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SPRING SEATED CENTER CLIP FOR PLATE LOCK-UPS

Original Filed June 28, 1927

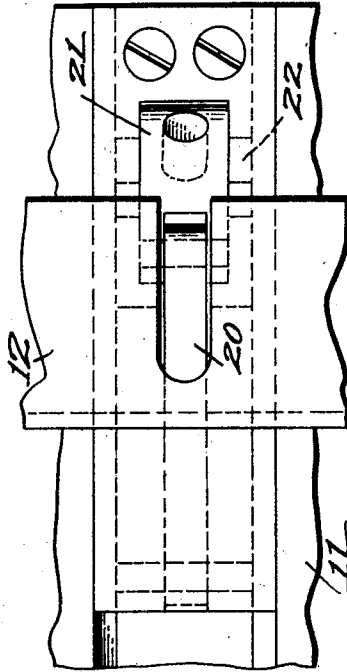
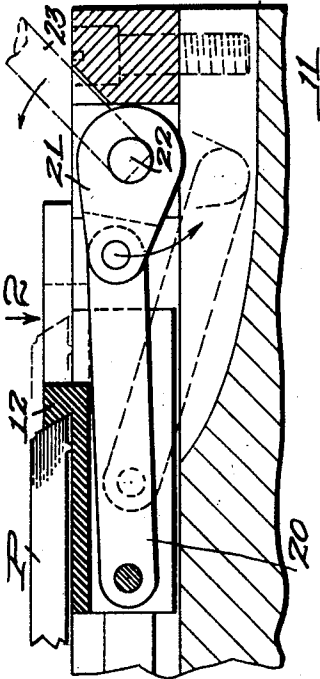


FIG. 2.

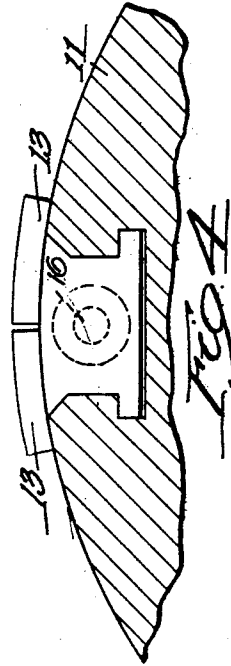


FIG. 3.

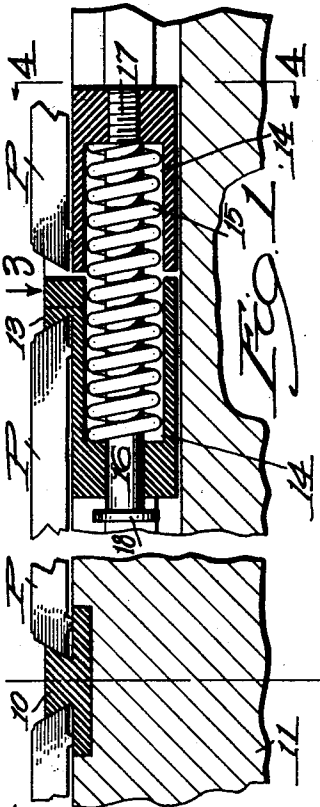


FIG. 4.

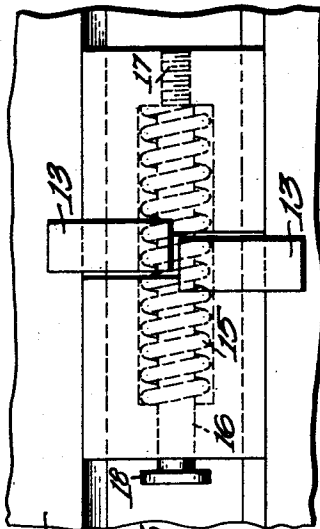


FIG. 5.

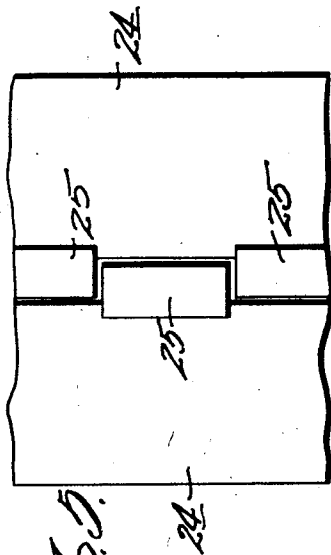


FIG. 6.

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SPRING SEATED CENTER CLIP FOR PLATE LOCK-UPS

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This invention relates to a lock-up for printing plates on a press cylinder in which the outer locking clip is located in a fixed position at all times and an intermediate locking arrangement is provided in two parts so that, irrespective of the length of the plates, the outer margins at the ends of the cylinders will always be the same.

The principal object of the present invention is to provide a flexible means connecting the two parts of the intermediate clip for holding them apart so that variations in the width of the plate are taken up by the flexible means and also to provide automatic means whereby any crumbling away of the edge of a plate under pressure of the clamps will not loosen the plate on the cylinder, but the yielding means will take up the slack and the plate will still be clamped to the cylinder.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which

Fig. 1 is a radial section taken centrally through a clamp constructed in accordance with this invention, as shown on a printing plate cylinder;

Fig. 2 is a plan of the manual plate locking mechanism looking in the direction of the arrow 2 in Fig. 1;

Fig. 3 is a plan of the intermediate plate clamps looking in the direction of the arrow 3 in Fig. 1;

Fig. 4 is a sectional view on the line 4-4 of Fig. 1; and

Fig. 5 is a plan showing a modification in which the intermediate clip is made in ring shape.

Referring first to Figs. 1, 2, 3 and 4 the usual center ring 10 located in stationary position is shown on the plate cylinder 11 with an end plate locking clamp 12 at the end of the cylinder. Only half of the cylinder is indicated in Fig. 1.

For the intermediate clips I use a set of clamps 13 between two plates P extending along the cylinder. These clips, as shown in Fig. 3, exert their pressure in opposite directions against the slanting edges of the printing plates. Each one is provided with

a barrel 14 below, these two barrels being in axial alignment and with their open ends facing each other. They enclose a spring 15 and therefore press the two clips apart in opposite directions, one against one plate and the other against the other one. These two barrels are connected by a central rod 16 secured into the bottom of one barrel at 17 and passing through a passage in the opposite end of the other and having a head 18 outside the same. This head limits the amount of motion of the two barrels, that is, it limits the distance apart of the two clips.

In the position shown in Figs. 1 and 3 the center clip, consisting of the two parts 13, is shown compressed by the action of a lock-up device. When that is withdrawn, however, both of the center clips will spread out by the action of the spring a distance equal to the distance between the head of one barrel 14 and the head 18 of the rod or bolt 16. It will be seen that if the edges of the plate should crumble and thus allow the clips 13 or one of them to move inwardly, the spring 15 has sufficient resiliency to hold the clips against both plates and to hold both plates after such crumbling occurs.

I have shown the invention as cooperating with a lock-up device for the outer clip 12 as stated above. This is shown in the form of a link 20 connected with the clip 12 and with an arm 21 on a stud 22 which is operated by a handle 23, preferably removable. The two positions, as shown in full and dotted lines in Fig. 1, show that it would be obvious that this lock-up is not adjustable but is movable to its final position and that the plates are held at the end by the resilience of the springs 15.

In Fig. 5 I have shown the invention as applied to a center clip made in the form of two rings 24 having projections 25 constituting the clips. In this case the rod 16 and corresponding parts are used just as in the other figures. The clips 13 or projections 25 are shown staggered in both forms because the center margins are usually so narrow as not to permit the center clip being divided in half and still retain sufficient thickness for the necessary strength. However,

this is not essential in cases where there is enough width to provide two of these clips registering with each other. From this it will be seen that the construction is simple and that no connection has to be made between the plate lock-up and the center clips and that the advantages above mentioned are secured.

Although I have illustrated and described only two forms of the invention I am aware of the fact that other modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited in these respects, but what I do claim is:—

1. In an intermediate plate holding means for a printing press cylinder, the combination with a pair of clips in staggered relationship having inclined surfaces for engaging the edges of two adjacent plates and located between the plates, and yielding means for forcing the same apart toward their respective plates, whereby irregularities in the plates will not prevent their being firmly clamped in position.

2. In a means for clamping two adjacent printing plates, the combination of a set of clips arranged substantially in circumferential alignment but every alternate one slightly out of alignment, each engaging the edge of one of said plates, each clip having a cylindrical body located below it, and a spring extending into the two cylindrical bodies for normally holding two adjacent clips apart.

3. In a means for clamping two adjacent printing plates on a press cylinder, the combination of a set of alternately oppositely facing clips for engaging the edges of said plates, alternately each clip having a cylindrical body located within the surface of the printing plate cylinder, and a spring extending into the two cylindrical bodies for normally holding two clips apart and firmly against their respective plates.

4. In a plate clamping device, the combination with a set of clips arranged in staggered relation to each other, those on each side being arranged to fit the edge of a plate on that side, and each clip having a cylindrical barrel below it with a recess therein opening inwardly, a strong spring in said recess for normally forcing said barrels apart, and a rod secured in the bottom of one barrel extending through both barrels and having a head on the outside for limiting the action of said spring at all times.

5. In an intermediate plate clamping device, the combination with a set of clips arranged in staggered relation to each other, those on each side being arranged to fit the edge of a plate on that side, and each clip having a cylindrical barrel below it with a recess therein opening inwardly, a spring in said recess for normally forcing said clips

apart, and means for clamping the outer edge of the outer plate.

In testimony whereof I have hereunto affixed my signature.

HANS C. JORDHOY. 70

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