Jan. 18, 1927. 1,614,801

A. F. OSTERLIND

TYPE CYLINDER FOR ROTARY PRESSES

Filed May 6, 1925

Fig. 1

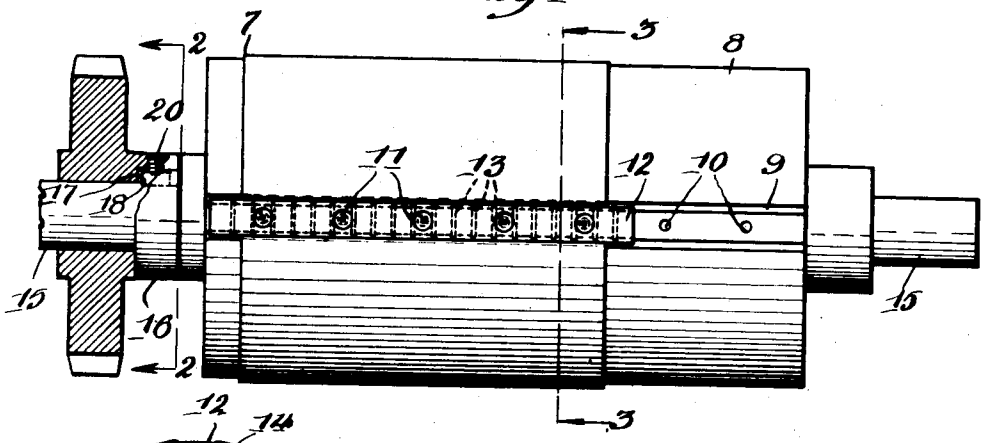


Fig. 2

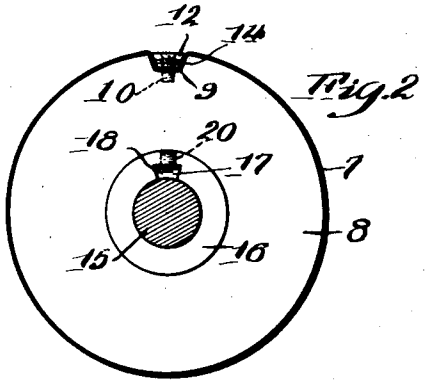


Fig. 3

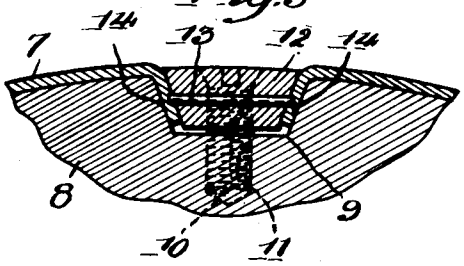


Fig. 4

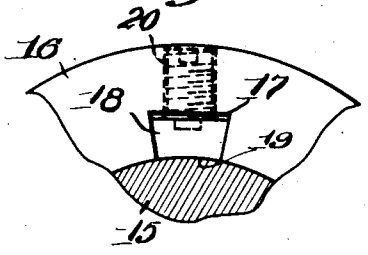


Fig. 5

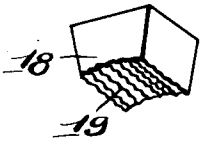
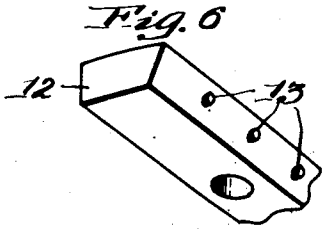


Fig. 6



Inventor

August F. Osterlind

By Stryker & Stryker

Attorneys

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UNITED STATES PATENT OFFICE.

AUGUST F. OSTERLIND, OF ST. PAUL, MINNESOTA.

TYPE CYLINDER FOR ROTARY PRESSES.

Application filed May 6, 1925. Serial No. 28,391.

In my co-pending application for patent upon a rotary press, Serial No. 735,238, filed September 2nd, 1924, I have described a machine adapted for general or job printing, in which the type cylinders have peripheries equal or substantially equal to one of the principal dimensions of the sheet to be printed. To adapt such machines for printing sheets of differing sizes, a number of type cylinders of corresponding sizes are provided and arranged to be exchanged one for another. Type cylinders of small diameter are necessarily employed in such machines, and this precludes the use of electrotypes of the usual thickness of 11/72ds of an inch. Abrupt bending of such thick plates distorts the surface of the type to an extent which renders printing therewith impractical. However, I have discovered that the thickness of the plates may safely be reduced to about .06 of an inch and that such thin plates are adapted to be mounted on cylinders of small diameter, viz, from 2 to 5 inches in diameter.

Obviously, the commonly employed means for securing plates to cylinders or other bases cannot be used upon such thin plates, and the present invention relates to improved means for securing printer's plates of the type described in said application, filed September 2nd, 1924, to small printing cylinders.

It is the object of this invention to provide novel and efficient means for securing printer's plates, of the thin type used in such machines, upon supporting cylinders. This invention also includes certain novel features of construction, which will be more fully pointed out in the following specification and claims.

Referring to the accompanying drawings, which illustrate the best form of my device at present known to me, Figure 1 is a side elevation of my improved type cylinder with the driving pinion in central, vertical section; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary section taken on the line 3—3 of Fig. 1; Fig. 4 is a fragmentary end view, showing the means for securing the drive pinion on the shaft of the cylinder; Fig. 5 is a detail of the dog for engaging the shaft and Fig. 6 is a detail, perspective view of an end of the bar for engaging the printer's plate or electrotype on the cylinder.

In the drawings I have used the numeral 7 to indicate a thin plate of the type adapted to be mounted on a cylinder 8 of small diameter. A shaft 15 rigidly supports the cylinder 8, while a gear 16 is adjustable on said shaft, being arranged to be driven at a fixed speed relative to the paper cutting mechanism of a rotary press. This fixed speed ratio is not changed when cylinders 8 of different sizes are placed in the machine, but the impression cylinder (not shown), is merely moved into peripherial contact with the type cylinders. The cylinder 8 is formed with a longitudinal groove 9 in its periphery, the sides of which, converge inward. In the bottom of this groove 9 is a series of tapped holes 10 for a series of screws 11, adapted to secure a longitudinal bar 12 in said groove. The screws 11 have countersunk heads formed with depressions adapted to be engaged by a wrench for turning said screws. Extending transversely through the bar 12, at suitable spaced intervals, is a series of pins 13, which project at the sides of said bar to engage margins 14 on the plate 7.

To permit changing of the angular position of the cylinder 8, relative to a drive pinion or gear 16 upon an axial shaft 15, I form a hub on said gear, which has an inwardly extending groove 17, adjacent to the shaft 15, for a dog 18. This dog has a roughened surface 19, adapted to grip the shaft 15, and a suitable set screw 20 threaded in the hub of the gear 16 is arranged to be turned to press the dog 18 against the shaft 15. This set screw 20 is formed with an axial hole, which is squared to receive a wrench or key for turning said screw.

In operation, the plate 7 is prepared in the usual manner by the electrolyte process or otherwise, thus producing under the present practice, a plate of about eleven seventy-seconds of an inch thick. This plate is then reduced to about six hundredths of an inch thick by removing metal from the back thereof. The margins 14, of about a quarter of an inch in width, consisting of the copper shell of the plate, are left at the adjoining edges thereof. The thin plate thus produced may now be bent to conform to the cylinder 8 by the use of straps placed about the plate and cylinder. Now with the clamping bar 12 removed, the edges or margins 14 of the plate 7 are bent into the groove 9, as clearly

shown in Figure 3, when said bar 12 is replaced and pressed into the groove 9. Finally, to securely fasten said bar in place and to draw the plate 7 snugly about the cylinder 8, the screws 11 are inserted and turned to cause the pins 11 to grip the margins 14 and draw them downward into the groove 9.

The shaft 15 is preferably formed integral with the cylinders of the smaller sizes, and said shaft is arranged to be placed in bearings of the type described in my copending application, above referred to. Finally, to adjust the cylinder 8 and shaft 15, relative to the drive gear 16 and other parts of the press, said cylinder is rotated to bring the bar 12 along the line where the printed sheet is to be severed and then the set screw 20 is tightened to engage the shaft 15 with the dog 18.

Having described my invention what I claim as new and desire to protect by Letters Patent is:

1. The combination with a type cylinder formed with a longitudinal groove in the periphery thereof, a type plate adapted to be applied to the periphery of said cylinder and having a margin adapted to be bent into said groove, a bar adapted to be placed longitudinally in said groove, means on a side edge of said bar adapted to engage the margin of said plate and means for securing said bar in engagement with said margin, whereby said plate may be drawn tight about said cylinder and secured against rotation thereon.

2. The combination with a type cylinder formed with a longitudinal groove in the periphery thereof, the sides of said groove being arranged to converge inward, a type plate adapted to be applied to the periphery of said cylinder and having opposite margins adapted to be bent against the converging sides of said groove, said margins being separated one from the other, a bar formed to fit in said groove, teeth projecting laterally from said bar to engage the margins of said plate and means for securing said bar in engagement with said margins.

3. The combination with a type cylinder having its periphery substantially equal to one of the principal dimensions of a sheet to be printed, said cylinder being formed with a longitudinal groove in the periphery thereof, a thin type plate adapted to encircle said cylinder and having opposite margins adapted to be bent into said groove, a bar extending longitudinally in said groove, teeth on said bar adapted to engage said margins and means for securing said bar in engagement with said margins.

4. The combination with a type cylinder formed with a longitudinal groove in the periphery thereof, and a driving gear arranged in axial alignment with said cylinder for driving the same, means for changing the angular position of said cylinder relative to said gear, a type plate adapted to encircle said cylinder and having margins adapted to be bent into opposite sides of said groove, a bar adapted to be placed longitudinally in said groove, means on said bar adapted to engage the inwardly bent margins of said plate and means for securing said bar in engagement with said margins and cylinder.

In testimony whereof, I have hereunto signed my name to this specification.

AUGUST F. OSTERLIND.