

No. 664,584.

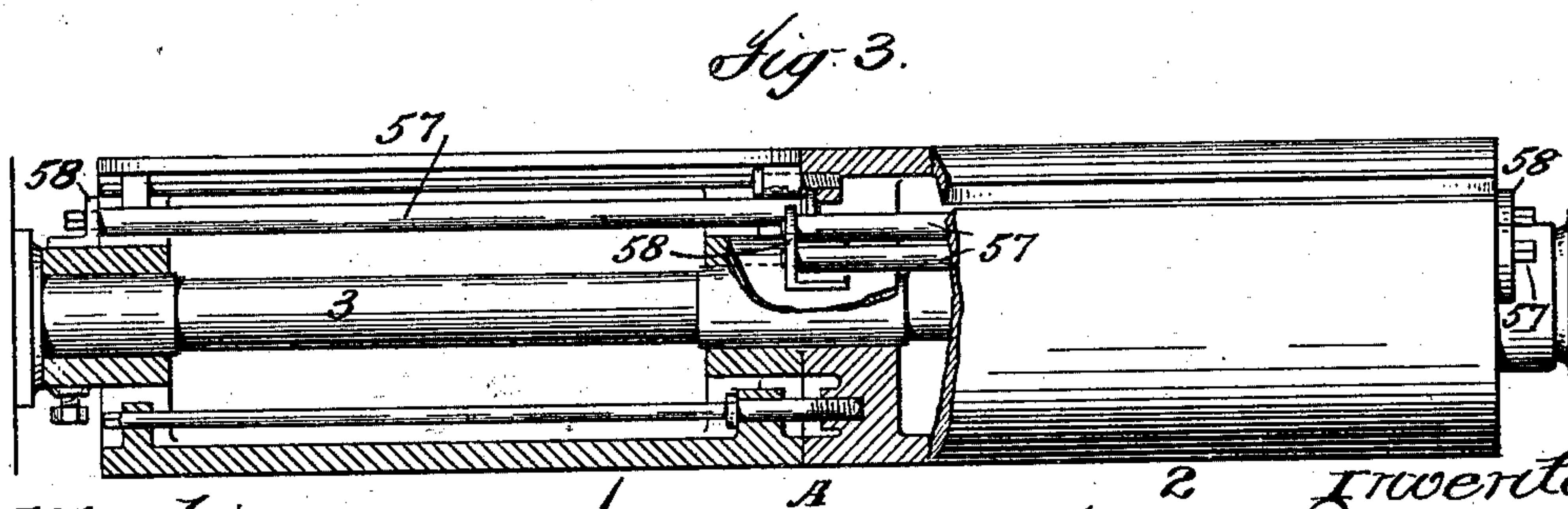
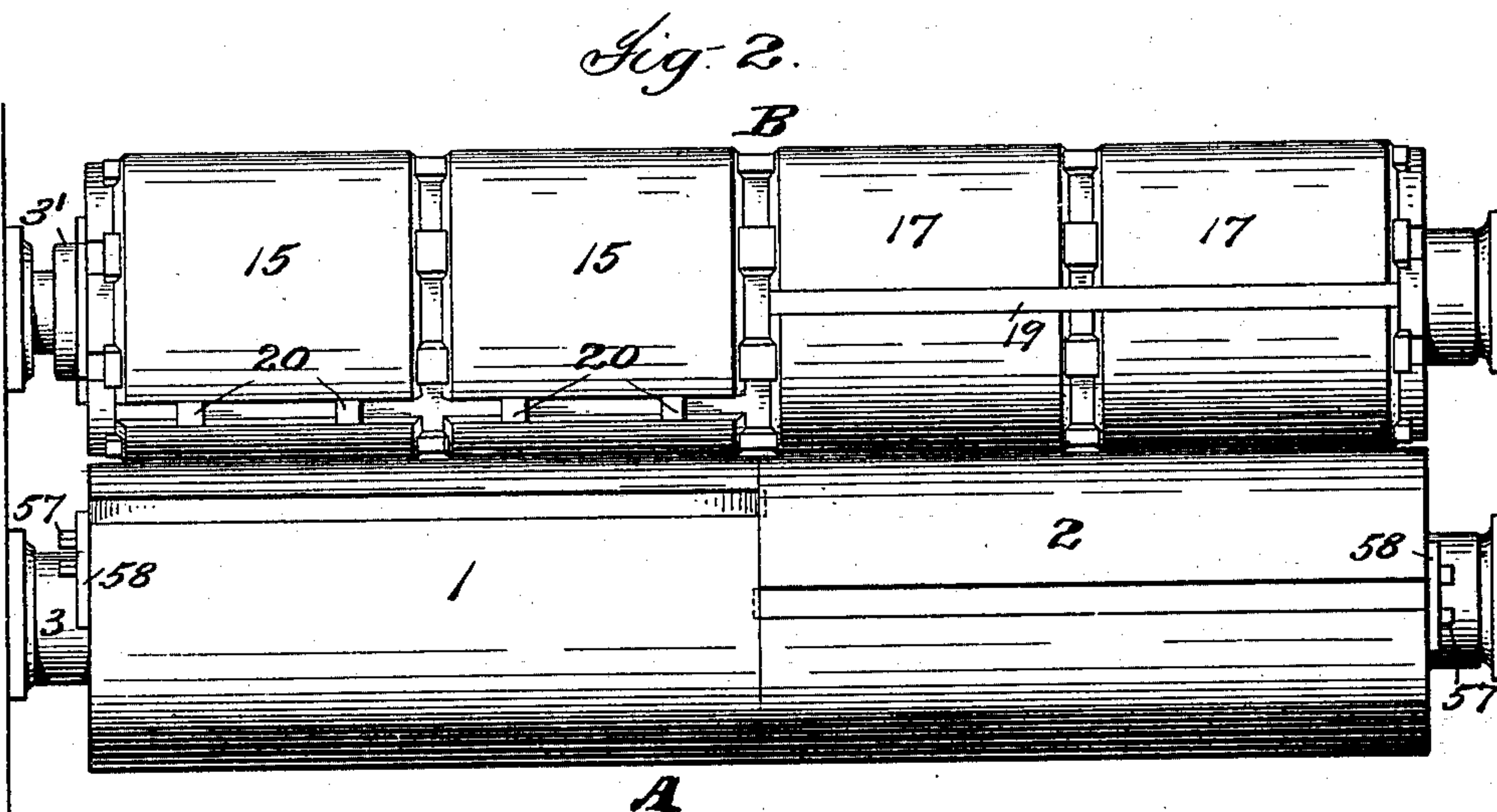
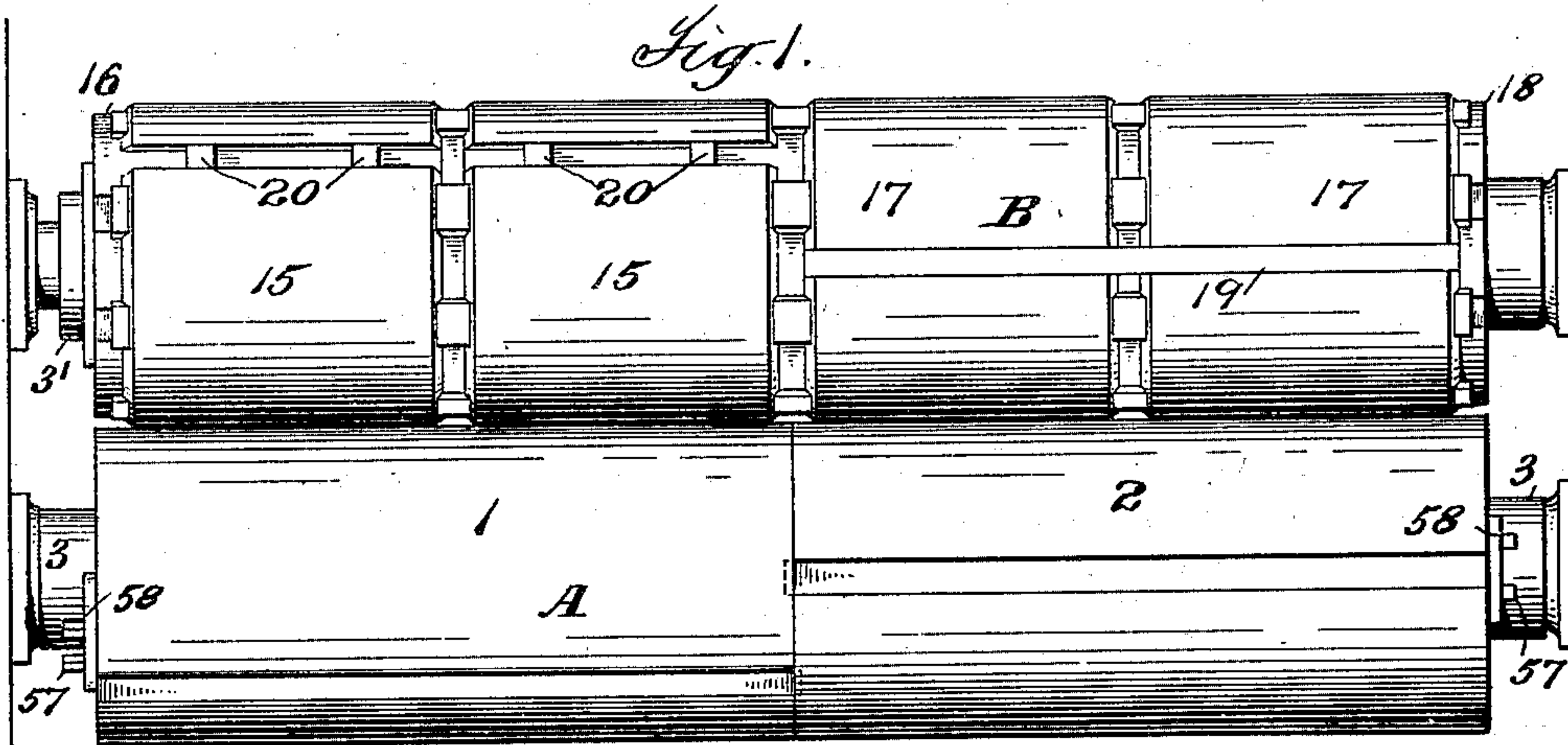
Patented Dec. 25, 1900.

O. ROESEN.
FORM CYLINDER.

(Application filed Jan. 22, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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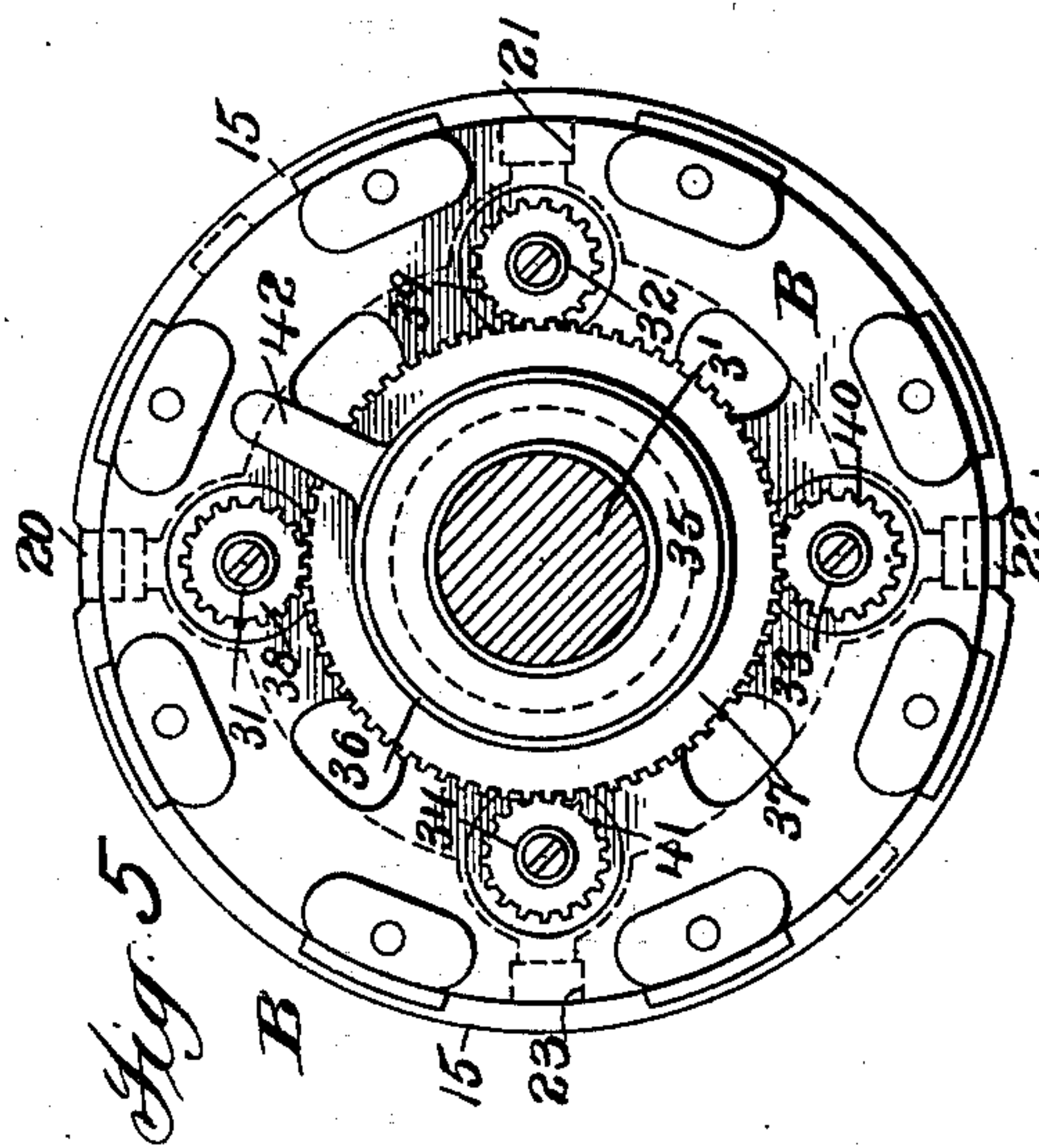
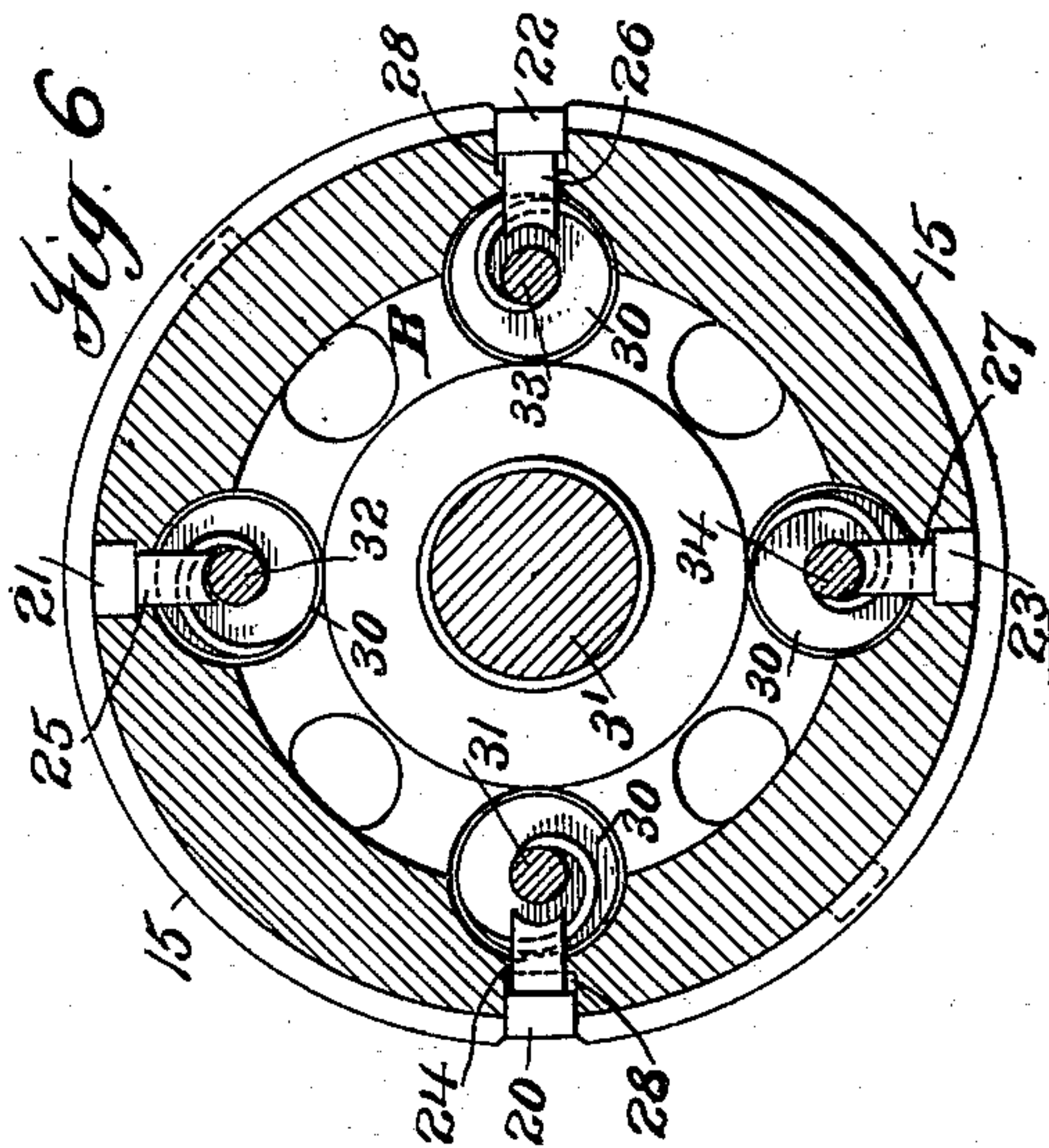
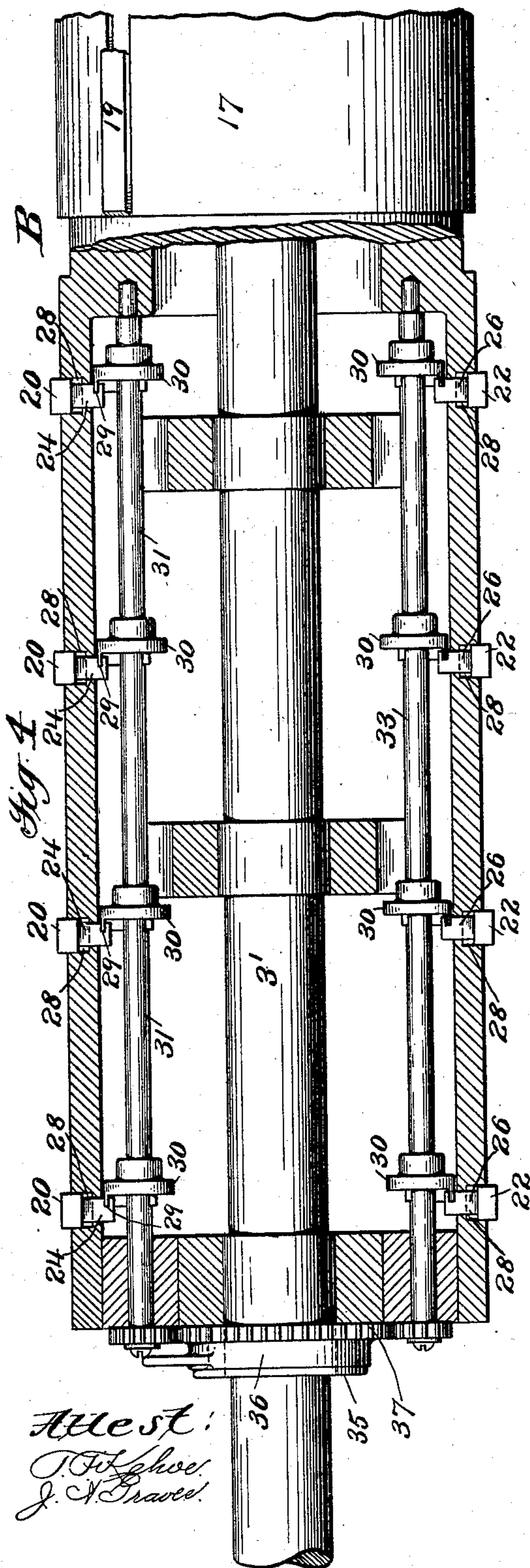
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FORM CYLINDER.

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2 Sheets—Sheet 2.

(No Model.)



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Atty

UNITED STATES PATENT OFFICE.

OSCAR ROESEN, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO ROBERT HOE AND CHARLES W. CARPENTER, OF SAME PLACE.

FORM-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 664,584, dated December 25, 1900.

Application filed January 22, 1900. Serial No. 2,248. (No model.)

To all whom it may concern:

Be it known that I, OSCAR ROESEN, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Form-Cylinders, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to certain improvements in devices for adjusting the margin-stops of the form-cylinders of printing-machines.

15 In an application filed December 8, 1899, Serial No. 739,586, I have shown and described a printing-couple the impression-cylinder of which is made in two parts, one of said parts being adjustable angularly with relation to the other. The said impression-cylinder is
20 more particularly intended for use with a double-wide-form cylinder carrying staggered plates, and the purpose of the construction is to bring the impression-surface into proper relation to the printing-surface when the direction of rotation of the printing-couple is
25 changed—as, for instance, in changing from black to color work, or vice versa. As is explained in said application, in double-wide machines employing staggered plates and
30 printing on a double-wide web if the rotation of the ordinary printing-couple be reversed the impressions do not fall in proper relation on the opposite sides of the web, and it is consequently necessary to introduce a special
35 slitting mechanism into the machine and in addition to use a special compensating mechanism to retard or increase the length of travel of one or both portions of the web, so as to bring the impressions on the opposite sides of
40 the web into proper relation to the other webs with which they are to be associated. In the printing-couple disclosed in the said application, however, one section of the impression-cylinder is angularly adjustable about the
45 shaft of the cylinder by twice the amount of the stagger between the plates. When the direction of rotation of such a couple is changed, it is of course necessary not only to adjust the movable section of the impression-cylinder with relation to the other section,

but it is also necessary to adjust the printing-plates on the coöperating portion of the form-cylinder. When the adjustments referred to have been made and the direction of rotation of the couple is reversed, the plates on the
55 form-cylinder and the coöperating part of the impression-cylinder which delivered the leading impression on the web when the couple was rotating in one direction still continue to deliver the leading impressions. 60

In printing-machines as now ordinarily constructed the plates are held on the cylinders by means of side clamps, which take over the beveled edges of the plates, one set of said
65 clamps usually being stationary and the other set adjustable, the clamps being arranged in grooves in the surface of the cylinder which are parallel to the axis of rotation of the cylinder. In addition to these clamps there is
70 also used with each plate what is known as a "margin" stop or bar, the said stop or bar being arranged on the surface of the cylinder parallel to the axis of rotation of the cylinder and in contact with the rear edge of the plate. As the cylinder rotates the plates, if not held,
75 would tend to shift around the cylinder in a direction opposite to the rotation of the cylinder, and these margin stops or bars are used to prevent this backward movement of the
80 plates.

It is the object of this invention to provide a form-cylinder which is primarily intended to be used with an impression-cylinder having one of its parts angularly adjustable, as before described, with a plurality of sets of
85 margin-stops, these margin-stops being arranged so that as the impression-cylinder is adjusted consequent to a change of rotation of the couple one set of margin-stops may be thrown into operative position and the re-
90 maining set or sets may be thrown into inoperative position.

With this and other objects in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter described, and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, which form a part of this specification, and in which like 100

characters of reference indicate the same parts, Figure 1 shows a double-wide printing-couple the impression member of which is provided with an adjustable section, the parts being in adjustment for rotation of the couple in one direction. Fig. 2 is a similar view showing the parts in adjustment for rotation of the couple in a direction reverse to that shown in Fig. 1. Fig. 3 is a side view, partly in section, of a form of impression-cylinder which may be used with the form-cylinder embodying the invention. Fig. 4 is a side view, partly in section, of a part of a form-cylinder constructed in accordance with the invention. Fig. 5 is an end view of the form-cylinder shown in Fig. 4. Fig. 6 is a vertical section through said cylinder.

Referring to the drawings, A indicates the impression-cylinder, and B the form-cylinder, of a double-wide printing-couple. The impression-cylinder consists of two sections 1 and 2, these sections being shown as mounted on a shaft 3, which is supported in suitable bearings in the machine. In the construction shown the section 1 of the impression-cylinder is the adjustable section, any suitable means being employed to adjust it and hold it in adjustment, the means hereinafter described being those set forth in my pending application before referred to. This adjustable section coöperates with a set of plates 15, mounted on the part 16 of the double-wide form-cylinder. The section 2 coöperates with a set of plates 17, mounted on the part 18 of the double-wide form-cylinder. The side edges of the plates 15 and 17 are held in position by side clamps of any usual or desired form.

The form-cylinder shown in the drawings is designed to carry two sets of plates on each of its parts 16 and 18. Each of the parts is accordingly provided with devices for preventing the plates from shifting angularly about the cylinder. The devices on the part 18 are or may be of any usual form, and in the construction shown they consist of the ordinary stationary margin-bars 19. While the devices for preventing the plate from shifting angularly on the part 16 may be variously constructed, they consist in the present instance of sets of independent blocks 20, 21, 22, and 23, the blocks 20 having shanks 24, the blocks 21 having shanks 25, the blocks 22 having shanks 26, and the blocks 23 having shanks 27. The cylinder is provided with a series of recesses 28, in which the stops are located, and the shanks extend through perforations in the bottom of these recesses. Each of the sets of blocks is made adjustable—that is, it can be thrown into or out of operative position. Various constructions may be employed to effect this adjustment. In the construction shown, however, each of the shanks 24 25 26 27 is provided with a groove 29, which takes over the edge of a snail-cam 30. These snail-cams are mounted on shafts 31 32 33 34, there being one of these shafts for each of the

sets of margin-stops. The construction is preferably so arranged that all the shafts are rotated simultaneously, and in the construction of cylinder illustrated, which is intended to carry but two sets of printing-plates, the cams on the shafts 31 and 33 are arranged when the shafts are rotated in one direction to throw their stops out into operative position, while the cams on the shafts 32 and 34 are arranged so as to simultaneously throw their stops into inoperative position.

Any suitable means may be employed for rotating the several shafts 31, 32, 33, and 34 simultaneously. Preferably, however, the shaft 3' of the impression-cylinder is provided outside the cylinder with a collar 35, on which is mounted to turn a hub 36, provided with a gear 37. Each of the shafts 31, 32, 33, and 34 is provided with gears 38 39 40 41, which gears are in mesh with the gear 37, before described. The hub 36 may be turned in any suitable manner to rotate the gear 37 and the gears meshing therewith. In the construction shown it is provided with a handle 42. The blocks 20 and 21 are arranged at a distance from each other angularly about the cylinder equal to twice the amount of the stagger between the plates or, in other words, equal to the distance which the coöperating impression-cylinder is angularly adjustable. When now it is desired to change the direction of rotation of the couple, the impression-cylinder is angularly adjusted by means hereinafter described and then the handle 42 is given a movement in the proper direction, so as to cause the cams 30 to throw into the recesses in the cylinder the sets of margin-stops which were operative when the couple was rotating in one direction and throw out the other sets. By this arrangement it will be seen that the adjustment of the plates for the different directions of rotation of the couple can be instantly made, it being only necessary to turn the handle in the proper direction to indicate precisely where the rear edges of the plates shall be placed on the form-carrying cylinder.

As has been before indicated, the impression-cylinder consists of two sections 1 and 2, these sections being shown as mounted on the shaft 3, supported in suitable bearings in the machine. The section 1 in the construction shown is the adjustable section, and any suitable means may be provided for holding it in its adjusted position. As shown, this means consists of bolts 51, having squared heads 51'. These bolts take into threaded sockets 52 in the stationary section 2. Two sets of these sockets are arranged so as to hold the section 1 in either of its adjusted positions. Suitable means are also provided for holding a tympan or blanket on each of the sections 1 and 2. The ends of each of the tympan or blankets are carried through the gap or opening in each section of the cylinder and are secured in any suitable manner in the cylinder. In the construction shown they are secured to shafts 57, mounted in brackets 58, suitably located in

the interior of the cylinder. These shafts 57 may be provided with any suitable tightening means—as, for instance, squared heads on which a wrench may be placed.

5 The constructions by which the invention is carried into effect may be considerably varied. The invention is not, therefore, to be limited to the precise construction shown and described.

10 What I claim is—

1. The combination with a form-cylinder, of a plurality of devices operating to prevent the plates from shifting angularly about the cylinder, and means carried by the cylinder 15 whereby a part of said devices is rendered operative when the cylinder is rotating in one direction and another part of said devices is rendered operative when the cylinder is rotating in the opposite direction, substantially 20 as described.

2. The combination with a form-cylinder, of a plurality of sets of devices operating to prevent the plates from shifting angularly about the cylinder, a group of said sets of de- 25 vices being operative when the cylinder is rotating in one direction, and another group of said sets of devices being operative when the cylinder is rotating in the opposite direction, and means carried by the cylinder for rendering 30 one group operative and the other group inoperative, substantially as described.

3. The combination with a form-cylinder, of a plurality of sets of devices operating to prevent the plates from shifting angularly 35 about the cylinder, a group of said sets of devices being operative when the cylinder is rotating in one direction and another group of said sets of devices being operative when the cylinder is rotating in the opposite direction, 40 and means carried by the cylinder for simultaneously rendering one group operative and the other group inoperative, substantially as described.

4. The combination with a form-cylinder, 45 of a plurality of sets of margin-stops carried by the cylinder, a group of said sets of stops being operative when the cylinder is rotating in one direction and another group of said sets of stops being operative when the cylin- 50 der is rotating in the opposite direction, and means carried by the cylinder for simultaneously rendering one group operative and the other group inoperative, substantially as described.

55 5. The combination with a form-cylinder, of a margin-stop, a recess in the cylinder in which said stop is mounted, and means for giving the stop a radial movement toward and from the axis of the cylinder, substan- 60 tially as described.

6. The combination with a form-cylinder, of a plurality of sets of margin-stops carried by the cylinder, a plurality of shafts, one for 65 each set of stops, means for rotating the shafts, and means intermediate the shafts and the stops whereby the stops are operated, substantially as described.

7. The combination with a form-cylinder, of a plurality of sets of margin-stops carried thereby, a plurality of shafts, one for each 70 set of stops, means for simultaneously rotating the shafts, and means intermediate the shafts and the stops whereby the stops are operated, substantially as described.

8. The combination with a form-cylinder, 75 of a plurality of sets of margin-stops, a plurality of shafts, one for each set of stops, a gear mounted on the shaft of the form-cylinder, gears mounted on each of the shafts and meshing with said gear, and snail-cams on 80 each of the shafts, one for each of the margin-stops, substantially as described.

9. In a printing-couple, the combination with an impression-cylinder having a plural- 85 ity of impression-surfaces, one of which is angularly adjustable, of a form-cylinder comprising a plurality of sections, one of which is provided with a plurality of devices oper- 90 ating to prevent the plates from shifting angularly about the form-cylinder, and means whereby a part of said devices is rendered operative when the cylinder is rotating in one 95 direction and another part of said devices is rendered operative when the cylinder is rotating in the opposite direction, substantially as described.

10. In a printing-couple, the combination with an impression-cylinder having a plural- 100 ity of impression-surfaces, one of which is angularly adjustable, of a form-cylinder comprising a plurality of sections, one of which is provided with a plurality of sets of mar- 105 gin-stops, and means whereby one set of stops may be rendered operative when the couple is rotating in one direction and another set of stops may be rendered operative when the couple is rotating in the opposite direction, 110 substantially as described.

11. In a printing-couple, the combination with an impression-cylinder having a plural- 110 ity of impression-surfaces, one of which is angularly adjustable, of a form-cylinder comprising a plurality of sections, one of which is provided with a plurality of sets of devices 115 for preventing the plates from shifting angularly about the cylinder, and means whereby a group of said sets of devices is rendered operative when the cylinder is rotating in one 120 direction, and another group of said sets of devices is rendered operative when the cylinder is rotating in the opposite direction, substantially as described.

12. In a printing-couple, the combination with an impression-cylinder having a plural- 125 ity of impression-surfaces, one of which is angularly adjustable, of a form-cylinder comprising a plurality of sections, one of which is provided with a plurality of sets of margin- 130 stops, and means whereby a group of said sets of stops is rendered operative when the cylinder is rotating in one direction and another group of said sets of stops is rendered operative when the cylinder is rotating in the opposite direction, substantially as described.

13. In a printing-couple, the combination with an impression-cylinder having a plurality of impression-surfaces, one of which is angularly adjustable, of a form-cylinder comprising a plurality of sections, one of which is provided with a plurality of sets of devices for preventing the plates from shifting angularly about the cylinder, a group of said sets of devices being operative when the cylinder is rotating in one direction and another group of said sets of devices being operative when the cylinder is rotating in the opposite direction, and means for simultaneously rendering one group operative and the other group inoperative, substantially as described.

14. In a printing-couple, the combination with an impression-cylinder having a plurality of impression-surfaces, one of which is an-

gularly adjustable, of a form-cylinder comprising a plurality of sections, one of which is provided with a plurality of sets of margin-stops, a group of said sets of stops being operative when the cylinder is rotating in one direction and another group of said sets of stops being operative when the cylinder is rotating in the opposite direction, and means for simultaneously rendering one group operative and the other group inoperative, substantially as described.

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

OSCAR ROESEN.

Witnesses:

OTTO L. RAABE,
HENRY S. MOUNT.