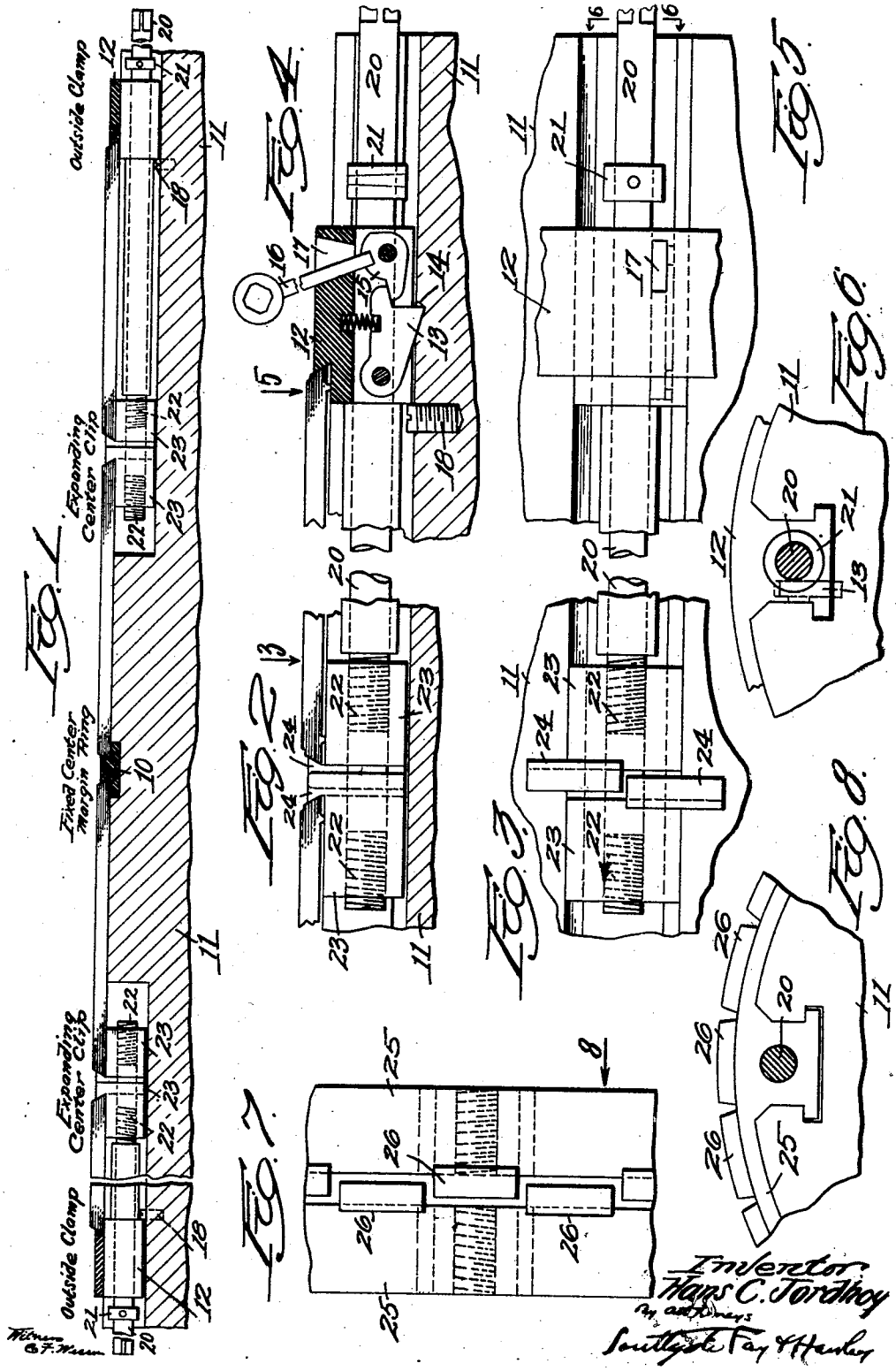
Sept. 3, 1929. H. C. JORDHOY 1,726,836

CENTER MARGIN PLATE LOCK-UP

Original Filed May 4, 1927



Inventor
Hans C. Jordhoy
By attorneys
Scull, Fish, Fay & Hanley

Patented Sept. 3, 1929. 1,726,836

UNITED STATES PATENT OFFICE.

HANS C. JORDHOY, OF PLAINFIELD, NEW JERSEY, ASSIGNOR TO WOOD NEWSPAPER MACHINERY CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF VIRGINIA.

CENTER-MARGIN PLATE LOCKUP.

Application filed May 4, 1927, Serial No. 188,625. Renewed February 14, 1929.

This invention relates to a plate lock up for locking the four plates arranged the length of a plate cylinder of a web printing press.

The principal object of this invention is to provide a construction in which the outside margins of the printed product will be constant, irrespective of the lengths of the printing plates and, if the plates vary in length, the variation will come in the so-called center margin, that is, the margin in the center of each half of the web, thus avoiding the occasional reduction of the outside margin of the paper to practically nothing. The invention also involves a quick releasing device for the stationary outside plate clamp and other features of construction as will appear.

Reference is to be had to the accompanying drawings in which

Fig. 1 is a radial sectional view of a part of a printing plate cylinder showing four plates arranged therealong and a preferred embodiment of this invention;

Fig. 2 is an enlarged view of the so-called center clip and its operating mechanism taken on the same plane;

Fig. 3 is a plan thereof;

Fig. 4 is a view like Fig. 2 taken in the same plane and showing the releasing device for the outside clamp;

Fig. 5 is a plan of the same;

Fig. 6 is an end view of part of the cylinder with the plate locking shaft in section as indicated by the line 6—6 of Fig. 5;

Fig. 7 is a plan similar to Fig. 3 of a modification; and

Fig. 8 is an edge view of the form shown in Fig. 7.

It is customary to lock up two plates on each side of the center line on a conventional plate cylinder of a web press. Thus the plate next to the center ring is locked between it and a movable intermediate clip, and the plate on the outside of the cylinder is locked between the movable clip and an outside clip operated by a screw. The two plates on the other half of the cylinder are locked up in precisely the same manner. From this it will be observed that the outside plate is positioned entirely by the inside plate. Where the plates vary in overall length the variation of the outside plate is equal to the variation of both plates, if they vary in the same way. Frequently this causes the outside margin of a paper to all but disappear due to the likelihood of both plates being longer than the press is designed for. In this invention I provide means for avoiding this difficulty and under ordinary circumstances maintain the outside margins alike at all times. The variation all comes at the center margins on each half of the web.

In this case I provide the usual fixed center margin ring 10 on the plate cylinder 11 and the plates are forced up against it in the manner shown, which is well known in this art. On the ends of the press I provide outside clamps 12 in the form of half rings. These may be made movable where the margins are so narrow as to necessitate it. For this purpose I provide a means for quickly removing each end ring so that the plate nearest the end of the cylinder may be removed longitudinally. This is shown in Figs. 4 and 5 in which the ring 12 is provided with a recess in which is located a spring latch 13 entering a notch 14 in the cylinder. This latch is operated by an operating lever 15. The lever can be turned by an extension on the lock up wrench 16 to raise the latch and release the ring 12. Thus the ring can be drawn back and the end plate released. The extension on the lock up wrench 16 passes through a passage 17 in the ring 12. This ring comes up against a fixed stop 18 on the cylinder when closed, so its position is fixed. The end ring of course is locked automatically in place when it is moved up to the position shown in Fig. 4.

Through the end ring 12 passes a shaft 20 squared at the end so as to be operated by a wrench. This is provided with a collar 21 for limiting the backward motion of the clamp 12 and is provided with a right and left hand screw thread 22. The two parts of this thread engage in threaded openings in two clips 23. Obviously when the shaft 20 is turned these two lips 23 will move toward each other or away from each other according to the direction of rotation. These two clips constitute the center expanding clamp. Each clip has a projection 24 extending toward the other and shaped to fit the slanting edges of the printing plate as shown in Fig. 2. Therefore when the plates are in position, the rings 10 and 12 being stationary, the turning of the shaft 20 in the proper direction will expand this center clamp and force the projections against the beveled edges of the two plates to clamp the plates firmly in position.

In the form shown in Figs. 7 and 8, two half rings 25 constitute the expanding center clip. They are formed with a series of staggered projections 26 arranged to engage the two plates in the same way as the projections 24 and hold them in the same way but throughout a larger area.

In both forms of the invention it will be seen that by contracting the center clip 23—23 the inner plate is released and can be removed. If there is space enough the two plates can be removed without moving the outside ring 12. In that case the center clips would have to occupy a wider space than I have shown in the drawings. The fixed rings 12 at the ends of the cylinder can be quickly drawn back so that the plate nearest the end of the cylinder may be removed if the center clips cannot be contracted enough to release them.

It will be noticed also that the operation of loosening the plates at the center clips is carried on in substantially the same manner as in the old cylinder, thus not necessitating any change in the manner of operation. The center clamp is handled as a unit of the conventional type except when the end ring has to be removed on account of the fact that the margins are too narrow. By fixing the outer edge of the outside plate and the inner edge of the inside plate at definite points on both halves of the cylinder, whatever variation may occur in the plates is taken care of in the center margin where the center clips are located. In this way the paper will have its end margins of uniform width and any variation will appear in the center margin only.

Although I have illustrated and described only two forms of the invention I am aware of the fact that 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 to the details of construction herein disclosed, but what I claim is:—

1. In a plate lock up for a printing plate cylinder, the combination with a stationary center margin ring and two stationary outside clamping rings, of two expanding center clamps for engaging the edges of two adjacent plates, and means operable from outside said outside clamping means for expanding and contracting the center clamps to tighten the plates on the cylinder and loosen them for removal.

2. In a plate lock up device for a printing plate cylinder, the combination with a center margin ring on the cylinder and an end clamp, of an expanding center clamp adapted to hold the adjacent edges of two printing plates, said expanding clamp comprising two clips each having a projection having angular edges for engaging plates on opposite sides and having passages therethrough in alignment provided with right and left hand screw threads, and an operating shaft extending beyond the end clamp and having right and left hand screw threads engaging the first named screw threads for simultaneously moving the two clips toward or from each other.

3. In a printing plate lock up, the combination with a stationary center margin ring and two end clamping rings, of two sets of expanding center clips for engaging the edges of the plates, and means extending beyond the end clamping rings for expanding and contracting the center clips, said end clamping rings, each being fixed in position on the ends of the cylinder and having means for releasing them to draw them back if desired.

4. In a plate lock up for a printing plate cylinder, the combination with means for holding the adjacent edges of each inside plate and each outside plate adapted to be contracted and expanded for the purpose described, and end clamping rings for holding the edges of the outside plates, of a latch on each of said clamping rings for holding them in stationary position on the cylinder and means for readily releasing the latch to allow the clamping ring to be drawn back.

5. A clamping ring for a printing plate having an inclined edge for holding the edge of the printing plate, a spring latch therein for entering a notch to hold the clamping ring in stationary position, a lever mounted on the clamping ring for releasing the latch, and means adapted to extend through the clamping ring for operating said lever.

6. The combination with a printing plate cylinder having a notch in its surface and a stop, of an end clamp for engaging the outer edge of a plate on the cylinder, a spring latch on the clamp adapted to enter said notch when in contact with the stop, and means for readily releasing the latch to permit the clamp to be drawn outwardly along the cylinder.

7. In a plate lock up for a printing plate cylinder, the combination with a stationary center margin ring and two stationary outside clamping rings, of two expanding center clamps for engaging the edges of two adjacent plates, and means extending beyond said outside clamping rings operable for expanding and contracting the center clamps to tighten the plates on the cylinder and loosen them for removal.

In testimony whereof I have hereunto affixed my signature.

HANS C. JORDHOY.