

(No Model.)

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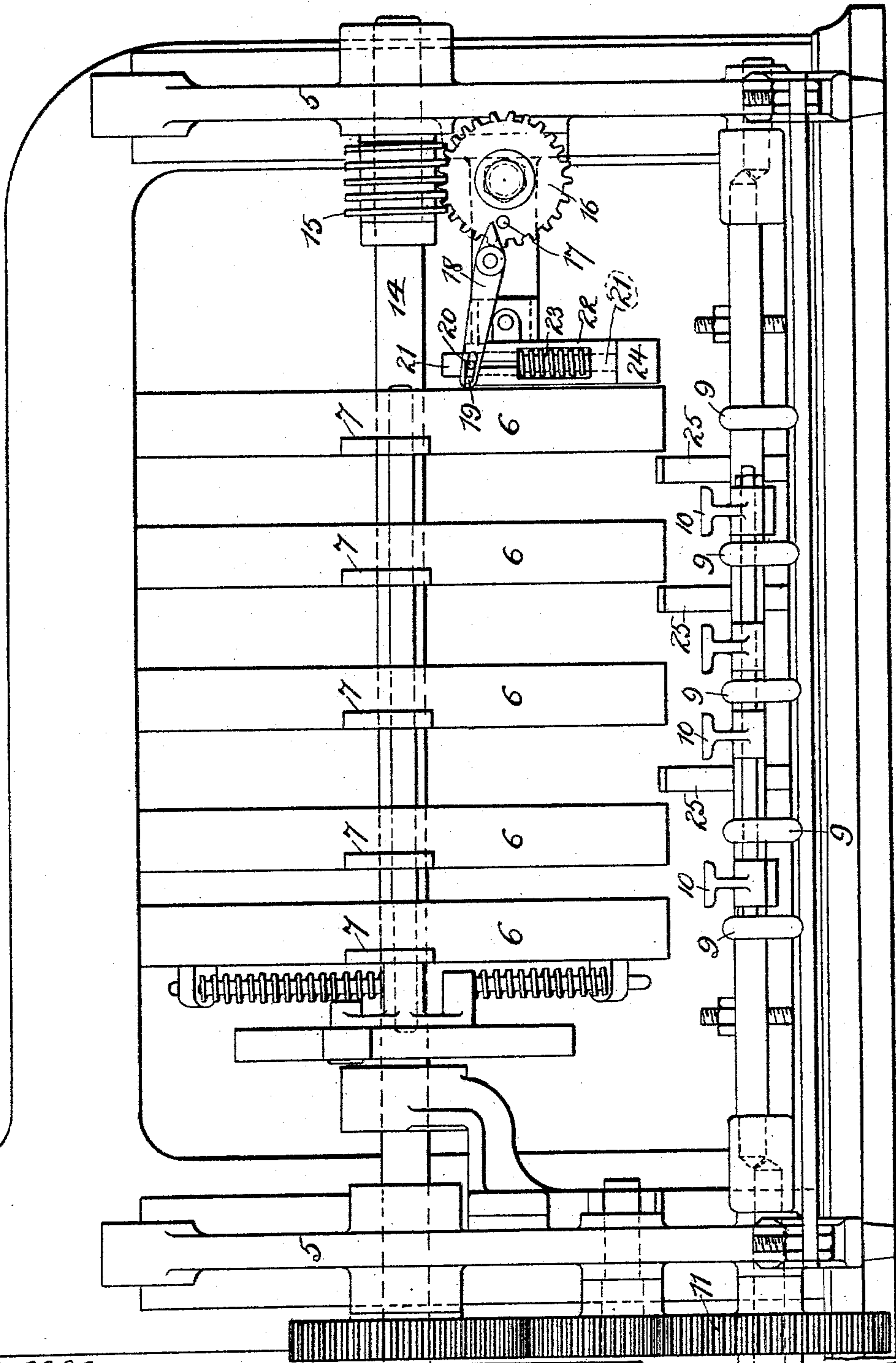
S. G. GOSS.

COUNTING APPARATUS FOR PRINTING PRESSES.

No. 583,992.

Patented June 8. 1897.

*Fig. 1.*



*Witnesses*  
*Wm. J. Fleming*  
*St. M. Rheum*

*Inventor*  
*Samuel G. Goss,*  
*by Bond, Adams, Rickards & Jackson, Attys*

(No Model.)

3 Sheets—Sheet 2.

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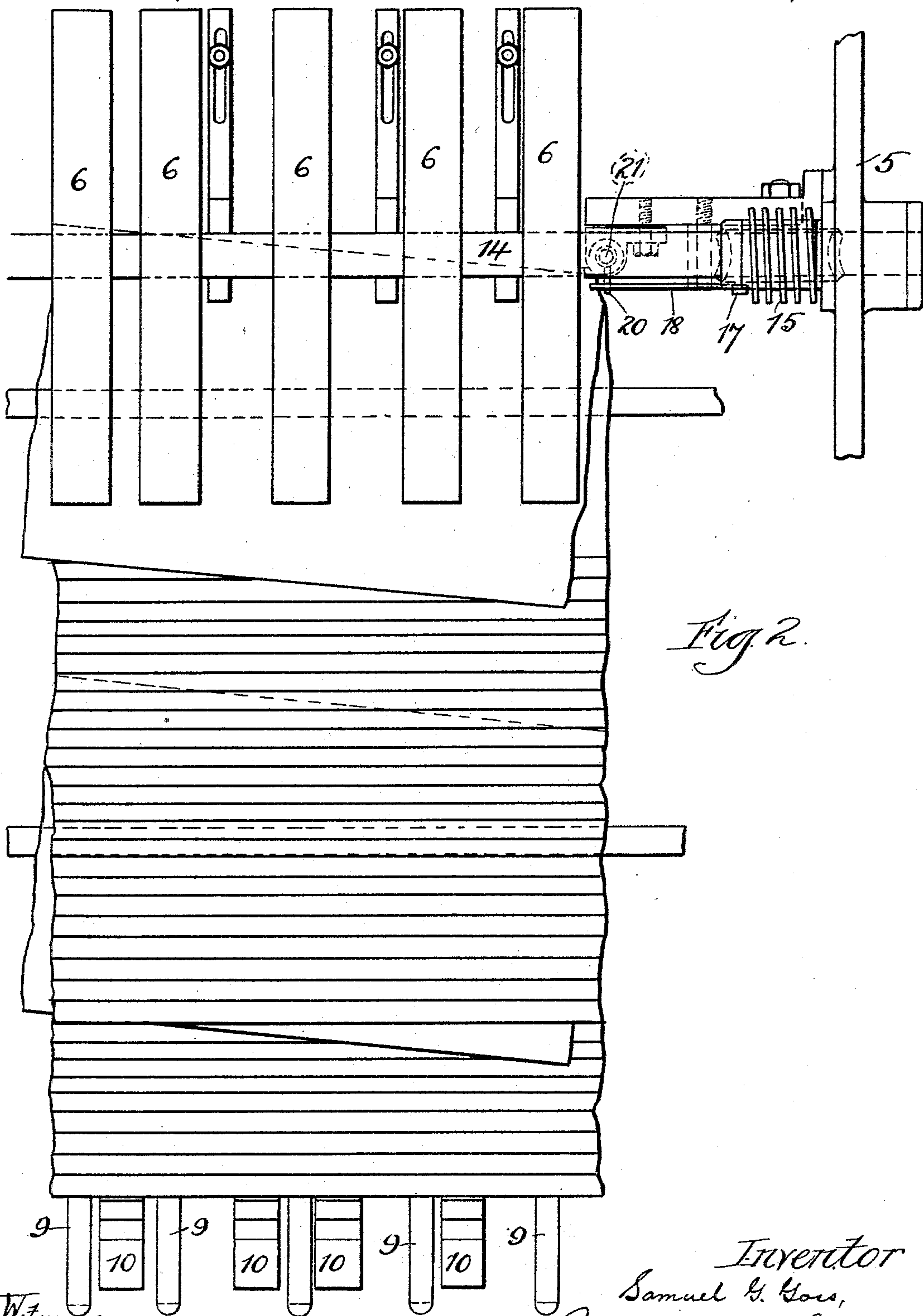


Fig. 2.

Witnesses  
Wm. A. Hamming  
M. M. Rheum

by

Inventor  
Samuel G. Goss,  
Bond, Adams, Dick and Jackson,  
Attys.



(No Model.)

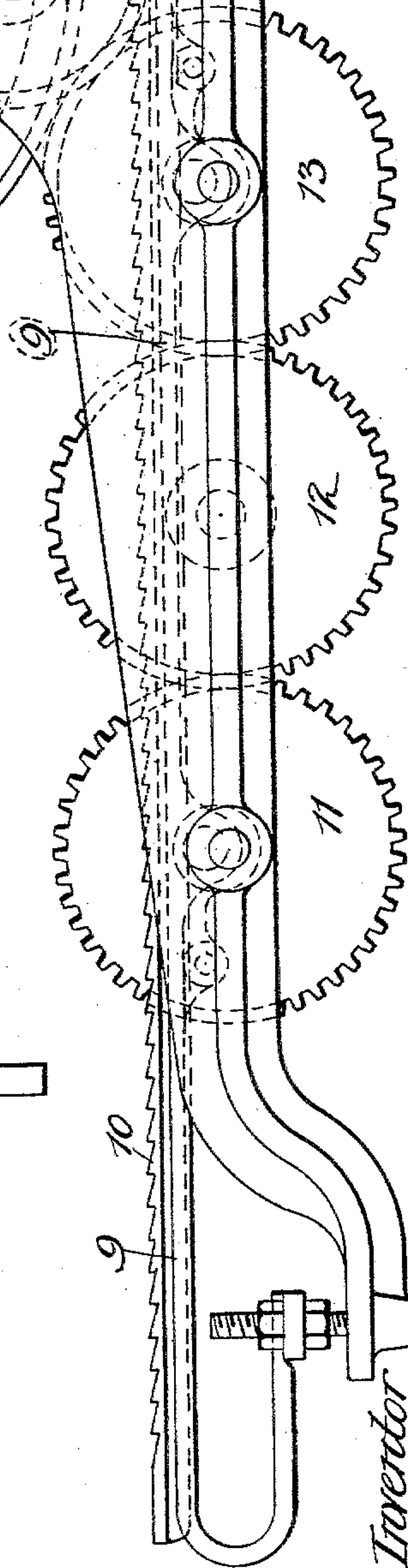
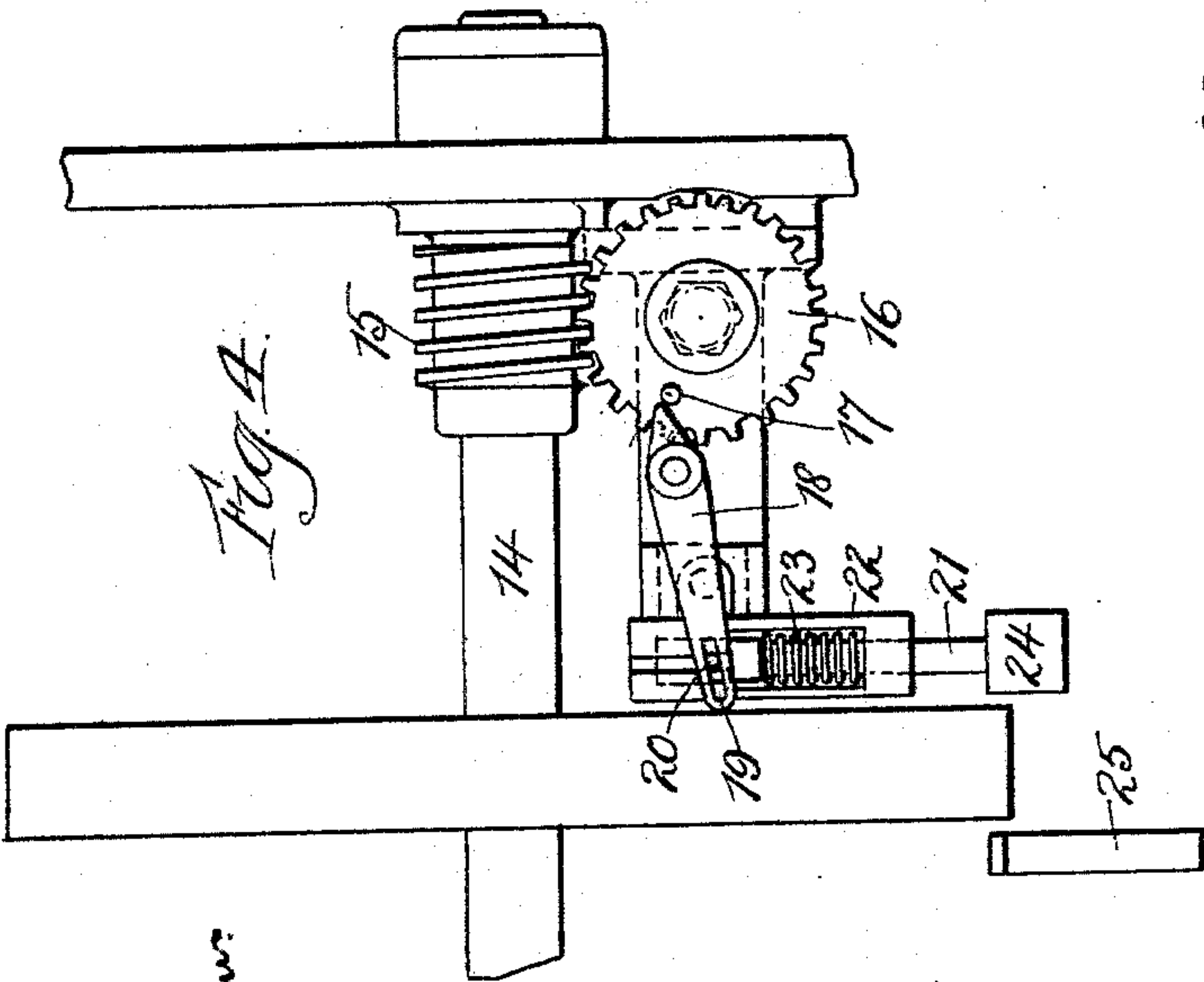
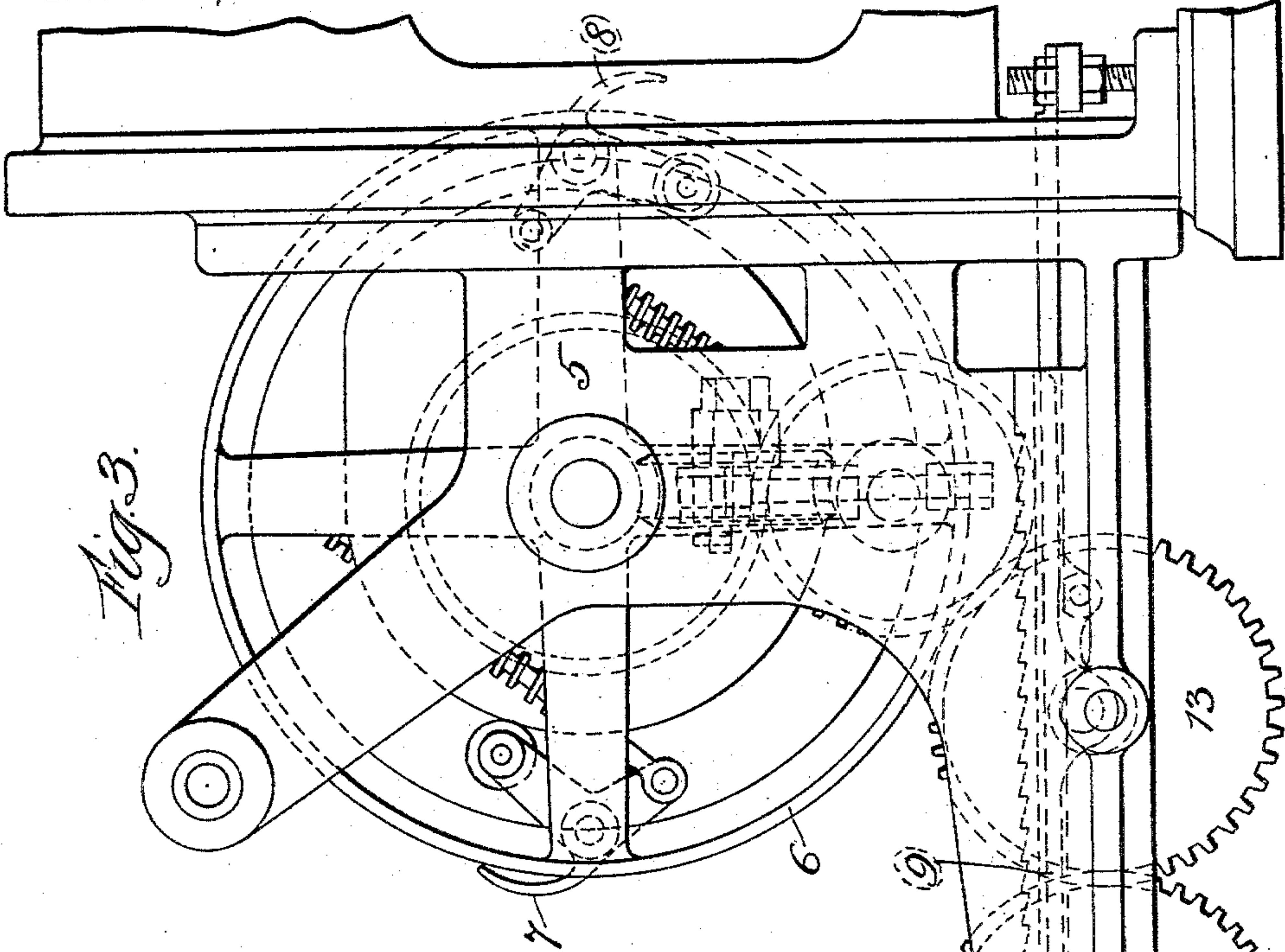
3 Sheets—Sheet 3.

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COUNTING APPARATUS FOR PRINTING PRESSES.

No. 583,992.

Patented June 8, 1897.



Witnesses  
Wm. F. Hummel  
S. M. N. Schenck

Inventor  
Samuel G. Goss,  
By Ronald Adams Richardson, Attorney



# 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. 583,992, dated June 8, 1897.

Application filed February 11, 1895. Serial No. 537,987. (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, of which the following is a specification, reference being had to the accompanying drawings, in which—  
Figure 1 is an end elevation of the delivery apparatus of a press, showing my improved counting mechanism. Fig. 2 is a partial plan view. Fig. 3 is a side elevation. Fig. 4 is a detail of the counting mechanism, showing it in a different position.

In web-perfecting presses it is quite necessary that means should be provided for counting out the papers delivered, so that the operator will not have to stop and count them when removing the papers from the press. For this purpose in presses where the folded papers have been delivered in a vertical position apparatus has been provided for causing certain of such papers to project beyond the others, the papers being usually marked off in series of twenty-five, the twenty-fifth paper projecting beyond the others.

Various other methods have been devised for counting out the papers, which it is not necessary to specify herein.

The chief object of my present invention is to provide new and improved means for counting out the papers, which is particularly applicable to presses in which the papers are delivered in a substantially horizontal position, whereby certain papers are shifted at an angle to mark the count and a folded edge of the paper is caused to project beyond the adjacent papers, thus avoiding possibility of mistake when the operator separates the piles. This object is accomplished in the manner and by the mechanism hereinafter described and claimed.

In the accompanying drawings the numeral 1 indicates the frame of the press; 6, a series of pulleys or a cylinder which constitutes a delivery-carrier; 7 8, grippers on the pulleys or cylinder; 9, a series of bars upon which the folded papers are delivered by the said carrier, and 10 a series of ratchet-bars by which the papers are delivered upon the

bars 9 and moved slowly upon said bars, thereby causing the papers to slightly overlap one another.

11 12 13 indicate a series of gears by which the ratchet-bars 10 are driven. The delivery pulleys or cylinder 6 may be of any approved construction, and instead of using the bars 9 and ratchet-bars 10 any other approved mechanism for this purpose may be used, such as slowly-moving tapes. I prefer the ratchet-bars, however, as I have found them to be more satisfactory. The construction of the delivery pulleys or cylinder and ratchet-bars does not form part of this invention, and as their construction is well understood, and is fully shown and described in United States patent to me, No. 513,678, dated January 30, 1894, it will be unnecessary to describe them here in detail.

14 indicates a shaft, upon which the pulleys or cylinder 6 are mounted, as shown in Fig. 1.

15 indicates a worm, which is mounted upon the shaft 14 and meshes with a worm-wheel 16. The worm and worm-wheel are so adjusted with relation to each other that the worm-wheel will rotate a certain distance upon the delivery of each paper. In the construction shown the worm-wheel is arranged to make one complete rotation for twenty-five complete rotations of the delivery pulleys or cylinder, and when only one paper is delivered at each rotation of the delivery pulleys or cylinder—as, for instance, a sixteen-page paper—the papers will be marked off into piles of twenty-five. If, however, eight-page papers are produced, two papers will be delivered for each complete rotation of the delivery-rollers, and the piles marked off will contain fifty copies. It will be understood, however, that the number of copies in the piles counted out may be varied as desired by adjusting the parts of the machine.

17 indicates a laterally-projecting pin carried by the worm-wheel 16, which pin is adapted to engage one arm of a lever 18, mounted upon a suitable support. The other arm of the lever 18 is provided with a slot 19, which receives a pin 20, projecting from a rod 21, carried in a box or frame 22, supported in any suitable manner. The arrangement is such that by the rocking of the lever 18 the rod 21



may be moved vertically. The rod 21 is normally held in its uppermost position by a spring 23, as shown in Fig. 4. The rod 21 preferably carries a block 24 at its lower end, but it may be enlarged or bent to the proper shape, the object being to make the rod 21 serve as a stop for one of the papers, as will be hereinafter set forth.

25 indicates a series of stationary stops arranged under the pulleys or cylinder 6, which serve to stop the papers as they are delivered from the pulleys or cylinder 6, in a manner well understood, the stops intercepting the front edge of the sheet after it has been released by the grippers, but while it is still on the cylinder or the pulleys constituting the cylinder. The rod 21 is arranged slightly forward of the stops 25, and it is normally held up and very close to cylinder 6 in such position that it is not engaged by the papers as they are delivered from the pulleys or cylinder 6. When, however, the rod 21 is moved downward, the block 24 is moved into such position that just before a paper is delivered from the pulleys or cylinder 6 one end of the paper will strike the block 24, causing the paper to be pushed from the grippers and turned at an angle to the other papers while the paper is still on the cylinder 6 or before the sheet has touched the others, as shown in Fig. 2. As will be understood from the above description, this is accomplished at stated intervals by the rotation of the worm-wheel 16, which causes the rocking of the lever 18 through the instrumentality of the pin 17. One arm of the lever 18 is beveled, so that more accurate adjustment may be made. As soon as the lever 18 is tripped by the pin 17 it will be returned to its normal position by the spring 23, and will remain in such position until it is again tripped upon the completion of another rotation by the worm-wheel 16.

I do not limit myself to the specific details of the construction illustrated, as my invention includes equivalent devices.

Ordinarily in counting off papers by displacing a paper at certain intervals one sheet is advanced beyond the others, and that part of the paper which projects beyond the others to indicate the count is free from folds, so that the free edges of the paper project. Therefore the papers at each side of the one projected also have their free or unfolded edges uppermost, and the operator in separating the papers in bunches is liable to catch his fingers in one of the papers adjacent to the one projected, which disarranges the papers or tears them, and, moreover, he is also liable to take up an improper number. In my invention certain papers are shifted at an angle while on the delivery-carrier to mark the count, and a folded edge of the paper is caused to project beyond the adjacent papers, so that a corner of said paper projects and thus avoids the possibility of the operator making a mistake when he separates the piles. In

delivery apparatus the papers are delivered at a high rate of speed, and if the interception of the paper takes place at the middle or approximately at the middle of the folded papers the intercepted paper is liable to be thrown forward and either be projected too far beyond the other papers or be thrown entirely out of the pile, thus destroying the count. In my invention there is no liability whatever of throwing the paper out of the pile, as the folded paper is merely shifted or turned at an angle to the other papers in the pile, and the back-stops hereinbefore explained serve to prevent undue movement of the sheet. If a folded paper is projected in substantially a straight line beyond the other papers, the projected paper is very liable to be drawn back into line with the other papers in the pile by the friction caused by the moving paper, which objection is avoided by turning the paper at an angle, as in my invention.

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

1. In a counting apparatus for a printing-press, the combination with a delivery-carrier, of a counting device normally held out of operative position and so located that it can be moved into the path of the paper at one side of the central line thereof while the paper is still on the carrier, and means for moving the counting device, whereby one paper is intercepted and turned angularly with relation to the other papers, substantially as and for the purposes described.

2. In a counting apparatus for a printing-press, the combination with a delivery-carrier, and one or more stationary stops, of a counting device normally held out of operative position, and so located that it can be moved into the path of the paper at one side of the central line thereof while the paper is still on the carrier, and means for moving the counting device, whereby one paper is intercepted and turned angularly with relation to the other papers, substantially as and for the purposes described.

3. In a counting apparatus for a printing-press, the combination with a delivery-carrier for delivering the papers in a pile, of a vertically-movable counting device normally held out of operative position and so located that it can be moved into the path of the paper at one side of the central line thereof while said paper is still on the carrier, and means for automatically operating the counting device at intervals, whereby the paper is intercepted and turned angularly with relation to the other papers, substantially as and for the purposes described.

4. In a counting apparatus for a printing-press, the combination with a delivery-carrier for delivering papers in piles, with each paper overlapping the preceding one, of a counting device normally held out of operative position and so located that it can be moved into the path of the paper at one side of the central line thereof while the paper is still on the car-



rier, and means for operating the counting device at intervals whereby certain papers are intercepted and turned angularly with relation to the other papers, substantially as and for the purposes described.

5. In a counting apparatus for a printing-press, the combination with a delivery-carrier, and one or more stationary stops for stopping the papers delivered from said delivery-carrier, of a vertically-reciprocating counting device arranged in advance of the stops, normally held out of operative position and so located that it can be moved into the path of the paper at one side of the central line thereof while the paper is still on the carrier, and means for reciprocating the counting device at intervals, whereby certain papers are intercepted as they are delivered and turned laterally to an angular position relative to the other papers, substantially as and for the purposes described.

6. The combination with a delivery-carrier, and one or more stops, as 25, of a vertically-reciprocating rod 21 normally held out of op-

erative position and so located that it can be moved into the path of a paper at one side of the central line thereof while the paper is still on the carrier, and devices operated by the delivery apparatus for reciprocating said rod, whereby certain papers are intercepted and turned angularly with relation to the other papers, substantially as and for the purposes described.

7. The combination with a delivery-carrier, and one or more stops, as 25, of a reciprocating rod 21 arranged in advance of said stops and acting to intercept certain papers and cause them to turn laterally to an angular position relatively to the other papers, a lever 18, a worm-wheel 16, and means whereby the lever is rocked by the rotation of the worm-wheel, substantially as and for the purposes described.

SAMUEL G. GOSS.

Witnesses:

JOHN L. JACKSON,  
JULIA M. BRISTOL.