W. C. SCOTT.

PLATE PRINTING MACHINE.

APPLICATION FILED JULY 30, 1914.

1,268,165.

Patented June 4, 1918.

2 SHEETS—SHEET 1.

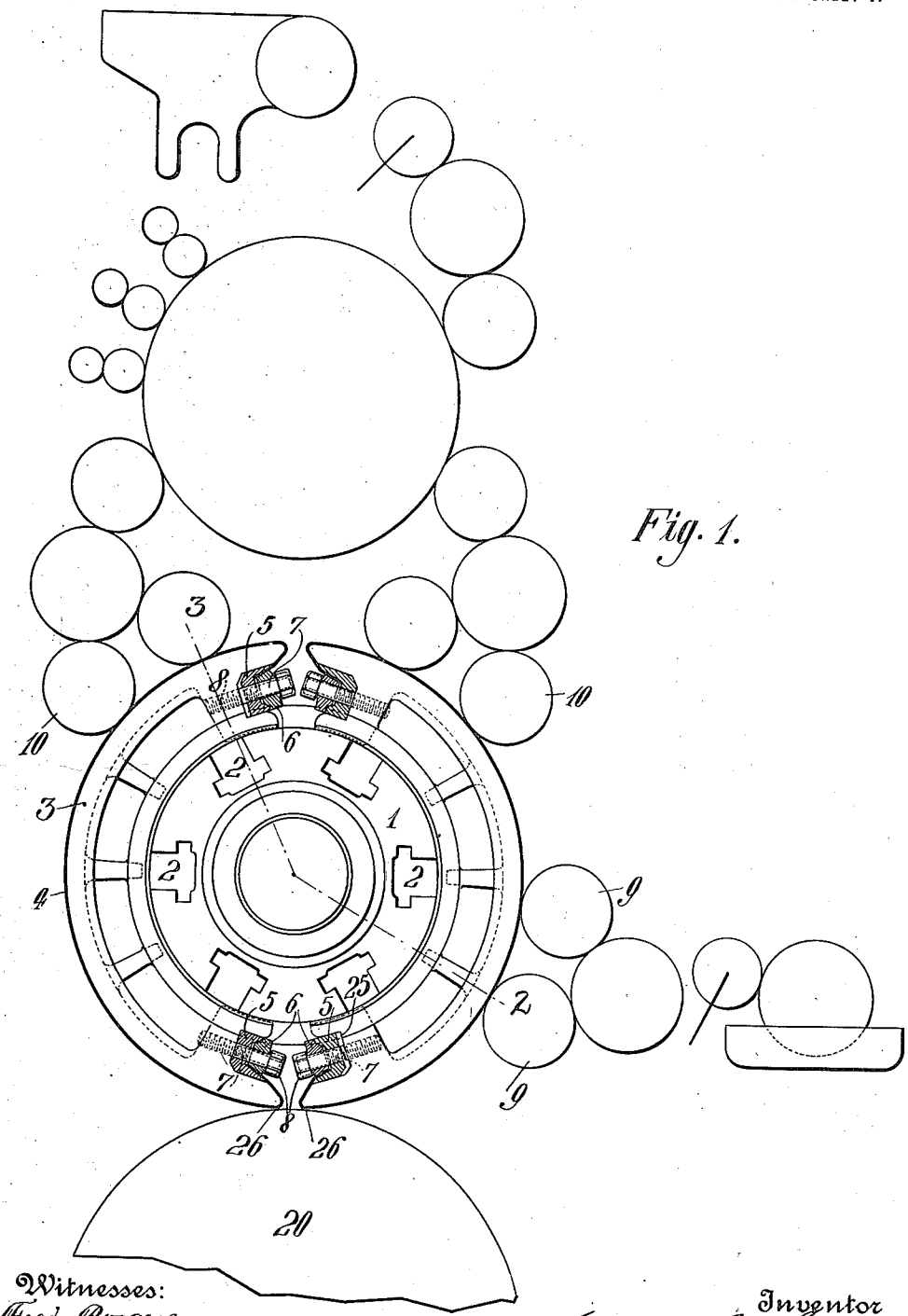


Fig. 1.

Witnesses:
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2 SHEETS—SHEET 2.

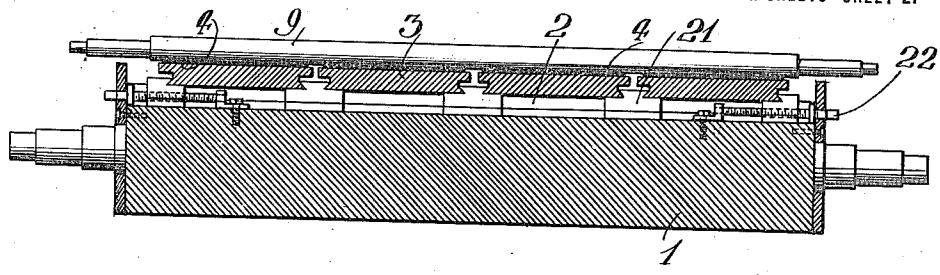


Fig. 2.

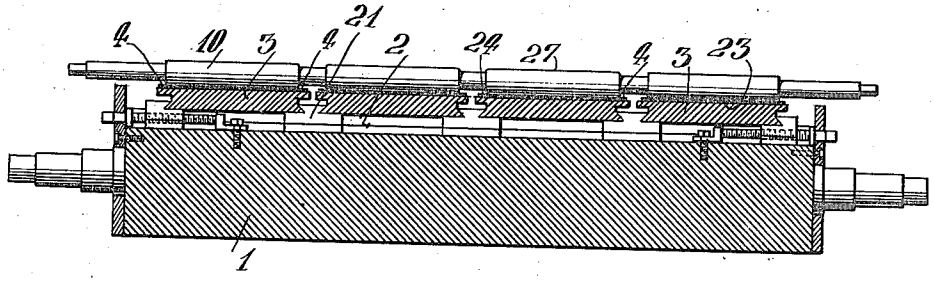


Fig. 3.

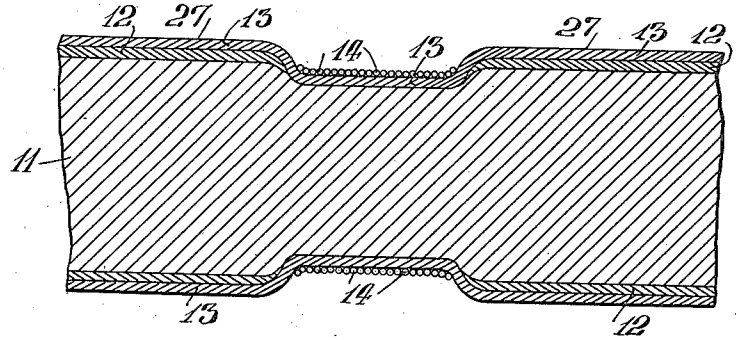


Fig. 4.

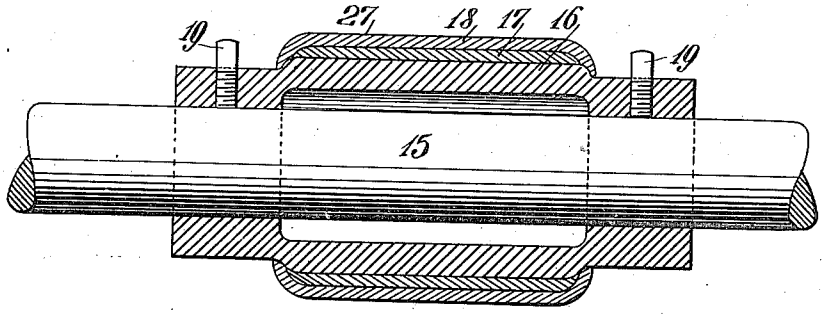


Fig. 5.

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UNITED STATES PATENT OFFICE.

WALTER CHARLES SCOTT, OF PLAINFIELD, NEW JERSEY, ASSIGNOR TO ISABELLA SCOTT AND DAVID J. SCOTT, EXECUTORS OF WALTER SCOTT, DECEASED.

PLATE-PRINTING MACHINE.

1,268,165. Specification of Letters Patent. Patented June 4, 1918.

Application filed July 30, 1914. Serial No. 854,081.

To all whom it may concern:

Be it known that I, WALTER C. SCOTT, a citizen of the United States, and a resident of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Plate-Printing Machines, of which the following is a specification.

This application is the original one from which the application filed November 20, 1915, Ser. No. 62,447, which developed into Patent No. 1,206,929 was divided.

The present invention relates to printing machines, and more particularly to machines employing flexible printing plates such as planographic machines or lithographic presses printing from a zinc aluminum or other plate or sheet held on the cylinder under tension, as well as intaglio machines and "offset" presses.

In the usual rotary lithographic presses, the form or design is carried on a zinc or aluminum plate, which is stretched over the surface of the plate cylinder by clamps holding and tightening the plates from each end, and the plate is always the full width of the cylinder, irrespective of the size of the design, in order to allow the dampening and inking mechanisms to properly perform their functions. This is found very satisfactory and successful for ordinary lithographic work in which sheets are printed and where the design is put on plates and the time consumed in preparing the plates is not a serious object. But in adapting this type of press and this style of printing to periodical production, particularly where only one page, or a series of pages, can be gotten ready at a time, and where the news features compel rapid production and quick change and clamping of the plates, the ordinary style of cylinder is not suitable.

The main object of the invention is to adapt a planographic or like machine to newspaper and magazine work.

Another object of the invention is to provide clamping means of small dimensions and of sufficient capacity between circumferentially adjacent page forms.

The invention resides in a form carrying cylinder provided with a plurality of removable form carrying jackets, arranged circumferentially with respect to each other, each jacket having an undercut groove at each end circumferentially to form overhanging end portions, and the end portions of adjoining jackets being closely adjacent to provide narrow margins, together with a flexible printing plate carried by each jacket and extending over the overhanging portions into the undercut groove at each end, and means in the undercut grooves of each jacket for straining the plate.

Other features of construction, combination of parts and arrangement of elements will appear as the specification proceeds.

In the accompanying drawings the invention is disclosed in a concrete and preferred form, but changes of construction may be made without departing from the legitimate and intended scope of the invention as expressed in the appended claims.

In the said drawings:

Figure 1 illustrates a diagrammatic side elevation of a machine embodying the invention.

Fig. 2 is a sectional view substantially on the line 3—2 through the form cylinder showing a dampening roller in position.

Fig. 3 is a sectional view also substantially on the line 3—2 showing an inking roller in position.

Figs. 4 and 5 show details of construction of the inking roller.

Similar characters of reference indicate corresponding parts in the several views.

20 is the impression cylinder, 1 the form carrying cylinder, while 9 are the dampening rollers and 10 the inking rollers.

The form carrying cylinder is grooved as at 2. These grooves are adapted to receive sliding dogs 21 that form spacing and clamping members for holding the jackets 3 in position, the dogs and jackets both being formed, for this purpose, with bevel surfaces, as shown. 22 indicate screws for moving and clamping the dogs 21 in position. By these means the jackets can be adjusted circumferentially or transversely as will be apparent. The jackets 3 are arranged circumferentially in groups, end to end, each group containing preferably a plurality of side by side jackets as shown. 4 indicates the printing plate or surface stretched on each jacket and having the printing portion 23 and intervening marginal portions 24. Each jacket is provided preferably at both ends circumferentially with an undercut groove 25 forming overhanging end portions 26 which are closely adjacent in the different groups. Located in the grooves 25 are clamp bars 5 and 6

which are shaped to firmly hold the ends of the plate stretched over the outside of the jacket when secured together by means of the bolts 7. The plates are tightened and adjusted circumferentially on the jackets by means of the straining bolts 8 which draw the clamp bars 5 and 6 along the groove 25 of the jacket 3. It will be understood that the jackets are fitted, before they are placed on the cylinder, with printing plates; and that the bars 5 and 6 are fastened to the ends of the plates before the latter are placed on the jackets. This admits of having clamping bars and fastening devices of ample proportion within a small compass.

It will further be noted that in this arrangement it is possible to have very narrow margins between the designs carried on the plates. In fact, these plate jackets can be made to almost butt the plates together. Also, by having extra jackets and clamp bars, changes in plates can be very readily made, as the plates can be clamped on these jackets and be ready to place on the cylinder in a very short time. This is of material advantage in case any page should by accident become injured. Also, it will be noted that each plate can be individually adjusted for register, if color printing is desired.

9 represents one of the water form rollers for dampening the plate. This roller is preferably full length or uninterrupted so as to dampen both the printing portions 23 and intervening marginal portions 24. 10 is an inking roller provided with an interrupted inking surface, or having a plurality of inking portions 27, as shown. In this way the marginal portions 24 of the plates are not smutted, while the entire form is dampened. This construction is necessary because it would not be possible to bevel the edges of the jackets lengthwise of the machine without correspondingly building up the dampening rollers—and that would interfere with the surface speed of the rollers and cylinders.

In Fig. 4 is shown one way of recessing the inking roller. Here the stock 11 of the roller is turned to a smaller diameter opposite the marginal portions of the printing plates, the usual packing 12 under the leather covering 13 is omitted, and the latter is drawn to a smaller diameter by means of the wire wrapping 14.

In Fig. 5, the shaft 15 carries a plurality of rollers (only one shown) said rollers being each composed of a tube 16 covered with felt 17 and leather 18. The rollers are held on the shaft 15 by means of set screws 19.

What is claimed is:

1. In a printing machine, a form carrying cylinder, a plurality of removable form carrying jackets, arranged circumferentially with respect to each other, each jacket having an undercut groove at each end circumferentially to form overhanging end portions, the end portions of adjoining jackets being closely adjacent to provide narrow margins, a flexible printing plate carried by each jacket and extending over the overhanging portions into the undercut groove at each end, and means in said undercut grooves in each jacket for straining the plate.

2. In a printing machine, a form carrying cylinder, a plurality of removable form carrying jackets, arranged circumferentially with respect to each other, each jacket having an undercut groove at each end circumferentially to form overhanging end portions, the end portions of adjoining jackets being closely adjacent to provide narrow margins, a flexible printing plate carried by each jacket and extending over the overhanging portions into the undercut groove at each end, means in said undercut grooves in each jacket for straining the plate, and means for adjusting the jackets lengthwise and circumferentially of the cylinder.

3. In a printing machine, a form carrying cylinder, a plurality of groups of jackets arranged circumferentially, each group consisting of a plurality of side-by-side jackets and each jacket having an undercut groove at each end circumferentially to form overhanging end portions, the end portions of adjoining jackets being closely adjacent to provide narrow margins, a flexible printing plate carried by each jacket and extending over the overhanging portions into the undercut groove at each end, and means in said undercut grooves in each jacket for straining the plate.

4. In a printing machine, a form carrying cylinder, a plurality of groups of jackets arranged circumferentially, each group consisting of a plurality of side-by-side jackets and each jacket having an undercut groove at each end circumferentially to form overhanging end portions, the end portions of adjoining jackets being closely adjacent to provide narrow margins, a flexible printing plate carried by each jacket and extending over the overhanging portions into the undercut groove at each end, means in said undercut grooves in each jacket for straining the plate, and means for adjusting the jackets lengthwise and circumferentially of the cylinder.

Signed at Plainfield, in the county of Union and State of New Jersey, this 18th day of July, A. D. 1914.

WALTER CHARLES SCOTT.

Witnesses:

CORE E. SPRAGUE,

JACOB V. COLES.