

Dec. 15, 1925.

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N. CHRISTIANSEN

DOOR LOCKING DEVICE

Filed March 7, 1924

Fig. 1.

Fig. 2.

Fig. 3.

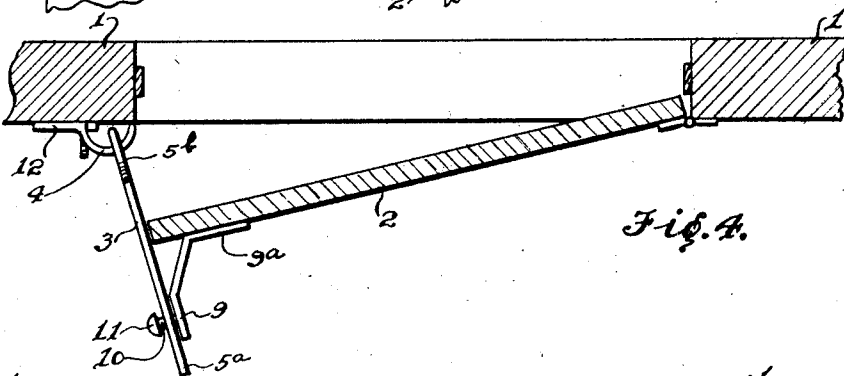
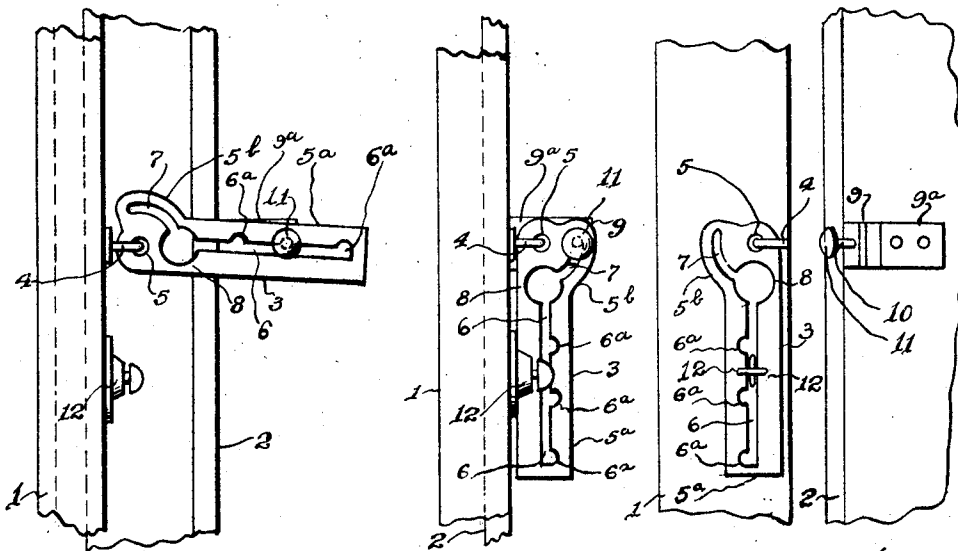


Fig. 4.

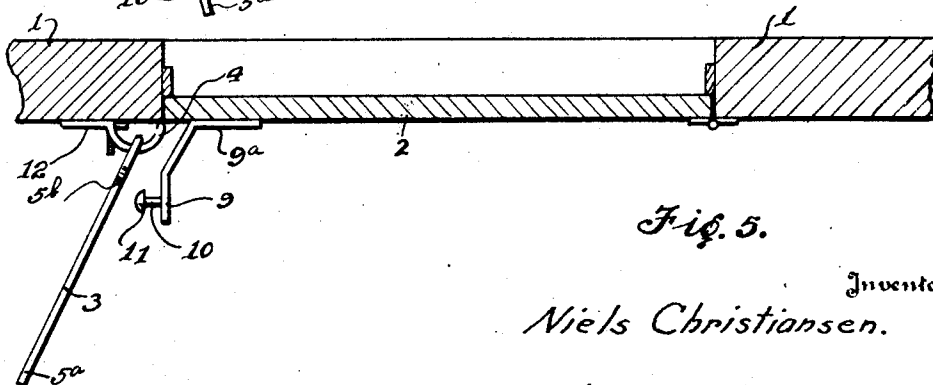


Fig. 5.

Inventor

Niels Christiansen.

By Albert R. Blackwood.

Attorney

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UNITED STATES PATENT OFFICE.

NIELS CHRISTIANSEN, OF NEWPORT NEWS, VIRGINIA.

DOOR-LOCKING DEVICE.

Application filed March 7, 1924. Serial No. 697,557.

To all whom it may concern:

Be it known that I, NIELS CHRISTIANSEN, residing at Newport News, in the county of Warwick and State of Virginia, a citizen of the United States, have invented certain new and useful Improvements in Door-Locking Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to door locking devices, particularly for locking state room doors of ships, but also applicable for locking other doors.

My invention has for its object to provide a door locking device having an arm which is supported on a door casing and adapted to be moved vertically and horizontally to engage means on the door to lock the door open and closed, disengaged from the engaging means on the door to unlock the door and be turned over bodily laterally flat against the door casing, when disengaged from the engaging means on the door, and be locked to the door casing by locking means provided thereon, thereby adapting it, when in use, to lock a door ajar so as to permit the free passage of fresh air into the room, to lock the door entirely closed and to unlock the door and to allow these operations only from within the room and when the door is entirely closed, and the arm to be locked out of the way, when not in use, and against any movement, as otherwise the pitching and tossing of the ship would cause the arm to rattle against the door casing and disturb the occupant of the room.

My invention consists in providing a door locking device, for accomplishing the above-mentioned objects, which is simple and constructed of the minimum number of parts, namely, an arm, its supporting means on the door casing, the means on the door for engaging the arm to lock the door open or closed and disengaging it to unlock the door and the means on the door casing for locking the arm out of the way, when disengaged from the engaging means on the door, when out of use.

My invention is illustrated by the accompanying drawings in which:—

Figure 1 is a fragmentary side view of a door casing having my device applied and locking a door ajar.

Figure 2, a fragmentary side view of a door and casing having my device applied and locking the door closed.

Figure 3, a fragmentary front view of a door and casing having my device applied and disengaged from the engaging means on the door and turned down and bodily laterally against the door casing and locked thereto by the locking means thereon.

Figure 4, a horizontal sectional view, through the door casing, showing my device applied and locking a door ajar, and

Figure 5, a horizontal sectional view, through a door casing, showing my device applied and the arm disengaged from the engaging means on the door and the door unlocked.

Referring to the drawings, in which like reference characters designate corresponding parts, 1 designates a door casing and 2 a door.

3 designates the arm of my device which is mounted on a hook 4, carried by a bracket on the door casing, by means of an eye 5 engaged by the hook.

The arm 3 consists of a forward straight portion 5^a and a rear enlarged portion 5^b, the portion 5^a having a rearwardly extending straight slot 6 and notches 6^a leading into the slot 6 and the rear portion 5^b having a curved slot 7 and a circular intermediate slot 8 into which the slots 6 and 7 lead.

9 designates the means on the door adapted to be entered through the intermediate slot 8 and engage the slot 6 and thereby the notches 6^a and lock the door ajar, see Figures 1 and 4, and engage the slot 7 and lock the door closed when the arm is turned down, see Figure 2.

The engaging means 9 on the door consists of a knob extending from a bracket 9^a secured on the door, having a neck 10, which engages the slots 6 and 7, and a head 11 which bears and slides against the side of the arm and prevents the knob from becoming disengaged from the slots 6 and 7 and yet is of such diameter as to allow its easy insertion and withdrawal through the intermediate slot 8.

12 designates the locking means, secured on the door casing, for locking the arm 3 when it is turned down and bodily laterally flat against the door casing, after having been disengaged from the locking means on the door, the locking means 12 consist-

ing of a button snap or turn button, adapted to be inserted through the slot 6 and turned across the face of the arm to lock the arm and turned parallel with the slot 6 and withdrawn to unlock the arm, see Figure 3.

The operation is as follows:—

It being assumed that the parts of the device are in the position shown by Figure 3, namely, the arm 3 being locked flat against the door casing 1 and the door 2 being unlocked, the head of the snap button 12 is now turned to a position parallel with the straight slot 6 in the arm 3, pulled forward releasing it from the button snap 12, moved over laterally at right angles to the door casing 1 into the position shown by Figure 5, moved laterally towards the door 2, causing the head 11 of the knob 9 on the door to enter the intermediate slot 8 and the door 2 is then opened, causing the neck 10 of the knob 9 to engage and slide in the slot 6 of the arm 3 and the head 11 of the knob 9 to slide against the side of the arm 3 until the neck 10 is engaged with one of the notches 6^a of the arm by the gravitation of the arm, whereupon the door will be locked ajar.

To now lock the door closed, the arm 3 is raised slightly, causing the neck 10 of the knob 9 to be disengaged from the notch 6^a and the door 2 is then closed, causing the neck 10 of the knob 9 to pass rearwardly in the slot 6 into the intermediate slot 8, the arm 3 is then lowered causing the neck 10 of the knob 9 to enter and pass into the rear end of the curved slot 7, whereupon the door will be locked closed.

To now unlock the door 2, the arm 3 is raised, causing the neck 10 of the knob 9 to pass from the curved slot 7 into the intermediate slot 8, the arm 3 is then turned laterally causing the head 11 of the knob 9 to disengage the intermediate slot 8, whereupon the door will be unlocked, and to now lock the arm 3 to the door casing 1, the arm 3 is lowered and turned over laterally flat against the door casing, causing the head of the button snap 12 to engage the slot 6 of the arm 3 and the head of the button snap 12 is then turned across the side of the arm 3, whereupon the arm 3 will be locked to the door casing against movement.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A device for holding a door ajar and for locking the same in closed position embodying two units, one of said units comprising an attaching member including a pivot element, and an arm connected adjacent one end with the said pivot element, said arm having a longitudinal slot formed in one wall with a series of notches, the

slot adjacent the pivoted end of the arm, having an arcuate terminal branch, one wall of the said slot, substantially at the juncture of the slot and its branch having a recess therein of dimensions greater than the width dimension of the slot, the other unit comprising an attaching member, a stud extending therefrom for sliding engagement in the slot and the branch thereof, and a head upon the stud of a diameter greater than the width dimension of the slot and less than that of said recess in the wall of the slot, the stud being engageable in the branch of the slot when the arm is suspended from its pivot, to lock the door in closed position, and being engageable selectively in the notches in the wall of the slot when the arm is extended outwardly from its pivot, to hold the door ajar, the head of the stud being engageable through the recess in the wall of the slot to provide for disengagement of the arm from the stud to render the device inactive and permit of free opening and closing of the door.

2. A device for holding a door ajar and for locking the same in closed position embodying two units, one of said units comprising an attaching member including a pivot element and an arm connected adjacent one end with the said pivot element, the said arm being both pivotally and laterally adjustably movable about the pivot element and having a slot formed in one wall with a series of notches, the slot adjacent the pivoted end of the arm, having an arcuate terminal branch, one wall of said slot, substantially at the juncture of the slot and its branch, having a recess therein of dimensions greater than the width dimension of the slot, the arm, in its lateral adjustment about its pivot, being adapted to lie against the door part to which the attaching member of the respective unit is secured and thus assume an inactive position, the other unit comprising an attaching member, a stud extending therefrom and fixed with relation thereto for sliding engagement in the slot and the branch thereof, in the arm of the first mentioned unit, and a head rigid with relation to the stud and carried thereby and of a diameter greater than the width dimension of the slot and less than that of the said recess in the wall of the slot, the stud being engageable in the branch of the slot when the arm is suspended from its pivot, to lock the door in closed position, and being engageable selectively in the notches in the wall of the slot, when the arm is extended outwardly from its pivot, to hold the door ajar, the head of the stud being engageable through the recess in the wall of the slot to provide for disengagement of the arm from the stud and permit of the before-mentioned lateral adjustment of the arm about its pivot to assume inactive position.

3. A device for holding a door ajar and for locking the same in closed position embodying two units, one of said units comprising an attaching member including a pivot element and an arm connected adjacent one end with the said pivot element, the said arm being both pivotally and laterally adjustably movable about the pivot element and having a slot formed in one wall with a series of notches, the said slot adjacent the pivoted end of the arm, having an arcuate terminal branch, one wall of said slot, substantially at the juncture of the slot and its branch, having a recess therein of dimensions greater than the width dimension of the slot, the arm, in its lateral adjustment about its pivot, being adapted to lie against the door part to which the attaching member of the respective unit is secured and thus assume an inactive position, the other unit comprising an attaching member, a stud extending therefrom and fixed with relation thereto for sliding engagement in the slot and the branch thereof, in the arm of the first mentioned unit, and a head rigid with relation to the stud and carried thereby and of a diameter greater than the width dimension of the slot and less than that of the said recess in the wall of the slot, the stud being engageable in the branch of the slot when the arm is suspended from its pivot, to lock the door in closed position, and being engageable selectively in the notches in the wall of the slot, when the arm is extended outwardly from its pivot, to hold the door ajar, the head of the stud being engageable through the recess in the wall of the slot to provide for disengagement of the arm from the stud and permit of the beforementioned lateral adjustment of the arm about its pivot to assume inactive position, and means attachable to the door member to which the first mentioned unit is attached, for maintaining the arm of said unit in suspended inactive position.

In testimony whereof I have affixed my signature.

NIELS CHRISTIANSEN.