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PLATE CYLINDER.

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1,220,668. Patented Mar. 27, 1917.

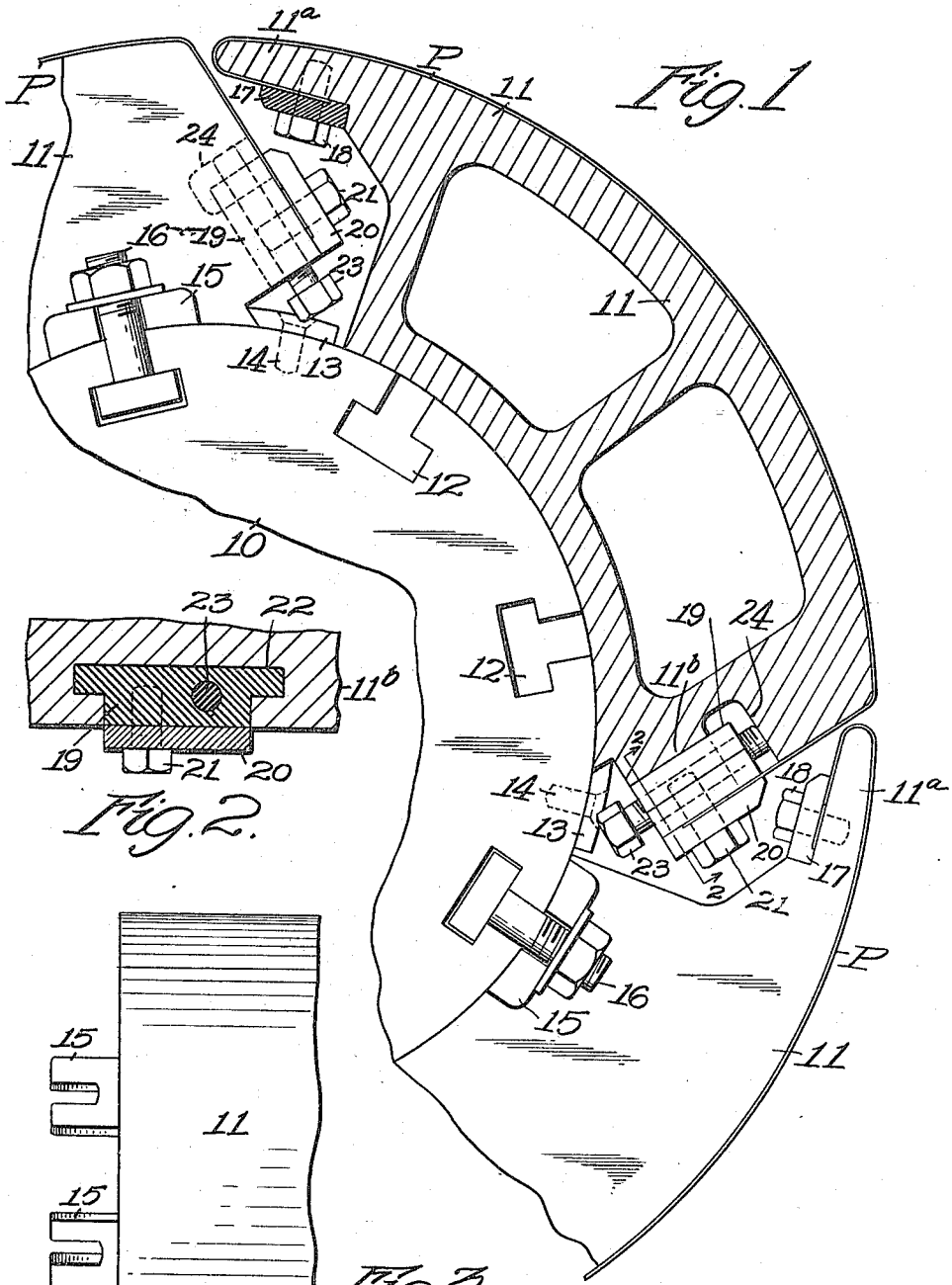


Fig. 2.

Fig. 3.

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PLATE-CYLINDER.

1,220,668. Specification of Letters Patent. Patented Mar. 27, 1917.

Application filed November 15, 1915. Serial No. 61,497.

To all whom it may concern:

Be it known that I, CHARLES A. MEISEL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Plate-Cylinder, of which the following is a specification.

This invention relates to a plate cylinder of improved and novel construction particularly designed for use in off-set printing. In this process of printing the ink is applied to a thin zinc or aluminum plate which is tightly stretched and clamped upon the surface of the plate cylinder. The ink is transferred or off-set from the printing plate to a rubber blanket carried by a similar cylinder and is thereafter transferred from the rubber blanket to the paper or other impression surface. The printing plates are sometimes of a length substantially equal to the circumference of the plate cylinder but are frequently of shorter lengths.

It is the general object of my present invention to provide an improved construction of plate cylinder by the use of which these shorter plates can be conveniently secured in position upon the cylinder.

With this object in view an important feature of my invention relates to the provision of a composite cylinder formed of a cylindrical body member and a plurality of shell sections each adapted to be detachably secured to said body member. Provision is made on each shell section for stretching and clamping the printing plate thereon and a further feature of my invention relates to the arrangement and disposition of these clamping devices by which arrangement and disposition the outer edges of successive sections may be brought closely adjacent to each other so that the printing surface may be made substantially continuous.

Further features of my invention relate to certain arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings, in which—

Figure 1 is an end elevation partly in section of a portion of my improved plate cylinder;

Fig. 2 is a detail sectional view taken along the line 2—2 in Fig. 1, and

Fig. 3 is a plan view of a portion of one of the shell sections.

As shown in the drawings my improved plate cylinder comprises a cylindrical body member 10 and a plurality of shell sections 11. The body member 10 is provided with a series of parallel T-slots 12 extending axially throughout the length of the cylinder. It is also provided with a plurality of ribs 13 also extending axially of the body member and serving as guides and stops for positioning the shell sections thereon. The ribs 13 may be secured to the member 10 by screws 14 and are each provided with an undercut edge adapted to coöperate with a beveled edge portion of a shell section 11.

The shell sections 11 are provided with projecting ears 15, slotted to receive bolts 16, the heads of which are received in the T-slots 12. By means of the ribs 13 and the bolts 16, the shell sections are thus accurately alined and securely fastened to the member 10.

The shell sections may be made in cellular form, as shown in Fig. 1, and each section is provided at its left hand end, as viewed in said figure, with a projecting portion 11^a to the under side of which a clamping bar 17 is secured by binding screws 18. By means of the clamping bar 17 one end of the printing plate P may be firmly secured to the shell section.

At its opposite end the plate P is secured to a plurality of sliding blocks 19, each block being provided with a jaw 20 and a clamping screw 21 by means of which the end of the plate P may be securely grasped. The block 19 is of T-section (as shown in Fig. 2) and is adapted to slide in a T-slot 22 formed in a portion 11^b of the shell section 11 which projects into a recess formed in the inner right hand corner of the shell section as viewed in Fig. 1.

An adjusting screw 23 is threaded through the sliding block 19 and engages an abutment 24 on the shell section. By turning the screw 23 the sliding block 19 may be forced away from the abutment 24, thus stretching the printing plate P tightly over the outer surface of the shell section.

When it is desired to secure a plate to the plate cylinder above described, a shell section of suitable size is selected, one end of the plate is clamped under the bar 17, the

opposite end of the plate is secured to the blocks 19 by the jaws 20, and the blocks 19 are then adjusted to stretch the plate tightly about the shell section. After the plate has been thus adjusted the shell section is placed upon the cylindrical body member 10 and is clamped thereon by bolts 16.

Reference to Fig. 1 will show that the clamping devices are so disposed in recesses in the ends of the shell sections that the outer edges of the shell sections may be brought into positions closely adjacent to each other, the printing surface of the cylinder being thus made substantially continuous.

While the cylinder has been described in connection with the mounting of the printing plates it will be evident that the construction is equally well adapted for mounting the rubber off-set or transfer blanket.

By securing the plates or blankets to the shell sections before the sections are mounted upon the cylinder several important advantages are attained.

The shell sections may be carried in stock in different widths of face and thus a section may be readily selected which is suitable to the particular work in hand. The separate sections are light in weight when compared with the usual plate cylinder and are consequently much more easily handled when attaching the plate thereto. Furthermore, if it becomes necessary to use the press for other purposes before a job is completed, the shell section with its attached plate may be removed as a unit and it is not necessary to disturb the adjustment of the plate on its section.

Having thus described my invention and the advantages attainable by the use thereof it will be evident that changes and modifications can be made therein by those skilled in the art without departing from the spirit and scope thereof as set forth in the claims and I do not wish to be otherwise limited to the details herein disclosed, but what I claim is:—

1. A plate cylinder comprising a cylindrical body member having a plurality of parallel T-slots formed therein and also having a plurality of axially extending beveled ribs secured thereto, a plurality of shell sections each having a beveled portion adapted to engage one of said ribs and having projections positioned for engagement by clamping bolts inserted in said T-slots, and means to secure a plate to each of said sections.

2. A plate cylinder comprising a cylindrical body member, a plurality of shell sections, each detachably secured to said member, and clamping devices for securing and stretching a metal plate on each of said sections, said devices comprising a clamping bar near one edge of each section and under a projecting outer portion thereof, a plurality of clamping jaws each fixed to a separate sliding block mounted in substantially radial ways in a recessed portion at the opposite end of said section, and means for moving said sliding blocks to draw the metal plate tightly over said section the clamping jaws of one shell section fitting beneath the clamping bar and projecting outer portion of the next adjacent section, and permitting the outer surface of said sections to be made substantially continuous.

3. A plate cylinder comprising a cylindrical body member, a plurality of shell sections each detachably secured to said member, and clamping devices for securing and stretching a metal plate on each of said sections, said devices comprising a clamping bar near one edge of each section and under a projecting outer portion thereof, a clamping device for the opposite edge of the metal plate and adjusting screws effective to move said clamping device substantially radially, said clamping device when in use being positioned beneath the clamping bar and projecting outer portion of the next adjacent section and thus permitting close approach of the edges of the printing plates carried by said sections.

In testimony whereof I have hereunto set my hand.

CHARLES A. MEISEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."