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E. SAMPSON, SR

LOCKING MEANS FOR INDEX CARDS AND THE LIKE

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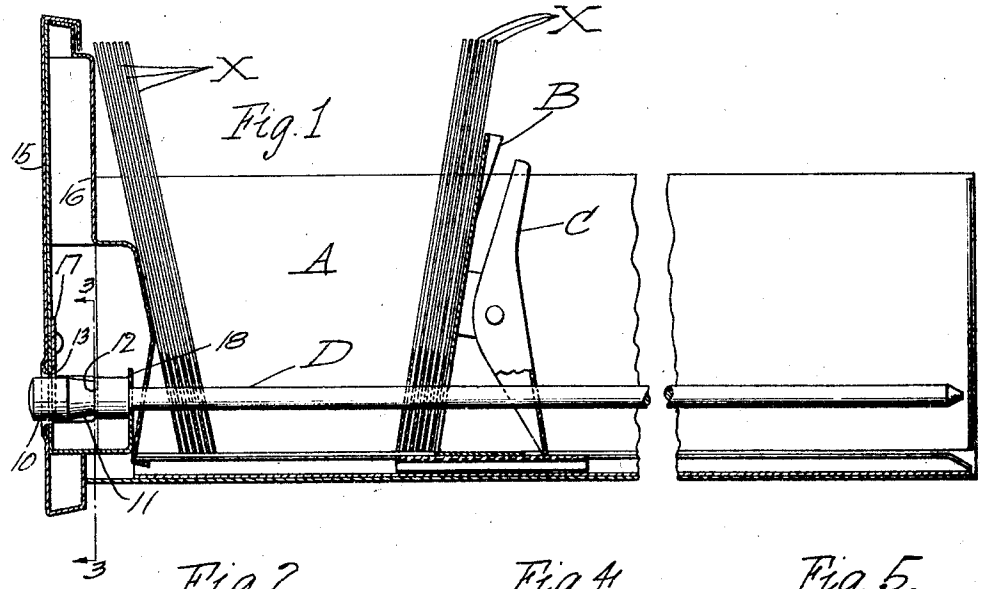


Fig. 1

Fig. 2.

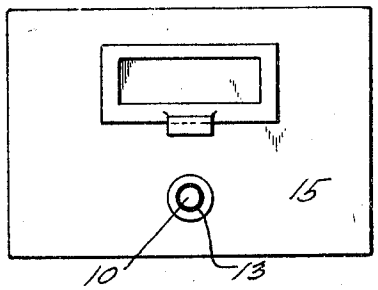


Fig. 4.

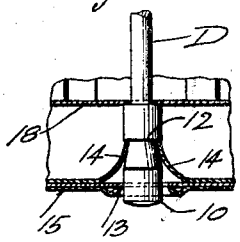


Fig. 5.

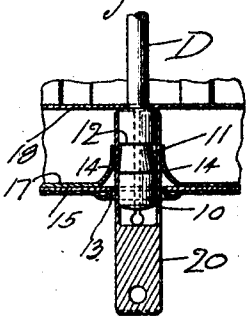


Fig. 3.

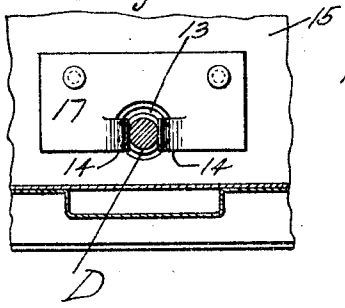
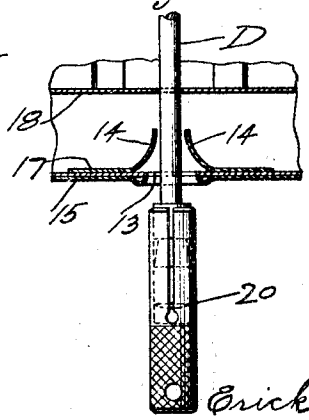


Fig. 6.



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UNITED STATES PATENT OFFICE.

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LOCKING MEANS FOR INDEX CARDS AND THE LIKE.

Application filed January 27, 1926. Serial No. 84,082.

This invention relates to improvements in locking means for the locking rods of card index drawers or holders of that kind in which the cards are locked or retained in the drawer or holder by a rod passing lengthwise of the drawer through registering holes in the several cards. In order to release and permit the ready removal of the cards from the drawer when necessary, the rod, in some constructions, is removably secured in the drawer so that the rod can be pulled lengthwise out of the holes in the cards. In these devices as ordinarily constructed, however, the rod is provided with a locking or securing means of some sort, whereby the rod can be locked in place in the drawer or holder to prevent the unauthorized removal of the cards, the rod being removable to release the cards only by the use of a rod-releasing key or device. As heretofore ordinarily constructed, these lock rods require either a flat key or a key made with tongues, necessitating either a very thin piece of metal for the key so that it will be difficult to pick or release the rod lock, or else a key which must be accurately placed and manipulated in order to release the rod lock such keys or releasing devices thus being easily broken or damaged so as to prevent the operation of the rod locks or making them difficult of operation.

The objects of my present invention are to produce a practical and desirable locking means for the card locking rods of card index drawers and the like, of such construction that the locking rod can be quickly and easily placed and locked in position in the drawer, but cannot be removed or moved to release the cards except by the use of the key, which key, however, is of simple and strong construction, and can be readily operated to release and remove the locking rods; also to produce a practical and desirable locking rod and locking means therefor, which, while being strong and durable, and not liable to get out of order, nevertheless can be produced at a minimum cost; also to construct the rod locking means and key so that a strong, durable key can be used, but which nevertheless are of such construction that the rod cannot be readily released except by means of the particular key; also to provide the rod with a locking head of circular or symmetrical cross section and cooperating locking means, whereby the rod will be locked when pushed into position in the drawer irrespective of the angular position of the rod, so that special care is not required in placing and securing the rod in position, and to likewise make the key of tubular or annular cross section so that the key also can be quickly and easily manipulated to release the rod without the exercise of special care to place the key in any particular angular position; also to form the key and lock rod so that the key, in addition to serving as the lock-releasing means for the rod, also constitutes a knob or handle by means of which the rod may be withdrawn from the drawer or holder; and also to improve locking means of the nature indicated in the other respects hereinafter described and set forth in the claims.

In the accompanying drawings the invention is illustrated in connection with a card index drawer of well known type. In said drawings:

Fig. 1 is a longitudinal sectional elevation of a card index drawer provided with locking means embodying the invention for the card locking rod.

Fig. 2 is a front elevation, on a reduced scale, of the drawer.

Fig. 3 is a fragmentary, transverse section thereof on line 3—3, Fig. 1.

Fig. 4 is a sectional plan view of the rod locking means showing the rod locked in place.

Fig. 5 is a similar view showing the key inserted, and the rod thereby released.

Fig. 6 is a similar view showing the rod unlocked and withdrawn.

A represents the card index drawer which is provided with the usual follower B slidably engaging a guide in the bottom of the drawer to permit the follower to be moved longitudinally of the drawer and secured in different positions by means of the follower clamp C, for clamping and freeing the cards X which stand on edge in the drawer between the follower and the front end of the drawer. These parts may be of any usual or suitable construction.

D represents the card locking rod which, as usual, extends lengthwise of the drawer, passing through holes in the front end or wall of the drawer and in the follower B, and also through registering holes in the lower portions of the cards for preventing removal of the cards from the drawer ex-

cept by first withdrawing the rod from the holes in the cards. The locking rod is preferably provided at its front end with an enlargement or head 10, which is of symmetrical shape in cross section, being, as shown, of cylindrical shape. This head is permanently secured to or formed on the rod and has a peripheral shoulder preferably formed by a circumferential, external groove 11 of V-form, having an abrupt inner edge forming the shoulder 12, perpendicular to the axis of the rod, and a forwardly sloping or inclined bottom. On the front end or wall of the drawer, preferably at opposite sides of the hole 13 therein, through which the locking rod passes and in which the head 10 is located when the rod is in position, are spring tongues or locking members 14 adapted, when the lock rod is pushed into place in the drawer, to snap into the circumferential groove 11 in the head of the rod with their inner ends engaging the inner abrupt edge 12 of the groove, so as thereby to prevent the withdrawal of the locking rod forwardly through the hole 13 without first disengaging or lifting the tongues out of engagement with the inner edge 12 of the groove. In the preferred construction shown in the drawings, the front end of the drawer is hollow, having spaced apart, outer and inner walls, the former composed of two plates 15 and the latter formed by a plate 16 suitably secured in place, and a thin lock plate 17 is riveted or otherwise fixed on the inner face of the outer wall 15 of the front end, this plate 17 being stamped or formed to provide the two inwardly projecting and converging spring tongues 14 disposed at opposite sides of the locking rod D so as to engage in the groove of the locking rod at the opposite sides of the rod. The lower end of the inner plate 15 shown, is bent inwardly and then upwardly, forming a flange 18 through a hole in which the locking rod passes and against which the head 10 of the rod is adapted to strike to limit the inward movement of the rod. One or more than two of the locking tongues 14 could be employed, and they could be formed and mounted in other suitable ways. As will be seen from the drawings, the locking tongues or members are thus located within the hollow front end of the drawer between the outer and inner walls thereof, so that the locking tongues are housed or enclosed and can not be reached or actuated to release the rod except by means of a key or implement inserted through the hole 13 in the front end of the drawer through which the locking rod passes. Since the head 10 of the locking rod is symmetrical, preferably circular in cross section, and the locking groove or shoulder completely encircles the head, the locking rod will be engaged and locked by the tongues no matter to what position the rod may be turned while being inserted into place, and no special care is required to position and lock the rod in place. It is only necessary to push the rod inwardly through the hole 13 as far as it will go. When the rod is locked in place, the front or outer end of its head is preferably about flush with the front face of the drawer, and the head does not project out far enough to enable it to be gripped for pulling the rod out except by the use of a special key or implement.

20 represents the key or device for releasing and removing the locking rod. This key has a hollow cylindrical or tubular inner end adapted to be inserted into the hole 13 in the front end of the drawer over the head 10 of the locking rod. The tubular portion of the key has a sliding fit on the cylindrical head 10, and by pushing the key inwardly over the head, the inner end of the key will engage the spring tongues 14 and lift the same out of engagement with the groove in the head of the rod. In thus pushing the key into place, the inner end of the key is moved inwardly beyond the abrupt inner edge or shoulder 12 of the groove 11 in the rod, so that the walls of the key bridge the groove, and the ends of the spring tongues which then bear on the outer surface of the key are prevented from again entering the groove when the rod is pulled forwardly with the key out of the hole 13. Preferably the inner end of the key is bevelled so as to more easily release the spring tongues, and the tubular portion of the key is also preferably slit longitudinally, as shown, and made of such internal diameter that when the key is pushed into place over the head 10 of the rod, it will frictionally grip the head so that the rod can be pulled forwardly by means of the key until its head 10 is freed from engagement with the spring tongues. Thus, the key serves both as the device for releasing the locking rod from its locking tongue, and also as a handle or implement for pulling the rod out through the hole 13. Since the key is tubular and of the same cross sectional, internal shape as the head 10, the key will operate the same no matter to what position it may be turned with respect to the rod, and care is not necessary to turn the key to any particular position to release the rod. The key could be made tubular throughout, but preferably, for the sake of strength, its outer end is made solid and is provided with a transverse hole for convenience in carrying on a ring or for tagging. The outer end portion of the key is also shown as knurled or roughened so that it may be better gripped.

I claim as my invention:

1. The combination with a holder for cards

or the like, of a locking rod passing through a hole in a wall of said holder and adapted to engage the cards for locking them in the holder, said rod having adjacent its outer end a peripheral shoulder, a locking member on the holder adapted to engage said shoulder to lock the rod in place in the holder, and a key having a sleeve portion adapted to be inserted into said hole around the outer end of said rod over said shoulder and between said rod and said locking member to release said locking member from the rod and permit the rod to be withdrawn through said hole, said sleeve portion of said key being adapted to pass over and obstruct said shoulder to prevent the reengagement of said locking member therewith.

2. The combination with a holder for cards or the like, of a locking rod passing through a hole in one end of said holder and adapted to engage the cards for locking them in the holder, said rod having adjacent its outer end a peripheral shoulder, a locking member on the holder adapted to spring into engagement with said shoulder to lock the rod in place in the holder, and a key having a sleeve portion adapted to be inserted into said hole over the outer end of said rod to engage and release said locking member from the rod, said key being adapted to grip said rod whereby the rod can be pulled out of the hole by means of said key.

3. The combination with a holder for cards or the like, of a locking rod passing through a hole in one end of said holder and adapted to engage the cards for locking them in the holder, said rod having adjacent its outer end a peripheral groove, a locking member on the holder adapted to engage in said groove to lock the rod in place in the holder, and a key having a longitudinal, open ended sleeve portion, said key being adapted to be inserted endwise into said hole with said sleeve portion passing over the outer end of said rod and inwardly beyond said groove, whereby the wall of said sleeve will release said locking member from the groove during said endwise movement and permit the rod to be withdrawn through said hole.

4. The combination with a holder for cards or the like, of a locking rod passing through a hole in a wall of said holder and adapted to engage the cards for locking them in the holder, said rod having at its outer end a cylindrical head provided with a peripheral groove, a spring tongue secured to said holder and adapted to snap into said groove to lock the rod in place in the holder, and a key having a hollow cylindrical portion adapted to be inserted into said hole over the head of the rod and between the rod and said spring tongue to release said spring tongue from said groove and permit the rod to be withdrawn through said hole.

5. The combination with a holder for cards or the like, of a locking rod passing through a hole in a wall of said holder and adapted to engage the cards for locking them in the holder, said rod having at its outer end a cylindrical head provided with a peripheral groove, a spring tongue secured to said holder and adapted to snap into said groove to lock the rod in place in the holder, and a key having a split tubular portion adapted to be inserted into said hole over the head of the rod and engage and release said spring tongue from said groove, said key being held in frictional engagement with the head of said rod whereby the rod is adapted to be withdrawn through the hole by means of said key.

6. The combination with a holder for cards or the like, of a locking rod passing through a hole in a wall of said holder and adapted to engage the cards for locking them in the holder, said rod having an outer end portion of circular cross section provided with a circumferential shoulder, a locking member on the holder comprising an inwardly directed spring tongue extending substantially lengthwise of said rod and having a free end adapted to engage said shoulder on the rod to lock the rod in place in the holder, and a key adapted to be inserted through said hole over the front end of said rod to disengage said spring tongue from the shoulder on the rod and obstruct said shoulder to prevent the reengagement of said tongue therewith and permit the rod to be withdrawn through said hole.

7. The combination with a holder for cards or the like, of a locking rod passing through a hole in a wall of said holder and adapted to engage the cards for locking them in the holder, said rod having an outer end portion of circular cross section provided with a circumferential groove, a locking member on said holder which extends inwardly and substantially lengthwise of said rod and has an end portion arranged to enter said groove to lock the rod in place in said holder, and a key adapted to be inserted into said hole around the end of the rod to disengage said locking member from the groove in said rod and cover said groove to prevent the reentry of said locking member into said groove and permit the withdrawal of the rod through said hole.

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