W. A. PRINGLE.

CYLINDER FOR PRINTING PRESSES.

APPLICATION FILED NOV. 26, 1906.

989,870.

Patented Apr. 18, 1911.

2 SHEETS—SHEET 1.

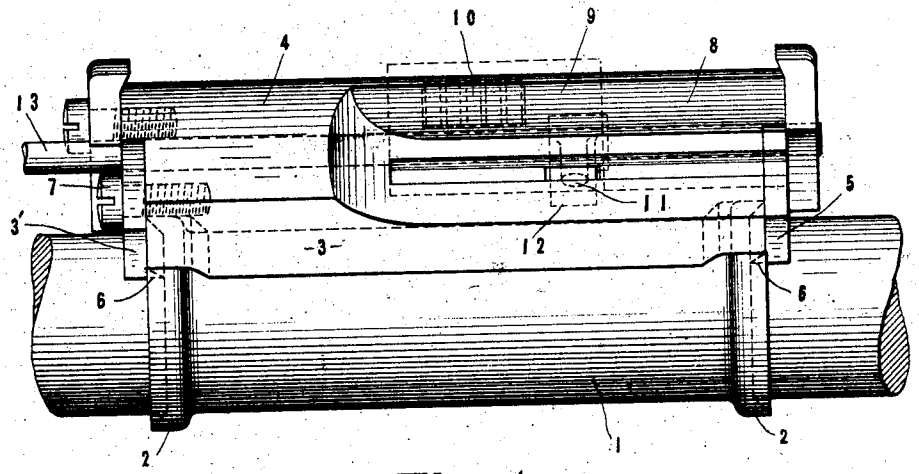


Fig. 1.

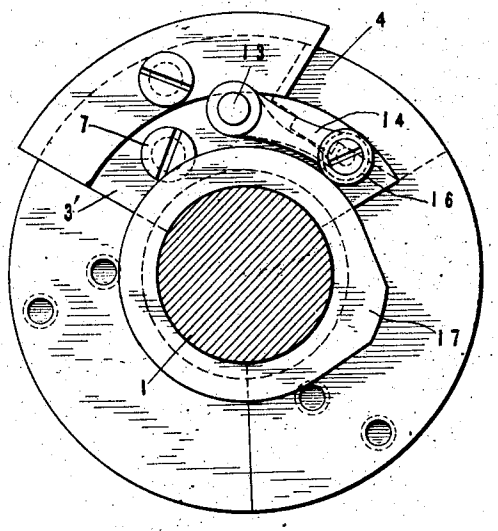


Fig. 2.

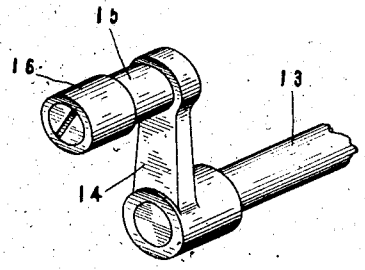


Fig. 3.

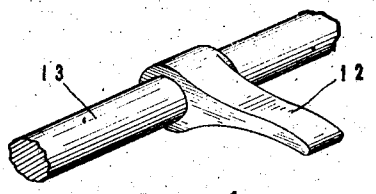


Fig. 4.

WITNESSES

J. Clyde Ripley

Arthur G. Previs

INVENTOR

W. A. Pringle

BY

Duell, Warfield & Duell

ATTORNEYS

W. A. PRINGLE.

CYLINDER FOR PRINTING PRESSES.

APPLICATION FILED NOV. 26, 1906.

989,870. Patented Apr. 18, 1911.

2 SHEETS—SHEET 2.

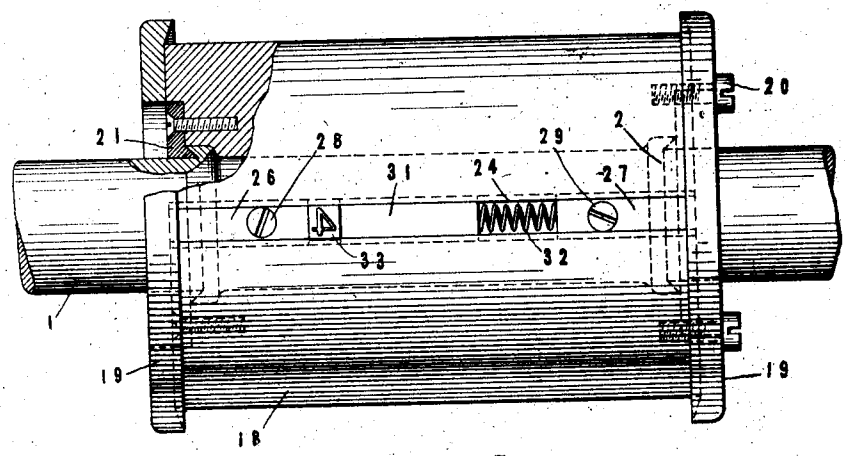


Fig. 5.

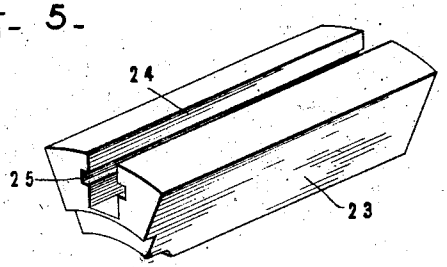


Fig. 7.

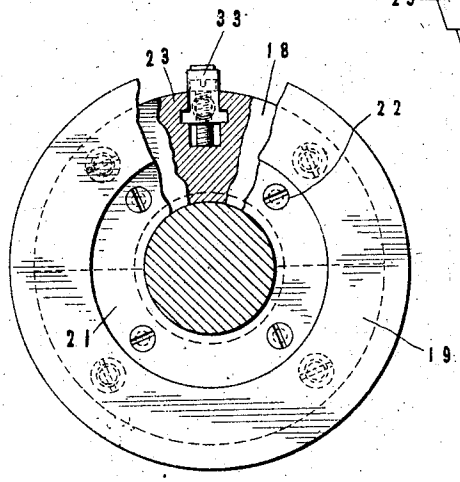


Fig. 6

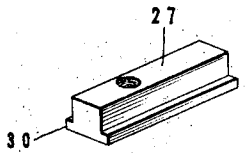


Fig. 8.

WITNESSES

J. Clyde Ripley

Arthur F. Irwin

INVENTOR

W. A. Pringle

BY

Duell, Warfield & Duell

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM A. PRINGLE, OF NIAGARA FALLS, NEW YORK, ASSIGNOR TO THE CARTER-CRUME CO., LIMITED, OF NIAGARA FALLS, NEW YORK, A CORPORATION OF CANADA.

CYLINDER FOR PRINTING-PRESSES.

989,870. Specification of Letters Patent. Patented Apr. 18, 1911.

Application filed November 26, 1906. Serial No. 345,014.

To all whom it may concern:

Be it known that I, WILLIAM A. PRINGLE, residing at Niagara Falls, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Cylinders for Printing-Presses, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to printing mechanism, and more particularly to the construction of plate or form cylinders adapted to be employed in rotary printing presses.

One of the objects of the invention is to provide simple and efficient means for mounting printing devices upon a supporting shaft.

Another object is to provide improved means for carrying printing or numbering devices employed in printing mechanism of the above character.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

Referring now to the accompanying drawings, wherein is illustrated one of the various possible embodiments of my invention, Figure 1 is a view in elevation of a supporting shaft, showing the manner of mounting the section thereon. Fig. 2 is a view in vertical section taken through the supporting shaft, showing the means for mounting and actuating the printing devices carried thereby. Fig. 3 is a view in perspective of the outer end of a rock shaft employed for operating printing devices, showing the arm by means of which the same is actuated. Fig. 4 is a similar view of the means employed to engage and actuate the printing devices carried by a section mounted upon the shaft. Fig. 5 is a view similar to Fig. 1, but on a smaller scale, showing a different type of cylinder for carrying printing devices. Fig. 6 is a view in end elevation showing the manner of mounting the printing devices upon the cylinder, some of the parts being broken away so as better to disclose the construction. Fig. 7 is a view in perspective of one of the sections of the cylinder upon which printing devices are mounted. Fig. 8 is a similar view showing one of the blocks carried within the section.

Similar reference characters refer to similar parts throughout the several views.

Referring now to the drawings, 1 indicates a shaft upon which the several sections or cylinders employed to carry the printing devices are mounted, said shaft being rotatably mounted at either end in journals provided in the side frame of the printing press, as will be understood. Shaft 1 is provided with a plurality of pairs of oppositely-disposed undercut flanges 2, said flanges being preferably made integral with the shaft as shown. Each section is adapted to rest upon shaft 1 between the flanges, and is shaped to fit about said flanges, the several sections lying snugly against the shaft.

Referring now to Figs. 1 to 4, inclusive, section 3 is shown as comprised by a block 4 of a length equal to the distance separating a pair of flanges 2. This block is provided at either end thereof with a plate indicated at 3′ and 5 respectively, each of which has means, as projection 6, adapted to take under the undercut portions of flanges 2. In the present instance, plate 5, at one end of the block is shown as rigidly secured thereto, the other of said plates being clamped against said block by means of a headed screw 7, which is threaded into the block. By this means the block is securely clamped to the shaft in any desired adjusted position thereabout.

Block 4 in the present instance is provided with a milled recess 8 adapted to receive a numbering head 9 or other printing device, as shown herein in dotted lines, said head being suitably secured within said recess. This head, in the present instance, is provided with a plurality of numbering wheels, as at 10, adapted to be actuated by a plunger 11 which extends downwardly through the head. Plunger 11 is adapted to be engaged and actuated by means of a finger 12 fixed upon rock shaft 13, which extends longitudinally of block 4, the outer end of which is provided with a rocker arm 14. Rocker arm 14 has a stud 15 extended outwardly therefrom which carries an anti-friction roller 16. This roll traverses the

periphery of a cam 17 attached to the bearing or box at one of the ends of the shaft, so that at each revolution of the shaft arm 14 is swung to actuate the rocker shaft, whereby finger 12 actuates the printing devices through plunger 11.

In Figs. 5 to 8, inclusive, shaft 1 is shown as provided with another type of cylinder, herein shown at 18. This cylinder is comprised by a plurality of sections made of the proper height so that printing plates may be fastened thereon as by means of clamps 19, which engage the printing plates at opposite ends thereof, thereby holding said plates against the periphery of the section. In Fig. 5 the clamping plate at one end of the drawing is shown as fastened to the sections of the cylinder by means of clamp screws 20. While the cylinder 18 may be made up of any desired number of sections, in the present instance I have shown the same as made in four sections, the several sections constituting the cylinder being positioned about the shaft between a pair of oppositely-disposed undercut flanges, and are rigidly secured to the shaft by means of clamp plates 21, each of which is provided with a projecting member fitted within the undercut portion of a flange. These plates may be secured to the sections in any desired manner. In the present instance, I have shown the plates at one end of the cylinder as being secured thereto by means of clamp screws 22 threaded into openings provided in the several sections. In this instance one of the sections indicated at 23 is provided with a longitudinally extending recess 24, the walls of which are grooved at 25, as clearly shown in Figs. 6 and 7. Within this recess and at both ends thereof are provided blocks 26 and 27 respectively, said blocks being rigidly secured in said recess by means of clamp screws 28 and 29. Blocks 26 and 27 are also provided with oppositely-disposed tongues or kerfs 30 which are received in the grooves 25 of recess 24. Intermediate end blocks 26 and 27 is provided a sliding block 31 which is constructed similarly to the fixed blocks. Between this sliding block and block 27 is provided a coil spring 32 which urges the sliding block toward the other of said fixed blocks so that there may be clamped between the sliding block and fixed block 26 one or more of printing devices or types, one of which is indicated at 33. By this means the types are securely held upon the cylinder.

Having thus described the structural features constituting this embodiment of my invention, the manner of using the same may now be understood. The several cylinders or sections being rigidly and securely clamped upon the undercut integral flanges of the supporting shaft may be readily removed therefrom by simply releasing the clamping plates by means of which the said sections or cylinders are clamped upon the flanges. The sections, as illustrated in Figs. 1 and 5, may be used together or singly, or several of either or both styles of sections may be employed upon the same shaft.

It will thus be seen that I have provided a construction well adapted to attain the several objects and aims of my invention in an exceedingly simple yet practical manner, the several sections being rigidly secured upon the shaft in such manner that they may be readily detached therefrom, as when it is desired to position other styles or forms of cylinders or sections thereon.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

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

1. In printing mechanism, in combination, a shaft having an undercut flange thereon, a section adapted to carry printing devices positioned upon said shaft, means carried by said section near one end thereof and movable relatively thereto adapted to engage said undercut flange to hold the same in position, and means at the opposite end of said section adapted to co-act with said shaft for locking the same in proper position.

2. In printing mechanism, in combination, a shaft, a section adapted to carry printing instrumentalities positioned upon said shaft and having locking means at both ends thereof, said shaft having a flange undercut at its outer side near one end thereof adapted to engage one of said locking means, and means near the other end of said shaft coacting with the other locking means whereby said section is rigidly secured to said shaft.

3. In printing mechanism, in combination, a shaft, and a section adapted to carry printing instrumentalities positioned upon said shaft and having locking means at both ends thereof, said shaft having an undercut flange near one end thereof adapted to engage one of said locking means, and outwardly undercut means near the other end of said shaft coacting with the other locking means whereby said section is rigidly se-

cured to said shaft, said locking means permitting said section to be adjusted about said shaft.

4. In printing mechanism, in combination, a shaft having an annular undercut flange, a section adapted to carry printing instrumentalities positioned upon said shaft, a member secured to said section having means which take under the undercut portion of said flange at one end, and coacting locking means near the other end of said section and shaft whereby said section is secured to said shaft, a cam and intermediate mechanism between said printing instrumentalities and said cam for actuating the former at each revolution of the shaft.

5. In printing mechanism, in combination, a shaft having a plurality of undercut flanges, a section adapted to carry a numbering device positioned upon said shaft between said flanges, means carried by said section adapted to co-act with said undercut flanges for securing the section to said shaft, a cam adjacent said shaft, and intermediate mechanism between said numbering device and said cam adapted to actuate the former at each revolution of the shaft.

6. In printing mechanism, in combination, a shaft having a plurality of undercut integral flanges, a section adapted to carry printing devices positioned upon said shaft between said flanges, and a pair of members one of which is adapted to be secured to each end of said section, each of which has means adapted to take under said flanges whereby said section is secured to said shaft.

7. In printing mechanism, in combination, a shaft having a pair of oppositely-disposed undercut flanges, a section resting upon said shaft intermediate said flanges, and plates secured to either end of said section, each of said plates having means which takes under one of said flanges and thereby secures said section to said shaft.

8. In printing mechanism, in combination, a shaft provided with a pair of undercut integral flanges, a section adapted to carry printing devices resting upon said shaft between said flanges, a pair of members secured to said section adapted to engage under said flanges, and a second pair of members secured to said section adapted to engage and hold printing devices thereon.

9. In printing mechanism, in combination, a shaft having a pair of integral undercut flanges, a section adapted to carry printing devices resting upon said shaft between said flanges, a pair of plates secured to said section adapted to engage under said flanges and thereby secure said section to said shaft, and means for securing said plate to said section.

10. In printing mechanism, in combination, a shaft provided with a pair of undercut integral flanges, a section resting upon said shaft between said flanges, a pair of plates each of which has means adapted to take under one of said flanges, means for securing said plates to said sections, and a second pair of plates mounted upon said section adapted to clamp printing devices therebetween whereby said printing devices are secured to said section.

11. In printing mechanism, in combination, a shaft provided with a pair of undercut flanges, a section adapted to carry a numbering device secured to said shaft between said flanges, means on said section adapted to engage said flanges for clamping the section thereto, a cam on said shaft, and an intermediate rock shaft between said numbering device and said cam for actuating the former at each revolution of the shaft.

12. In printing mechanism, in combination, a shaft provided with a pair of fixed, oppositely disposed, undercut flanges, a section adapted to carry printing devices positioned upon said shaft between said flanges, and means for clamping said section to said flanges.

13. In printing mechanism, in combination, a shaft provided with a plurality of fixed flanges, a section adapted to carry printing devices positioned upon said shaft between said flanges, and means secured to said section and engaging said flanges for holding said section in position upon said shaft.

14. In printing mechanism, in combination, a shaft provided with a pair of undercut flanges facing outwardly with respect to one another, a section adapted to carry printing devices positioned upon said shaft between said flanges, and means for clamping said section to said flanges.

15. In printing mechanism, in combination, a shaft provided with a plurality of flanges, a section adapted to carry printing devices positioned upon said shaft between said flanges, and means operatively associated with said section and engaging the outer surfaces of said flanges to hold said section in position.

16. In printing mechanism, in combination, a shaft provided with a plurality of undercut integral flanges, a plurality of sections resting upon said shaft, one of said sections being positioned between each pair of said flanges, a plate adapted to be clamped to the opposite ends of each of said sections, each of said plates having means taking under the undercut portions of said flanges whereby said sections are rigidly secured to said shaft, and a clamping plate secured to the opposite end of each of said sections adapted to engage and secure a printing device to said section.

17. The combination, with a shaft having a collar adjacent each end, of a cylinder

segment adapted to be set upon the shaft between the collars with end portions projecting over the collars, means for fastening said end portions in circumferential adjustment upon the collars, and a longitudinal channel in the segment adapted to receive and have fastened therein one or more type holders.

18. In printing mechanism, in combination, a shaft provided with a pair of undercut flanges, a section adapted to carry a numbering device positioned upon said shaft between said flanges, a pair of members on said section adapted to engage said flanges for clamping the section thereto, means on said section adapted to engage and hold said numbering device, and means for actuating said numbering device at each revolution of the shaft, the construction and arrangement of said engaging members and flanges permitting the adjustment of said numbering device about said shaft.

19. In printing mechanism, in combination, a shaft provided with a pair of integral undercut flanges, a section adapted to carry printing devices, and means associated therewith adapted to take under said undercut flanges for securing the section thereto, said means permitting an adjustment of said section about said shaft.

In testimony whereof I affix my signature, in the presence of two witnesses.

WILLIAM A. PRINGLE.

Witnesses:

GEO. D. CAMPBELL,

V. J. STAFFORD.