C. T. NANKERVIS.

LOOSE LEAF LEDGER.

APPLICATION FILED MAY 20, 1919.

1,349,577. **Patented Aug. 17, 1920.**

FIG. 1

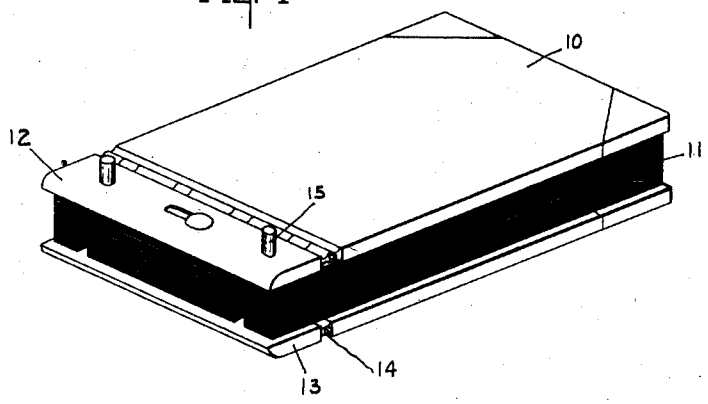


FIG. 2

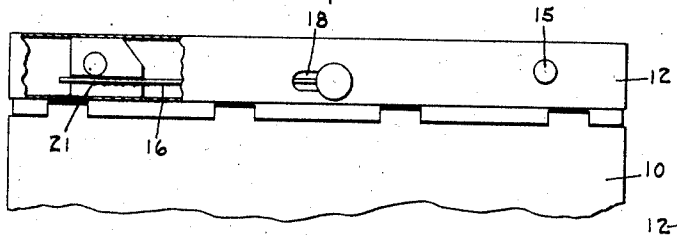


FIG. 3

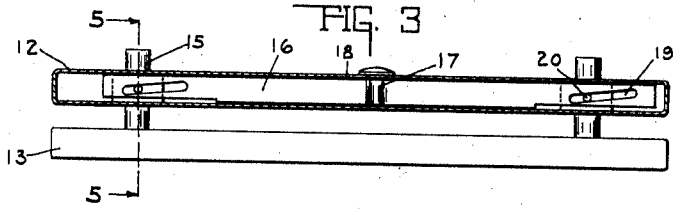


FIG. 4

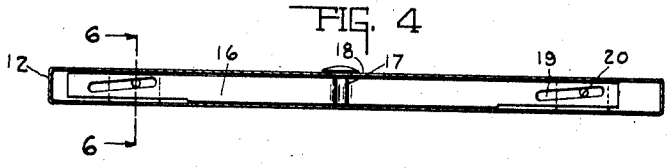


FIG. 5

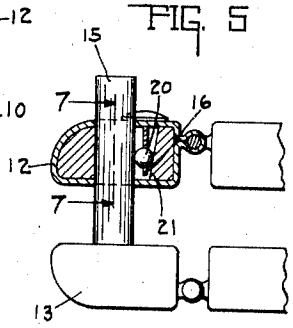


FIG. 6

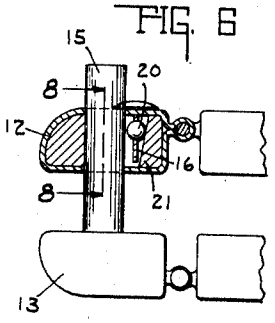


FIG. 7

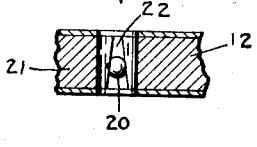
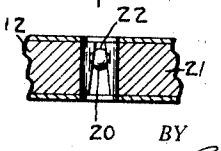


FIG. 8



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UNITED STATES PATENT OFFICE.

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LOOSE-LEAF LEDGER.

1,349,577. Specification of Letters Patent. Patented Aug. 17, 1920.

Application filed May 20, 1919. Serial No. 298,485.

To all whom it may concern:

Be it known that I, CHARLES T. NANKERVIS, a citizen of the United States, and a resident of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Loose-Leaf Ledger; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

This invention relates to a binder for loose leaf ledgers and more particularly to the locking means for positively locking the binding members together, so as to prevent their withdrawal when locked, and at the same time permit them to be compressed to more firmly bind the loose leaves, and automatically lock in their compressed position.

This is accomplished by means of a pair of locking balls mounted so as to operate in a tapered groove in which they are moved into and out of locking position by a locking bar which causes them to operate on an inclined bearing surface as will be hereafter more fully explained.

In the accompanying drawings which are made a part of this application Figure 1 is a perspective view of a loose leaf ledger showing the binder attached thereto. Fig. 2 is a plan view looking down on the binder. Fig. 3 is a longitudinal cross section through the upper binding member showing the locking bar in elevation. Fig. 4 shows the locking bar in elevation in unlocking position. Fig. 5 is a cross section taken on the line 5—5 of Fig. 3 showing the locking ball in locking position with the post and ball in elevation. Fig. 6 is a cross section taken on the line 6—6 of Fig. 4 showing the ball in unlocking position including the post and lower member. Fig. 7 is a section taken on a line 7—7 of Fig. 5 with the post removed. Fig. 8 is a section taken on the line 8—8 of Fig. 6 with the post removed.

There is shown in the drawings a loose leaf ledger 10 in which the loose leaves 11 are bound by a binder consisting of an upper binding member 12 and a lower binder member 13. The binding members are provided with hinges 14 to which the ledger covers are hinged, and the lower member 13 is provided with a pair of binding posts 15 rigidly secured thereto, which extend upwardly through the upper member 12. The upper binding member is provided with a longitudinally sliding locking bar 16 which is slidably operated by a pin 17 secured therein and extending through the slot 18 in the top of the upper locking member. Near each end of said locking bar and adjacent the post 15 there are inclined slots 19 in blocks 21 which contain the locking balls 20 and cause them to roll on the inclined bearings 21 as said locking bar is caused to slide back and forth by the pin 17. When the locking bar 16 is moved into the position shown in Fig. 3 the balls 20 are carried to the lower ends of the inclined bearings 21 which will force them forward through the enlarged portion of the tapered grooves 22, into contact with the posts 15, thereby locking the binding member 12 to said posts. When the bar is caused to slide in the opposite direction, to the position shown in Fig. 4 the balls are carried upwardly on the inclined bearing, as shown in Fig. 6, and are forced back by the tapered groove 22 in position to disengage the posts 15 and unlock the binding member.

The blocks 21 through which the posts extend are provided with the tapered grooves 22, as shown in Figs. 7 and 8 in which the balls 20 ride, whereby portions of the balls project through to make contact with said posts when moved to the enlarged portions thereof, and positively lock said binding member thereto. The upper binding member is then prevented from being drawn upwardly, as the balls, in that case would be bound tightly against the posts by the inclined bearing, but at the same time the upper binding member may be forced downwardly so as to further compress the loose leaves, as in that movement the balls would move slightly up the inclined bearing just enough to slide on the posts.

The invention claimed is:

1. A binder for loose leaf ledgers including a pair of binding members, binding posts secured to one member and projecting through the other member, a locking bar slidably mounted in said last mentioned member, locking balls actuated by said locking bar, and inclined bearings upon which said balls are actuated for forcing them into and out of locking position.

2. A binder for loose leaf ledgers including a pair of binding members, binding posts secured to one of said members and projecting through the other member, a locking bar having inclined slots therein

slidably mounted in said last mentioned member, locking balls mounted in said slots so as to be controlled by the movement of said bar, and inclined bearings adjacent said posts acting as a bearing surface for said balls for forcing them in contact with said posts and permitting their disengagement therefrom when actuated by said locking bar.

3. A binder for loose leaf ledgers including a pair of binding members, blocks mounted in one of said members, having tapered slots therein, binding posts secured to the other member and projecting through said blocks, a locking bar having inclined slots therein slidably mounted in said blocks, locking balls mounted in said slots so as to be controlled by the movement of said bar and partially extending through said tapered slots adjacent said posts, said inclined slots forcing said balls through said tapered slots into engagement with said posts and permitting their disengagement therefrom when actuated by said locking bar.

In witness whereof, I have hereunto affixed my signature.

CHARLES T. NANKERVIS.