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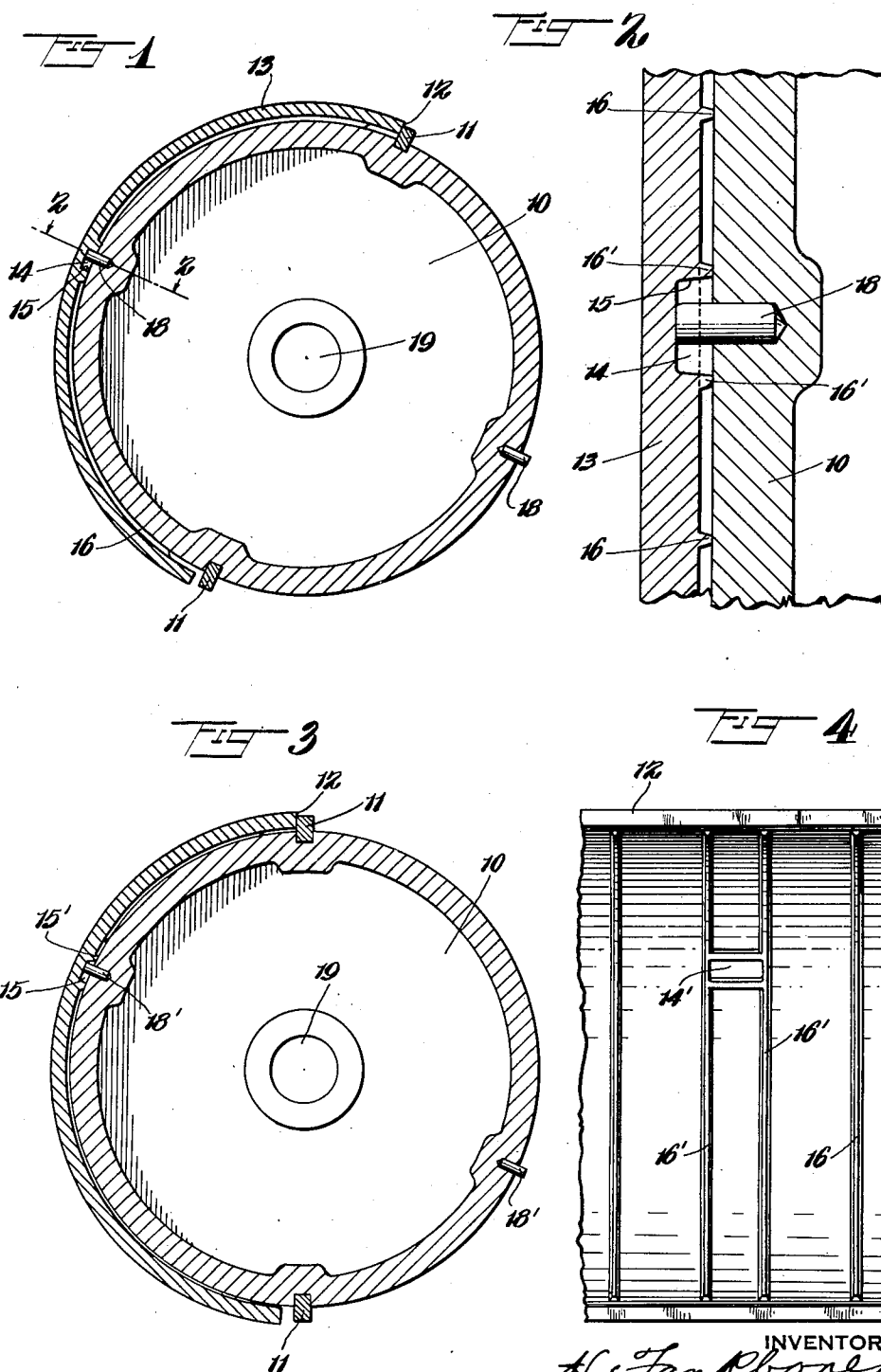
H. FANKBONER

1,923,925

PRINTING PRESS

Filed Jan. 14, 1931

2 Sheets-Sheet 1



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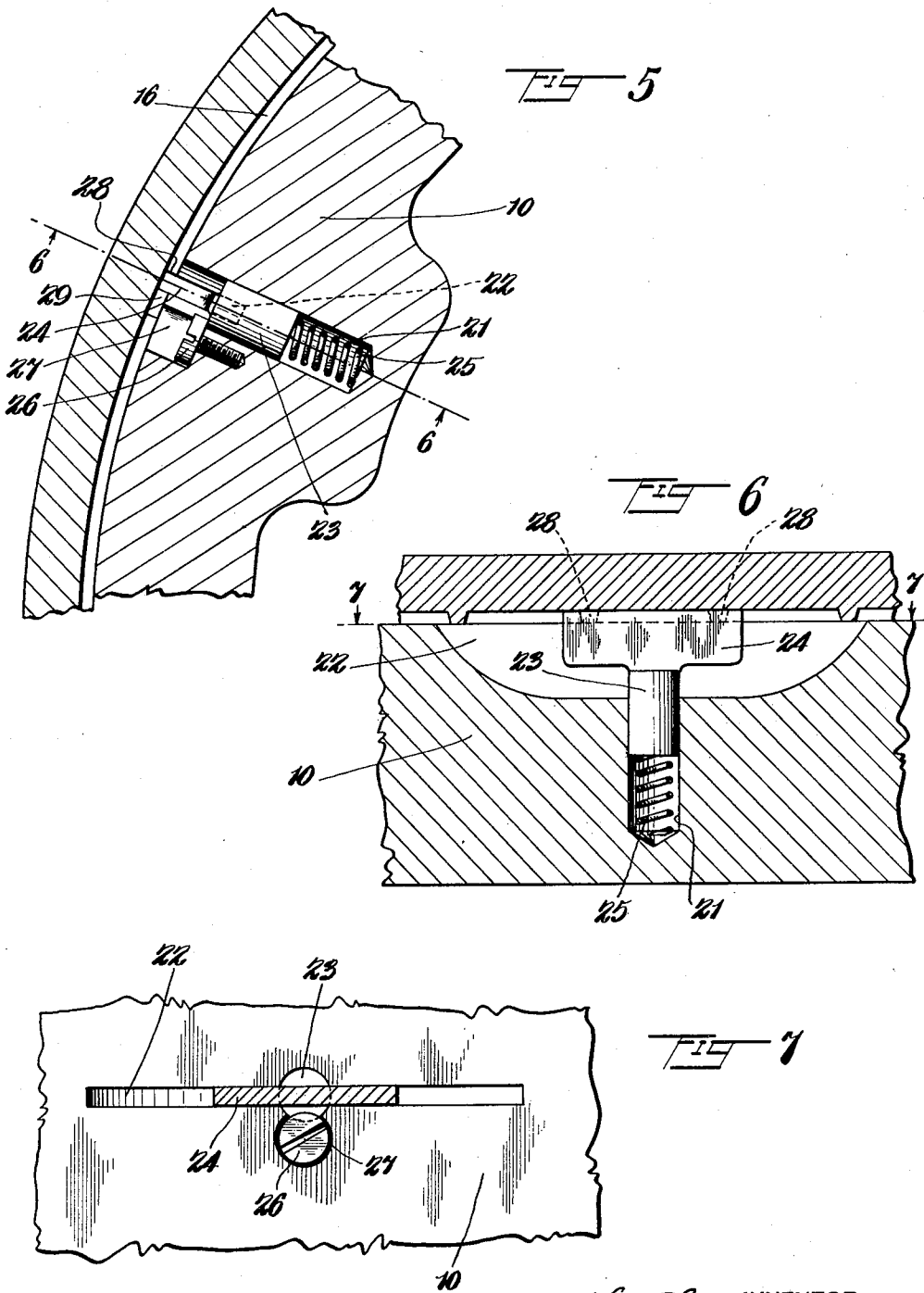
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UNITED STATES PATENT OFFICE

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PRINTING PRESS

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tion of Illinois

Application January 14, 1931. Serial No. 503,651

6 Claims. (Cl. 101—378)

The present invention relates to printing presses and more particularly to means for temporarily holding the plates on the plate cylinder of a rotary printing couple during the plating.

5 Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

10 The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

15 The accompanying drawings, referred to herein and constituting a part hereof, illustrate the preferred embodiments of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:—

20 Figure 1 is a vertical cross section through a plate cylinder and plate embodying the present invention;

Figure 2 is a longitudinal fragmentary section taken on the line 2—2 of Figure 1;

25 Figure 3 is a vertical cross section through a modified embodiment of the present invention;

Figure 4 is a fragmentary side elevation of the plate shown in Figure 3;

30 Figure 5 is a fragmentary, vertical section through a further modified embodiment of the present invention;

Figure 6 is a fragmentary section taken on the line 6—6 of Figure 5; and

35 Figure 7 is a section taken on the line 7—7 of Figure 6.

The present invention has for its object the provision of means for facilitating and shortening the time required for plating of the plate cylinders of a rotary printing couple, such as the plate cylinders of a high speed newspaper press. A further object is the provision of means for preventing the plates dropping from the plate cylinders while the plates are not locked or securely fastened to the plate cylinders by the plate clamps.

45 In accordance with the present invention, cooperating interengaging members are provided, one on the concave surface of the curved plate, the other on the surface of the plate cylinder and above the axis of the cylinder. Preferably, substantially midway between the edges of the plate or on the trailing half of the plate is formed a recess or shoulder to be engaged by a projection carried by the plate cylinder and lying above the cylinder axis during plating.

It will be understood that the foregoing general description and the following detailed description as well, are exemplary and explanatory of the invention but are not restrictive thereof.

Referring now in detail to the illustrative embodiment of the invention as illustrated in Figures 1 and 2 of the accompanying drawings, the plate cylinder 10 of the rotary printing couple is provided with the usual plate-driving stops 11 arranged along and in contact with the trailing edge 12 of the stereotype plate 13.

60 In accordance with the present invention, and for holding the plate on the cylinder during plating of the press, the substantially semi-cylindrical stereotype plates are each provided with a shallow longitudinally extending recess 14, having substantially radial shoulders 15. The recess is preferably located centrally and on the concave or rear side of the plate 13 between two adjacent ribs 16. If desired, and as shown, the two central ribs 16' on the back of the plate may be placed slightly closer together than usual to form the end closures of the recess.

Cooperating with the recess in the back of the plate is provided a radially extending pin 18 projecting from the surface of the cylinder and located substantially midway between the diametrically opposite driving stops 11. Generally, a single centrally-located plate-retaining pin 18 is sufficient for holding the plate on the cylinder during plating, but additional pins may be provided if desired.

After plating one side of the cylinder in the position shown in Figure 1, the plate may be locked in position by means of the usual plate clamps. The cylinder is then rotated a half-rotation, bringing the other driving stop 11 and plate-retaining pin 18 into operative position, after which the operations are repeated.

Figures 3 and 4 of the drawings illustrate a modified embodiment of the invention suitable for use in connection with printing presses in which the driving stops 11 are vertically aligned with the axis 19 of the cylinder during plating. In this position, the retaining pin 18' is placed closer to its corresponding driving stop than in the previous embodiment, but is positioned substantially above the cylinder axis.

The stereotype plates for use in connection with this embodiment are formed with a shallow, longitudinally extending recess 14' in the back or concave side of the plate, between adjacent ribs 16' thereof and in a position to accurately register with the pin 18' on the cylinder 10. Preferably, the upper side or shoulder 15' of the recess

is formed substantially perpendicular to a line drawn from one edge 12 of the plate to the other edge, while the lower edge of the recess is radial.

While the recesses in the back of the plate may be formed in any desired manner, they are preferably formed during the casting of the plate in the casting box, as by attaching a correspondingly shaped metal block to the core of the casting box. With plates of the type shown in Figure 3, the upper edge or shoulder 15' of the recess is made perpendicular, as described, so that the plate may draw from the casting box.

Preferably, and as shown in the foregoing embodiments, the recess is slightly wider and considerably longer than the diameter of the retaining pins on the cylinder, thereby facilitating the positioning of the plates on the cylinder and at the same time permitting axial movement of the plates by the plate clamps as the plates are locked in running position.

Figures 5, 6 and 7 illustrate another modification of the invention in which the plate retaining pin is resiliently seated in the cylinder and the ribs of the plate are interrupted to provide shoulders to be engaged by the pin. As embodied, the cylinder 10 is provided with a cylindrical socket 21 which opens outwardly into a longitudinally extending, narrow and relatively shallow slot 22. The plate-retaining pin in this modification comprises a cylindrical plunger 23 provided with a narrow, flat, longitudinally extending head 24 of substantially the same depth as the narrow slot 22, so that the pin may be pushed until it is flush with the surface of the cylinder. For resiliently pressing the pin outwardly and into plate retaining position, a spring 25 is provided in the socket 21 and engages the inner end of the plunger 23.

Means are also provided for limiting outward movement of the retaining pin, while permitting easy replacement. For this purpose a fillister head screw 26 is provided, and is set in an offset recess 27 so that a portion of its head overlies the outer cylindrical portion of the plunger 23. In the plates used with these retaining pins, the circumferentially extending ribs 16 on the backs of the plates are interrupted, as at 29, for a short distance to provide sharp shoulders 28 to be engaged by the flat head 24 of the retaining pin.

This modification, while not as simple as the other modifications described, has the advantage that the plates may be slid into position. The pin is retracted and lies flush with the surface of the cylinder until the plate is properly positioned, and is then resiliently projected to engage the shoulders 28.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim is:—

1. A curved printing plate having a concave rear face provided with circumferentially extending ribs, certain of said ribs being interrupted intermediate their ends to provide a sharp shoulder.

2. In a plate cylinder, means for temporarily securing a curved printing plate to the cylinder during plating comprising a retractible pin normally projecting from the surface of the cylinder.

3. In a plate cylinder, means for temporarily securing a curved printing plate to the cylinder while the plate is not locked on the cylinder comprising a pin resiliently urged outwardly of the cylinder and projecting beyond the surface thereof, said pin being provided with a flat head extending axially of the cylinder.

4. In a plate cylinder, means for temporarily holding a curved printing plate on the cylinder while the plate is not locked by the plate clamps, comprising a radially extending pin, resiliently urged outwardly of the cylinder and projecting beyond the surface thereof, and means for limiting the outward movement of the pin, said pin being provided with a flat head extending axially of the cylinder.

5. In a plate cylinder having driving means for the plates, means for temporarily holding a curved printing plate on the cylinder while the plate is not locked by the plate clamps on the cylinder with the driving means above and below the axis of the cylinder, said holding means comprising a radially extending pin located above the axis of the cylinder and normally projecting beyond the surface of the cylinder, said pin being provided with a flat head extending axially of the cylinder and means for resiliently urging said pin outwardly.

6. In a printing press the combination of a curved printing plate; a plate cylinder for supporting said plate, plate driving means to be positioned in substantial vertical alignment with the cylinder axis during plating, and a cooperating projection and shoulder, one on the plate, the other on the cylinder and positioned above the cylinder axis during plating.

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