

[54] **SADDLE LOCK-UP FOR FLEXIBLE PRINTING PLATES**
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[22] Filed: **Oct. 17, 1972**
[21] Appl. No.: **298,210**

[52] **U.S. Cl.**..... **101/415.1, 101/378, 101/382**
[51] **Int. Cl.**..... **B41f 27/12, B41f 27/14**
[58] **Field of Search**..... **101/382, 378, 331, 101/279, 415.1; 29/21**

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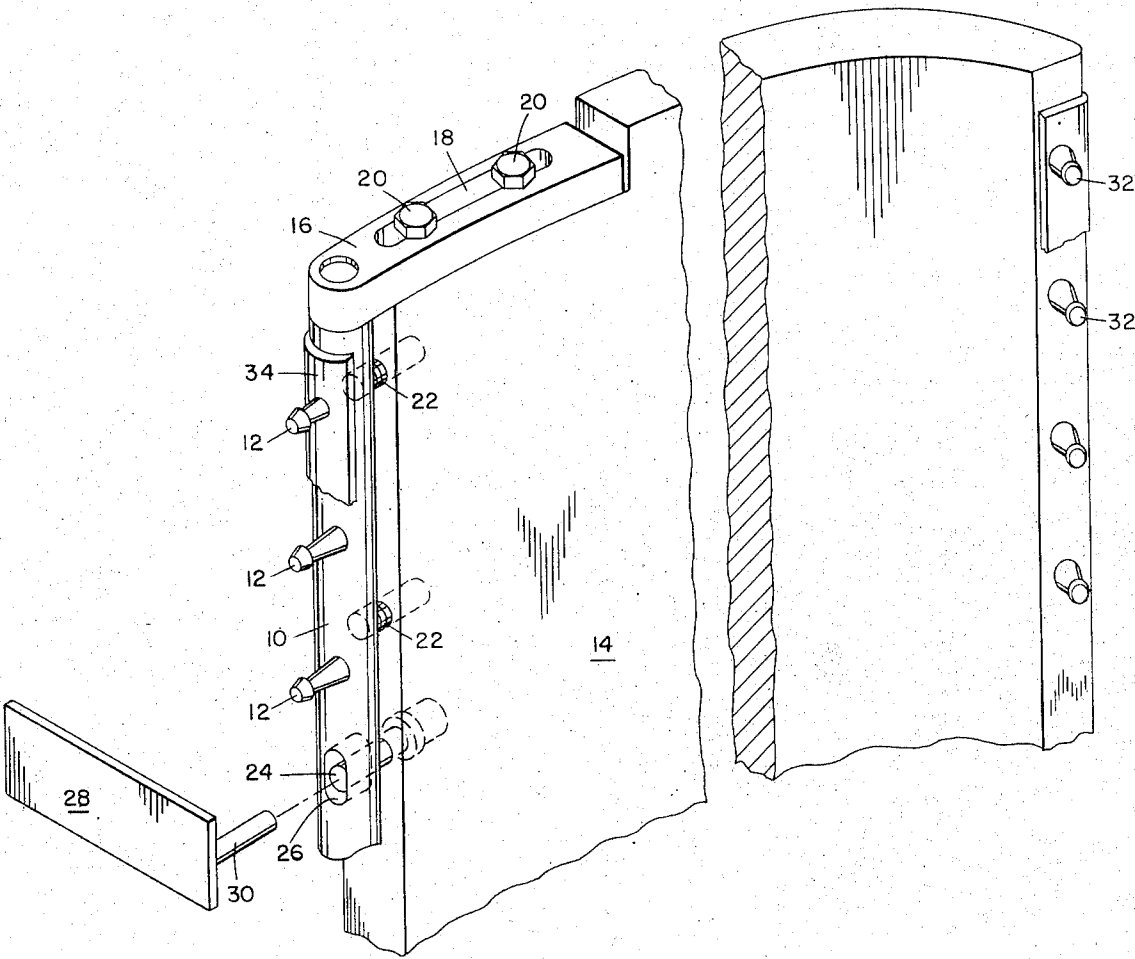
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[57] **ABSTRACT**

The invention is a flexible printing plate saddle lock-up which is operable either on-press or off-press and which provides means to maintain tension in the flexible plate to prevent shifting and buckling of the plate which would result in poor print quality. The saddle lock-up has a rotatable securing bar to which the flexible plate is attached, said rotatable bar being spring biased to uniformly tension said plate, said rotatable bar being secured in locked position by a spring loaded pin and complimentary opening in said bar.

5 Claims, 4 Drawing Figures



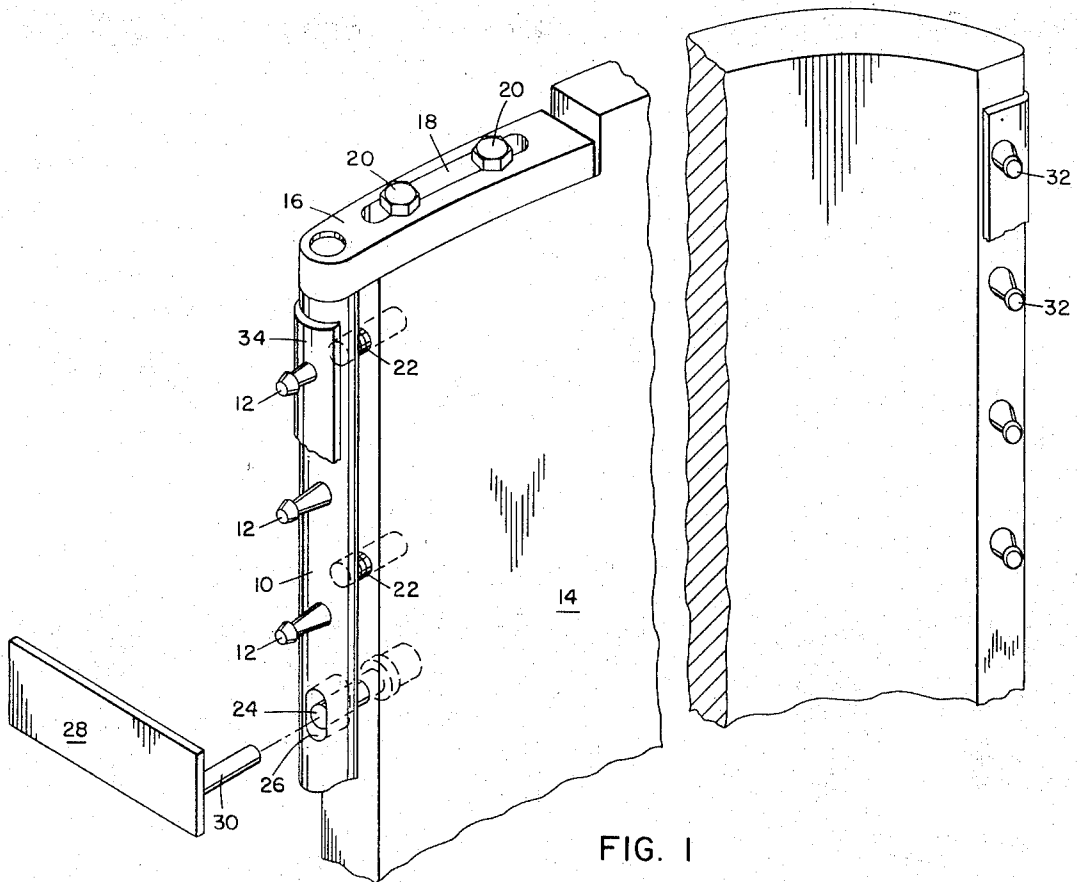


FIG. 1

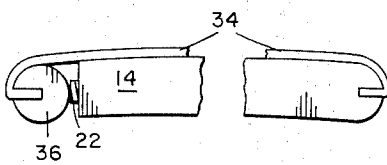


FIG. 2

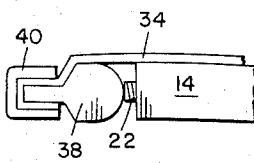


FIG. 3

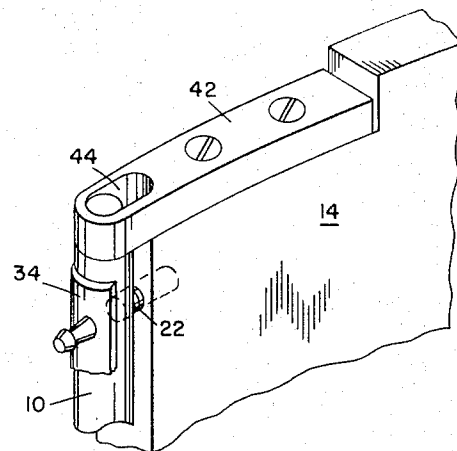


FIG. 4

SADDLE LOCK-UP FOR FLEXIBLE PRINTING PLATES

BACKGROUND OF THE INVENTION

This invention relates to the field of letterpress printing using shallow relief flexible plates on rotary presses. The invention relates directly to a method for locking these flexible plates to semicircular saddles which are in turn locked to the printing press cylinder.

Traditionally cast lead stereotype plates have been used to carry the printing image in letterpress printing. These plates are now being replaced by flexible plastic, metal, or metal-backed plastic plates. Various combinations of cam operated and spring loaded devices are in use for firmly maintaining these flexible plates on the press saddles. These well-known devices are limited, i.e., they require a metal back flexible plate, or they cannot be used both on-press and off-press, or they do not provide an effective means for tensioning the plate. The present invention is usable with all types of flexible plates, incorporates holding tension and can be used for either on- or off-press lock-up.

SUMMARY OF THE INVENTION

It is a purpose of this invention to provide a saddle lock-up usable on-press and off-press that will uniformly tension the printing plate. To accomplish this purpose the present invention provides in combination a rotatable securing bar to which the flexible plate is attached, said rotatable bar being spring biased to uniformly tension said plate and said bar secured in locked position by a spring loaded pin and complementary opening in said bar.

OBJECTS OF THE INVENTION

It is the primary object of the instant invention to provide a saddle lock-up for flexible printing plates that may be used either on-press or off-press.

It is the further object of the instant invention to provide a saddle lock-up which may be quickly and simply activated.

It is yet another object of the instant invention to provide a saddle lock-up which will uniformly tension the flexible printing plate.

Further objects will become obvious in view of the following discussion.

DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of the saddle lock-up in locked position.

FIG. 2 shows a top view of a first alternate securing bar.

FIG. 3 shows a top view of a second alternate securing bar.

FIG. 4 shows a perspective view of an alternate mounting for the securing bar.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With continued reference to the drawing, the invention comprises a means for locking flexible printing plates to a letter-press saddle, suitable for either on-press or off-press lock-up and a means for maintaining tension in the printing plate. As can be seen in FIG. 1, rotatable bar 10 having a series of securing pins 12 is mounted at the trailing edge of the saddle 14. The ends of the bar are fitted into side plates 16 at the sides of

the saddle and are free to turn in the side plates 16. FIG. 1 shows one side of the saddle lock-up only, the other side being symmetrical to the side shown. Slotted hole 18 is cut into the side plates 16 and hexhead bolts 20 or the like slideably secure the side plates 16 to the saddle 14. Springs 22 urge the rotatable bar 10 and the side plates 16 away from the trailing edge of the saddle 14 in a circumferential direction. A spring loaded detent pin 24 engages an opening 26 in the bar 10. When the pin 24 is engaged in the opening 26, the bar 10 is restrained from turning. This restraint occurs when the bar 10 is rotated to the printing position. An operating tool 28 which contains a short pin 30 is used to rotate the bar 10 into the printing position and also to depress the detent pin 24 to allow the bar 10 to return to the unlocked position. Fixed holding pins 32 are located in the leading edge of the saddle 14. It can be seen that rotation of the bar 10 will initially tension the printing plate. Flexible plates 34 that mount on the saddle have holes punched in both ends, matching the pattern of the holding pins 12 and 32. These holes can be punched in all-plastic plates, in all metal plates, in metal-backed plastic plates, or in plastic plates with metal end reinforcement.

Although this invention has been described as having holding pins in the ends of the saddle 14 and in the rotatable bar 10, several other attachment means may be substituted without changing the general features of the invention. FIG. 2 shows a slotted bar 36 which may be substituted for the above described bar 10. The printing plate may be slipped into the slot in the slotted bar 36 which is then rotated into a locked printing position. The leading edge of the saddle can also be provided with a stationary slot. FIG. 3 shows a second alternate securing means in the form of a rotatable wedge-shaped blade 38. In this embodiment the ends of the printing plate are provided with metal clips 40 or the like which will fasten over the leading edge of 38. The leading edge of the saddle can likewise be provided with a fixed wedge shaped blade (not shown). Other end attachment methods may be used without departing from the essential features of the invention.

FIG. 4 shows an alternate means of mounting the rotatable member. Specifically FIG. 4 shows the rotatable bar 10 mounted in a bar 42 having a slot 44. Bar 42 is secured to the saddle 14 in a conventional manner. It would also be within the scope of the invention to provide projecting lugs cast into the saddle in lieu of the bars 42. In this type of an assembly (not shown) stub pins would be used to connect a rotatable bar to the projecting lugs of the saddle. It is also noted that the springs 22 could be replaced with other resilient means such as a strip of elastic material to bias the rotatable rod 10 outward in a circumferential direction with respect to the saddle.

Thus it can be seen that a major advantage of this invention is its applicability to either on-press or off-press lock-up. It can also be seen that this invention has the advantage of using resilient biasing means in conjunction with the rotatable bar to maintain tension in the flexible plate.

It is understood that the invention is not limited to the precise description given, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the appended claims.

What is claimed is:

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1. A saddle lock-up for flexible printing plates comprising:

- a. semi-cylindrical saddle means having a leading edge and a trailing edge and adapted to be locked to a printing press cylinder;
- b. a bar slideably connected to said trailing edge to move toward and away from said trailing edge in a generally circumferential direction, said bar being rotatable about its longitudinal axis between a non-printing position for mounting a flexible plate and a printing position, said bar having a first securing means for holding one end of a flexible printing plate;
- c. a second securing means connected to said leading edge to secure the other end of a flexible printing plate;
- d. releasable locking means interlocking said trailing edge and said bar against rotation in the printing position; and
- e. resilient means interposed between said bar and

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said trailing edge, said resilient means being compressed when said bar is rotated to the printing position to bias said bar away from said trailing edge and thereby uniformly tension a flexible printing plate.

2. A device as in claim 1 wherein said locking means includes a spring biased pin in said trailing edge and a complementary opening through said bar said pin being positioned in said opening in the printing position.

3. A device as in claim 2 wherein said first and second securing means comprise pins over which a flexible printing plate may be impaled.

4. A device as in claim 2 wherein said first and second securing means comprise slots into which the ends of a flexible printing plate may be inserted.

5. A device as in claim 2 wherein said first and second securing means comprise wedge shaped members over which a flexible printing plate may be clipped.

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