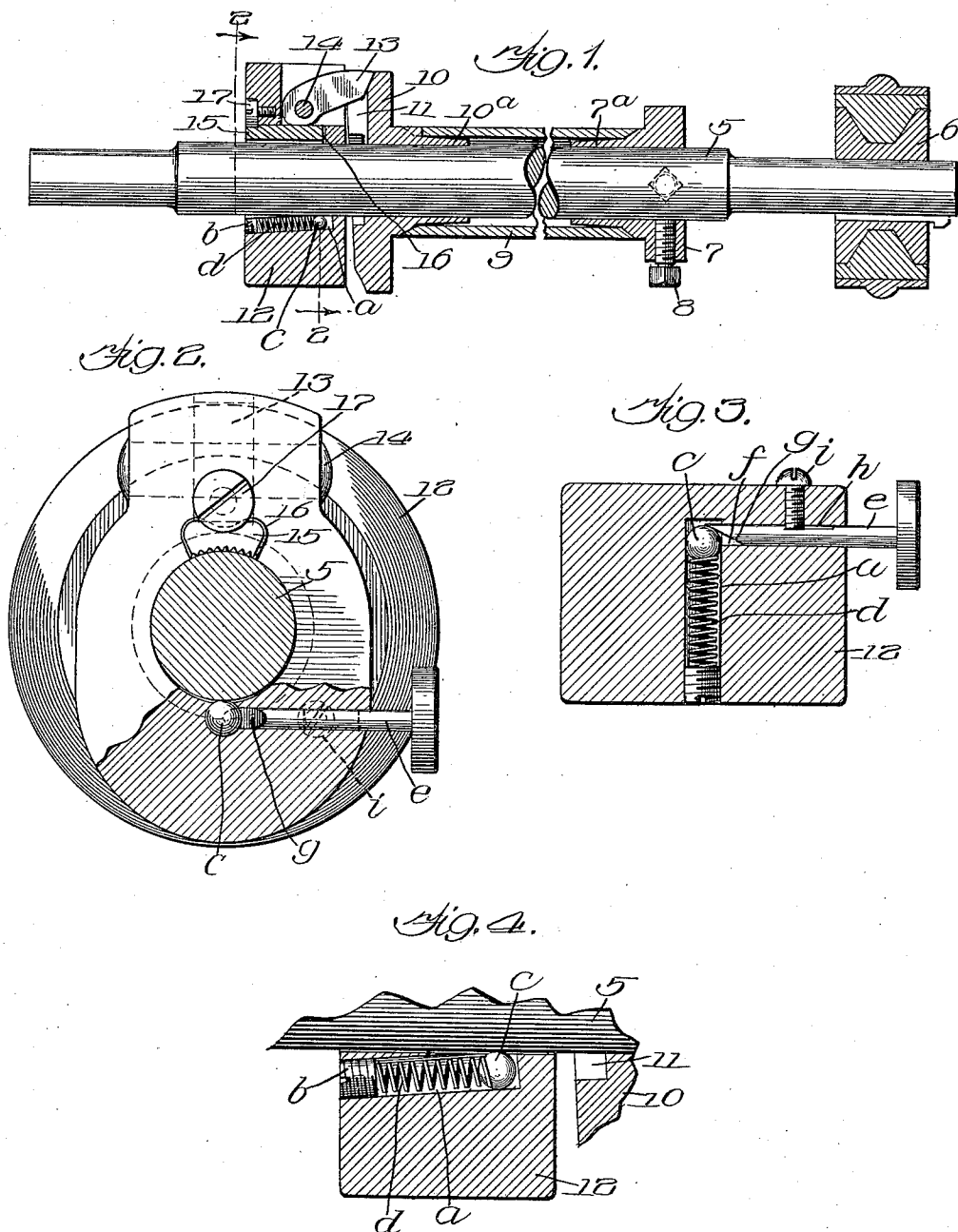


A. A. HENZI.
 ROLL HOLDER FOR PRINTING PRESSES.
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Patented June 4, 1912.



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UNITED STATES PATENT OFFICE.

ALBERT A. HENZI, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE GOSS PRINTING PRESS COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ROLL-HOLDER FOR PRINTING-PRESSES.

1,028,213.

Specification of Letters Patent.

Patented June 4, 1912.

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To all whom it may concern:

Be it known that I, ALBERT A. HENZI, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Roll-Holder for Printing-Presses, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates primarily to devices for securing roll-holders to shafts of printing-presses, such devices being of the same general type as shown in Letters Patent of the United States Nos. 907,760 and 907,761, dated December 29, 1908, granted to The Goss Printing Press Company upon applications filed by William Evensen.

The object of the present invention is to provide improved means for locking to the shaft the removable collar that lies adjacent to the removable head that engages and bears against one end of the usual tube or roll on which the web of paper is wound. As heretofore constructed, and as explained in said former patents, such collar has been clamped to the roll-shaft by means of an engaging plate loosely supported in the collar and pressed tightly against the shaft by a pivoted cam lever one end of which was in contact with a cam face on said removable head. It has been found in practice that the locking means for securing such collar to a shaft will not at times, owing to wear of said engaging plate, always remain firmly attached in place but will gradually move outward on the shaft.

My invention is directed particularly to the providing of means to counteract this tendency, and, broadly stated, it consists in providing the said collar with an additional locking feature which offers no obstruction to the easy slipping on of the collar but which will so engage the shaft as to automatically grip it when the collar tends to move away from said cam-faced removable head, and furthermore will have its holding grip on the shaft increased in proportion to the force tending to so move the collar. I accomplish this by the construction shown in the drawings and hereinafter described.

That which I believe to be new will be set forth in the claims.

In the drawings,—Figure 1 is a longitudinal section of a roll-holder embodying my improvements, the devices being shown applied to a shaft, the roll-holder and the shaft

being partly broken away; Fig. 2 is an enlarged vertical section taken at the line 2—2 of Fig. 1; Fig. 3 is a detail, being a horizontal section through the lower part of the collar, and showing the spring-pressed steel ball therein that acts to prevent accidental movement of the collar, and also showing the means employed for holding such ball out of operative engagement with the shaft when it is desired to remove the collar from the shaft; and Fig. 4 is a detail, partly in section, showing the spring-pressed steel ball in operative engagement with the shaft.

Referring to the several figures of the drawings in which corresponding parts are indicated by like reference characters 5 indicates a shaft which is to be journaled in the frame of a press as usual and upon which is to be mounted a tube having wound thereon a web of paper. The shaft is provided with the usual tension pulley 6.

7 indicates a head secured in proper position on the shaft 5 by a setscrew 8 or otherwise.

9 indicates the usual tube upon which is wound the web of paper.

10 indicates a head loosely mounted upon the shaft 5 and provided with a cam face 11 on its outer side as shown.

The fixed head 7 and removable head 10 are each provided, as shown, on their inner faces with sleeve portions 7^a and 10^a adapted to be inserted in the ends of the tube 9.

12 indicates a wide collar on the shaft adjacent to the removable head 10.

13 indicates a lever pivotally secured to the collar 12, the pivot therefor being indicated by 14.

15 indicates a block located in a recess formed in the collar 12 so as to permit the face of the block to bear against the shaft, as clearly shown in Figs. 1 and 2,—said face being roughened or corrugated to better engage the shaft. The inner end of the lever 13 is cam shaped and by the turning of such lever, as explained in said former patents, the block is pressed tightly against the shaft. The block, as in said former constructions, is held in place by the head of a screw 17 inserted in the outer face of the collar 12.

The parts so far described are old and in view of the more detailed description found in said patents need not be here described with greater particularity.

Turning now to the features of improvement that I have devised,—*a* indicates a long socket in the wide collar 12 and extending from the front face thereof to within a short distance of the rear face. This long socket is inclined as clearly shown in Figs. 1 and 4 so that at its forward end, which is normally kept closed by a screw-plug *b*, it is a short distance from the shaft-opening while its rear portion merges into said shaft opening, the comparatively small opening or passage thus formed between the inclined socket and the shaft-opening permitting a suitable shaft-engaging device held in the inner end of the inclined socket to slightly project and bear against the shaft 5. The shaft-engaging device referred to is, in the form of construction shown, a hardened steel ball *c* which is held in proper position by a coiled spring *d*.

e indicates a pin arranged in a cross-passage *f* in the wide collar 12 which passage opens into the inclined socket *a* near the inner end thereof. The inner end of the pin *e* is beveled, as shown at *g*, (see Figs. 2 and 3) with the point of such beveled end lying normally just behind the hardened steel ball *c*. The pin is notched as at *h*, into which notch projects the end of a short screw *i*, the longitudinal movement of the pin being thus limited and its axial turning prevented.

The operation of the mechanism is, briefly, as follows: With the tube 9 and its roll of paper carried thereby in position on the shaft and held between the fixed and removable heads 7 and 10 respectively, the collar 12 is placed on the shaft and moved up so that its lever 13 engages the cam face 11. Through the turning of the head 10 the cam face 11 turns the said lever and causes it to bear with great force against the block 15 which moves against and bears upon the shaft. In moving the wide collar 12 into place along the shaft to bring it into operative position the steel ball *c* will offer no resistance to such movement but will roll freely inasmuch as this movement of the collar will tend to force the ball toward the outer end of the inclined socket against the pressure of the spring *d*, and thus, while the spring will at all times keep the ball far enough toward the inner end of the socket to insure the ball and shaft being in contact with each other, the ball cannot bite or grip the shaft. If, however, the collar tends to move out of operative relation with the cam-head 10, owing to a slipping of the block 15 due to wear or imperfection, such movement will be instantly prevented by said ball *c*, due to the tendency of the ball under such circumstance to move toward the inner end of the incline and thus cause it to be wedged with increasing force against the shaft and consequently bind the collar and shaft

firmly together. When it is desired to hold the ball *c* out of binding engagement with the shaft so as to permit the collar 12 to be removed the pin *e* is to be forced inward to the limit of its movement, and, by reason of the engagement of its beveled end *g* with the ball, such ball will be pushed back against the force of the spring *d*, thus removing the ball from operative engagement with the shaft.

It will be noted that the ball clutch enables the collar 12 to be pushed by hand into the precise position it should occupy, and holds the collar in said position during the time the lever 13 is being operated upon by the cam face 11, in order to force the block 15 firmly down upon the shaft. Except for the ball clutch, the collar 12 might be pushed away from the roll during the brief interval required for the movement of the lever 13. This is because, owing to the shape of the cam face 11 and its engagement with the free end of the lever 13, the rotation of the head 10, for a distance sufficient to shift the position of the lever 13, would have a tendency to displace the collar, through the intervention of the lever. Even a very slight displacement of the collar is effectively prevented by the ball clutch.

It will be understood that while my improvements are designed primarily for use in connection with printing-press rolls, they may be employed in any other situation where it is desired to connect a collar or equivalent device with a shaft in such manner that the collar can be easily moved longitudinally of the shaft in one direction but automatically held against movement in a reverse direction.

That which I claim as my invention, and desire by Letters Patent, is—

1. The combination with a roll-holder shaft and a longitudinally-movable head on said shaft, of a collar on said shaft adjacent to said head and carrying means adapted to be actuated by the rotation of the head to engage the shaft, and other shaft-engaging means carried by the collar, said last-named means being adapted to permit the collar to be moved in one direction longitudinally of the shaft and automatically prevent its movement in the reverse direction.

2. The combination with a roll-holder shaft, a head adapted to be secured thereto and another head loose thereon, of a collar mounted on the shaft adjacent to said last-named head, means carried by the collar for engaging such head and adapted, when such head is turned, to force it toward the fixed head, a clamping plate adapted to be forced against the shaft by said engaging means, and other shaft-engaging means also carried by the collar and adapted to permit said collar to be moved in one direction longitudinally of the shaft and automatically

prevent its movement in the reverse direction.

3. A clamping-device for roll-holders, comprising a head adapted to be mounted
5 on a shaft, said head having means adapted to engage one end of a roll tube or core, the outer face of said head being provided with a cam, a collar adjacent to said outer face, a lever carried by said collar, means actuated
10 by said lever for engaging the shaft, said lever being adapted to engage said cam on the face of the head, and other shaft-engaging means carried by the collar, said last-named means being adapted to permit the
15 collar to be moved in one direction longitudinally of the shaft and to automatically prevent its movement in the reverse direction.

4. A clamping-device for roll-holders, comprising a head adapted to be mounted
20 on a shaft, said head having means adapted to engage one end of a roll tube or core, the outer face of said head being provided with a cam, a collar adjacent to said outer face, a
25 lever carried by said collar, means actuated by said lever for engaging the shaft, said lever being adapted to engage said cam on the face of the head, other shaft-engaging

means carried by the collar, said last-named means being adapted to permit the
30 collar to be moved in one direction longitudinally of the shaft and to automatically prevent its movement in the reverse direction, and means for holding said second-named shaft-engaging means out of en-
35 gagement with the shaft.

5. A clamping-device for roll-holders, comprising a head adapted to be mounted
on a shaft, said head having means adapted to engage one end of a roll tube or core, the
40 outer face of said head being provided with a cam, a collar adjacent to said outer face, a lever carried by said collar, means actuated by said lever for engaging the shaft, said lever being adapted to engage said cam
45 on the face of the head, and a rolling member located in an inclined socket in the collar that communicates with the shaft-opening in the collar, and means for holding said rolling member in position to bear
50 against the shaft.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."