

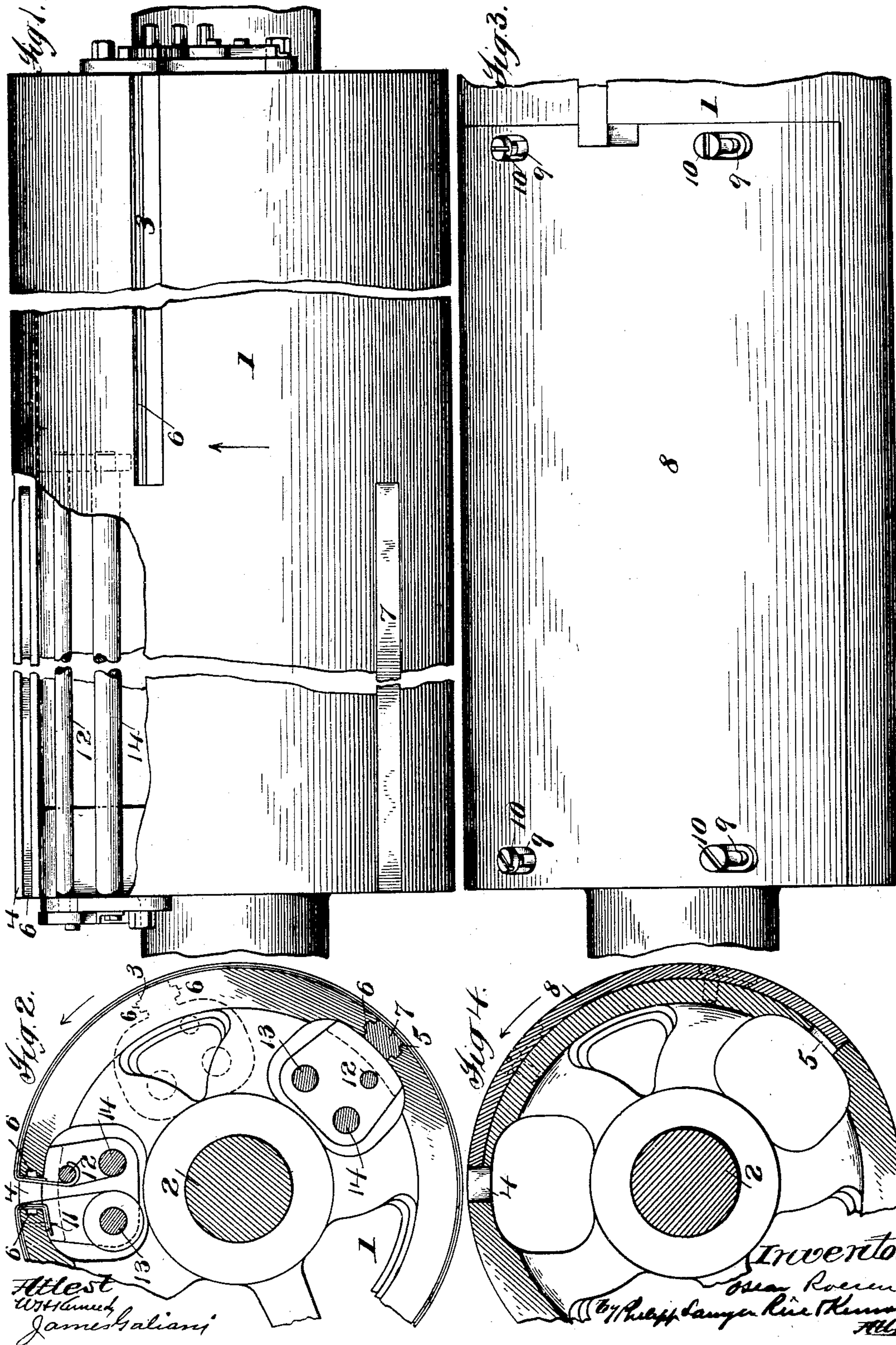
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O. ROESEN.
CYLINDER FOR PRINTING MACHINES.

APPLICATION FILED NOV. 12, 1902.

NO MODEL.



UNITED STATES PATENT OFFICE.

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CYLINDER FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 733,276, dated July 7, 1903.

Application filed November 12, 1902. Serial No. 130,967. (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 Cylinders for Printing-Machines, 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 cylinders for printing-machines.

In printing-machines employing a plurality of printing-couples it is desirable to arrange the cylinders of one or more of the rotary
15 couples so that the direction of rotation of the cylinders may be reversed. In constructions in which the plate-cylinders are arranged to carry staggered plates, however, when the direction of rotation of one or more
20 of the couples is reversed the impressions do not fall in proper relation on opposite sides of the web, and it has been customary in most cases to introduce a special slitting mechanism into the machine and also to use 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 opposite sides of the web into proper relation with the other webs with which they
25 are to be associated. The introduction of slitting and compensating mechanisms produces a machine of considerable complexity and is objectionable for that and other reasons. If, however, the use of these slitting and compensating mechanisms is to be
35 avoided, the stagger of the plates must be changed—that is to say, the plates which are in advance when the cylinders are rotating in one direction must be the rear set of plates when the cylinders are rotating in the other direction. This change in the stagger of the plates, however, necessitates in couples of the ordinary construction a corresponding change in the position of the impression-surfaces which correspond to the plates—that is to say,
45 the surface on the impression-cylinder which is the leading surface when the couple is running in one direction must be the rear surface when the couple is running in the opposite
50 direction.

The present invention has for one of its objects to produce a cylinder adapted for use in a printing-couple arranged to carry staggered plates, the cylinder being so constructed that the changes of stagger incident to a reversal of the couple may be readily and easily made.

A further object of the invention is to produce an impression-cylinder adapted for use in a couple arranged to print from staggered plates in which the position of the impression-surfaces and the blankets and other appurtenances incident thereto may be readily shifted when the stagger of the plates is altered.

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

In the accompanying drawings, Figure 1 is an elevation, partly broken away, of the improved cylinder. Fig. 2 is a sectional end elevation of the construction shown in Fig. 1. Fig. 3 illustrates a modified construction of cylinder. Fig. 4 is a sectional end elevation of the construction shown in Fig. 3.

Referring to the drawings, 1 indicates a cylinder adapted for use in a printing-couple. In the construction shown the cylinder 1 is an impression-cylinder which is mounted on a shaft 2, supported in the frame in the usual manner. This cylinder is adapted for use with a plate-cylinder carrying sets of staggered plates and is constructed so that the position of the impression-surfaces may be altered when the stagger of the plates is altered—as, for instance, when the direction of rotation of the couple is reversed. The means by which the relative position of the impression-surfaces on the cylinder is to be shifted may be varied widely. As shown, the head of one of the impression-surfaces on one side of the cylinder is defined or formed by a gap 3. The other side of the cylinder is provided with two gaps 4 and 5, either of which may define or form the head of the impression-surface on that side of the cylinder. One of these gaps is located in advance of the gap 3, and the other is located in the rear of said

gap 3, said gap 3 being, therefore, opposite the space between the two gaps and substantially midway of said space. Assuming that the cylinder is running in the direction of the arrow in Fig. 1, the gap 4 will define or form the head of the impression-surface on the left-hand side of the cylinder, said surface cooperating with the leading set of plates on the plate-cylinder, and the gap 3 will form or define the head of the impression-surface on the right-hand side of the cylinder, said surface cooperating with the rear set of plates on the plate-cylinder. When, however, the direction of the cylinder is reversed, the impression-surface the head of which is defined by the gap 5 will cooperate with the leading set of plates on the plate-cylinder, and the impression-surface whose head is defined by the gap 3 will cooperate with the rear set of plates. In order that the impression-surface presented to the plates may be unbroken, gap-filling means are employed, which may be varied widely in construction. Two forms of gap-filling means are shown.

Referring to Figs. 1 and 2, the gaps 4 and 5 are shown as having grooved sides, the grooves being marked 6, and cooperating with these grooved gaps is a tongued block 7, which is preferably adapted to be inserted in either groove. When the cylinder is running in the direction indicated by the arrow in Fig. 1, therefore, the block will be inserted in the gap 5, thus filling this gap and causing the cylinder to present an unbroken impression-surface, except for the gap 4, which defines its leading end. When, however, the cylinder is running in the opposite direction, the block 7 will be inserted in the groove 4.

Referring to the modification shown in Figs. 3 and 4, the surface of the cylinder between the grooves is recessed or cut away, as clearly indicated in Fig. 4, and located in this recess is a sliding plate 8, said plate being provided with slots 9 and being held in position by set-screws 10, the slots being countersunk, so that the heads of the screws come below the surface of the cylinder. This plate 8 is wide enough so as to reach from the rear edge of one gap to the rear edge of the other gap. If, therefore, it is desired to leave the gap 4 open, the plate is adjusted, as shown in Fig. 4, so that its front edge corresponds with the rear edge of the gap 4 and its rear edge corresponds with the rear edge of the gap 5. If, however, it is desired to leave the gap 5 open, the plate is shifted so as to cover the gap 4.

When the cylinder is employed as an impression-cylinder, it will be provided with blanket-retaining devices, which may be of any desired description. While a single set of blanket-retaining devices might be employed for all the blankets on the cylinder or a set of retaining devices might be provided

for the blanket on one side of the cylinder and another set of retaining devices for the blanket on the other side of the cylinder, in the preferred construction and as shown there will be a set of retaining devices for each gap, said devices being located adjacent the gaps. As illustrated, the gap 4 has adjacent to it on one side a set of pins 11 and on the other side a reel-rod 12. Reel-rods 13 and 14, serving to support the usual shifting tympan, may also be provided, if desired. These reel-rods are of the ordinary construction well known in printing-machines, and the agencies for rotating them and holding them in position are well known, so that any further or specific description of them is unnecessary. In the construction shown when the direction of rotation of the cylinder is reversed the blanket and shifting tympan will be transferred from the holding devices adjacent the gap 4 to the holding devices adjacent the gap 5.

Changes and variations may be made in the constructions by which the invention is carried into effect. The invention is not, therefore, to be confined to the specific construction hereinbefore described.

What is claimed is—

1. In a printing-machine, the combination with a cylinder provided with securing means for a plurality of blankets arranged side by side and staggered with respect to each other, of means for shifting the relative position with respect to each other of said blankets on the surface of the cylinder whereby the stagger of the blankets with respect to each other may be varied, substantially as described.

2. In a printing-machine, the combination with a cylinder provided with securing means for a plurality of blankets arranged side by side, of a plurality of gaps arranged so that the relative position of the blankets with respect to each other may be varied, and gap-filling means, substantially as described.

3. In a printing-machine, the combination with a cylinder of a width adapted to provide a plurality of impression-surfaces side by side, said cylinder having a plurality of gaps arranged so that the position of the leading ends of the impression-surfaces may be shifted, and gap-filling means, substantially as described.

4. In a printing-machine, the combination with a cylinder having two gaps on one side of the cylinder and a gap on the other side positioned opposite the space between the two gaps, of a gap-filling means adapted to close either of the two gaps, substantially as described.

5. In a printing-machine, the combination with a cylinder having two gaps on one side and a gap on the opposite side positioned opposite the space between the two gaps, of a gap-filling block, substantially as described.

6. In a printing-machine, the combination with a cylinder having two gaps on one side

and a gap on the other side positioned opposite the space between the two gaps, of blanket-securing devices adjacent to the gaps, and gap-filling means, substantially as described.

5 7. In a printing-machine, the combination with a cylinder having two gaps on one side and a gap on the other side positioned opposite the space between the two gaps, of blanket-securing devices adjacent to the gaps,

and a gap-filling block, 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,
P. P. CHEWS.