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SECURING PLATE ON PRINTING PRESS CYLINDERS

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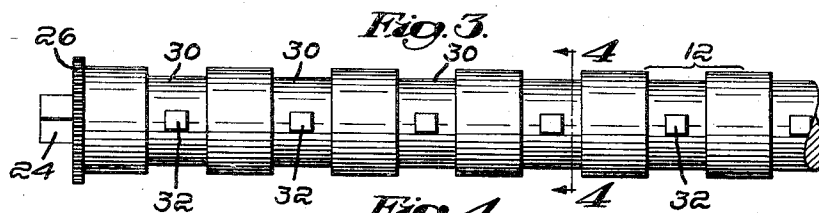
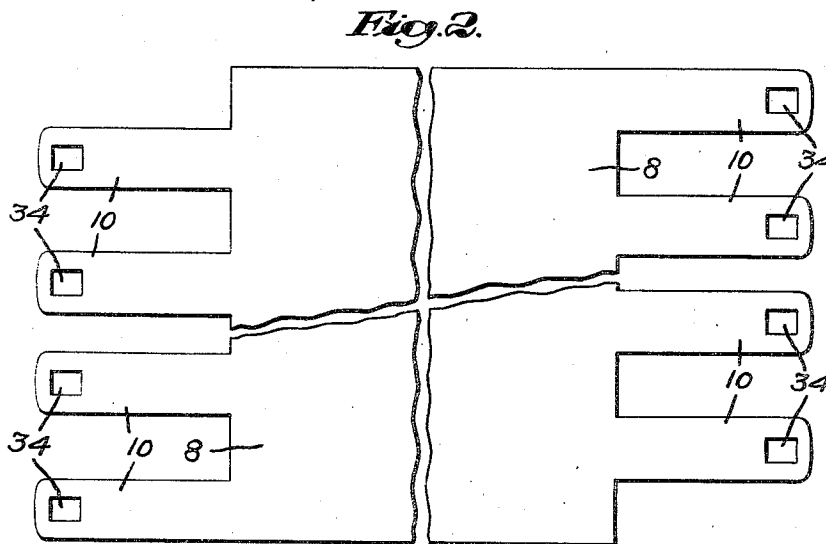
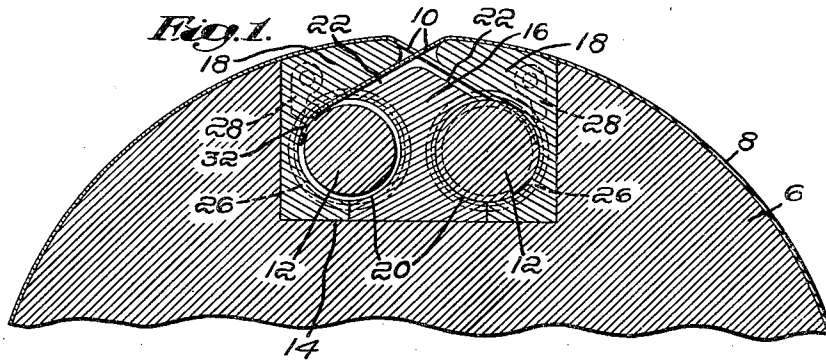
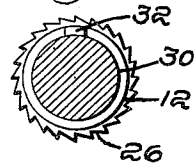


Fig. 4.



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SECURING PLATE ON PRINTING PRESS
CYLINDERSCharles A. Meisel, Milton, Mass., assignor to
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7 Claims. (Cl. 101—415.1)

This invention relates to printing cylinders and more particularly to the construction thereof providing for securing printing plates about their surfaces. The object of the invention is to provide a simple and efficient construction for clamping the adjacent ends of the plate or plates with which the cylinder is clothed and for tensioning them. In particular I provide a compact arrangement permitting the clamping to be effected with a minimum loss of space at the surface of the cylinder between the plate ends and without any sharp bending of the plates.

My invention will be well understood by reference to the following description of the illustrative embodiment thereof shown by way of example in the accompanying drawing, wherein:—

Fig. 1 is a fragmentary transverse section through a printing cylinder;

Fig. 2 is a plan view of the printing plate with parts broken away;

Fig. 3 is an end elevation of a part of a reel shaft used in the construction; and

Fig. 4 is a section on the line 4—4 of Fig. 3.

Referring to the drawing, I have there shown a cylinder 6 about which is secured a printing plate 8 and for convenience in the following description we may assume that a single plate covers substantially the entire periphery of the cylinder, its two ends being presented adjacent to each other and secured although, as will be obvious, more than one plate may be applied to the cylinders and the adjacent ends of two plates secured in the manner about to be described.

In the preferred form of the invention the ends of the plate 8 are provided with projecting fingers 10 in alternating or staggered position at the two ends so that when the two ends are presented to each other the fingers on one end may pass into the spaces between those on the other end in interdigitated relation, and thus the ends of the main body of the plate may be brought into close proximity. The fingers may be bent inwardly at a relatively slight angle to the periphery of the cylinder to cross, as indicated in Fig. 1, slightly within the periphery of the cylinder and have their distal ends secured at the further side of the line of crossing, they being herein shown as attached to reel shafts 12 housed within the cylinder.

In the preferred form of the invention shown the cylinder 6 is formed with a recess 14 in which may be secured a central member 16, roughly of I-shaped section, and lateral members 18, roughly of channel-shaped section, which when set together provide cylindrical bores 20 and passage-

ways 22 extending substantially tangentially from these bores to the exterior of the cylinder and intersecting slightly inwardly of the periphery thereof. The three members 16 and 18 are of uniform cross section throughout and thus may be cheaply and expeditiously made. The fingers 10 enter the passageways and are secured at their distal ends to the reel shafts 12 received in the bores 20 and adapted to be turned by means of the squared ends 24 exposed at the end of the cylinder and held in adjusted rotative position by means of ratchets 26 with which cooperate the pawls 28.

Herein the main body of the shaft 12 is of the same diameter as the bore 20, filling the same and finding a bearing on the wall of the bore. The shaft is provided with recesses 30 at intervals corresponding in width and spacing to the width and spacing of the fingers 10 which are to be engaged therewith and is herein shown as turned down to provide reduced portions which in cooperation with the wall of the bore 20 provide pockets in which the fingers 10 are received, as seen at the left of Fig. 1. Projections 32 from the reduced portions of the shaft extend therefrom to or close to the wall of the bore.

Referring to the left-hand of Fig. 1, if the shaft 12 is turned somewhat clockwise from the position illustrated, the projections 32 will be presented at the inner end of the passageway 22. The fingers 10, which extend toward the left in the figure, may be passed down into the spaces between those fingers which project toward the right into the left-hand passageway and the openings 34 in the ends of the fingers engaged over the projections 32 by a simple movement of superposition without the necessity, for example, of setting up any screws or similar clamps. Since the ends of the fingers will be beneath the body of the other plate and the overhanging wall of the passageway and thus inaccessible to tools, the advantage of this method of effecting the engagement of the ends of the plate with the shaft will be obvious. If, then, the shaft is rotated counterclockwise to the position shown at the left in Fig. 1, the end of the projections 32 will be presented to the wall of the bore, interlocking with the shaft the ends of the fingers which cannot escape over the ends of the projections. The two ends of the plate being engaged with the two shafts in the manner described, the plate may be tensioned by turning up the shafts as necessary and desirable.

As is clearly seen from Fig. 1, the edges of the plate between the bases of the fingers are brought

close together with a minimum of lost space between, while the size and ruggedness of the securing means is in no way scanted. No sharp bend of the plate is required and it may be easily
 5 straightened out, for instance, if it is desired to regain the same as in the case of a zinc plate for offset printing. The mechanical construction is simple, inexpensive, rugged and convenient.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not
 10 restrictive; reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. In a printing press cylinder, means for clamping and tensioning interdigitated plate ends
 20 comprising a plurality of members of substantially uniform cross section set within the cylinder and defining between them longitudinally extending cylindrical bores and intersecting slots opening substantially tangentially from the bores to
 25 the surface of the cylinder, shafts rotatably received in said bores having cut-away portions and provided in the cut-away areas with projections to engage the plate ends, and means for turning the shafts alternatively to present said projections
 30 at the inner ends of the slots for engagement with plate ends entered therethrough or to retract them within the bores.

2. In a printing press cylinder, means for clamping and tensioning a plate end thereto
 35 comprising a pair of members of substantially uniform cross section set in the cylinder and defining between them a cylindrical bore and a slot opening substantially tangentially from said bore to the surface of the cylinder, a shaft rotatably fitting the bore, which shaft is recessed
 40 and has a projection in the recess extending in close proximity to the cylindrical surface defining the bore, and means for rotatably adjusting the shaft.

3. A printing press cylinder having a longitudinal cylindrical bore adjacent the surface thereof and a slot extending substantially tangentially
 45 from said bore to the surface of the cylinder, a shaft rotatably received in the bore, the shaft being recessed and having a projection in the recess extending into close proximity to the surface defining the bore, and means for rotatably adjusting the shaft.

4. A printing press cylinder having a longitu-

dinal cylindrical bore adjacent the surface thereof and a slot extending substantially tangentially from said bore to the surface of the cylinder, a shaft extending through the bore and mounted
 5 for rotative movement, means on the shaft for interlocking a plate end exposed in one position of rotative adjustment of the shaft at said slot for engagement of the plate end therewith, the plate end so engaged being overlaid in another
 10 position of adjustment by the wall of the bore to prevent disengagement of the plate end from said means.

5. A printing press cylinder providing means for clamping thereto a series of spaced fingers extending from a plate, the cylinder having a longitudinal cylindrical bore adjacent the surface
 15 thereof and a slot opening substantially tangentially from the bore to the surface of the cylinder, a shaft rotatably fitting said bore, the shaft being circumferentially cut away at intervals to provide in cooperation with the wall of the bore
 20 pockets into which the fingers of the plate may extend, and means to provide a hook-like traction connection between the fingers and the shaft at the location of the pockets.

6. A printing press cylinder providing means for clamping thereto intersecting plate ends having a series of interdigitated fingers, the cylinder having longitudinally extending shafts housed
 25 interiorly therein and intersecting passages extending substantially tangentially from the shafts to the surface of the cylinder, cooperating means on the shafts and at the distal ends of the fingers for connecting the same constructed and arranged to be engaged by a movement of superposition of
 30 the fingers when the shaft is adjusted to expose the engaging means thereon at the inner end of the passage, and means for retaining the shafts in positions of rotative adjustment.

7. A printing press cylinder providing means for clamping thereto intersecting plate ends having a series of interdigitated fingers, the cylinder having passageways intersecting adjacent the surface thereof into which the distal ends of the fingers may be inserted, movable tensioning means
 35 within the cylinder inwardly of the passageways presenting in one position of adjustment at the inner ends of the passageways means constructed and arranged to engage the distal ends of fingers by a simple movement of introduction of the latter and to interlock the same on retractive movement of the tensioning means to another position of adjustment.

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