V. FILTEAU.

PLATE LOCKING DEVICE FOR PRINTING CYLINDERS.

APPLICATION FILED JULY 16, 1909.

954,506.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

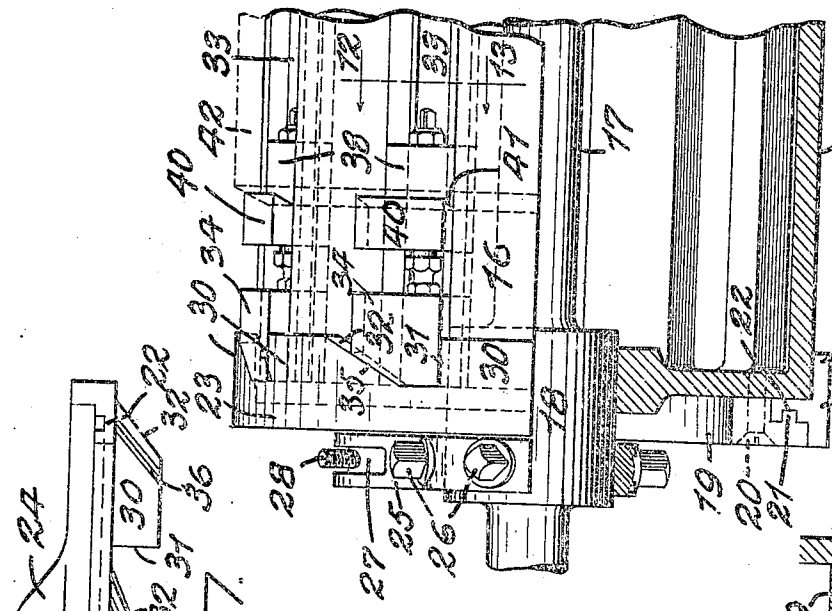

FIG. 2.

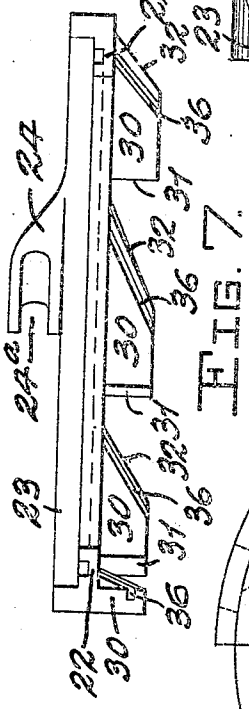

FIG. 7.

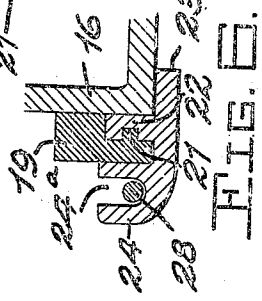

FIG. 6.

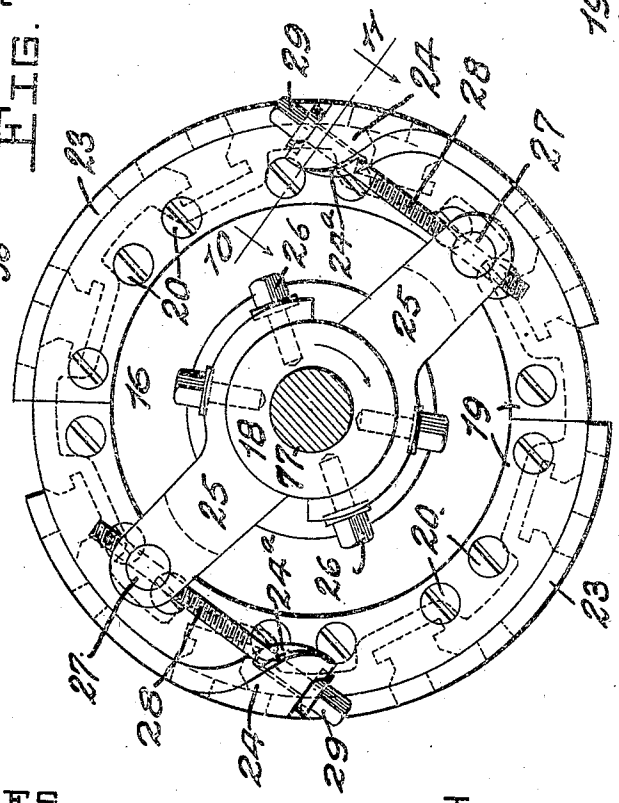

FIG. 1.

WITNESSES

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2 SHEETS—SHEET 2.

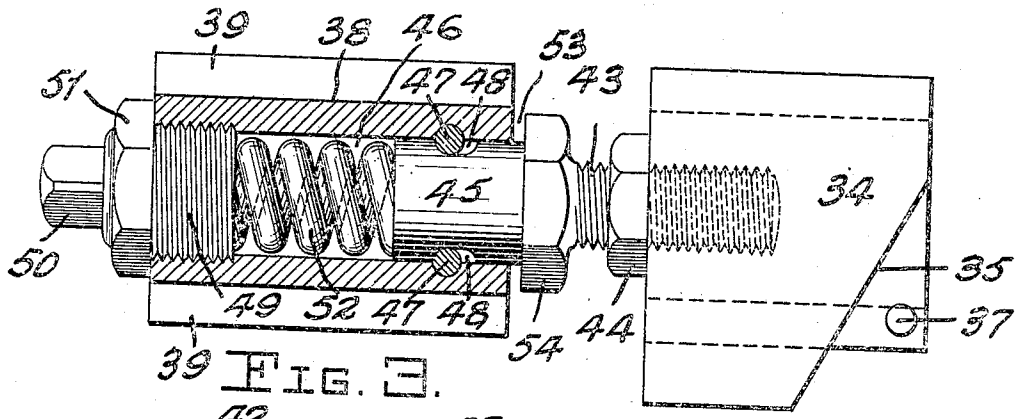


FIG. 3.

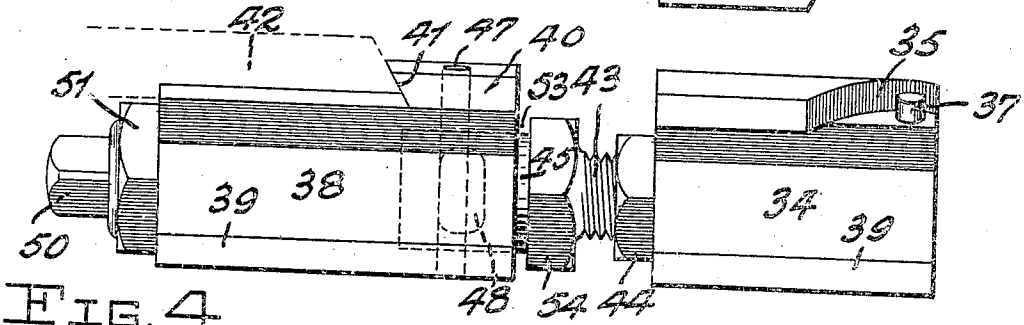


FIG. 4.

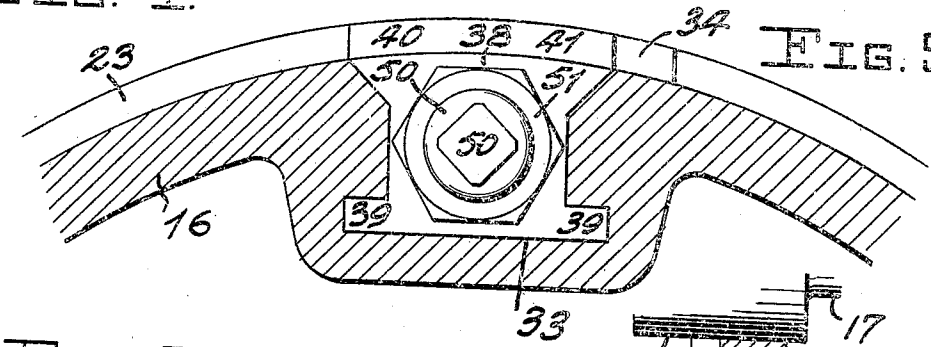
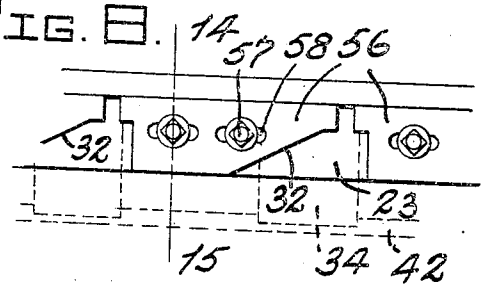


FIG. 5.

FIG. 8.



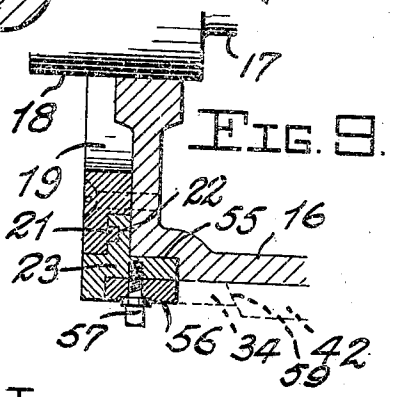


FIG. 9.

WITNESSES

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UNITED STATES PATENT OFFICE.

VICTOR FILTEAU, OF MONTREAL, QUEBEC, CANADA.

PLATE-LOCKING DEVICE FOR PRINTING-CYLINDERS.

954,506. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed July 16, 1909. Serial No. 508,049.

To all whom it may concern:

Be it known that I, VICTOR FILTEAU, of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Plate-Locking Devices for Printing-Cylinders, of which the following is a full, clear, and exact description.

This invention relates to mechanism for locking or clamping printing plates upon the cylinders of printing presses, and the main object is to provide a device which by a single operation will clamp and lock the plates in position, thus obviating the necessity of using screws or other means requiring several operations to accomplish the same result.

A further object is to provide a very simple and easily constructed device that will be positive in its action; that will adjust itself automatically to compensate for any unevenness or irregularity in the printing plate; and that can be operated with great speed thus saving valuable time when the newspaper is going to press.

The device consists essentially of a ring preferably formed in two sections and adapted to be secured to the end of the printing cylinder. The ring is provided on its inner face with a series of lugs projecting toward the cylinder and having one edge beveled to coöperate with a series of sliding blocks which also have beveled faces. The ring is slidable circumferentially upon the cylinder and is provided at its outer edge with a slotted lug adapted to engage a clamping arm secured to the cylinder shaft. When the clamping device is secured in position, the ring may be adjusted circumferentially so that the beveled faces of the lugs operating against the beveled faces of the blocks force a series of clips into engagement with the printing plates to hold the latter firmly in position.

In the drawings which illustrate my invention:—Figure 1 is an end elevation of a cylinder showing my invention attached thereto. Fig. 2 is a side elevation partly in section of the device shown in Fig. 1. Fig. 3 is an enlarged plan view partly in section of the clip for clamping the plate in position. Fig. 4 is an enlarged side elevation similar to Fig. 3. Fig. 5 is an enlarged cross sectional view of the cylinder on the line 12—13 of Fig. 2. Fig. 6 is a cross section on the line 10—11 of Fig. 1. Fig. 7 is an inside plan view of the ring. Fig. 8 is a plan view of an alternative form of the ring. Fig. 9 is a cross sectional view on the line 14—15 of Fig. 8.

Referring to the drawings, 16 designates the cylinder of a printing press mounted upon the shaft 17, which is provided with an enlarged head 18. An annular plate or ring 19, preferably made in two parts, is fixed to each end of the cylinder by means of the screws 20, and is provided with an annular tongue 21 which fits into the curved flange 22 of a sliding ring 23. The ring 23 is made in two sections, each of which is slightly shorter than the half sections of the fixed ring 19, in order that the sliding ring will have a certain amount of play in its movement on the fixed ring. The sliding ring 23 is provided on the outside with a slotted lug 24 overhanging the end of the cylinder. Arms 25 are secured to the hub or shaft by means of the screws 26, the free ends of said arms being bifurcated and carrying a pivotal cylindrical block 27, through which passes a threaded rod 28 having an enlarged square head 29. The rod 28 swings upon the pivotal block 27 and is adapted to be inserted in the slot 24^a of the lug 24. It will be seen that when the rod is in this position and the square head 29 turned, the sliding ring will have a circumferential movement on the fixed ring and may be tightened or loosened at will.

The sliding ring 23 is provided at the opposite side with lugs 30 which overhang or project over the cylinder, as shown in Fig. 2. Each lug has one face 31 parallel with the axis of the cylinder, and another face 32 beveled or sloping, as clearly shown in Fig. 7. The cylinder is provided with longitudinal channels 33, in which slide the cheek blocks 34, said blocks being provided with beveled faces 35 which abut and coöperate with the beveled faces 32 of the lugs 30. The interior faces of the lugs 30 are provided with channels or slots 36 parallel with the sloping edges 32, and the cheek blocks 34 are provided with pins 37 which slide in the slots 36, thus maintaining the beveled faces of the lugs and cheek blocks in parallel relation. Behind the cheek blocks are clips 38 which slide in the channels 33 and are similar in form to said cheek blocks, both being provided with tongues 39 to prevent them from being lifted from said channels. The clips 38 are each provided

with a projecting portion 40 having a beveled face 41 adapted to grip and clamp the printing plates 42, which are placed on the cylinder.

The clips 38 and cheek blocks 34 are connected by studs 43 which are threaded into the cheek blocks and provided with lock nuts 44, and with plain cylindrical portions 45 sliding into the bore 46 of the clips. Pins 47 are fixed in the clips and operate within the elongated slots 48 in the portion 45 of the stud to permit a longitudinal play between the clip and the stud in order to take up or compensate for any inequalities in the length of the printing plate. A plug 49 provided with a squared end 50 is threaded into the opposite end of the clip and is provided with a lock nut 51. A spring 52 is compressed between the stud and the plug so that the clip is normally maintained away from the cheek block. If any unevenness or depression exists in the stereotype plate, the spring forces the clip into the depression leaving a clearance indicated by the numeral 53 between the clip and the shoulder 54 of the stud. It will be noted that the adjusting nuts on the connecting studs between the clips and the cheek blocks are located within the channels of the cylinder so as not to interfere with the operation of the parts.

In the alternative form shown in Figs. 8 and 9, the ring 23 instead of being provided with integral lugs 30 is embedded in an annular depression 55 in the end of the cylinder, and is provided with sliding blocks 56 secured thereto by means of the set screws 57 operating in the slots 58 in such a manner that said blocks are movable within certain limits upon the ring. The blocks 56 are provided with sloping or beveled faces exactly the same as those of the lugs 30 which coöperate with the beveled faces of the cheek blocks, as before. In this form, however, it will not be necessary to use the clips 38 as the cheek blocks 34 will be provided at their inner edges with inwardly beveled edges 59 similar to the beveled faces 41, to clamp and hold the printing plates 42 in position. This form of plate will be found useful on old press cylinders where the space between the printing plates and the end of the cylinder is not sufficient to admit of the insertion of the clips. The blocks 56 may be adjusted within the slots 58 to compensate for any inequality or unevenness in the plates.

In the operation of this device, the printing plates are placed in position on the cylinder, the edges of said plates being engaged by the beveled faces 41 of the clips. The ring 23 is then brought into position so that the beveled edges 32 of the lugs 30 cooperate with the beveled faces 35 of the cheek blocks 34. The rods 28 carried upon the arms 25 are then inserted in the slots 24ª of the ring and upon screwing up the square heads 29 of said rods, the ring will force the cheek blocks toward the printing plates and will clamp and lock same positively and securely in place. This locking movement is accomplished by the single operation of inserting the rods 28 within the slots and tightening same in position. Any unevenness in the ends of the printing plates is taken care of automatically by means of the spring mechanism above described.

This device is very simple to construct and is very efficient and rapid in its operation, and will be found to save a great deal of time in adjusting the printing plates of a press when time is of most value in newspaper work.

While I have shown the preferred form of this invention, it will be obvious that several changes or modifications may be made in the details of construction without departing from the spirit of my invention.

Having thus described my invention, what I claim is:—

1. The combination with a printing cylinder having plates therefor, of a series of clamps engaging said plates, a movable ring having beveled faces adapted to engage said clamps, a pair of arms, and adjustable means carried by the arms for forcing the ring into engagement with the clamps.

2. The combination with a printing cylinder having plates therefor, of clamps engaging said plates, beveled faces on said clamps, a movable ring having beveled faces coöperating with the beveled faces in said clamps, arms fixed to the cylinder, and screws pivoted to said arms for imparting to said ring a sliding wedge like movement with respect to said clamps.

3. A plate clamping device comprising a series of clamps having plate engaging means at one end and beveled faces at the opposite end, a sliding ring having beveled faces coöperating with the beveled faces of said clamps, and screws releasably connecting said arms and ring and adapted to impart a rotary motion to said ring.

4. A plate clamping device comprising a series of slidable clamps having plate engaging means at one end, beveled faces at the opposite end, a rotatable ring engaging the beveled faces of said clamps, a pair of fixed arms, and screws pivotally connected with said arms for rotating said ring to impart a sliding motion to the clamps.

5. A plate clamping device comprising a series of clamps having plate engaging means, a rotatable two part ring, a pair of arms, and means carried by the arms for rotating the parts of said ring independently to impart a sliding motion to the clamps.

6. A plate clamping device for printing cylinders, comprising a series of clamps having plate engaging means, adjusting springs

for said clamps, a rotatable ring engaging said clamps, arms carried by the cylinder engaging said rings to impart a rotary motion to same, and screws pivotally mounted at the extremities of said arms for imparting a sliding movement to said clamps upon the rotation of the ring.

7. A plate clamping device for printing cylinders comprising a series of clamps having plate engaging means, a rotatable two part ring having lugs mounted thereon, arms carried by the cylinder, and adjusting screws pivotally mounted at the extremities of said arms and engaging the lugs of said rings to impart a sliding motion to the clamps, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

VICTOR FILTEAU.

Witnesses:
C. W. TAYLOR,
STUART R. W. ALLEN.