

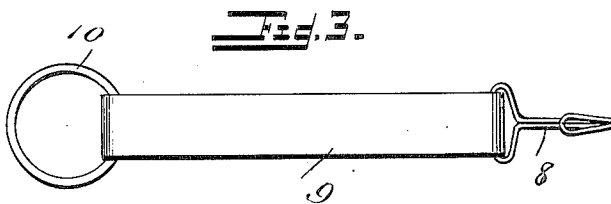
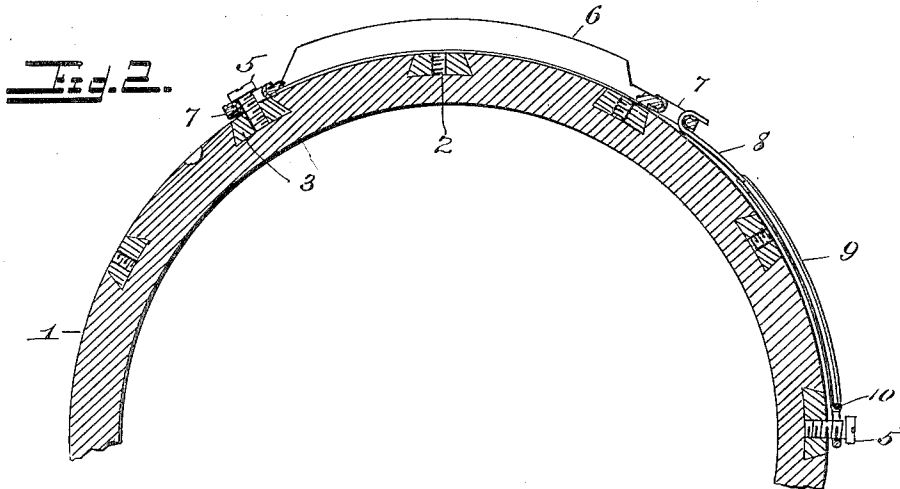
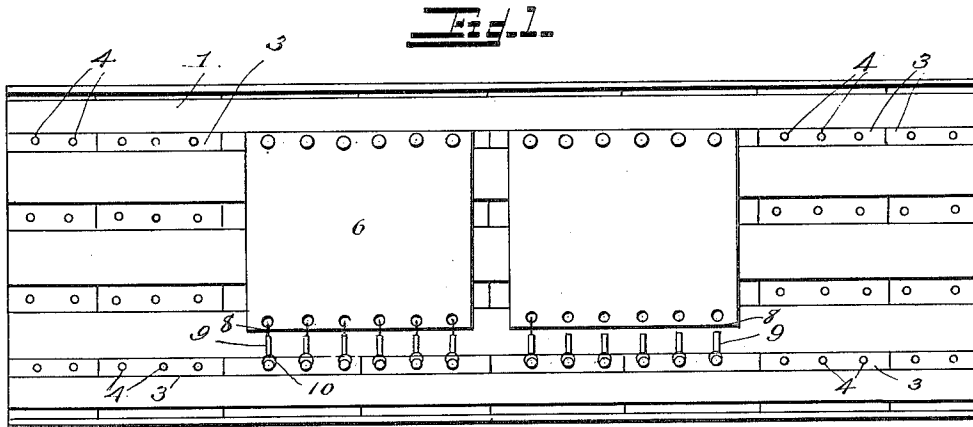
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S. C. FORRESTER

FASTENING DEVICE FOR FLEXIBLE PRINTING PLATES

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UNITED STATES PATENT OFFICE.

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FASTENING DEVICE FOR FLEXIBLE PRINTING PLATES.

Application filed June 14, 1921. Serial No. 477,410.

To all whom it may concern:

Be it known that I, SAMUEL CLIFFORD FORRESTER, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Fastening Devices for Flexible Printing Plates, of which the following is a specification.

This invention relates to the art of printing, but more particularly to a simple, effective and expeditious means for operatively positioning a flexible printing element upon a printing cylinder.

One of the principal objects of this invention is to effect a simple fastening device for securing a flexible printing element to the surface of a printing cylinder, in manner to facilitate its rapid attachment or detachment when occasion requires.

Another important object of this invention is to provide a fastening device of the character specified, which will enable a flexible printing element to be stretched taut over the printing cylinder and at the same time affords an absolutely uniform distribution of the tension.

Other objects of this invention are: to provide a fastening means which is simple, inexpensive, durable, and effective in operation; likewise one which will eliminate much of the annoyance and loss of time experienced with the fastening means now employed for this purpose.

With these and other objects in view, which will become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which like characters of reference indicate like parts throughout the several figures, of which:

Fig. 1, is a plan view of a printing cylinder equipped with a flexible printing element secured in accordance with the principle of this invention;

Fig. 2, is a fragmentary transverse section, with parts in elevation; and

Fig. 3, is a detail plan of one of the elastic connections.

Briefly stated, this invention comprises a printing cylinder having two rows of cir-

cumferentially spaced anchoring members, between which a flexible printing element is stretched, one longitudinal edge of the element being in engagement with the gripper line or upper row of anchoring members, the other being connected to the lower or back row through the instrumentality of elastic bands or straps.

It has been the prevailing practice to secure flexible printing elements, such as that described in pending application, Serial Number 453,759, filed March 19, 1921, method and apparatus for producing a resilient printing plate, with cord or wire fastening means secured around the cylinder, but with the use of these much time, labor, and material is lost, due to adjustment of the plate and defective printing resulting from buckling of the printing element caused by an unequal distribution of tension. It is, therefore, the aim and purpose of this invention to eliminate these difficulties by providing a fastening means which will enable the plate or printing element to be quickly mounted on the cylinder in a manner to preclude its creeping or buckling, the cause of defective printing.

In the illustrated embodiment characterizing this invention, there is shown a cylinder 1 of a rotary printing press, having its surface formed with an annular series of mortises 2 which are arranged in circumferentially spaced relation around the cylinder, with which they are coextensive.

These mortises or channels 2 accommodate in end to end relation a series of tenons in the nature of short blocks 3, which lie with their upper surfaces coincident with that of the cylinder. One row of blocks 3 is provided with a series of permanently mounted aligning studs 5, constituting what may be termed a gripper line; while the remaining blocks are formed with suitable threaded openings to receive screws 5', which forms the complement of the gripper line. These screws 5' may be transferred from one row of blocks 3 to another as occasion might require, depending on the width of the flexible printing element which is stretched between them.

To enable operative positionment of the flexible printing element 6 upon the print-

ing cylinder, said element is provided along its longitudinal edges with a plurality of grommets or eyelets 7. The grommets along one edge of the printing element being adapted to embrace studs 5, while those in the other are adapted to engage hooks 8 secured to the upper ends of elastic bands 9, the free ends of which are provided with rings 10 for engagement with screws 5'.

From the preceding structural outline it is manifest that with the use of this fastening means, the flexible printing element may be readily mounted in proper printing position by simply arranging the lower or back row of screws 5' in proper spaced relation with respect to the studs 5 in the gripper line, dependent on the width of the printing element, engaging the grommets on one edge of the flexible printing element with studs 5 of the gripper line, and stretching the elastic bands 9 until they are of sufficient length to enable rings 10 to engage the complementary screws 5'. As the elastic bands are stretched, necessarily the flexible printing element will be drawn taut over the surface of the printing cylinder with the tension applied uniformly to all parts thereof.

In conclusion, it will be seen that straps 9, owing to their elasticity, effect a uniform distribution of the tension, thus precluding the possibility of defective printing resulting from creeping or buckling of the printing element. Moreover, the permanent line of studs 5 with which one edge of the printing element may be engaged, enables the said element to be instantly snapped into place and eliminates the loss of time incurred in the removal of the several screws heretofore employed incidental to mounting the printing element on the cylinder.

Although in the foregoing, certain elements may have been set forth as best adapted to perform the functions allotted to them, nevertheless, it is to be understood that various minor changes as to form, substance, etc., may be resorted to within the scope of the appended claims without departing from or sacrificing any of the principles of this invention.

Having thus described my invention, and without enumerating variations and equivalents, what I desire protected by Letters Patent is as set forth in the following claims:

1. A flexible-plate mounting for cylinder presses comprising a cylinder having an annular series of mortises arranged in circumferentially spaced relation around the cylinder, and anchoring means associated with the said cylinder, said means including filler blocks engaged in the said mortises, and anchoring studs having threaded engagement with the said blocks and arranged in two circumferentially spaced rows.

2. A flexible-plate mounting for cylinder

presses, comprising a cylinder, and plate-anchoring means arranged on the cylinder in two circumferentially spaced lines, one of said lines being adjustable circumferentially of the cylinder and including a variable number of plate-attaching units.

3. A flexible-plate mounting for cylinder presses comprising a cylinder having circumferentially spaced parallel sets of plate-anchoring members between which a printing plate is adapted to be secured, said sets of anchoring members being relatively adjustable circumferentially of the cylinder to accommodate plates of varying widths, and elastic plate-tensioning means for securing the plate to the anchoring members of one set.

4. In a flexible-plate mounting for cylinder presses, the combination with a printing cylinder having two circumferentially spaced lines of plate-anchoring members, one line of which has adjustment circumferentially of the cylinder, of a plurality of plate-tensioning elements detachably connected at one end to the said adjustable members, and a flexible printed plate having one edge detachably connected with the opposite ends of the tensionable elements, and its other edge engaged with the anchoring members of the opposite line.

5. A flexible-plate mounting for cylinder presses comprising a cylinder having relatively stationary and adjustable sets of plate-anchoring members between which a printing plate is securable, the members of the said adjustable set having adjustment both longitudinally and circumferentially of the cylinder.

6. A flexible printing-plate mounting for cylinder presses comprising the combination with a printing cylinder having an annular series of mortises arranged in circumferentially spaced relation around the cylinder, of filler means removable contained within the said mortises, a permanent row of plate-anchoring members carried by the filler means of one mortise, and an adjustable row of plate-anchoring members engaged with the filler means of another mortise, the members of the said adjustable row being transferable from the filler means of one mortise to another.

7. A flexible printing-plate mounting for cylinder presses comprising its combination with a printing cylinder having an annular series of mortises arranged in circumferentially spaced relation around the cylinder, of a row of short blocks in each mortise, aligning studs mounted on the blocks of one mortise and constituting the permanent gripper or starting line of the cylinder, a plurality of screws threadedly engageable with the blocks of the other rows or mortises to form the complement of the gripper line and being transferable from one row of

blocks to another, a flexible printing-plate disposed between the said lines of studs and screws and having grommets along opposite edges, the grommets of one edge being engaged over the said studs, and a series of elastic bands between the opposite edge of the plate and the said screws, each of said bands being provided with a hook at one end engaged in a grommet of the plate and a ring at the other end engaged over one of the said screws. 10

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Witness:

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