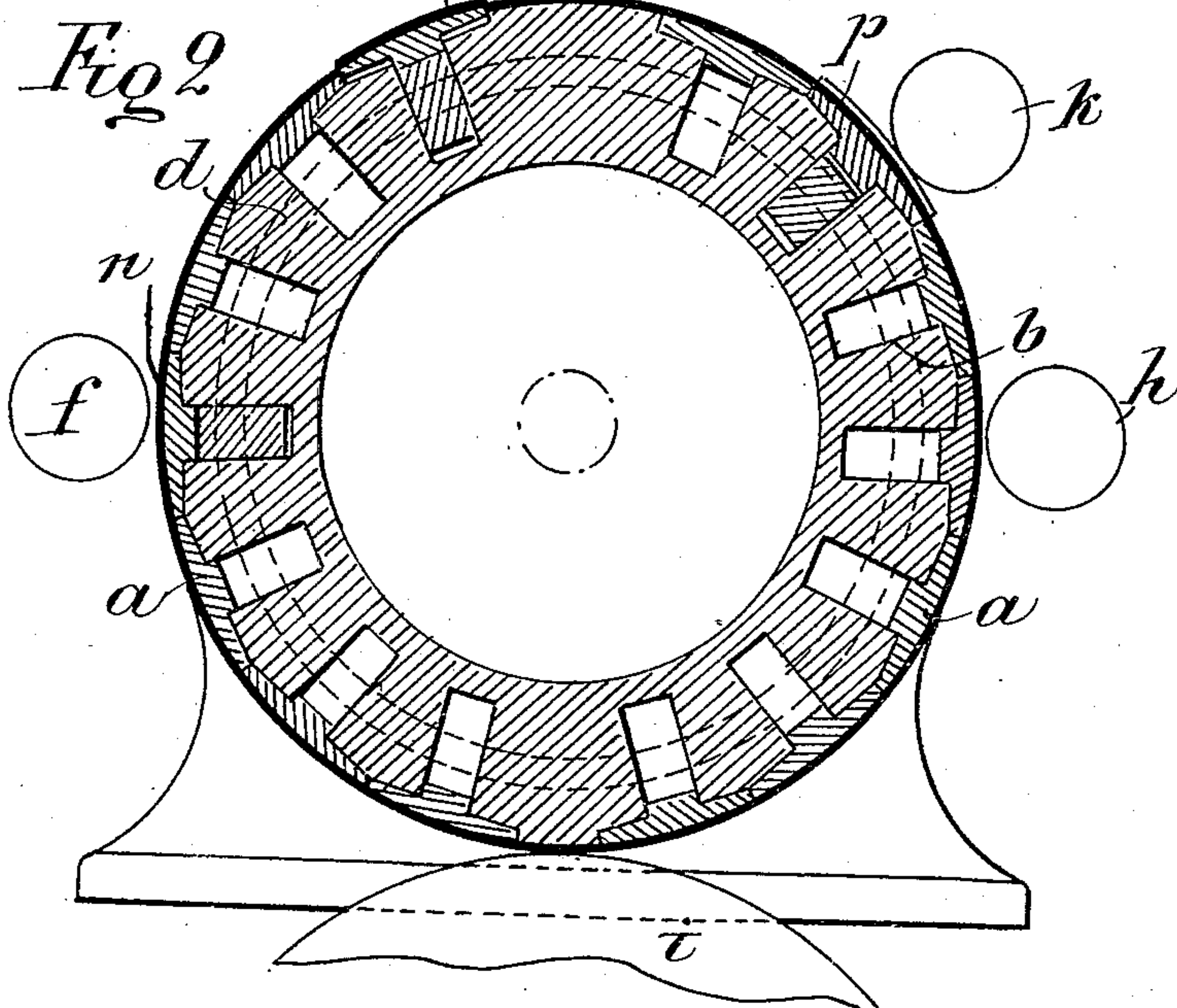
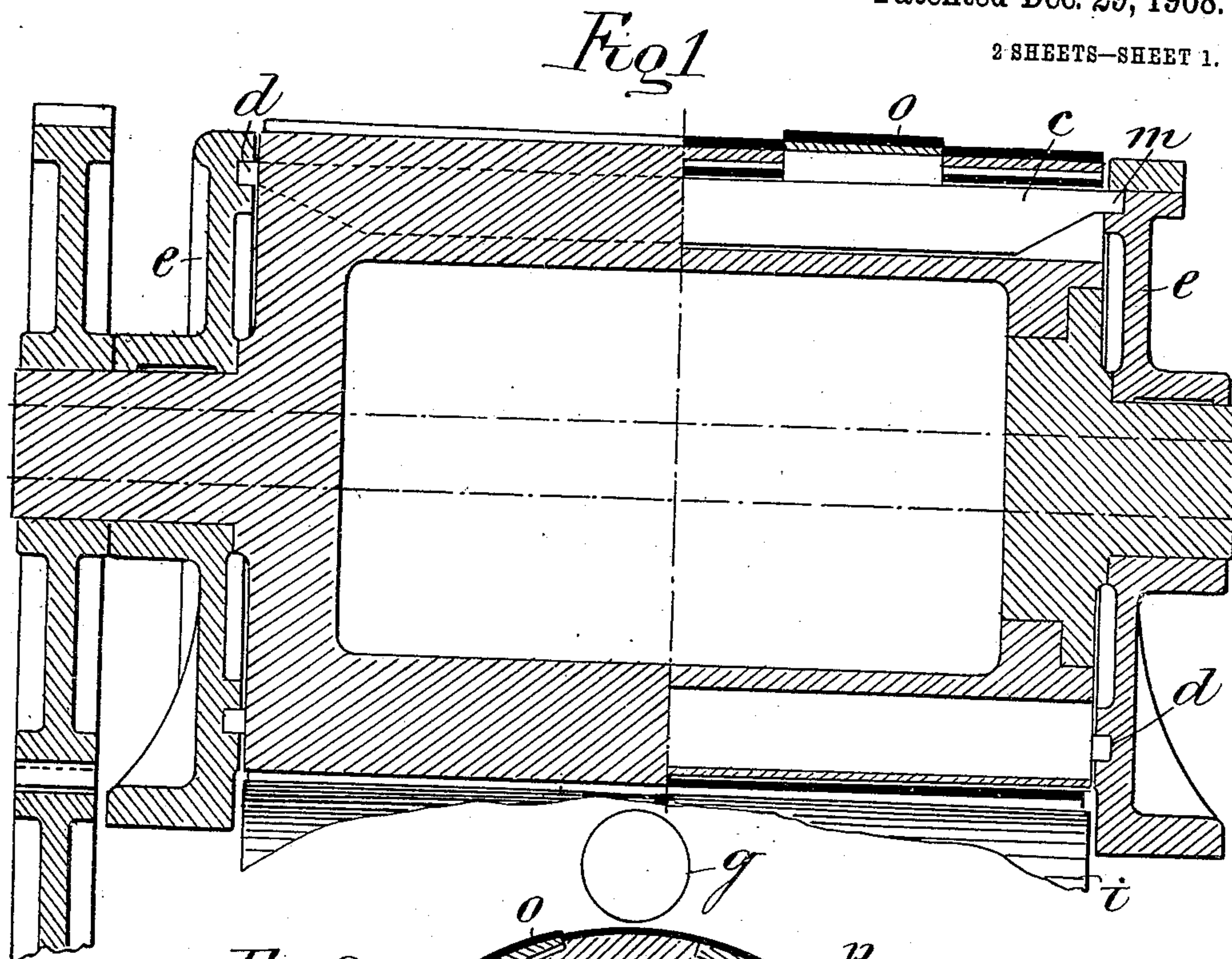


C. A. LINDMAN.
 PRINTING PRESS FOR SIMULTANEOUS PRINTING WITH DIFFERENT COLORS.
 APPLICATION FILED AUG. 29, 1906.

908,286.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.



Witnesses:
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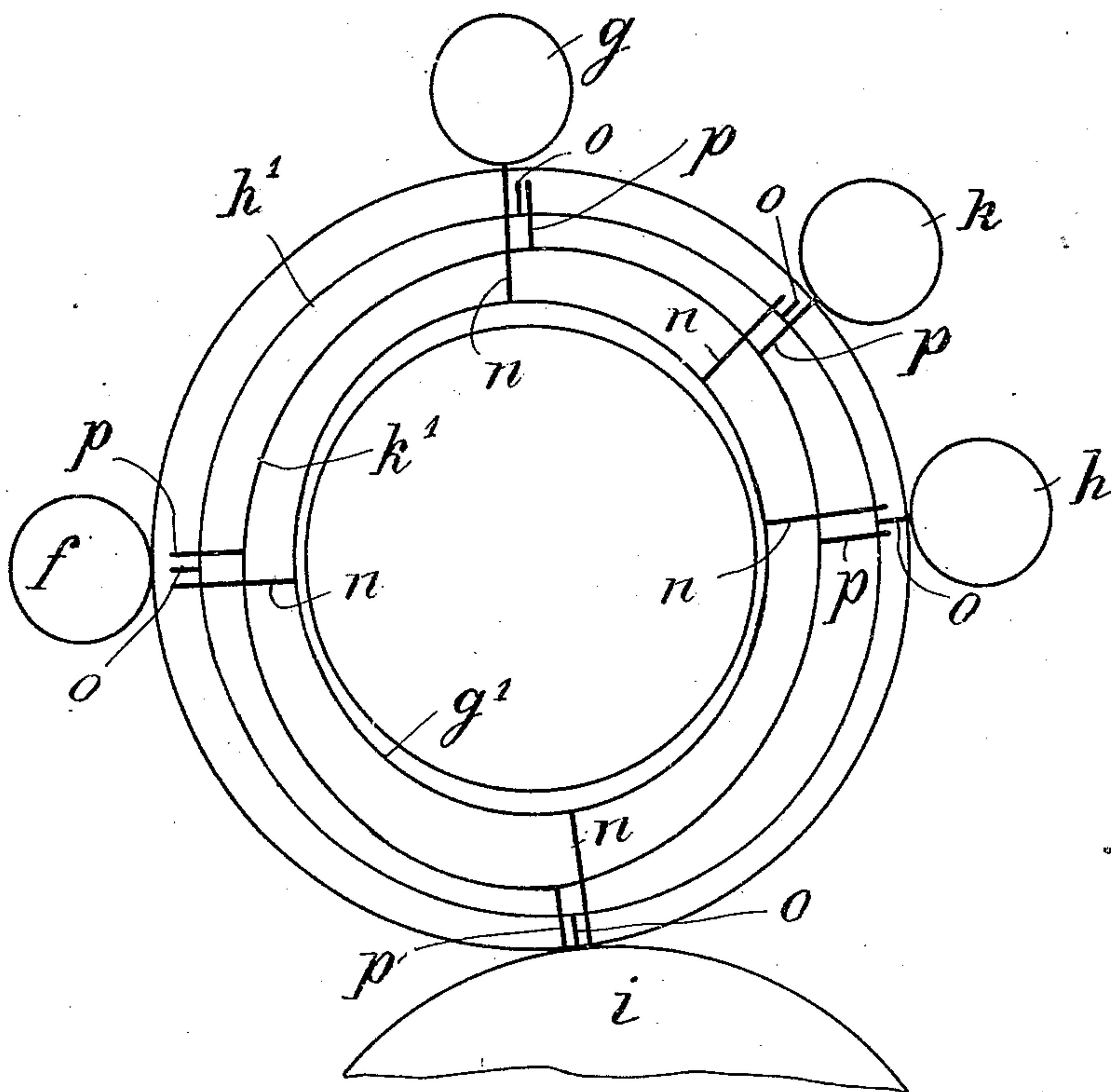
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

CARL ALBERT LINDMAN, OF HELSINGBORG, SWEDEN.

PRINTING-PRESS FOR SIMULTANEOUS PRINTING WITH DIFFERENT COLORS.

No. 908,286.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed August 29, 1906. Serial No. 332,474.

To all whom it may concern:

Be it known that I, CARL ALBERT LINDMAN, citizen of the Kingdom of Sweden, and a resident of Helsingborg, Sweden, Södergatan 28, district physician, have invented new and useful Improvements in Printing-Presses for Simultaneous Printing with Different Colors, of which the following is a specification.

This invention relates to a device for printing-presses of the kind for printing with different colors at one impression.

The invention is especially intended for rotating printing-presses such as are employed for printing newspapers, and by the use of the invention with such printing presses it is possible, in a simple manner, to insert colored, and therefore particularly conspicuous, advertisements or notices in any part of the newspaper. Such printing-presses have already been made in which the parts of the printing-surface or type-surface, which were to be printed with special colors, were made displaceable so that they could be displaced outside as well as inside the printing surface proper. Such a displaceable part is arranged in such a manner, that while passing the black-roller, it sinks below the printing surface proper, while it assumes a level with and rises above the said printing surface, respectively, when passing the paper-roller and when passing the color-roller, which is to deposit the required color on to the type or printing blocks on the displaceable part concerned. The methods hitherto known for producing said movement, however, have presented several drawbacks, which the present invention aims at remedying. As an example it may be mentioned that said displaceable parts were formerly moved by plates provided with wedges and moved in the axial direction, which produced great friction; or by cam disks on the axle of the rotating printing press; the latter arrangement presented the drawback that a considerable number of cam disks were required, and that it was not possible to print with more than one single color in each plan of said disks.

The present invention is shown in the accompanying drawing in which—

Figure 1 shows a printing cylinder for a rotating-press in two different longitudinal sections, Fig. 2 is a cross-section of same, and Fig. 3 is a diagrammatic view.

The cylinder-surface is formed of a number of interchangeable segments on which the stereotype plates or printing-blocks are fixed. Some of these segments, namely those indicated by *a* in Fig. 2, rest constantly on the cylinder itself and form in this manner the fixed printing-surface. The other segments for example, *n*, *o*, *p* are, on the contrary, displaceable in the radial direction, so that they—as stated above—may move to the outer side or inner side of the fixed printing-surface or into the said surface itself. The characteristic feature of the invention consists in the said displacement being effected by the segments *n*, *o* and *p* being attached to the outside of plates *c* which are fixed in the grooves *b* in the cylinder and arranged parallel with the cylinder-shaft, these plates being displaceable in radial direction by their ends *m*, which are pointed or made more slender than the plates themselves, reaching into the untrue path *d* on the interior surface of the fixed bearing-piece *e* of the cylinder. When the cylinder rotates, the plates *c* and with them the segments *n*, *o*, *p*—all according to the path *d* being more or less untrue—will be displaced in the radial direction outward or inward.

Fig. 2 shows the color-rollers lying around the printing-cylinder. Of these the roller *f* is the ordinary black ink-roller which is always in contact with the printing-surface, while the rollers *g*, *k* and *h* are color-rollers, each of which deposits its own color for example, green, red and blue, respectively. The latter rollers are placed a little distance outside the cylinder's printing-surface. The irregularity of the path *d* is adjusted so that when one of the segments *n*, *o*, or *p* passes the ink-roller *f*, it is held a little inside of the fixed printing-surface. Through the continued motion it is pushed outward, so that each segment receives color from its own color-roller and not from any of the other color-rollers. For example, the segment *p* is colored red by the roller *k*, the segment *o*, green by the roller *g*, and the segment *n*, blue by the roller *h*, while all the segments are in height with the printing-surface where the printing is effected, that is, opposite the paper-roller *i*. In Figs. 1 and 2 of the drawing only one of the untrue paths or eccentric grooves is shown, namely the one with which the plate carrying the segment *o* engages, but similar paths or grooves are to be pro-

vided for the plates carrying the segments n and p , as shown diagrammatically in Fig. 3, wherein the paths or grooves for all three segments are shown and designated as h' , k' and g' . It is to be understood that the ends of the plates c carrying the segments n and p have their ends bent so much in towards the cylinder-shaft, that the paths may lie inside each other. The number of displaceable segments may be varied according to wish. If several segments are wanted to print with the same color, all that must be observed is, that their plates move in the same set of untrue paths d .

15 In flat presses, that is, such presses that have a printing-table moving backwards and forwards in a horizontal direction, the invention may likewise be employed, the paths d being, in such case, placed in fixed guides arranged along the printing-table.

20 What I claim, and desire to secure by Letters Patent, is:

1. In a printing press the combination of a support having bearing pieces provided with a plurality of eccentric grooves in their inner faces, a cylinder mounted in the frame and provided with a plurality of longitudinal grooves, printing segments having members projecting into the grooves of the cylinder, the projecting members of sundry of the segments having their ends reduced and extending into the eccentric grooves of the bearing

pieces, whereby the said segments will be moved below, beyond and on a level with the printing surface of the cylinder, the remaining segments being stationary and forming the fixed printing surface, and an ink and a plurality of color rollers grouped about the cylinder.

2. In a printing press, the combination of a frame having bearing pieces provided with eccentric grooves on their inner surfaces, a printing cylinder provided with a plurality of longitudinal grooves, a plurality of color applying segments secured to the outer faces of plates arranged in the grooves of the cylinder and having their ends reduced and extending into the eccentric grooves of the bearing pieces, and an ink roller and a plurality of color rollers grouped about the cylinder, the cylinder having a printing surface for contacting with the ink roller, and the eccentric grooves being so arranged with respect to said rollers that the segments are held below the printing surface when passing the ink roller and projected beyond the said surface only when opposite a particular color roller.

Signed by me at Copenhagen, Denmark, this 31st day of July, 1906.

CARL ALBERT LINDMAN.

Witnesses:

C. O. WIESEMANN,
HENRY C. EVANS.