

No. 797,319.

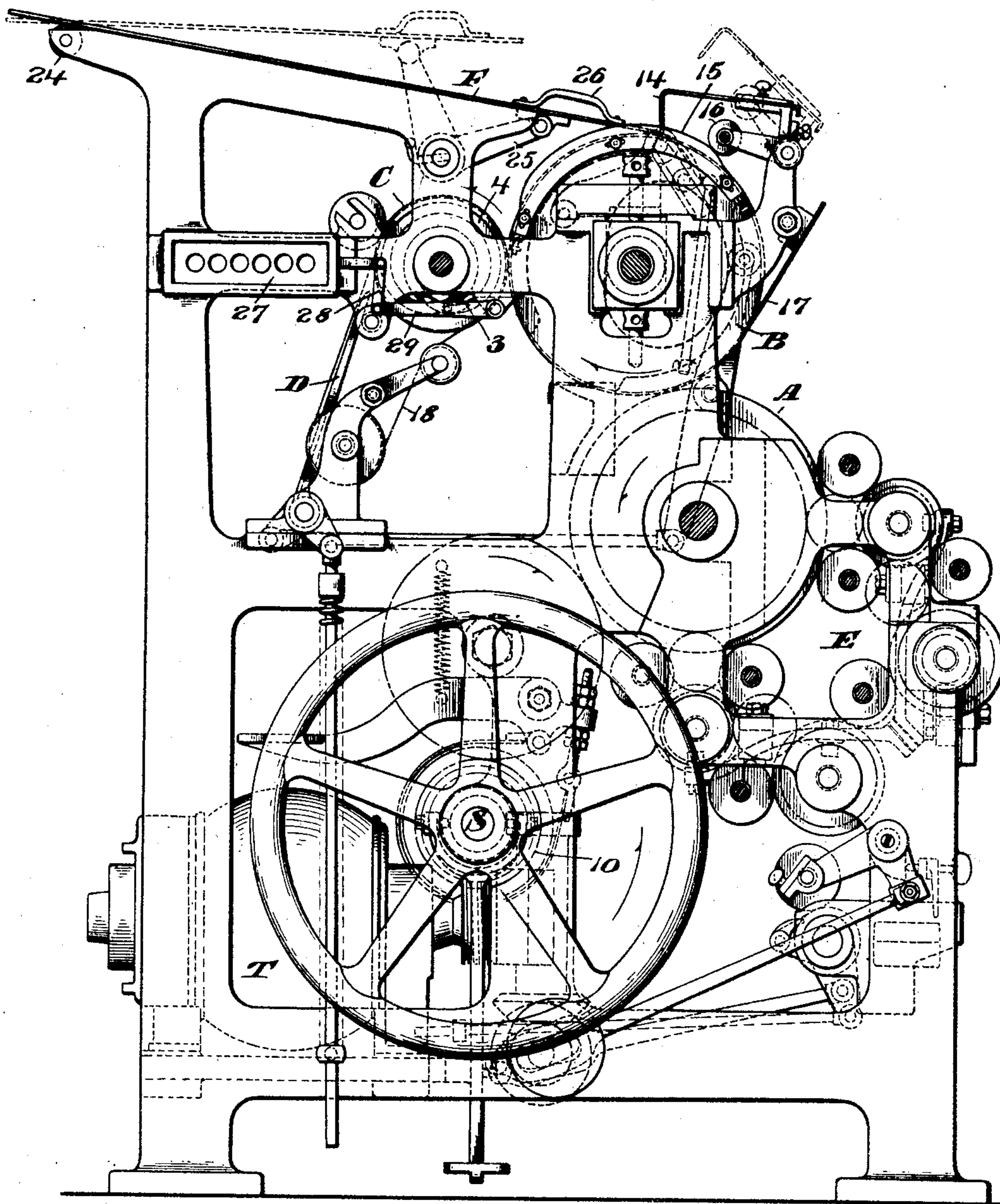
PATENTED AUG. 15, 1905.

G. F. READ.
PRINTING PRESS.

APPLICATION FILED DEC. 18, 1903.

3 SHEETS—SHEET 1.

Fig. 1.



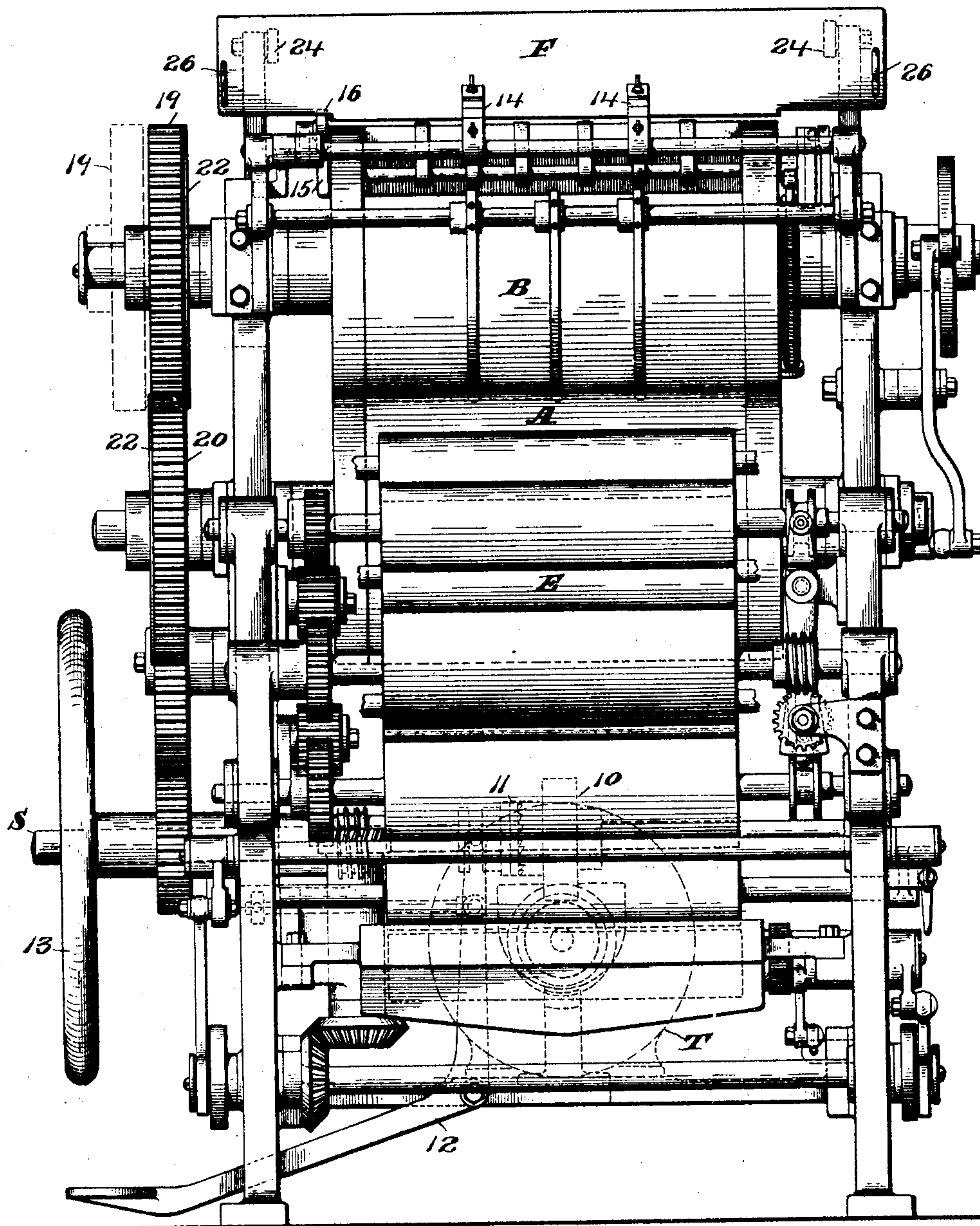
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3 SHEETS—SHEET 2.

Fig. 2.

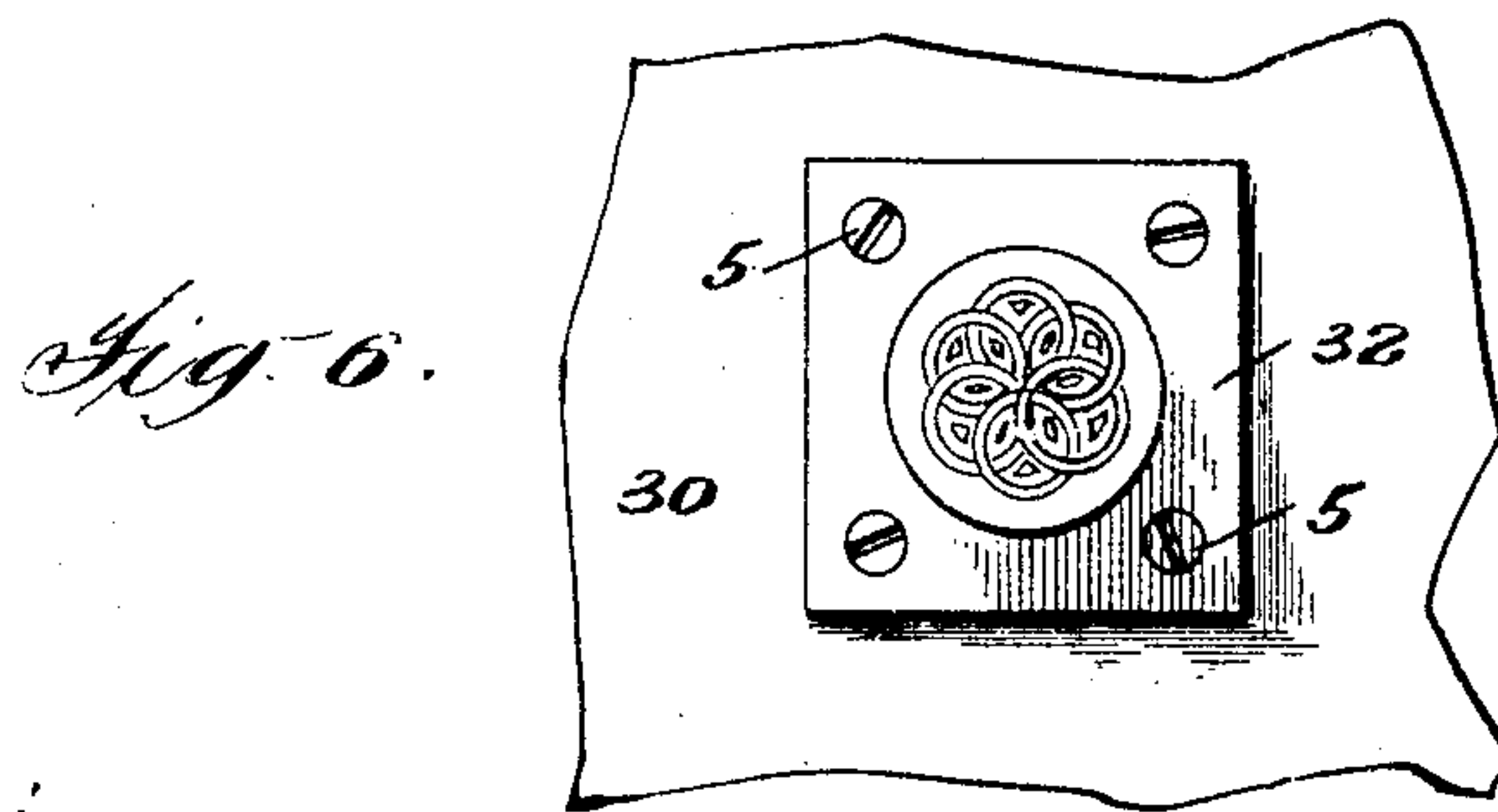
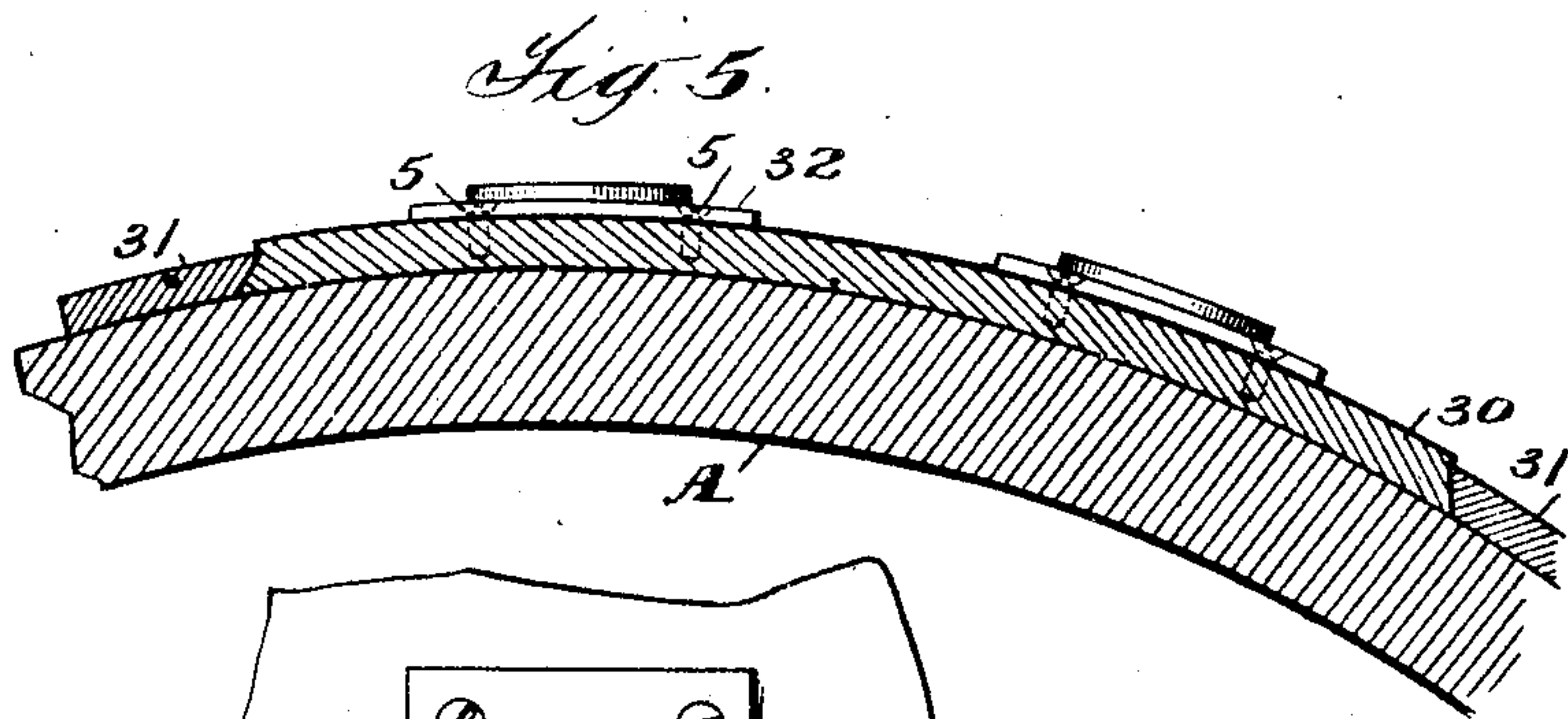
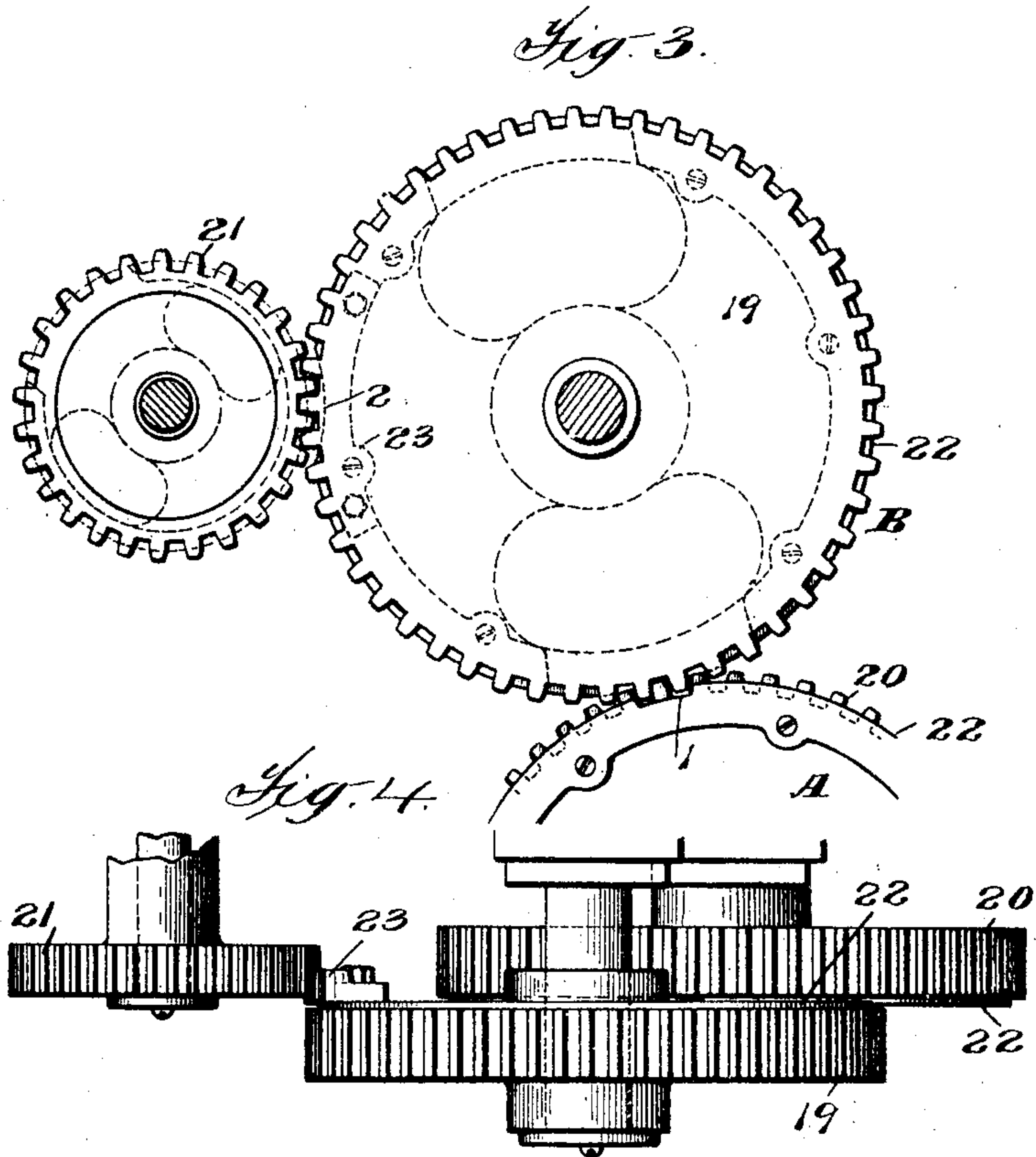


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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

GEORGE F. READ, OF NEW YORK, N. Y., ASSIGNOR TO ROBERT HOE, OF NEW YORK, N. Y.

PRINTING-PRESS.

No. 797,319.

Specification of Letters Patent.

Patented Aug. 15, 1905.

Application filed December 18, 1903. Serial No. 185,638.

To all whom it may concern:

Be it known that I, GEORGE F. READ, a citizen of the United States, residing at New York city, county of Kings, and State of New York, have invented certain new and useful Improvements in Printing-Presses, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to an improved printing-press which is adapted especially for printing the seals, numerals, or similar matter on bank-notes, the especial object of the invention being to provide a simple, compact, and efficient machine for this purpose in which the cylinders shall be readily and conveniently accessible for the operations of making ready and inking up.

A further object is to provide a more efficient check against fraud than in previous presses of this class.

For a full understanding of the invention a detailed description of a construction embodying all the features of the same in their preferred form as applied in a seal-press will now be given in connection with the accompanying drawings, forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the press. Fig. 2 is a front view of the same. Fig. 3 is a detail view of the sliding-gear construction for connecting and disconnecting the type and impression cylinders. Fig. 4 is a plan view of the parts shown in Fig. 3. Fig. 5 is a detail of a portion of the type-cylinder, showing the method of attaching the seals. Fig. 6 is a plan view of a portion of Fig. 5.

Referring to said drawings, A is the type-cylinder; B, the impression-cylinder; C, the delivery-roll; D, the fly for delivering the printed sheets; E, the inking mechanism for the type-cylinder, all this mechanism being actuated by suitable connections from the main driving-shaft S, which is driven from a motor T through the motor-shaft and a worm-wheel 10, this worm being loose on the shaft S and adapted to be connected to and disconnected therefrom by a clutch 11, controlled by treadle-lever 12, so that by unclutching the worm from shaft S by the treadle the main shaft S and the press parts may be ac-

tuated slowly by hand through the hand-wheel 13 on the shaft.

The inking mechanism E and the fly-delivery D may be of any suitable construction, the inking mechanism preferably being arranged, as shown, so as to leave the upper part of the cylinder A exposed as far as possible for putting on the plates, and the top inking-roll may be made removable to enlarge this free space. The sheets are fed to the press over the feed-board F and against the stop 14, which is controlled from the impression-cylinder B by the cam 15 and roll 16, as usual in such constructions, and pass under the guide 17 to the delivery-cylinder C and thence to the fly D over the tapes 18 in substantially the same manner as heretofore, any suitable arrangement of pins or grippers being used on cylinders B C for receiving and delivering the sheets.

The features of construction in which the present invention is especially embodied will now be described. It is important that the type and impression cylinders should be readily and conveniently disconnected for inking up and readily connected again in proper relative positions for printing, and it is desirable also to provide means for conveniently assuring the proper position of the delivery-cylinder relatively to the impression-cylinder. For these purposes the gear 19, by which the impression-cylinder B is driven from cylinder A through gear 20 and which drives the delivery-cylinder C through gear 21, is mounted to slide on its shaft into and out of position to engage gear 20—that is, from the position shown in full lines in Fig. 2 to that shown in dotted lines in the same figure and in full lines in Fig. 4—thus allowing the type-cylinder A to be rotated independently of the impression-cylinder.

Each of the gears 19 20 is provided with a flange 22, these flanges being on opposite sides of the gears, so that the flange on each gear overlaps the teeth of the other gear, preventing any sidewise movement of the gears relatively to each other except at one point where the flanges 22 are provided with an opening or cut-away portion 1 of sufficient length to permit the gear 19 to be moved out of mesh with the gear 20 when these openings or cut-away portions of the flanges 22 are brought opposite each other. The cylinders A B must therefore always be in proper

relative position during printing, as the gears 19 20 cannot be disconnected or connected except when the cylinders are in the single position determined by the openings or cut-away portions 1 of the flanges 22.

The flange 22 on the cylinder B is also cut away at 2, so as to permit the flange to pass the teeth of gear 21 when the gear 19 is to be moved out of mesh with gear 20. Cylinders B C, however, need not be disconnected, and it is preferable that they should not be, but be at all times locked together in their correct relative positions. The gear 19, therefore, is preferably provided opposite the opening 2 in the flange 22 with a segment 23 on the inner side of the gear which is moved into mesh with the gear 21 when the gear 19 is moved outward for disconnecting the cylinders A B, thus locking the cylinders B C together and preventing any shifting of the relative position of these cylinders.

In making ready and in case of any defect in printing caused by the impression-cylinder packing it is necessary to get at the impression-cylinder quickly, and it is important also that the feed-board in such bank-note presses should be perfectly smooth for proper feeding of the sheets. I secure these results by making the feed-board F of a single piece of sheet metal, as shown, the rear end of which simply lies upon the roll 24 and the cylinder end of which is carried by rock-arms 25. The feed-board may thus be quickly removed from the cylinder, so as to leave the top surface of the latter fully accessible by raising the cylinder end of the feed-board F, which moves the feed-board upward and backward from the position shown in full lines in Fig. 1 to that shown in dotted lines in the same figure, a handle or handles 26 on the feed-board outside the path of travel of the sheets being shown for convenient handling of the feed-board. In such bank-note presses it is of the greatest importance that a counter shall be provided which cannot be tampered with, but must register each sheet delivered, thus serving as a check on both the feeder and the printer. I secure this result by actuating the counting mechanism by a closed cam on the delivery-cylinder instead of by the open cams heretofore used. In the construction shown the counter 27, which may be of any suitable construction, is actuated by link 28 and lever 29, which lever 29 carries a shoe 3, running in a closed cam 4 on the delivery-cylinder C, this cam being formed to operate the lever 29 only at each second revolution of the delivery-cylinder, as sheets are delivered thereby only at alternate rotations.

I have devised also a novel construction of printing-plate for seal and similar presses employing small printing-plates by which the plate may conveniently be attached at any part of the cylinder desired, this construction

being shown in detail in Figs. 5 and 6. In this construction the cylinder A carries on its surface plates 30, preferably of brass, which are secured in the desired position on the surface of the cylinder by any suitable means, as by the clamps 31, and upon these brass plates 30 are secured at the points desired the small printing-plates 32, which consist of steel plates bent to the curve of the cylinder and secured to the brass plates in the positions desired by screws 5, a simple and convenient means of providing a printing-cylinder with a number of small printing-plates being thus provided.

It is to be understood that the invention is not to be limited to the exact form or arrangement of the parts in the construction illustrated, but that modifications may be made in this construction while retaining the features claimed as my invention.

What I claim is—

1. The combination with impression and type cylinders, of gears connecting the cylinders, the gear on one of said cylinders being mounted to move longitudinally of the cylinder into and out of mesh with the gear on the other cylinder to permit the type-cylinder to rotate independently of the impression-cylinder, and means for preventing the disconnecting and connecting of the gears except when the cylinders are in a certain position whereby the cylinders will always be in proper relative position when connected for printing.

2. The combination with impression and type cylinders, of gears connecting the cylinders, the gear on one of said cylinders being mounted to move longitudinally of the cylinder into and out of mesh with the gear on the other cylinder to permit the type-cylinder to rotate independently of the impression-cylinder, and flanges on the gears provided with openings to permit the connecting and disconnecting of the gears only when the openings are opposite each other whereby the cylinders will always be in proper relative position when connected for printing.

3. The combination with type and impression cylinders and a delivery-cylinder, of gears connecting the cylinders, the gear on the impression-cylinder being mounted to move longitudinally of the cylinder into and out of mesh with the gear on the type-cylinder, and means for locking the impression-cylinder to the delivery-cylinder when the impression and type cylinders are disconnected.

4. The combination with type and impression cylinders and a delivery-cylinder, of gears connecting the cylinders, the gear on the impression-cylinder being mounted to move longitudinally of the cylinder into and out of mesh with the gear on the type-cylinder, and a segment on the impression-cylinder gear moved into mesh with the delivery-cylinder gear to

lock the delivery-cylinder to the impression-cylinder when the impression and type cylinders are disconnected.

5. The combination with type and impression cylinders and a delivery-cylinder, of gears connecting the cylinders, the gear on the impression-cylinder being mounted to move longitudinally of the cylinder into and out of mesh with the gear on the type-cylinder, means for locking the impression-cylinder to the delivery-cylinder when the impression and type cylinders are disconnected, and means for preventing the disconnecting and connecting of the gears except when the impression and type cylinders are in a certain position.

6. The combination of type, impression, and delivery cylinders geared together, the gear on the impression-cylinder being mounted to move longitudinally of the cylinder into and out of mesh with the type and delivery cylin-

der gears, flanges provided with openings on the type and impression cylinders and preventing the disconnection of the gears except when these openings are opposite each other, the flange on the impression-cylinder gear being provided with an opening to permit the flange to pass the delivery-cylinder gear, and a segment on the inner side of the impression-cylinder gear meshing with the delivery-cylinder gear to lock the impression and delivery cylinders together when the impression and type cylinders are disconnected.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE F. READ.

Witnesses:

J. A. GRAVES,
G. M. BORST.