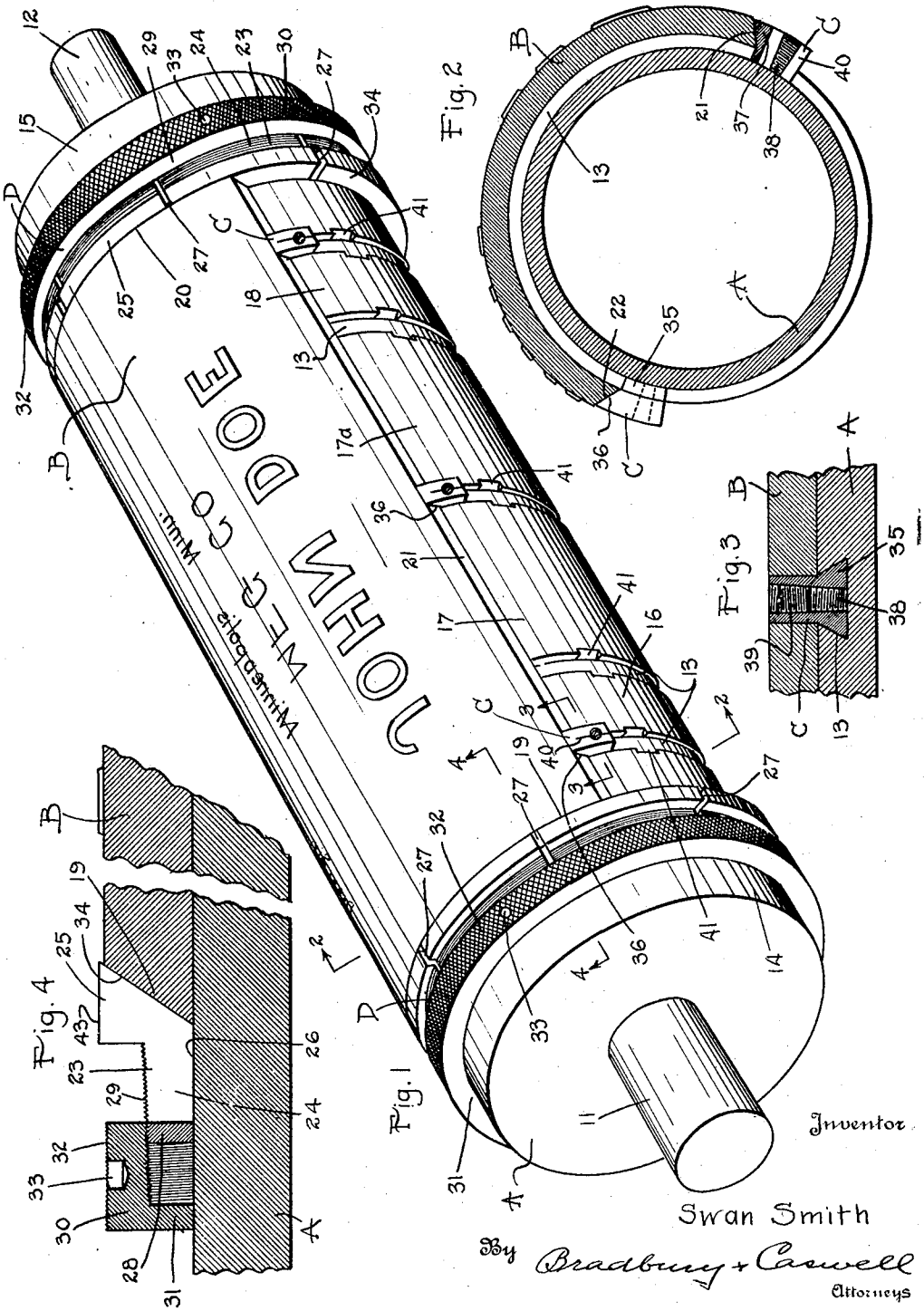
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PRINTING CYLINDER FOR ROTARY PRESSES

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PRINTING CYLINDER FOR ROTARY PRESSES.

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My invention relates to printing cylinders for rotary presses and has for its object to provide a printing cylinder embodying simple and effective attaching means for mounting and holding one or more type plates upon the printing cylinder.

Another object resides in providing tapered holder rings with beveled faces adapted to engage the beveled circumferential edges of a plate, said rings being slit and having screwed thereon lock rings which serve to clamp the holder rings in place upon the cylinder.

A still further object of the invention resides in forming the cylinder with circumferential grooves and in providing abutments movable along said grooves and formed with beveled faces adapted to engage the beveled edges of the type plate, each abutment being split and having a screw fitted thereto for locking the same against movement along said grooves.

A feature of the invention resides in forming the holder rings with flanges which serve as bearers.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawings, Fig. 1 is a perspective view of a printing cylinder embodying my invention.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a detail sectional view through one of the abutments taken on line 3—3 of Fig. 1 and drawn to an enlarged scale.

Fig. 4 is a cross sectional view of the holder ring and lock ring taken on line 4—4 of Fig. 1 and drawn to an enlarged scale.

For the purpose of illustrating the application of my invention, I have shown in the drawings a printing cylinder A formed with trunnions 11 and 12 on which said cylinder may be mounted for rotation. The construction of printing cylinders and their relation in printing presses being well known in the art it has not been thought necessary to illustrate in detail a complete rotary printing press. In conjunction with this printing cylinder I have illustrated a segmental shaped type plate B adapted to be mounted on and secured to said cylinder in accordance with my invention.

The cylinder A is smooth throughout its length and of uniform diameter except for a number of circumferential grooves 13 which are situated inwardly from the ends of said cylinder leaving blank portions 14 and 15 at the ends of the cylinder and similar portions 16, 17, 17^a and 18 between the grooves 13. The type plate best suited to the present form of my invention is constructed with beveled circumferential edges 19 and 20 and beveled longitudinal edges 21 and 22 and is positioned with the edges 19 and 20 situated on any of the blank spaces 14, 15, 16, 17, 17^a or 18. The edges 19 and 20 of the illustrated type plate B fall upon the blank spaces 14 and 15. On these portions of the cylinder and engaging the edges 19 and 20 of said type plate are positioned holding devices D which serve to secure the type plate mounted on the cylinder.

Each holding device D consists of a holder ring 23 comprising a sleeve 24 integral with a flange 25 issuing outwardly therefrom. The holder ring 23 is bored at 26 to fit closely upon the cylinder A and is formed with a number of longitudinal slits 27 which extend through the flange 25 and into sleeve 24 almost entirely therethrough leaving bridge portions 28 holding the ring 23 together. The sleeve 24 is tapered externally and is externally threaded at 29 up to the flange 25. Upon the threaded portion 29 of holder ring 23 is screwed a lock ring 30 which is internally threaded to fit the threads 29 at the beginning of the sleeve 24 where the same are of a minimum diameter. An internal annular flange 31 on the lock ring 30 serves to guide said ring along cylinder A and center it relative to the sleeve 24 so that said lock ring may be readily screwed upon said sleeve. If desired said lock ring may be knurled as indicated at 32 to permit of readily screwing it upon sleeve 24 and may have sockets 33 formed therein adapted to be engaged by a spanner wrench to permit of tightly screwing said lock ring upon the sleeve 24. The flange 25 of each holder ring 23 is formed with a beveled face 34 which

engages one of the beveled edges of the type plate B. When lock ring 30 is tightly screwed upon the holder ring 23 said holder ring is clamped upon cylinder A so as to securely hold type plate B mounted thereon.

To prevent type plate B from moving circumferentially around the cylinder a number of abutments C are employed which are mounted in the grooves 13. These grooves are preferably dovetailed being enlarged at the bottom or the same may be formed in any other suitable manner. Each of the abutments C has a lug 35 adapted to be received by any of the grooves 13 said lug being enlarged at its base to fit the walls of a groove. Along one end of the abutment, which extends outwardly beyond the surface of cylinder A, said abutment is formed with a beveled face 36 which may engage either of the longitudinal beveled edges 21 or 22 of the type plate B to hold it in place upon the cylinder A. Abutment C may be formed with a central slit 40 extending through the lug 35 and almost throughout the length of the abutment leaving a bridge portion 37 at the head thereof. A tapered hole 38 is formed in abutment C, the same being threaded to receive a short tapered screw 39. The axis of this hole 38 is situated along the slit 40 so that as the screw 39 is screwed into hole 38 the lug 35 is spread and locked in groove 13 so as to hold plate B in position on the cylinder. The lug 35 of abutment C may be inserted into any of the grooves 13 through entry recesses 41 formed therein. If desired, the abutments C may be split into halves instead of being merely slit. And while such splitting of said abutments makes for additional loose parts, it will be obvious that a tighter grip between abutment and cylinder is made possible. If desired several type plates may be mounted on one cylinder. When narrow type plates are used the abutments C are inserted into the inner grooves 13 and the ends of said type plates are arranged with the holding devices D upon the blank spaces 16, 17, 17ª or 18.

The flanges 25 of holder rings 23, in addition to engaging the edges of type plate B for holding the same in place upon the cylinder are constructed with the peripheral surface 43 thereof disposed outwardly of the lock ring 30 and the body of the type plate B so as to lie flush with the face of the type on said type plate. In this manner these surfaces 43 serve as bearers for engaging the paper to feed and hold it in proper position on the impression cylinder of a printing press.

Type plates may be quickly mounted and held upon or removed from any improved printing cylinder. Mounted on the printing cylinder, the type plates are supported throughout their circumferential edges and at selected intervals along their longitudinal edges. Said plates may be adjusted both longitudinally and circumferentially on the printing cylinder so as to bring the same, with little effort, in the proper position.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

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

1. In combination, a plate carrying cylinder, a holder ring slidably fitted on said cylinder and adapted to engage a type plate thereon, and a lock ring fitted on said holder ring and co-operating therewith to clamp the same about said cylinder to hold it in engagement with said type plate.

2. In combination, a plate carrying cylinder having a circumferential groove, an abutment movable within said groove having a beveled edge adapted to engage the beveled edge of a type plate, and means for clamping said abutment in position within said groove.

3. In combination, a plate carrying cylinder, a pair of holders movable longitudinally relative thereto for engaging the circumferential edges of a type plate, means for locking said holders in position upon said cylinder, abutments movable circumferentially relative to said cylinder and supported thereon for engaging the longitudinal edges of said plate, and means for independently locking said abutments in adjusted position.

4. In combination, a plate carrying cylinder, a holder ring movable longitudinally thereon comprising a tapered sleeve and a flange formed with a beveled face adapted to engage the beveled edge of a type plate, the peripheral surface of said flange being disposd to form a bearer, threads formed on said sleeve, said flange and a portion of said sleeve being slit, and a lock ring threaded upon said tapered sleeve to cause the same to clamp upon said cylinder.

5. In combination, a plate carrying cylinder of a rotary press, a holder ring movable longitudinally on the cylinder and comprising a tapered sleeve having means for engaging the edge of a type plate to hold the plate attached to said cylinder, said sleeve having slits formed therein, threads formed on said sleeve, and a lock ring threaded upon said sleeve for clamping said holder ring in place upon said cylinder.

6. In combination, a plate carrying cylinder having a circumferential groove enlarged at the bottom, an abutment having a lug formed with an enlarged base movable along said groove, said abutment projecting above the surface of said cylinder and having a beveled face adapted to engage the edge of a

type plate, and means for locking said abutment in said groove against movement along the same.

7. In combination, a plate carrying cylinder, an annular holding member slidably fitted thereon and adapted to engage the edge of a type plate on said cylinder, and means carried by said member for clamping the same to said cylinder in selected positions thereon.

8. In combination, a plate carrying cylinder having a groove therein, an abutment slidably fitted within said groove and adapted to engage the edge of a type plate on said cylinder, and means carried by the abutment for clamping the same to the cylinder within said groove.

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

SWAN SMITH.