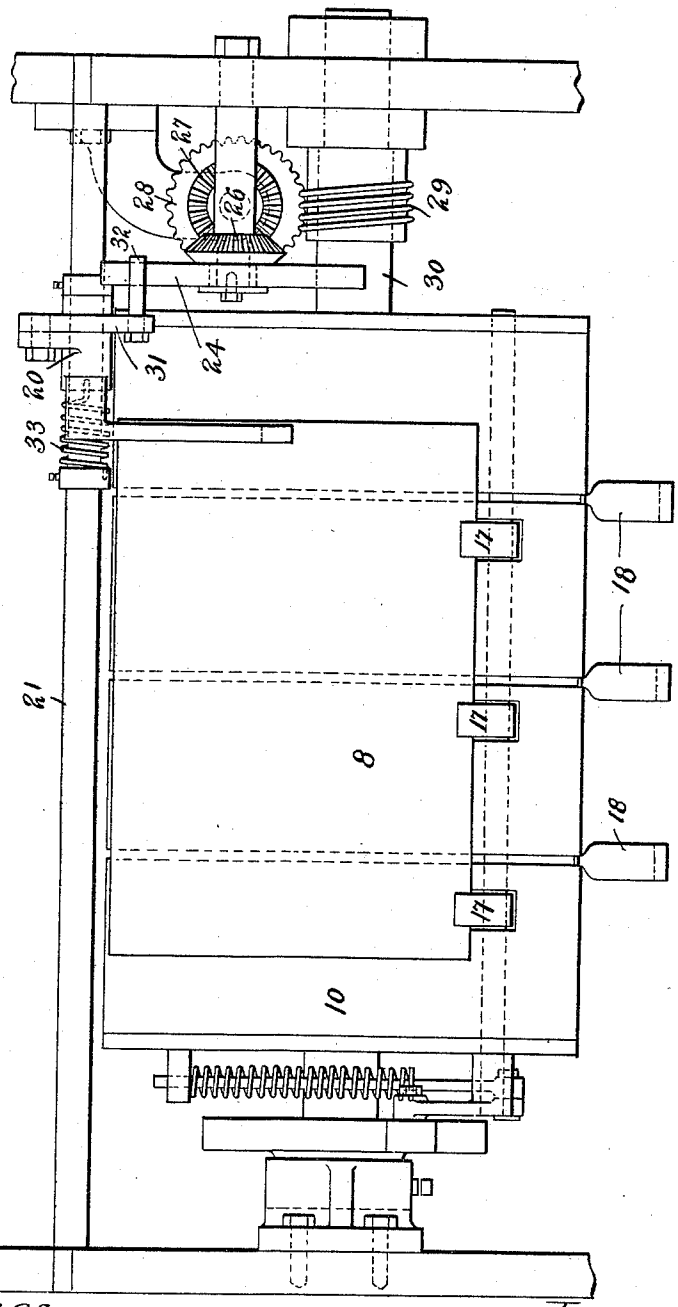

Fig. 3.

Witnesses.
Wm. M. Rheem.
Wm. F. Fleming.

Inventor.
Samuel G. Goss,
by Bond Adams Pierce & Jackson.
Atty's.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(No Model.) 4 Sheets—Sheet 4.

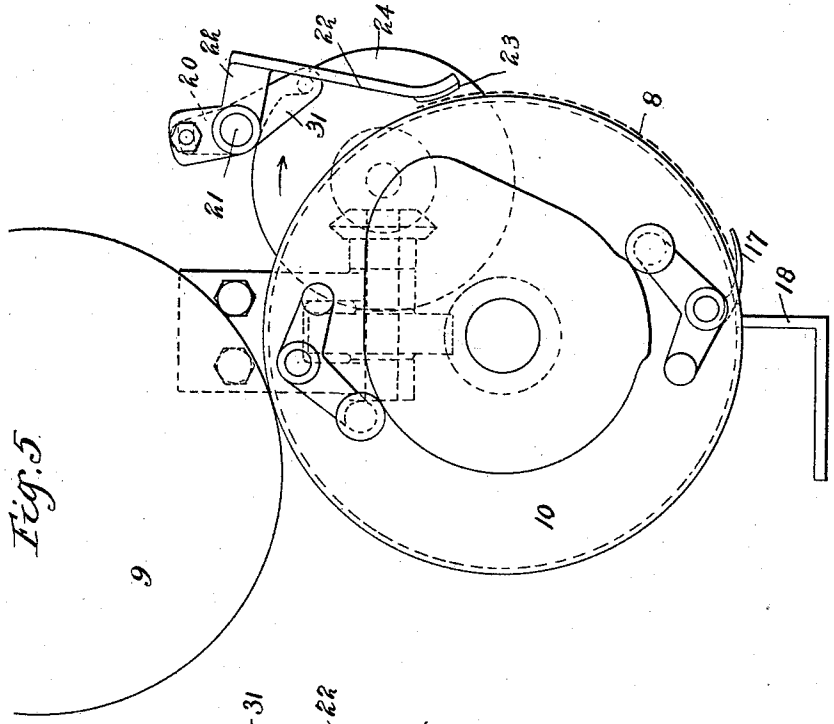

Fig. 5.

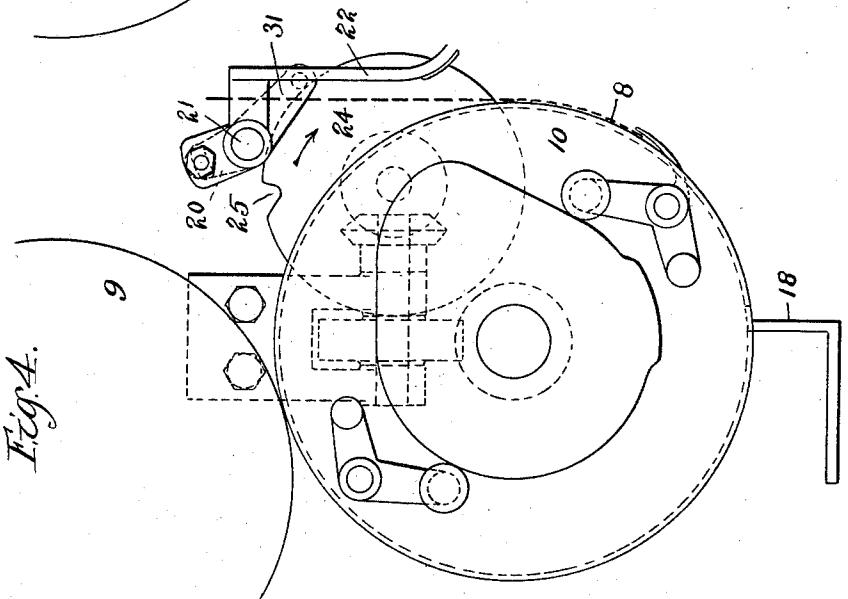

Fig. 4.

Witnesses.
Wm. M. Rheem.
Wm. F. Fleming

Inventor
Samuel G. Goss,
by Bond Adams Pickard & Jackson.
Atty's.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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

COUNTING APPARATUS FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 612,967, dated October 25, 1898.

Application filed June 17, 1897. Serial No. 641,117. (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 Counting Apparatus for Printing-Presses, whereof the following is a specification.

My invention relates to counting apparatus for printing-presses, and particularly to counting apparatus of the general class described in my Letters Patent of the United States No. 583,992, granted June 8, 1897, in which the count is indicated by the displacement of certain papers and their arrangement at an angle to the remaining papers in the pile, so that one or more corners of the displaced papers project beyond the other papers.

The object of my present invention is to provide improved mechanism for marking the count by turning certain of the papers angularly with relation to the other papers, as described in my former patent, although, broadly considered, my present invention is not confined to the turning of certain papers angularly with relation to other papers in order to indicate the count.

To this end my invention, broadly stated, consists in the combination, with a delivery-carrier, of a counting device which frictionally engages the papers which indicate the count and retards them, so that they are caused to project beyond other papers in the pile, and this whether the retarded papers are caused to assume an angular position or not.

My invention further consists in providing means for frictionally engaging the papers which are to mark the count at one side, and thereby retarding the side so engaged and causing the paper to assume an angular position with reference to the remaining papers; also, in providing mechanism which engages the paper as it is being delivered at one side and near the rear edge thereof, by which I mean the edge which is at the rear as the paper moves with the carrier.

My invention also comprises certain other more detailed improvements which will be specifically hereinafter pointed out.

In the accompanying drawings, Figure 1 is a side elevation of part of the delivery apparatus of a perfecting printing-press, illustrating my improvements. Fig. 2 is a plan view of certain of the parts shown in Fig. 1. Fig. 3 is an end view of one of the cutting-cylinders, showing the counting mechanism. Fig. 4 is a diagrammatic view showing the counting devices more specifically, and Fig. 5 is a similar view showing the counting devices in the act of engaging or nipping the paper to indicate the count.

Referring to the drawings, 6 indicates the frame of the press, which is preferably of some approved perfecting type.

7 indicates a table which receives the folded sheets or papers 8 as they are delivered from the press and upon which the papers are piled in such manner as to overlap.

9 10 indicate delivery-cylinders, the cylinder 9 being provided with suitable mechanism for cutting the web 11 transversely into sheets, coacting with the cylinder 10 for that purpose. The cylinder 9 is provided with folding-blades 12, by which the sheets are folded transversely between folding-rollers 13 14. The cylinders 9 10 are provided with such mechanism as is necessary to enable them to perform the operations for which they are intended; but as such features form no part of my present invention I shall not describe the delivery mechanism in detail, except as it may be necessary to a full understanding of my said invention.

15 indicates tape-rollers, and 16 indicates tapes which pass around the rollers 15 and 13 and over the rollers 14, serving to conduct the transversely-folded sheets down and deliver them to the cylinder 10, the grippers 17 of which seize their leading ends and carry them partially around such cylinder to stops 18, which intercept them and cause them to be deposited upon the table 7. One or more shoes 19 coact with the tapes 16 to guide the folded sheets to the cylinder 10.

The counting apparatus, which forms the special subject-matter of my present application, consists of a retarding device which is caused to act at certain periods by the revolution of the delivery-cylinders, which apparatus I shall now describe.

20 indicates a bracket which is pivotally mounted upon a suitable stud 21 in proximity to the cylinder 10, as shown in Fig. 2. The bracket 20 is provided with an arm 22, which, as here shown, is angular in form and extends down in proximity to the cylinder 10, near one end thereof, as shown in Fig. 2. The arm 22 is provided with a friction-pad 23, of rubber, leather, or other suitable material, the arrangement of the arm 22 and pad 23 being such that as the bracket 20 is rocked, as will be hereinafter described, the pad 23 may be moved toward the surface of the cylinder 10, thereby engaging the paper upon the cylinder with sufficient firmness to retard the paper at the side where the engagement with the arm 22 takes place. In practice the operation of the apparatus is so timed that the paper is engaged by the retarding device near one side and at or near the rear edge, as indicated in Fig. 5, at or about the time the delivery-grippers are opened to deliver such sheet.

The bracket 20 is rocked at suitable intervals for the purpose of indicating the count by means of a disk 24, having in its periphery a notch 25, said disk being regularly revolved by beveled gears 26 27, worm-wheel 28, and worm 29, said worm being mounted upon the axis 30 of the cylinder 10. This arrangement, however, may be varied, as the disk 24 may be caused to rotate by other suitable mechanism.

31 indicates an arm which is secured to the bracket 20 and carries a pin 32, which bears upon the periphery of the disk 24, a spring 33 serving to normally hold the pin 32 upon the periphery of said disk.

From the above description it will be noted that as the disk 24 is caused to rotate in the direction indicated by the arrow in Figs. 4 and 5 the arm 22 will be held normally in the position shown in Fig. 4, owing to the fact that the pin 32 will ride upon the periphery of the disk 24. When, however, the notch 25 passes under the pin 32, said pin, under the action of the spring 33, will be caused to enter said notch, thereby rocking the bracket 20 upon its stud, throwing the pad 23 toward the cylinder 10, as shown in Fig. 5, and causing it to strike and retard the paper which is at that time carried by said cylinder. This movement of the arm 22 occurs at or about the time the delivery-grippers are opened to deliver a sheet and is practically instantaneous, as the pin 32 is at once moved out of the notch 25 by the continued rotation of the disk 24, the rear edge of said notch being inclined to permit the pin to move out thereof. Inasmuch as the number of operations of the arm 22 in a given time is dependent upon the number of revolutions of the disk 24 it is evident that by increasing the rapidity of rotation of the disk 24 relatively to the speed of the cylinder 10 papers may be marked off at shorter intervals than otherwise, and consequently any desired count may be indicated by properly regulating the speed of the disk 22, or, if desired, by increasing the number of notches in said disk the papers may be counted off in smaller bunches.

I do not wish to be limited to the specific details above described, as many modifications thereof may be made without departing from my invention. Neither do I wish to be limited to so arranging the retarding device that in operating it will engage the papers which mark the count at or near one side, since, as hereinbefore stated, my invention includes also displacing such papers whether such displacement be angular or not. Nevertheless, inasmuch as the best results are secured by such angular displacement the arrangement herein shown and described I consider to be the best embodiment of my invention.

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

1. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of means adapted to frictionally engage and retard certain papers to cause them to assume an irregular position with reference to the other papers delivered, substantially as described.

2. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of means adapted to frictionally engage certain papers at one side of a central line to cause them to assume an angular position with reference to the other papers delivered, substantially as described.

3. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a counting device adapted to frictionally engage certain papers at one side near their rear edge, and means for operating said counting device, substantially as described.

4. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a rocking arm adapted to frictionally engage certain papers, and means for rocking said arm at stated intervals, substantially as described.

5. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a rocking arm adapted to frictionally engage certain papers, a rotary disk having a notch 25, an arm 31 connected to said rocking arm and having a pin 32 adapted to enter said notch 25, and means for rotating said disk, substantially as described.

6. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a counting device arranged opposite said carrier, and means for moving said device toward said carrier to engage the surface of and retard certain papers, substantially as and for the purpose specified.

7. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a counting device arranged opposite said carrier, and means for moving said device toward said carrier to frictionally en-

gage and retard certain papers, substantially as and for the purpose specified.

8. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a counting device arranged opposite said carrier at one side of the center thereof, and means for moving said device toward said carrier to engage certain papers, substantially as and for the purpose specified.

9. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a rocking arm, said arm having a friction-pad adapted to frictionally engage certain papers, and means for rocking said arm at stated intervals, substantially as described.

10. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a counting device arranged opposite said carrier, said counting device having a friction-pad, and means for moving said device toward said carrier to cause said pad to engage certain papers, substantially as described.

11. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of a counting device adapted to be operated to frictionally engage and retard certain papers, and means for operating said counting device to so engage said papers, substantially as described.

12. In a counting apparatus for printing-presses, the combination with a delivery-carrier, of means adapted to engage the surface of and retard certain papers to cause them to assume an irregular position with reference to the other papers delivered, substantially as described.

SAMUEL G. GOSS.

Witnesses:
JOHN L. JACKSON,
ALBERT H. ADAMS.