

Sept. 22, 1925.

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L. A. MacK. McGEACH

DOOR FASTENING

Filed Oct. 27, 1924

2 Sheets-Sheet 1

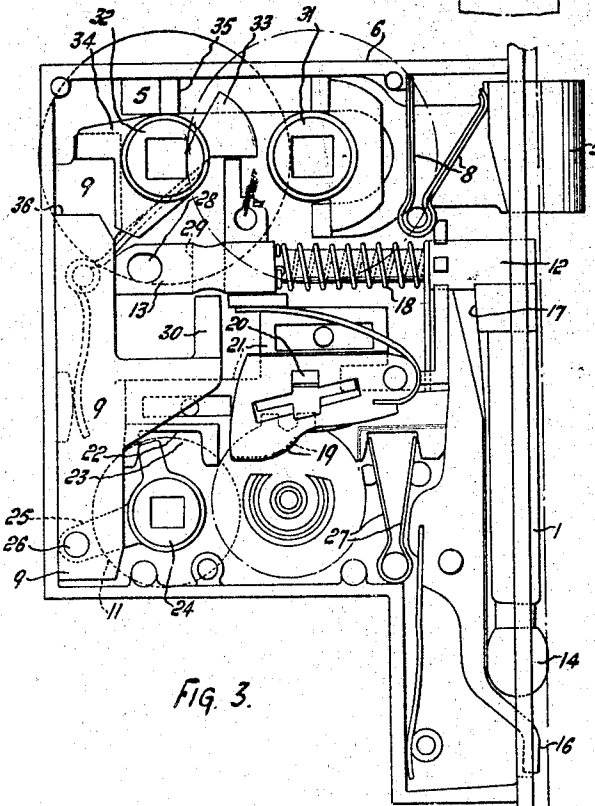
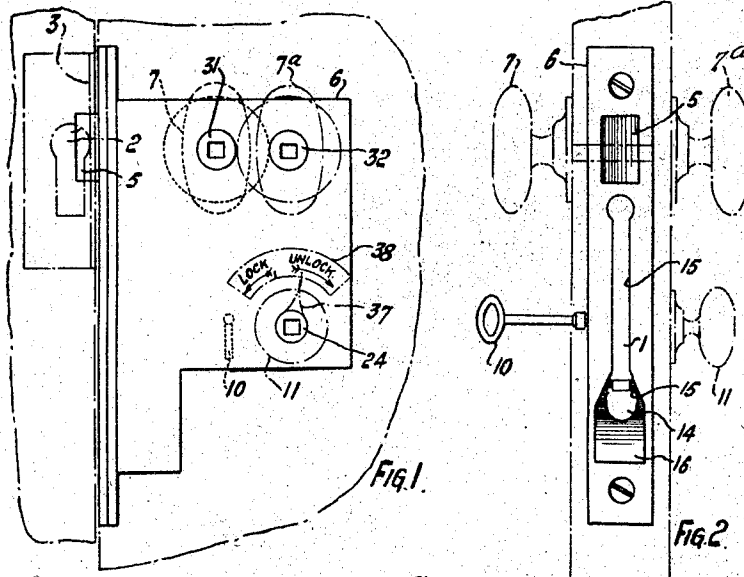


Fig. 3.

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2 Sheets-Sheet 2

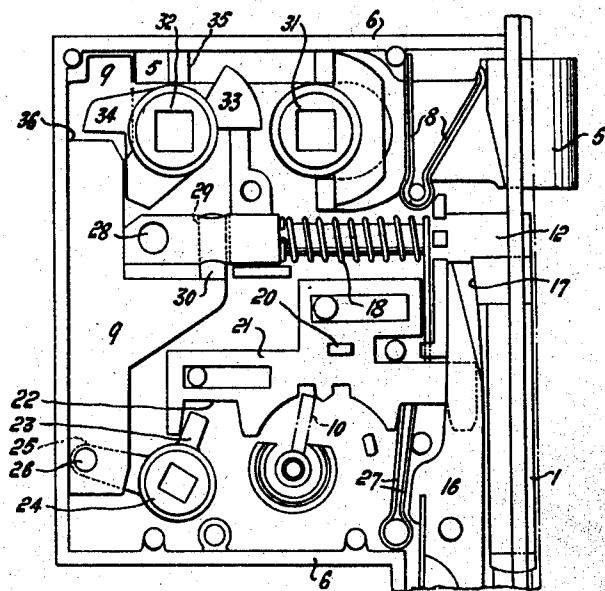


FIG. 4.

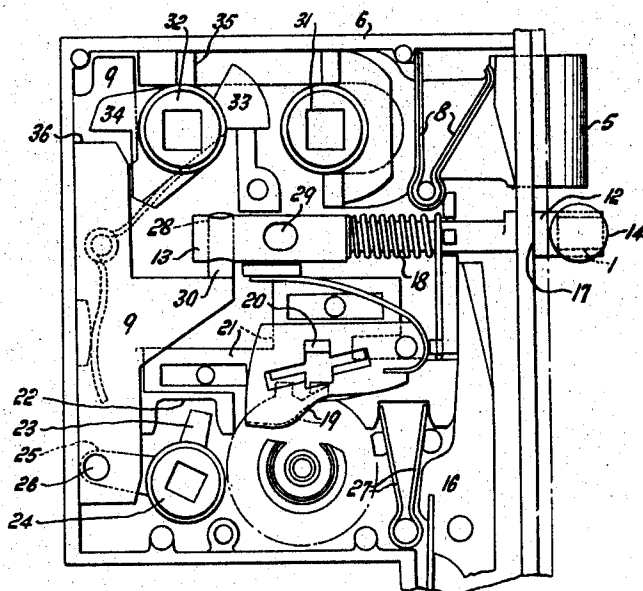


FIG. 5.

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UNITED STATES PATENT OFFICE.

LAUCHLAN ALEXANDER MacKAY McGEOCH, OF GLASGOW, SCOTLAND.

DOOR FASTENING.

Application filed October 27, 1924. Serial No. 746,183.

To all whom it may concern:

Be it known that I, LAUCHLAN ALEXANDER MacKAY McGEOCH, a subject of the King of Great Britain and Northern Ireland, and residing at Glasgow, Scotland, have invented a certain new and useful Improvement in Door Fastenings, of which the following is a specification.

This invention relates to locks for the doors of ships' cabins of the class provided with an ajar hook arranged as a component part of the mortice lock and co-operating with a socket disposed adjacent to the lock striking plate, the arrangement being such that when in operative position, the ajar hook is capable of being locked against movement, and, when the ajar hook is in inoperative position, the body of the hook is accommodated within the mortice lock so as to clear the striking plate.

Locks of this class usually include a mortice case equipped with a latch bolt operable by a knob in opposition to a spring and associated with a secondary bolt adapted to hold the latch bolt in locked position and controlled from the outside of the door by a key and from the inside of the door by a knob, there being fitted within the case for sliding and circular movements a spring-urged plunger formed with a locking barrel for co-operation with the secondary bolt and with a tie bar which constitutes the ajar hook proper, and which is formed with a knob engageable with a key-hole slot in a retaining plate located adjacent to or formed integral with the striking plate.

According to the invention there are employed for controlling the sliding movements of the secondary bolt a system of levers adapted for co-operation with a key inserted in the lock from the outside and a supplementary bolt having a pin entering slots in the levers and having an elongated notch engageable by one arm of a bellcrank lever of which the other arm is connected to the secondary bolt, and a knob located on the inside of the door and operatively connected to the bell crank lever.

In the barrel are formed perforations which are spaced circularly and axially from one another and are engageable with an extension rod on the secondary bolt, the arrangement being such that, when the secondary bolt is shot, the plunger may be re-

tained against either endwise or circular movement by the extension rod whether the tie bar is in operative position or in inoperative position.

Associated with the latch bolt are two rollbacks provided, respectively, with a knob located on the outside of the door and a knob located on the inside of the door, the first rollback operating the latch bolt in the usual way so long as the secondary bolt is unshot and the other rollback being formed with two arms of which one engages a projection on the latch bolt and the other is arranged in operative relationship with a shoulder on the secondary bolt, so that, in the event of the secondary bolt being shot, rotary movement imparted to the said rollback by the knob located on the inside of the door is accompanied by movement of the secondary bolt into inoperative position followed by withdrawal of the latch bolt.

In the accompanying drawings Fig. 1 is an elevation of the lock of the invention as viewed from the inner side of a door; Fig. 2 is an end elevation; Figs. 3, 4 and 5 are views of the interior of the lock.

The lock shown is provided with an ajar hook 1 arranged as a component part of the mortice lock and co-operating with a key-hole socket 2 disposed adjacent to the lock striking plate 3. As heretofore, provision is made for locking the ajar hook 1 against movement by the operation of the usual locking means controlling the latch bolt 5 of the mortice lock. When the ajar hook is in inoperative position, the body of the hook 1 is accommodated within the mortice lock so as to clear the striking plate 3. The mortice lock includes a mortice case 6 wherein is fitted the latch bolt 5 operable from the exterior of the cabin by a knob 7 in opposition to a spring 8 and associated with a secondary bolt 9 adapted to hold the latch bolt 5 in locked position. The bolt 9 is controlled from the outside of the cabin by a key 10 and from the inside of the door by a finger knob 11. Fitted within the mortice case 6 so as to be capable of performing sliding and circular movements relatively to the case is a spring-urged plunger 12 formed on the inner end with a locking barrel 13 adapted for co-operation with the secondary bolt 9 and on the outer end with a tie bar which constitutes the ajar hook proper and

which is formed at its extremity with a knob 14 engageable with the socket 2.

In operation, the tie bar is first retracted from a socket 15 formed in the mortice case 6 by operation of an ejector including a spring-urged pivoted trigger 16 accommodated in the socket 15 and engageable with a stepped shoulder 17 (see Fig. 3) on the plunger 12 so as temporarily to retain the plunger 12 in extended position with the tie bar clear of the mortice case. The tie bar is then moved angularly in opposition to the combined compression and torsion spring 18 urging the plunger into a position such that the knob 14 engages the socket 2, the shoulder 17 during angular movement of the tie bar clearing the end of the trigger 16 and permitting the trigger 16 to be restored by its spring to initial position.

When the tie bar is moved clear of the socket 2 and released, the spring 18 acting on the plunger 12 restores the tie bar to initial position.

For controlling the sliding movements of the secondary bolt 9 there is employed a system of levers 19 adapted for co-operation with a key inserted in the lock from the outside of the cabin. Slots in the levers 19 are entered by a pin 20 on a supplementary bolt 21 engageable by the key and having an elongated notch 22 engageable by one arm 23 of a bellcrank lever 24 of which the other arm 25 is connected at 26 to the bolt 9. When the key is turned, the bolt 21 is moved from the Fig. 3 position into the Fig. 4 position whereby the bolt 9 is moved into the Fig. 4 position. On completion of the turning movement of the key the bolt 21 is restored to the Fig. 3 position by the spring 27 but, by virtue of lost motion between the arm 23 and the notch 22, the bolt 9 is permitted to remain in the Fig. 4 position.

The lever 24, 25 is fitted with the knob 11 which, when operated manually, moves the bolt 9 irrespective of the nature of the last operation of the key.

The barrel 13 is formed with perforations 28, 29 which are spaced circularly and axially from one another and are engageable by an extension rod 30 formed on the bolt 9, the arrangement being such that, when the bolt 9 is shot, the plunger and barrel may be retained against either endwise or circular movement by the extension rod 30 whether the tie bar is in the operative position shown in Fig. 5 or in the inoperative position shown in Fig. 4.

The latch bolt 5 is operable by two rollback 31 and 32 provided, respectively, with a knob 7 located on the outside of the door and a knob 7^a located on the inside of the door. The rollback 31 operates the latch bolt in the usual way so long as the secondary bolt 9 is unshot. The rollback 32 is formed with two arms 33, 34 of which one

arm 33 engages the projection 35 on the latch bolt 5 and the other arm 34 is arranged in operative relationship with a shoulder 36 on the secondary bolt 9, so that, in the event of the secondary bolt 9 being shot, the circular movement imparted to the rollback 32 by the knob 7^a is accompanied by movement of the secondary bolt 9 into inoperative position followed by withdrawal of the latch bolt 5 from the striking plate 3.

In the event of the ajar hook 1 being locked in position by the secondary bolt 9 the ajar hook will also be released by oscillation of the knob 7^a, as will be readily understood.

There may be provided an indicating device comprising a pointer 37 attached to the knob 11 and registering with a suitably inscribed plate 38 fitted to the inner side of the door.

I claim:—

1. In a lock of the class referred to, in combination, a mortice case, an ajar hook, a manually operable latch bolt slidable in said case, an independently manually operable secondary bolt also slidable in said case, serving to dog said latch bolt in latching position, a system of slotted levers for controlling the movements of said secondary bolt independently of its manual operation, a key-operable supplementary bolt having a pin entering the slots in said levers and having an elongated notch, and a manually operable bell-crank lever having one arm engageable with said notch and having the other arm connected to said secondary bolt.

2. In a lock of the class referred to, in combination, a mortice case, a manually operable latch bolt slidable in said case, an independently manually operable secondary bolt slidable in said case and formed with an extension rod, an axially and rotatably movable plunger formed with a locking barrel and with a tie bar constituting an ajar hook, said barrel formed with perforations spaced circularly and axially from one another and engageable with said extension rod, a system of slotted levers for controlling the sliding movements of said secondary bolt, a key-operable supplementary bolt having a pin entering the slots in said levers and having an elongated notch, and a manually operable bell-crank lever having one arm engageable with said notch and having the other arm connected to said secondary bolt.

3. In a lock of the class referred to, in combination, a mortice case, an ajar hook, a latch bolt slidable in said case, said latch bolt having a projection, a secondary bolt slidable in said case to dog the latch bolt in locked position, said secondary bolt having a shoulder, a system of slotted levers for controlling the sliding movements of said secondary bolt, a key-operable supplementary bolt having a pin entering the slots in

said levers and having an elongated notch, a manually operable bell-crank lever having one arm engageable with said notch and having the other arm connected to said secondary bolt, and two rollbacks for operating said latch bolt, one of said rollbacks adapted to operate said latch bolt so long as said secondary bolt is unshot, and the other rollback being formed with an arm engageable with said projection and an arm engageable with said shoulder. 10

In testimony whereof I have signed my name to this specification.

L. A. M. McGEOCH.