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 DEVICE FOR LOCKING TYPES ON TYPE CARRYING MEMBERS OF PRINTING PRESSES
 AND THE LIKE.

APPLICATION FILED OCT. 31, 1908.

935,758.

Patented Oct. 5, 1909.

Fig. 1.

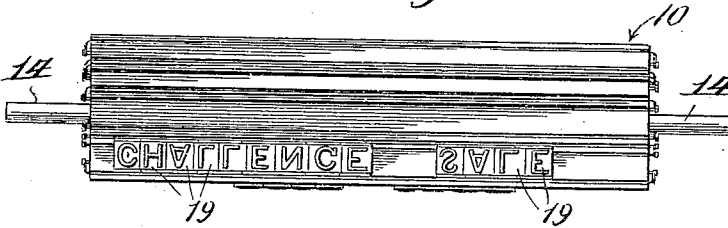


Fig. 2.

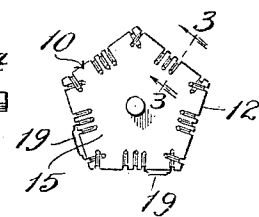


Fig. 3.

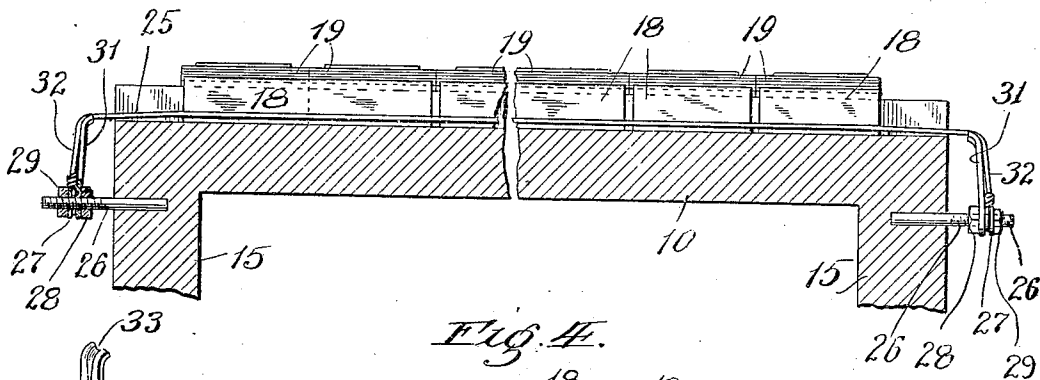


Fig. 4.

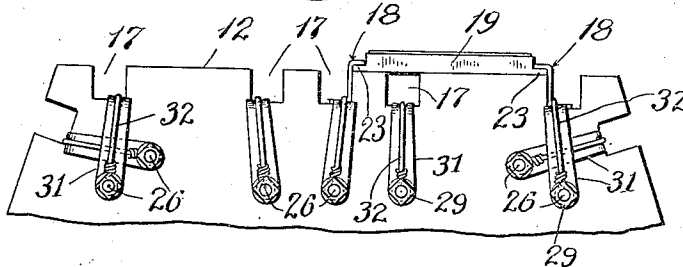


Fig. 5.



Fig. 6.

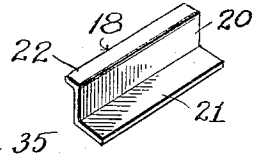


Fig. 8.

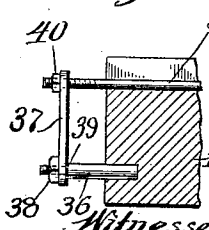
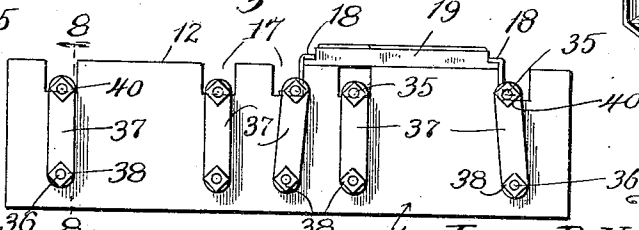


Fig. 7.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR LOCKING TYPES ON TYPE-CARRYING MEMBERS OF PRINTING-PRESSES
AND THE LIKE.

935,758.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed October 31, 1908. Serial No. 460,382.

To all whom it may concern:

Be it known that I, JAMES R. HAYDON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Devices for Locking Types on Type-Carrying Members of Printing-Presses and the Like; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to improvements in means for locking types to the type carrying member of a printing press, a printing stamp and the like, and the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

Among the objects of the invention is to provide a simple and efficient means for removably locking types to the face of a type carrying member, arranged to positively hold the type in place while at the same time permitting them to be readily released.

In the drawings:—Figure 1 is a side elevation of one form of type carrying member provided with my invention. Fig. 2 is an end elevation thereof. Fig. 3 is an enlarged, fragmentary, longitudinal section on line 3—3 of Fig. 2. Fig. 4 is an enlarged, fragmentary end view of the type carrying member, showing my improvements applied thereto. Fig. 5 is a detail of the locking device hereinafter to be described. Fig. 6 is a perspective view of the type holding clip. Fig. 7 is an end view of another form of type carrying member. Fig. 8 is a transverse section thereof on line 8—8 of Fig. 7.

I have herein shown my improved type locking means applied to two forms of holders 10 and 11, shown respectively in Figs. 1 and 7. The form shown in Fig. 1 and also in Figs. 2, 3 and 4, is a rotary type carrying member and is provided with a plurality of type supporting faces 12 arranged symmetrically about the same, five faces being herein shown. The type carrying member 10 is mounted on a central shaft 14 by which it is adapted to be mounted in a printing press of any suitable type. The end walls 15 of said member have openings to receive the shaft, as indicated in Fig. 2. The type car-

rying member shown in Fig. 7 is provided with a single type supporting face 12.

In each of the constructions, each of the type supporting faces is provided with a plurality of parallel, longitudinal grooves 17, 17 which extend to the end of the member, as herein shown. Said grooves receive type holding clips 18, 18 which extend outside of the grooves and are arranged for engagement with flat metal types 19, shown in Figs. 3, 4 and 7, to hold the types in place. The clips 18, herein shown, are of general Z-shape. Each clip comprises a central web portion 20, a bottom flange 21, that is adapted to lie on the bottom of its groove 17, and a top flange 22 which extends in a direction opposite to the flange 21 and located outside the groove. The outer flanges 22 of said clips are adapted for overlapping engagement with thin extensions or flanges 23 at the ends or sides of the type 19, as best shown in Figs. 4 and 7. The said grooves 17 are arranged at irregular distances apart, whereby types of different lengths may be applied to the face and supported thereon, or a plurality of rows of types may be applied to each face.

Means are employed for positively confining the clips in their grooves and thereby, through said clips, locking the type tightly on the type supporting faces of the type carrying member, and arranged to be readily released to unlock the type. I have herein shown two forms of such confining or locking devices, one illustrated in connection with the multi-face type carrier, shown in Figs. 1 to 4, inclusive, and the other illustrated in connection with the single face carrying member shown in Figs. 1 and 8. It will be understood, however, that the arrangement of the clip locking means may be varied within the scope of the invention while retaining the advantages of the constructions herein specifically described.

Referring now to the locking devices shown in Figs. 1 to 4, inclusive, the same are made as follows: Arranged longitudinally in the bottom of each groove 17 is a locking member 25 which, as herein shown, has the form of a wire having more or less flexibility, as a piano wire. Said wire is bent at its ends, beyond the ends of the grooves, to form arms 32 which are turned inwardly and the terminals thereof are wrapped or

looped about the outer ends of studs 26 which are fitted into openings in the ends of the type carrying member and extend endwise therefrom. The looped portions 27 of each arm 32 are confined between inner and outer nuts 28, 29 which have screw-threaded engagement with the outer ends of said studs. Arranged also between said nuts are plates 31, said plates being apertured to pass over the studs and being arranged inside the arms 32 of the locking members 25. Each of said plates 31 are provided at their outer ends with notches 33 over which the wire locking member is bent at the angle between the locking portion thereof and the inwardly turned arms 32. Said plates 31 constitute means for fixedly supporting the ends of the wire locking member outside the ends of the grooves so as to hold the locking portions of said member substantially rigid, and also constitute means for frictionally holding the locking member in place, as will hereinafter more fully appear.

The horizontal or straight locking portions of the locking members 25 lie over the inner flanges 21 of the Z-shaped clips. The studs 26 associated with each groove 17 lie in substantially the plane of the longitudinal center line of the groove. In the construction described, it will be observed that the locking members 25 are capable of swinging or oscillating in the bottoms of the grooves 17 toward and from the sides of the grooves and that when said locking members are swung toward the clips 18 which they confine, they engage with a clamping pressure the lower flanges 21 of said clips and thereby positively lock or confine said clips securely in place. To release the clips the locking members are swung away from the clips. When the locking members 25 have the form of a wire or rod the lower flanges of the clips may be made of such length that the wire locking members may be swung free from or clear of said lower flanges, thus permitting of the ready removal of the clips.

In addition to the function of the plates 31 of sustaining the pivotal arms 32 of the locking members and tensioning the locking members, they have the further function of frictionally holding the locking members in positions to which they may be swung. Such frictional action on said plates is due to the fact that the plates, as well as the loops of the arms 32, are clamped between the nuts 28 and 29 on the studs 26. Thus it will be observed that when the locking members 25 are thrown over the lower flanges of the clips, said clips will be held positively in place, and the locking devices will be maintained in locking position by reason of frictional connection of the locking members with the parts by which they are attached to the type carrying member.

In the construction shown in Figs. 1 to 4,

inclusive, wherein the type carrying member is provided with a plurality of type supporting faces, the arms 32 of the locking members and the supporting plates therefor of adjacent grooves of adjoining faces of the type carrying member may be arranged to cross each other, as indicated in Fig. 4.

By reason of the screw-threaded connection of the nuts 28 and 29 with the studs 26, it will be observed that the tension on the locking members 25 may be adjusted to compensate for wear on the friction members or elongation of the wire locking member, it only being necessary to screw both nuts 28 and 29 farther outwardly toward the ends of the studs 26 in case of stretching of the wire or other wear which would tend to loosen the holding action of the wire on the type holding clips. The same adjustment increases the effective friction action on the plates to hold the locking members in place.

The construction shown in Figs. 7 and 8 is different from that shown in the previously described figures, in addition to the shape of the type carrying member, in that the retaining or locking member 35, which in this instance assumes the form of a relatively rigid rod, is connected to the studs 36, like the studs 26 of the previous construction, by means of arms 37 made separate from and slipped over the ends of the rods 35 and the studs 36. In this construction the arms 37 comprise plates which are apertured at their ends to fit over said studs and the locking rods. The inner ends of the arms are clamped between nuts 38 on the outer reduced ends of the studs 36 and shoulder 39 on said studs to afford the desired frictional engagement of the arms with the studs. The outer ends of said arms are held on the locking rods 35 by means of other nuts 40, which engage the screw-threaded ends of the rods 35. Friction is exerted on the arms 37 to hold the locking rods or members 35 in their locking positions by turning the nuts 40 inwardly and binding the inner faces of the arms 37 against the shoulders 39.

The two forms of construction which are herein shown constitute effective means for locking the type retaining clips in place in their grooves, but it will be understood that the essential features of such a locking device may assume different structural form without departing from the spirit of the invention. The form herein shown, however, embracing a locking member 25 or 35 which is capable of swinging or oscillating on the axes of the studs 26 or 36 to lock and release the clips is an exceedingly simple, inexpensive and efficient device and is capable of being readily operated to insert or remove the type retaining clips.

The clip holding means herein shown may be employed in connection with the type carrying members of different printing

presses or stamps. Said construction lends itself with ready and peculiar adaptation to the type carrying members of printing presses for printing show window advertising cards, such a press being shown in my copending application for U. S. Letters Patent, filed on the 9th day of November, 1908, Serial No. 461,698.

I claim as my invention:—

1. Means for locking types to the type supporting face of a grooved type carrying member, comprising type holding clips in the groove arranged for engagement with the types supported on said face, an elongated locking member extending longitudinally through the groove for confining the clips therein, and means at the ends of the locking member and groove for releasably locking the clips in said groove.
2. Means for locking types to the type supporting face of a grooved type carrying member, comprising type holding clips in the grooves arranged for locking engagement with types supported on said face, and an elongated locking member arranged longitudinally within the groove and movable toward and from the side walls of the groove to confine the clips in the groove.
3. Means for locking types to the type supporting face of a grooved type carrying member, comprising clips in the groove having parts extending outside the groove for engagement with the types, and a locking member extending longitudinally through the groove and connected at its ends with the ends of the type carrying member in a manner to move toward and from the clips to releasably lock the same in place.
4. Means for locking types to the type supporting face of a grooved type carrying member, comprising type holding clips in the groove arranged for locking engagement with types supported on said face, an elongated locking member arranged longitudinally within the groove to move toward and from the side walls of the groove, and means for frictionally holding said locking member in its locking position.
5. Means for locking types to the type supporting face of a grooved type carrying member, comprising clips in the groove having parts extending outside the groove for engagement with the types, and a locking member extending longitudinally through the groove and provided at its outer ends beyond the groove with inwardly extending arms arranged for swinging or pivotal connection with the ends of the type carrying member.
6. Means for locking types to the type supporting face of a grooved type carrying member, comprising clips in the groove having parts extending outside the groove for engagement with the types, a locking member extending longitudinally through the

groove and provided at its outer end beyond the groove with inwardly extending arms arranged for swinging or pivotal connection with the ends of the type carrying member, and means for applying friction to said arms to hold the locking member in its locking position.

7. Means for locking types to the type supporting face of a grooved type carrying member comprising Z-shaped type holding clips, the inner flanges of which lie within the groove and the outer flanges of which extend outside the groove for engagement with the types, and locking means extending longitudinally throughout the groove and fixed to the type carrying member at the ends of the groove and arranged to force the inner flanges of the clips toward the bottom of the groove.

8. Means for locking types to the type supporting face of a grooved type carrying member comprising type holding clips having flanges which extend outside of the groove for engagement with the types, and a flexible locking device extending longitudinally through the groove and fixed to the type carrying member at the ends of the groove, and engaging parts of the clips within the groove in a manner to force such parts of the clips toward the bottom of the groove.

9. Means for locking types to the type supporting face of a grooved type carrying member comprising Z-shaped type holding clips the inner flanges of which lie within the groove and the outer flanges of which extend outside the groove for engagement with the types, and an elongated locking member extending through the groove and connected at its ends with the type carrying member in a manner to swing or oscillate toward and from the inner flanges of said clips.

10. The combination with a type holding member provided with a grooved type supporting face, of means for locking types on said face comprising type holding clips in said groove having parts which extend outside the groove for engagement with the types, a clip locking member extending longitudinally through the groove and attached to the type holding member by means permitting the locking member to swing or oscillate toward and from the clips, and means at the end of said member for adjusting it to said clips.

11. The combination with a type carrying member provided with a grooved type supporting face, of means for locking types on said face comprising clips in said groove having parts extending outside the groove for engagement with the types, a clip locking member extending longitudinally through the groove and provided at its ends with inwardly extending arms, studs ex-

tending endwise from the type carrying member on which said arms are pivoted, and friction means for confining the arms on said studs.

- 5 12. The combination with a type carrying member provided with a grooved type supporting face, of means for locking types on said face comprising clips in said groove having parts extending outside the groove
10 for engagement with the types, a clip locking member extending longitudinally through the groove and provided at its ends with inwardly extending arms, studs extending
15 endwise from the type carrying member on which said arms are pivoted, and screw-threaded nuts for confining said arms on said studs.

13. Means for locking types to the type supporting face of a grooved type carrying
20 member comprising type holding clips having flanges which extend outside of the groove for engagement with the types, and an elongated locking member extending

throughout the groove and having oscillatory movement toward and from the clip to 25 lock and release the clip.

14. Means for locking types to the type supporting face of a grooved type carrying member comprising type holding clips having flanges which extend outside of the 30 groove for engagement with the types, and a flexible elongated locking member extending throughout the groove and connected with parts located at the ends of the groove, said locking member having oscillatory 35 movement toward and from the clip to lock and release said clip.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 26th day of 40 October A. D. 1908.

JAMES R. HAYDON.

Witnesses:

W. L. HALL,

T. H. ALFREDS.