W. M. JENKINS.

LOCKING DEVICE.

APPLICATION FILED MAR. 7, 1910.

1,085,918. Patented Feb. 3, 1914.

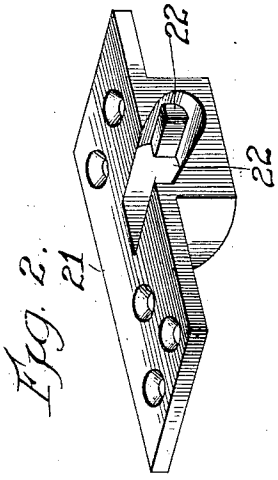


Fig. 2.

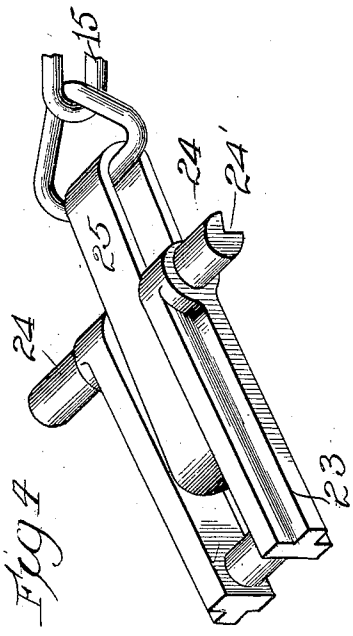


Fig. 4

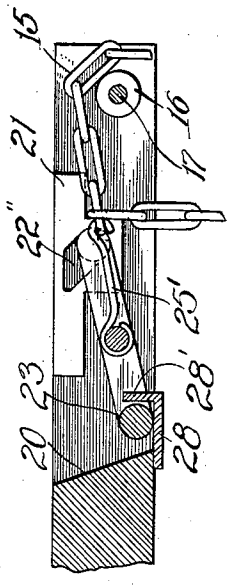


Fig. 6.

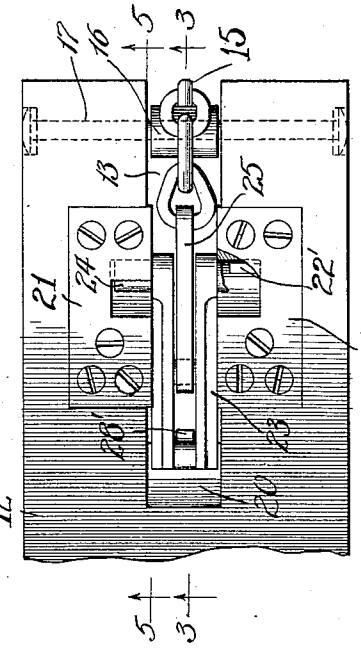


Fig 1.

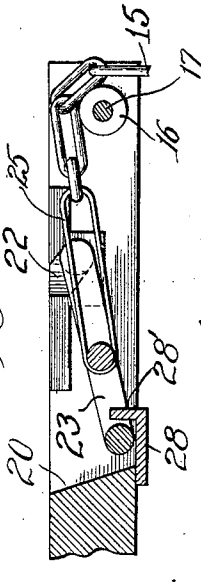


Fig. 3.

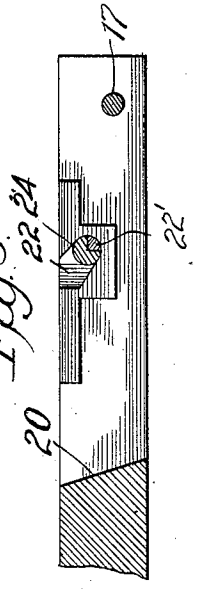


Fig. 5.

Witnesses:
H. R. Lewis
A. J. Wilson

Inventor:
William M. Jenkins
By Lothrop Bell & Fuller.
Atty's

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM M. JENKINS, OF CHICAGO, ILLINOIS.

LOCKING DEVICE.

1,085,918. Specification of Letters Patent. Patented Feb. 3, 1914.

Application filed March 7, 1910. Serial No. 547,708.

To all whom it may concern:

Be it known that I, WILLIAM M. JENKINS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locking Devices, of which the following is a specification.

This invention relates to locking devices and more particularly to devices adapted for use in connection with a binder or packaging apparatus, such, for instance, as that disclosed in my prior Patent No. 1,019,049 granted March 5, 1912, the function of which is to compress the package or bundle to be bound up, and to securely hold it together.

My invention is particularly useful in binders for holding bundles of bags, papers or other articles, and comprises essentially a lock, which, during its closing movement, will automatically compress the bundle and when closed will automatically lock, thus holding the articles so that they can not be removed until the lock is released.

One of the objects of the invention is to provide a lock of this character which will lock automatically when closed and which can not be opened except with the use of a special implement or key.

In the accompanying drawings which illustrate a preferred embodiment of my invention Figure 1 is a plan view of the lock. Fig. 2 is a perspective of one of the locking bearings. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a perspective of the locking lever. Fig. 5 is a section on the line 5—5 of Fig. 1, and, Fig. 6 is a similar view to Fig. 3 but showing a modified form of bearing.

Referring to the drawings, 12 designates a binding member which is preferably constructed of wood, although any other inflexible material might be employed, if desired. The binding member is provided at one end with a slot 13 beveled at its inner end as at 20 to permit swinging movement of the inner end of a locking lever, to be hereinafter described. On either side of the slot are mounted bearings 21, which, in the modification disclosed in Figs. 1 to 5 inclusive, comprise an upper plate provided with upwardly and rearwardly inclined slotted bearings 22 adapted to receive the laterally projecting trunnions 24 of a locking lever 23. The slots 22 in the bearings 21 are provided with locking shoulders 22′ as shown in Fig. 2, adapted to engage with correspondingly shaped grooves 24′ in the trunnions 24 to lock the lever against movement about its bearing trunnions.

Pivotally attached to the locking lever 23 midway its ends is the link 25 which is also connected to one end of a chain 15. The chain is guided by and moves over a roller 16 rotatably mounted upon a pin or bolt 17 near the end of the slot 13. The chain may be connected at its other end to one end of a rigid binding member (not shown) similar in shape and size to the binding member 12 and which may be permanently connected at its other end to the opposite end of the rigid member 12, or if preferred, the chain 15 may be made of sufficient length to inclose a bundle or package of the size desired, its free end being securely and permanently attached to the other end of the member 12. In order to prevent the lever 23 from turning downwardly too far about its bearing trunnions, a plate 28 is secured to the bottom of the binding member 12 below the forward end of the slot 13 against which the front end of the lever may rest. The inner end of the plate is preferably upturned at 28′ to prevent the insertion of a screw-driver or other implement under the end of the lever in an attempt to open the lock.

While I have shown both of the bearings 21 as provided with locking lugs 22′ and both of the trunnions 24 as grooved at 24′ to engage with the locking lugs, it will be apparent that only one of the bearings may be supplied with locking lugs, and ordinarily the application of these lugs to one of the bearings will be sufficient to prevent accidental or intentional unlocking of the lock without the aid of the key required for the purpose.

The mode of operation in my device is as follows: The locking lever is removed from its bearings and the chain and binding member are spread out so that a bundle may be placed upon the chain, or if two binding members are employed the bundle is placed upon the lower binding member; in either case the upper binding member 12 is then brought over and placed upon the top of the bundle. The length of the chain may be adjusted to accommodate various sized bundles by twisting it, or if preferred, the chain may be made in two sections connected together by a hook which may be hooked into any link which will give the required length

of chain. The chain should be just long enough to permit the trunnions 24 to be inserted into inclined bearing slots 22 with the other end of the lever extending toward the outer end of the binding member 12 in the direction of the chain 15 which is pulling upon it. The lever is now turned upon its trunnions thus pulling the chain over the roll 16 and compressing the bundle. When the lever has been turned to the position shown in Fig. 3 it is automatically locked against opening movement by the engagement of the locking lugs 22′ with the grooves 24′ in the lower faces of the trunnions. In the locked position of the device there is no normal tendency of the locking lever to open because the tension of the chain is exerted upon the lever in a line below the bearing trunnions, which tends to turn the lever downwardly or to pull it against the plate 28 and maintain the lever in locked position.

In the modification disclosed in Fig. 6 a bearing 21 is provided with bearing slots which are closed at their upper ends as indicated by 22″. This construction prevents the removal of the locking lever and necessitates that it be positioned with the trunnions in the bearings when the device is assembled. In order that this modification may be opened to permit its being placed around a bundle or package, the hook 25′ is substituted for the solid link 25 employed in the previously described modification. This hook is adapted to be engaged with any link of the chain 15.

When the device has been placed around a bundle or package the locking lever is swung back toward the end of the binding member and the chain 15 is brought up over the guide roll 16, whereupon the hook 25′ is hooked into one of the links of the chain as far down as possible so that the chain will be tight before the locking action begins. The lever is now swung forwardly about its trunnions drawing the chain over the roll 16 and compressing the package or bundle until the lever assumes its locking position as shown in Fig. 6.

It will be obvious since the pull of the chain 15 upon the locking lever is exerted in a line which passes below the trunnions, that the lever will be, under normal conditions, maintained in locked position by the tension of the chain alone. The locking shoulders 22′ and the coöperating grooves 24′ form merely an auxiliary locking mechanism which prevents the lock from being opened except by means of a special tool or key with which the trunnions can be forced bodily upwardly and outwardly away from the lugs.

While I have shown and described preferred embodiments of my invention, it will be apparent that various minor mechanical changes may be resorted to, such as making the binding member and the bearings integral, or casting the bearings and binder from iron or stamping them from heavy sheet metal, if preferred; therefore, I do not wish to limit myself to the exact construction shown but desire to embrace all the deviations which would properly come within the scope of the appended claims.

What I claim is:

1. In a lock for bundle-tying devices, the combination of a binding member provided with a plurality of bearings near one end thereof adapted to receive the trunnions of the locking lever, a locking lever having trunnions adapted to turn in said bearings, and a flexible binding means secured to the locking lever midway its ends and attached to the other end of the binding member whereby movement of the locking lever in said bearings will exert a tension upon said binding means, said trunnions and bearings being provided with coöperating faces adapted to abut against each other upon turning movement of the lever to locking position whereby the lever is locked against accidental opening movement, said bearings and trunnions being constructed so that no bodily movement of the trunnions relatively to the bearings in the direction of the tension exerted by said binding means is permitted after the lever has been turned to locked position.

2. In a lock for bundle tying devices, the combination of a binding member provided with bearings near one end thereof, a locking lever adapted to turn in said bearings, a flexible binding means secured to the locking lever midway its ends and permanently attached to the other end of the binding member, whereby movement of the locking lever in the bearings toward locking position will draw upon the binding means, and means located in one of said bearings to prevent opening movement of the locking lever when it has been brought to locking position.

3. In a lock for bundle tying devices, the combination of a locking lever having laterally projecting bearing trunnions provided with longitudinal grooves, and slotted bearings in which said trunnions are adapted to turn, said bearings having internal shoulders corresponding to the grooves in the bearing trunnions and adapted to be engaged with the grooves to prevent turning movement of the locking levers upon its trunnions.

4. In a lock for bundle tying devices, the combination of bearings closed to the top and open at one side only, a locking lever provided with trunnions adapted to turn in said bearings to compress the bundle being bound, and a shoulder adapted to coöperatively engage with a trunnion on the lock-

ing lever to maintain said locking lever in locked position.

5. In a lock for bundle tying devices, the combination of a binding member slotted at one end and having bearings in the side of said slot, a locking lever provided with trunnions adapted to rest in said bearings, a plate secured to the lower side of the binding member to limit the downward movement of the locking lever, said plate being turned upwardly at its outer end to protect the end of the lever, and means for automatically locking the lever against turning movement on its trunnions when it is turned to locking position.

WILLIAM M. JENKINS.

Witnesses:
I. J. WILSON,
M. ROBERTSON.

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