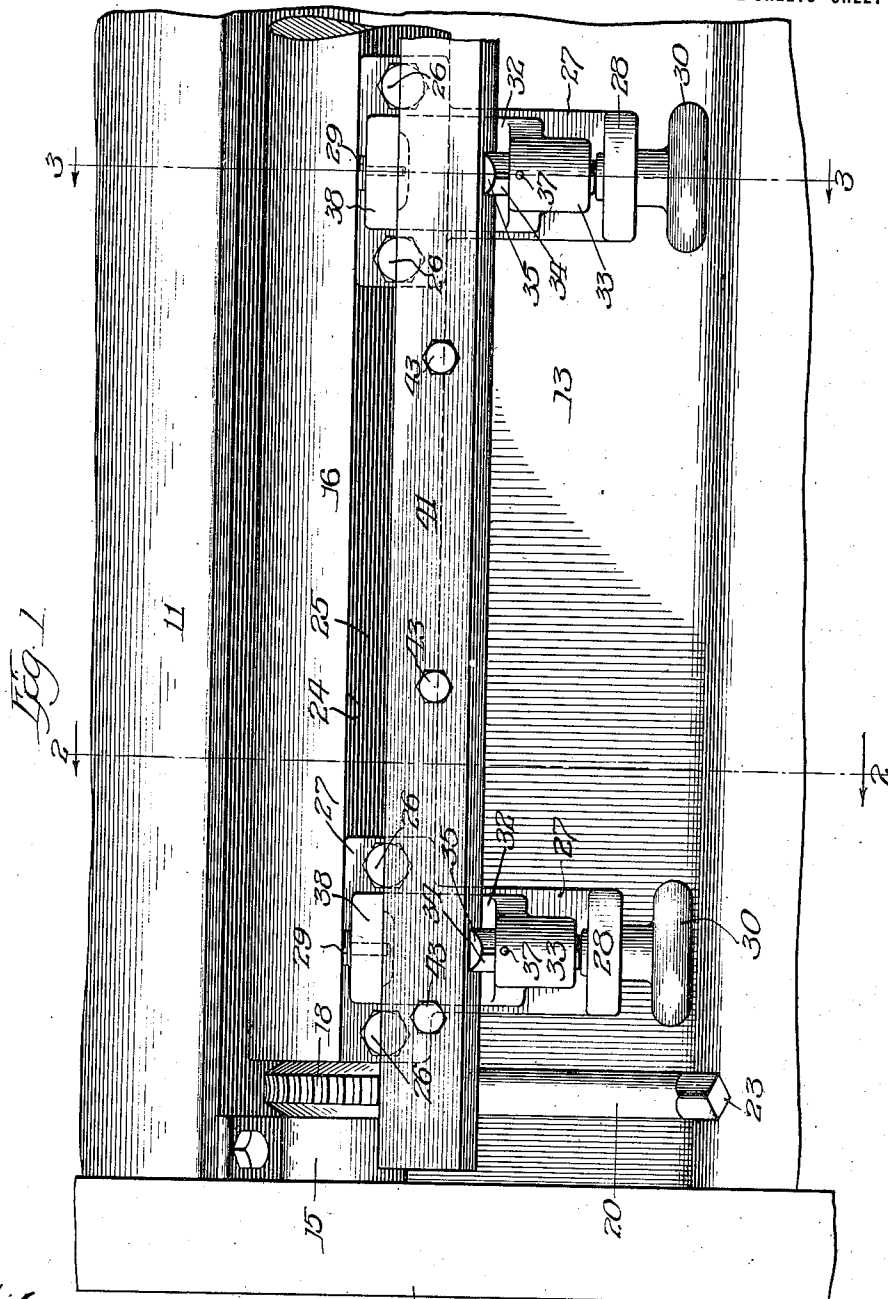


E. L. C. CLARK,
BLANKET CLAMP FOR OFFSET PRESSES.
APPLICATION FILED MAY 22, 1915.

1,215,344.

Patented Feb. 13, 1917.
2 SHEETS—SHEET 1.



Witnesses:

Ed. C. Larison
Lewis D. Geist

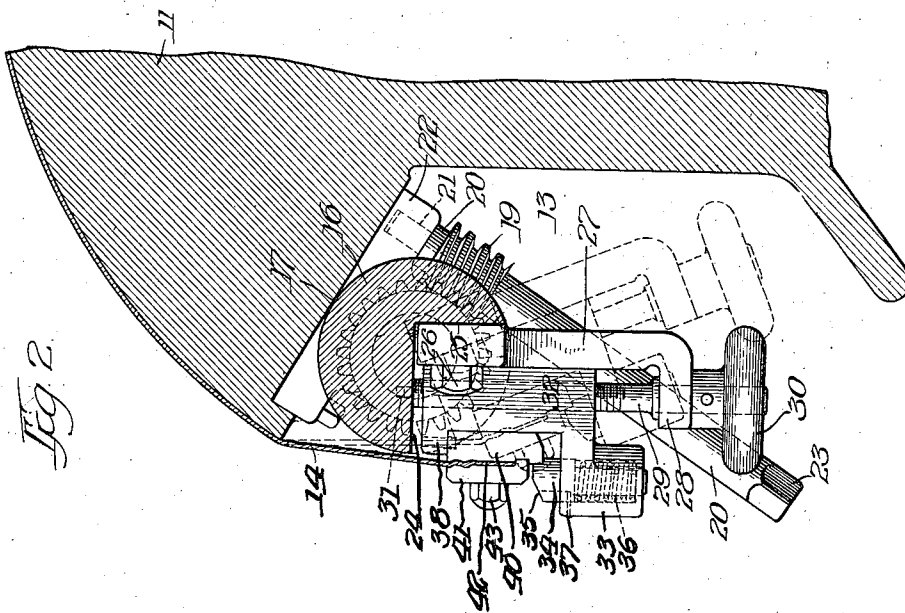
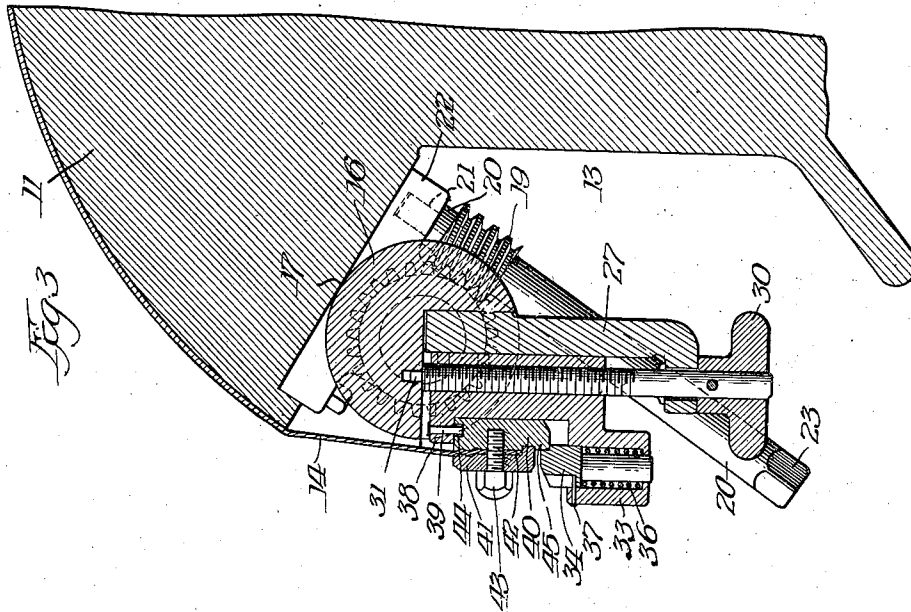
Inventor:

Edward L. C. Clark
By C. C. Guthrie
JMS

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Ed. Davison
Lewis D. Geist

Inventor

Edward L. C. Clark
By C. C. Hutchinson
Att'y

UNITED STATES PATENT OFFICE.

EDWARD L. C. CLARK, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO THE MIEHLE
PRINTING PRESS & MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPO-
RATION OF ILLINOIS.

BLANKET-CLAMP FOR OFFSET-PRESSES.

1,215,344.

Specification of Letters Patent.

Patented Feb. 13, 1917.

Application filed May 22, 1915. Serial No. 29,741.

To all whom it may concern:

Be it known that I, EDWARD L. C. CLARK, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Blanket-Clamps for Offset-Presses, of which the following is a specification.

The object of the invention is the provision of means for tensioning and clamping the plate or the like of a printing press as for instance the blanket of an offset press, said means comprising a series of local clamping and tensioning devices arranged at intervals longitudinally of the blanket cylinder and a further device acting upon the local devices in unison whereby to uniformly increase or diminish the tension on the blanket throughout the length of the cylinder. It will be understood that for the purposes of the present application the form plate of a printing press is the full equivalent of the blanket of an offset press, and the terminology of the specification and claims should be interpreted in the light of such facts.

In order that the invention may be readily understood a preferred embodiment of the same is set forth in the accompanying drawings and in the description based thereon. As, however, the invention is susceptible of embodiment in other and varied constructional forms without departure from the essence of the invention the drawings and description are to be taken in an illustrative and not in an unnecessarily limiting sense. In the drawings—

Figure 1 is a fragmentary view showing a portion of the printing cylinder in front elevation and illustrating the association therewith of the improved tensioning and clamping device;

Fig. 2 is a transverse section on the line 2—2 of Fig. 1; and

Fig. 3 is a similar section on the line 3—3 of Fig. 1.

In the drawings the cylinder is indicated at 11, mounted in the usual manner in the side frame 12 of the press and cut away at 13 to provide for the mounting of the means for clamping the blanket 14 which latter is to be tightly stretched over the operative surface of the cylinder as indicated more particularly in Figs. 2 and 3.

It is usual in printing presses to form the printing surface, whether in a bed press or a cylinder press, convex in order that the printing plate or blanket may be stretched tightly in contact with the same at all points. It is important after the plate or blanket is applied to its support, that the same should be tensioned uniformly throughout its extent and then securely held in order that there shall be no movement or unequal stretching of the same and consequent impairment of the impression secured therefrom. In the case of the blanket of an offset press it is of particular importance that provision be made for uniformly tensioning the blanket and thereafter holding the same under tension because of the tendency of the blanket to stretch unevenly.

If a clamping plate or bar be applied to the edge of the blanket transversely of its length and the bar be then placed under tension the unequal yielding of the blanket is liable to cause a non-uniform tautness and it is necessary to not only provide for longitudinally stretching the same to a uniform extent but also for locally tensioning the blanket in order to compensate for inequalities due to shrinkage or unequal stretching.

To overcome these difficulties I have provided local means for applying tension to the blanket at different points throughout its width or longitudinally of the cylinder in order to bring the same under uniform tension throughout its length and I have also provided supplementary coöperating means acting upon the blanket throughout its length in order to increase or diminish the tension thereon to bring the same to a proper degree of tautness and to relieve the tension entirely when the blanket is to be removed.

Suitably journaled at each end in the bearings 15 within the cut away space 13 of the cylinder is a rock shaft 16 in such relation as to have a lateral bearing at 17 against one wall of the space 13 said shaft carrying a worm wheel 18 in mesh with a worm 19 upon a spindle 20 journaled at 21 in the bearing block 22 and at the other end provided with a squared end 23 by means of which the same may be rotated in order to rock the shaft 16 within its bearings by means of the worm and worm wheel gearing. The shaft 16 is cut away at intervals or

throughout its length as shown to provide a segment groove having angularly disposed walls 24 and 25. The wall 25 has secured thereto by means of the bolt 26 a plurality of L-shaped brackets 27 within the angular portion 28 of which is journaled a screw spindle 29 having at its outer end a hand wheel 30 and at its inner end a reduced portion 31 journaled within the wall 24 of the shaft.

Each of the spindles 29 is threaded within a block 32 which bears upon the bracket 27 and is caused to slide thereon by means of its threaded engagement with the spindle 29. Each block has an extension 33 within which is mounted a catch 34 having a beveled outer end 35 and normally held in its outermost position by means of a spring 36 arranged within the extension 33 about the catch 34. The outward movement of the catch under the influence of the spring is limited by means of the pin 37. The block 32 is likewise provided opposite the extension 33 with another extension 38 having seated therein a pin 39 which projects slightly from the surface of the extension 38 in the general direction of the extension 33.

Accommodated within the space between the extensions 33 and 38 is a duplex clamp comprising members 40 and 41 adapted to receive therebetween the edge 42 of the blanket 14 and to be clamped together thereon by means of the set screw 43. The member 40 is provided at its inner end with a recess 44 adapted to be engaged over the projecting end of the pin 39 and the outer end of the member 40 is provided with a lip 45 adapted to engage behind the projecting end of the catch 34.

The operation of the device is as follows: The blanket 14 having been placed upon the cylinder 11 and suitably secured at one end by any ordinary clamping device or by a duplicate of that herein shown and described has its free edge engaged throughout its width at intervals between the two clamping members 40 and 41. Each of the clamping members secured to the blanket is engaged by means of its recess 44 over the pin 39 of its bracket and the lip 45 of the clamp is snapped into engagement behind the catch 34 which yields in order to permit the lip of the clamp to pass. The several clamps throughout the width of the blanket having been thus assembled with their respective brackets the blanket is tensioned locally by manipulating the hand wheel 30 so as to retract the blocks 32 to the requisite extent to place the blanket under approximately the same tension by means of the various clamps. This having been accomplished, additional tension is applied in uniform degree to all of the clamps and thus to the blanket throughout the length of the cylinder

by the rotation of the worm spindle 20 by means of which the shaft 16 is rotated and the brackets are thereby moved through an arc as indicated in dotted lines in Fig. 2, the path traveled by the various clamps 40, 41 causing a pull upon the end of the blanket as will be readily understood from an inspection of said Fig. 2. When the desired degree of tension is secured the same will be maintained until it is desired to increase or diminish the tension by the manipulation of the worm spindle 20.

When it is desired to remove the blanket the worm spindle 20 is rotated in the opposite direction producing slack in the overhanging edge of the blanket sufficient to permit each of the clamps to be pressed outwardly, causing a recession of the catches 34 into their housing sufficient to permit the recess 44 to be disengaged from the pin 39 whereupon the clamps may be removed from the embrace of the extensions 33 and 38.

I claim:

1. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a bracket carried by the cylinder, a screw spindle mounted in the bracket, a block threaded on the spindle, a clamp engaging the blanket edge, and a snap connection between the clamp and block, whereby upon the turning of the screw spindle the blanket will be tensioned by the clamp.

2. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle mounted in each of the brackets, a block threaded on each of the spindles, clamps engaging the blanket edge, snap connections between the clamps and the blocks, whereby upon the turning of the screw spindle the blanket will be tensioned locally by each of the clamps.

3. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle mounted in each of the brackets, a block threaded on each of the spindles, clamps engaging the blanket edge, snap connections between the clamps and the blocks, whereby upon the turning of the screw spindle the blanket will be tensioned locally by each of the clamps, and means to adjust the several brackets in unison whereby to tension the blanket simultaneously at the several local points.

4. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a bracket carried by the cylinder, a screw spindle mounted in the bracket, a block threaded on the spindle and having a pair of spaced opposed arms

projecting therefrom, a spring pressed catch mounted in one of the arms, a pin projecting from the other arm, and a clamp for engaging the blanket edge, said clamp having a recess adapted to receive the pin and also having a lip adapted to engage behind the catch, whereby upon the turning of the screw spindle the blanket will be tensioned by the clamp.

5 5. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle mounted in each of the brackets, a block threaded on each of the spindles and having a pair of spaced opposed arms projecting therefrom, a spring pressed catch mounted in one of the arms, a pin projecting from the other arm, and a clamp for engaging the blanket edge, said clamp having a recess adapted to engage the pin and also having a lip adapted to engage behind the catch, whereby upon the turning of the screw spindles the blanket will be tensioned locally by each of the clamps.

10 6. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle mounted in each of the brackets, a block threaded on each of the spindles and having a pair of spaced opposed arms projecting therefrom, a spring pressed catch mounted in one of the arms, a pin projecting from the other arm, a clamp for engaging the blanket edge, said clamp having a recess adapted to engage the pin and also having a lip adapted to engage behind the catch, whereby upon the turning of the screw spindles the blanket will be tensioned locally by each of the clamps, and means to adjust the several brackets in unison whereby to tension the blanket simultaneously at the points of attachment of the clamps throughout the length of the cylinder.

15 7. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle mounted in each of the brackets, a block threaded on each of the spindles, clamps engaging the blanket edge, snap connections between the clamps and the blocks, whereby upon the turning of the screw spindle the blanket will be tensioned locally by each of the clamps, a rock shaft extending longitudinally of the cylinder, the brackets mounted on the shaft and projecting laterally therefrom, and means to rock the shaft whereby to move the clamps in unison to uniformly increase or diminish the tension on the blanket throughout the length of the cylinder.

20 8. The combination with the cylinder of an offset press or the like, and a blanket

superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle mounted in each of the brackets, a block threaded on each of the spindles, clamps engaging the blanket edge, snap connections between the clamps and the blocks, whereby upon the turning of the screw spindle the blanket will be tensioned locally by each of the clamps, a rock shaft extending longitudinally of the cylinder, the brackets mounted on the shaft and projecting laterally therefrom, and means to rock the shaft comprising a worm wheel on the shaft, a worm in mesh with the wheel, and provided with means for its rotation, whereby to move the clamps in unison to uniformly increase or diminish the tension on the blanket throughout the length of the cylinder.

25 9. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle mounted in each of the brackets, a block threaded on each of the spindles and having a pair of spaced opposed arms projecting therefrom, a spring pressed catch mounted in one of the arms, a pin projecting from the other arm, a clamp for engaging the blanket edge, said clamp having a recess adapted to engage the pin and also having a lip adapted to engage behind the catch, whereby upon the turning of the screw spindles the blanket will be tensioned locally by each of the clamps, a rock shaft extending longitudinally of the cylinder, the brackets mounted on the shaft and projecting laterally therefrom, and means to rock the shaft whereby to move the clamps in unison to uniformly increase or diminish the tension on the blanket throughout the length of the cylinder.

30 10. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle mounted in each of the brackets, a block threaded on each of the spindles and having a pair of spaced opposed arms projecting therefrom, a spring pressed catch mounted in one of the arms, a pin projecting from the other arm, a clamp for engaging the pin and also having a lip adapted to engage behind the catch, whereby upon the turning of the screw spindles the blanket will be tensioned locally by each of the clamps, a rock shaft extending longitudinally of the cylinder, the brackets mounted on the shaft and projecting laterally therefrom, and means to rock the shaft comprising a worm wheel on the shaft, a worm in mesh with the wheel, and provided with means for its rotation, whereby to move the clamps in unison to uniformly increase or diminish the tension on the blanket throughout the length of the cylinder.

11. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle
 5 mounted in each of the brackets, a block threaded on each of the spindles, a clamp carried by each of the blocks and engaging the blanket edge, whereby upon the turning of the screw spindle the blanket will
 10 be tensioned locally by each of the clamps, a rock shaft journaled within a cut away portion of the cylinder and bearing substantially throughout its length upon a wall of the cut away portion, said shaft cut away
 15 along one side to provide a segment groove, the brackets mounted upon one wall of said groove and projecting laterally from the shaft, the inner end of the screw spindles bearing upon the opposite wall of said
 20 groove, and means to rock the shaft about its axis whereby to move the brackets and clamps in unison to uniformly increase or diminish the tension of the bracket throughout the length of the cylinder.

12. The combination with the cylinder of an offset press or the like, and a blanket superposed thereon, of a plurality of brackets carried by the cylinder, a screw spindle
 25 mounted in each of the brackets, a block

threaded on each of the spindles, a clamp 30 carried by each of the blocks and engaging the blanket edge, whereby upon the turning of the screw spindle the blanket will be tensioned locally by each of the clamps, a rock shaft journaled within a cut away portion 35 of the cylinder and bearing substantially throughout its length upon a wall of the cut away portion, said shaft cut away along one side to provide a segment groove, the brackets mounted upon one wall of said 40 groove and projecting laterally from the shaft, the inner end of the screw spindles bearing upon the opposite wall of said groove, and means to rock the shaft about 45 its axis whereby to move the brackets and clamps in unison to uniformly increase or diminish the tension of the bracket throughout the length of the cylinder, said shaft-rocking means comprising a worm wheel 50 carried by the shaft and a worm spindle in mesh with the worm wheel, said worm spindle being provided with means for rotation.

EDWARD L. C. CLARK.

Witnesses:

WM. H. CAPEL,
 C. WESLEY POMEROY.