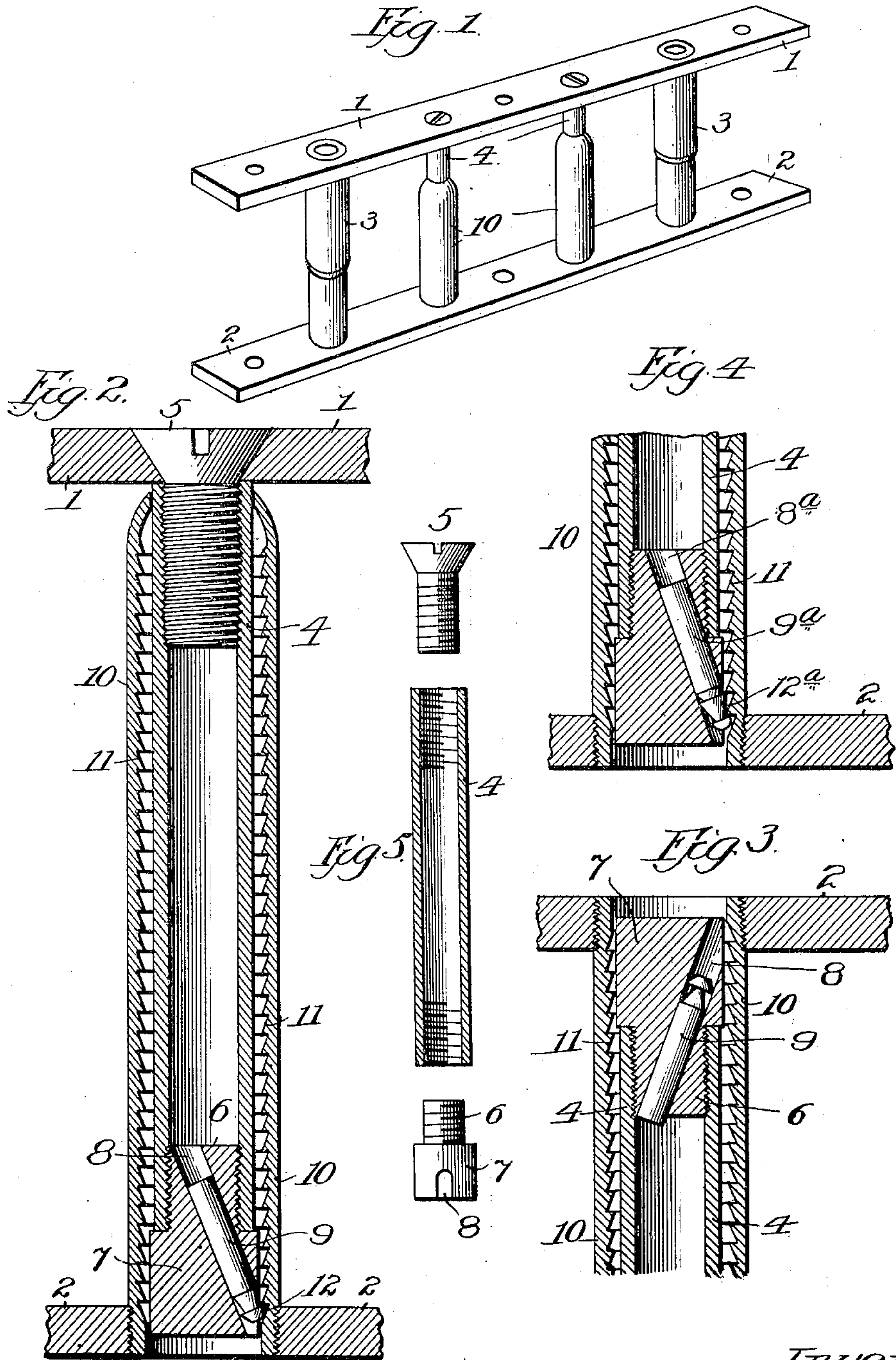


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A. D. HULQUIST.
LOCK FOR LOOSE LEAF BINDERS.
APPLICATION FILED APR. 18, 1906.



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UNITED STATES PATENT OFFICE.

ANDREW D. HULQUIST, OF CHICAGO, ILLINOIS.

LOCK FOR LOOSE-LEAF BINDERS.

No. 830,835.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed April 18, 1906. Serial No. 312,310.

To all whom it may concern:

Be it known that I, ANDREW D. HULQUIST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Locks for Loose-Leaf Binders, of which the following is a full, clear, concise, and exact description.

My invention relates to a lock for a loose-leaf binder or similar device; and its object is to provide a simple, efficient, and cheaply-manufactured locking device which when held in one position will be acted upon by gravity to automatically lock the binder in its adjusted position, but when held in a reverse position will be automatically unlocked.

My invention comprises two opposed clamping-plates, to each of which is secured a tube, said tubes telescoping the one in the other, the inner tube having a head threaded in its end. Said head has a hole drilled therein in which is placed a freely-slidable locking-pin adapted when its end is projected from the opening to engage threads upon the interior of the inclosing tube, and thus lock said tubes together, but when retracted to permit the free movement of the one tube in the other. The movement of said pin is controlled by gravity, so that when the parts are held in one position the lock is operative, but when held in the reverse position the lock is inoperative.

My invention may be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a binder embodying my invention. Fig. 2 is an enlarged vertical section of the locking device, showing the parts in locked relation. Fig. 3 is a fragmentary view similar to Fig. 2, but in reversed position, showing the parts unlocked. Fig. 4 is a fragmentary view similar to Fig. 2, showing a modified form of locking-pin. Fig. 5 is a separated view of one of the locking members.

Similar numerals of reference refer to similar parts wherever shown.

The opposed clamping-plates 1 2 have near each end thereof the usual telescoping members 3 3, containing springs which operate normally to separate the clamping-plates. Said plates may be attached by any suitable means to the covers of the binder. These parts form no part of my present invention, and their operation being well understood a

further description thereof is unnecessary. The locking mechanism for holding said plates in any desired adjustment toward or from each other is shown in detail in Figs. 2 60 and 3. A tube 4 is rotatably secured to the plate 1 by a screw-bolt 5, which passes through the plate 1 into the threaded end of the tube 4. The other end of said tube is also interiorly threaded to receive the threaded shank 6 of the head 7. Said head has a hole 8 drilled therethrough, said hole preferably extending diagonally from the lower end of the head into the interior of the tube 4. A pin 9 is freely slidable in the opening 8, the inner surface of the tube 4 acting as a stop to prevent the displacement of the pin, as shown in Fig. 3.

A tube 10 is secured to the plate 2 and has an interior diameter approximately the same as that of the cylindrical head 7. The tube 4 telescopes in the tube 10, and in order to prevent the separation of the parts the telescoping end of the tube 10 has a restricted opening large enough to permit the passage of the tube 4, but too small to permit the withdrawal of the head 7. The tube 10 has threads 11 upon its interior. That end of the pin 9 which is adapted to project outwardly has a restricted throat, providing a head or flange 12, adapted when the pin is so projected to engage the threads 11, and thus lock the parts in their adjusted position. As before stated, the pin 9 is freely slidable in the hole 8, so that when the parts are held in the position shown in Fig. 2 with the plate 1 above the plate 2 the pin 9 is acted upon by gravity and is projected outwardly into engagement with the threads 11. When held in the reverse position, (shown in Fig. 3,) a slight pressure of the plates 1 and 2 toward each other releases the pin 9 from engagement with the threads, and gravity acts upon the pin to retract the same, thereby unlocking the tubes 4 and 10 and permitting the plates 1 and 2 to be adjusted to or from each other.

In Fig. 4 I have shown a modified form of locking-pin 9^a, having a double head 12^a adapted to simultaneously engage two of the threads 11 of the tube 10. In this case it is desirable that the opening 8^a extend more nearly vertically through the head 7 in order that both flanges of the head 12^a may come into engagement with the threads. The tube 4 is preferably rotatably secured to the plate 1, so that when the clamping-plates are

pressed together any loosening can be taken up by rotating the tube 4, thereby screwing said tube farther into the tube 10. For this purpose the screw 5 enters the tube 4 far enough to properly secure said tube to the plate 1, and yet holds it sufficiently loose thereon, so that by further turning the screw 5—as, for example, with a screw-driver—the tube 4 is rotated, as above described.

10 I claim—

1. A lock for loose-leaf binders, comprising clamping-plates, a tube secured to one of said plates, said tube having a threaded interior, a post secured to the other plate and telescoping into said tube, said post being provided with a hole near its free end, and a pin having a restricted portion near one end and a head upon the end of said restricted portion, said pin being slidable in the hole in said post and controlled by gravity to regulate the engagement of the head of the pin with the interior threads of said tube to automatically lock said parts together when in one position and to unlock them when in the reverse position:

25 2. The combination with telescoping tubes, of an enlarged solid cylindrical head threaded in the end of the inner tube, said head being provided with a small hole extending diagonally from the interior of one tube to the interior of the other tube, a pin slidable in said head for engaging the threaded interior of the outer tube to lock said tubes telescoped at any desired adjustment, and a pair of clamping-jaws mounted upon the non-telescoped ends of said tubes.

35 3. A lock comprising clamping-plates, a tube, a screw passing through one of said plates into the threaded end of said tube to rotatably secure the same to the plate, an enlarged cylindrical head threaded in the other end of said tube, said head having a hole extending obliquely therethrough, a second tube secured to the other plate and into which said first tube telescopes, said latter tube having a threaded interior and a restricted opening at its telescoped end to prevent the separation of the parts, and a pin having a restricted portion near one end and a head upon the end of said restricted portion, said

pin being slidable in the hole in said head and controlled by gravity to cause the engagement of the head of the pin with the threads of the outer tubes to automatically lock said tubes together when in one position and to unlock them when in the reverse position.

4. In a locking device for a loose-leaf binder, the combination with telescoping tubes the outer of which has a screw-threaded interior and a restricted opening at its telescoping end, of an enlarged cylindrical head threaded in the end of the inner tube to prevent the separation of said tubes, said head having a hole drilled diagonally through the same into the interior of the tube, a slidable pin in said hole, said pin having a restricted portion near one end and a head upon the end of said restricted portion, said head being controlled by gravity to engage or disengage the threaded interior of the outer tube, whereby when the telescoped members are in one position they are locked and when in a reverse position they are freely adjustable, respectively, and a pair of opposed clamping-plates mounted upon the non-telescoped ends of said tubes.

5. In a locking device for a loose-leaf binder, the combination with telescoping tubings the outer of which has a threaded interior and a restricted opening at one end, of an enlarged head detachably secured upon the telescoping end of the other tubing, a pin slidable in a hole drilled diagonally in said head, said pin having a head adapted to engage or disengage the threaded interior of the outer tube when the parts are held in one or the other of two positions to lock the tubular members in their adjusted positions or to unlock the same respectively, a clamping-plate secured upon the outer tubular member, an opposed clamping-plate, and a screw passing through said plate into the threaded end of said inner tubing to rotatably secure the same to the plate.

In witness whereof I hereunto subscribe my name this 16th day of April, A. D. 1906.

ANDREW D. HULQUIST.

Witnesses:

GEORGE E. FOLK.

ALFRED H. MOORE.