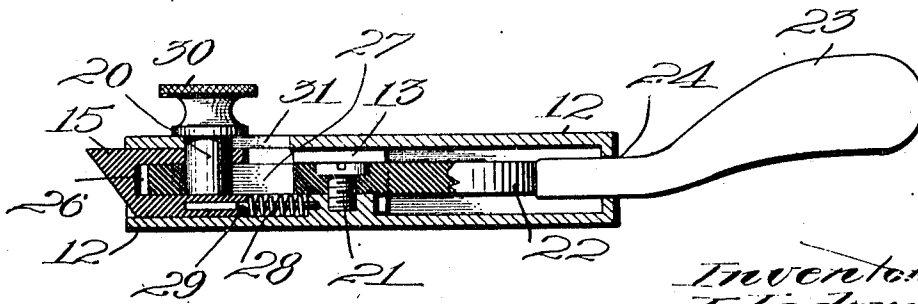
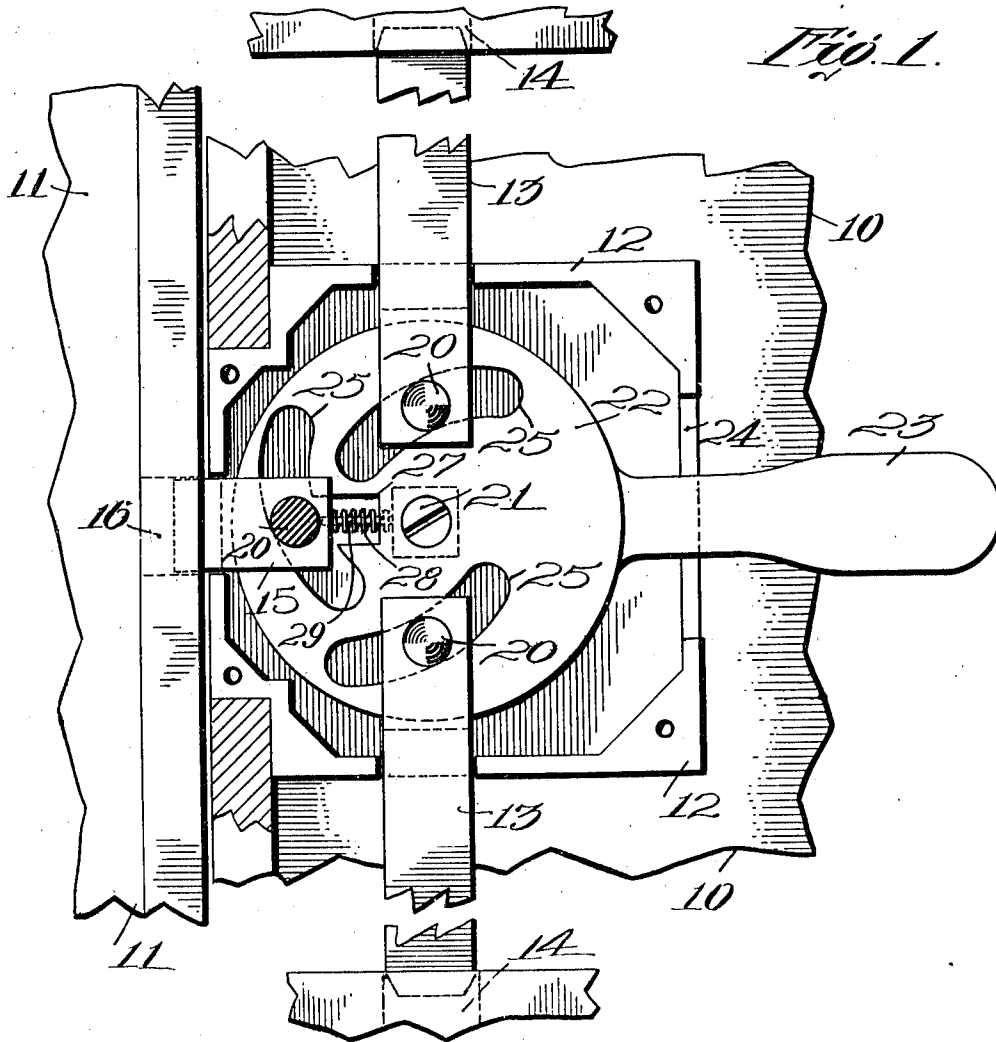


J. & A. LEDOUX.
DOUBLE DOOR BOLT.
APPLICATION FILED NOV. 16, 1909.

950,551.

Patented Mar. 1, 1910.



Witnesses
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C. M. Allen.

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH LEDOUX AND ARTHUR LEDOUX, OF WORCESTER, MASSACHUSETTS.

DOUBLE-DOOR BOLT.

950,551.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed November 16, 1909. Serial No. 528,358.

To all whom it may concern:

Be it known that we, JOSEPH LEDOUX and ARTHUR LEDOUX, citizens of the United States, both residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Double-Door Bolt, of which the following is a specification.

This invention relates to a double door bolt particularly adapted for that class of double doors which are made up of two swinging doors, one of which ordinarily is locked and both of which have to be opened at certain times.

The principal objects of the invention are to provide a simple, convenient and inexpensive means whereby one of the doors can be locked firmly at the top and bottom so that it can be kept locked under ordinary conditions and at the same time the other door can be locked to it and yet to provide means whereby the said other door can readily be unlocked so that it can be opened without interfering with the locking bolts which lock the first named door.

The invention also involves the provision of a simple and compact casing and a very convenient and inexpensive arrangement of the locking means with respect to the several bolts.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a front elevation of one form in which the invention can be embodied, and Fig. 2 is a transverse sectional view thereof through the center of the lock.

The invention is shown as applied to a swinging door 10 and a companion swinging door 11. Ordinarily the door 10 is intended to be locked and the door 11 opened frequently without interfering with the door 10. On the door 10 is placed a lock casing 12 which is hollow and provided with two bolts 13 extending therefrom in opposite directions and in alignment, each one being adapted to enter a slot 14 in the top or bottom of the door casing to hold the door 10 locked. Also projecting from the lock casing is a transverse bolt 15 adapted to enter a slot 16 in the door 11 to lock that door to the door 10. Each of these bolts is provided with a pin 20 fixed thereto near the inner end thereof. Pivoted at a point preferably equally distant from the inner ends

of the bolts on a screw 21 is an operating cam 22 having a handle 23 extending out through a slot 24 in the casing. This operating cam is pivoted to oscillate through a certain arc and is provided with a plurality of slots 25 each of which starts from a point near the center and extends toward the circumference of the cam in a direction at an angle to the radius thereof. They are shown as of curved form and each is of about the same curvature.

The several bolts are provided with transverse passages 26 substantially centrally located therein into which the cam projects and the pins 20 with which the bolts are provided are supported in the opposite walls of these passages and extend through them and through the slots 25 in the cam. It will be seen, therefore, that the oscillation of the cam will simultaneously project all the bolts outwardly or retract them inwardly. This in itself would lock both doors and unlock them at the same time. It is desired, however, to lock the door 10 in such a way that the door 11 can be free to be opened when desired, although it will ordinarily remain locked. For this purpose the one of the slots 25 which coöperates with the bolt 15 is provided with an off-set 27 extending radially toward the center of the cam and of sufficient size to receive the pin 20. Located in or adjacent to this off-set is a spring 28 mounted on a pin 29. This spring obviously tends to force the bolt 15 outwardly so that in the ordinary operation of the device, as described above, the bolt 15 will operate just the same as the bolts 13. However, when the parts are in locked position, if the cam is turned back enough to permit the pin 20 on the bolt 15 to come directly in line with the off-set 27, then the knob or handle 30 with which this pin is provided can be pressed toward the center of the cam by hand, which will retract the bolt 15 to permit the door 11 to be opened. The release of the knob 30 will permit the spring 28 to force the bolt outwardly again into locking position. This pin extends through a slot 31 in the casing. It is to be observed that in order to get the parts into this position, the bolts 13 have to be partly withdrawn but as they are not wholly withdrawn this does not matter and in fact if the cam slots 25 were concentric with the center of the cam at their outer ends, these bolts need not be withdrawn at all. These slots

are not shown as concentric because it is immaterial if these bolts are withdrawn to a slight extent, particularly as it is never desired to keep the bolt 15 in the situation in which it is capable of being withdrawn by hand except when the door is in constant use. In the case of an elevator when the door is not in use, as for example when the elevator is not running, the cam is drawn up to its limiting position and all the parts are firmly locked.

In view of the advantages set forth, it is to be observed that by having the cam pass into the passages 26 in the bolts, the parts are arranged in an extremely compact way and they do not have to be made as large as they would otherwise because the pins 20 have bearings and supports at both ends in the front and back of the bolts.

While we have illustrated and described a preferred form of the invention, we are aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, we do not wish to be limited to all the details of construction shown and described, but

What we do claim is:—

1. In a lock, the combination of an oscillatable cam, a plurality of bolts projecting from said cam in different directions, means for connecting said bolts with the cam, whereby when the cam is moved the bolts will be simultaneously moved outwardly or inwardly, said cam having means whereby one of said bolts can be withdrawn when the cam is in a certain position without moving the cam.
2. In a lock, the combination of two bolts located in longitudinal alinement, each having a pin thereon, a third bolt located transverse to the other two and having a pin, an oscillatable cam having three slots, one for receiving each of said pins, said slots being arranged to simultaneously withdraw all the bolts toward the cam when it is moved in one direction and to simultaneously project them from the cam when it is moved in the other direction, and a spring for assisting in moving the trans-

verse bolt outwardly, said cam having means whereby the transverse bolt can be retracted in opposition to the spring when the cam is in a certain position without changing the positions of the other two bolts.

3. In a lock, the combination of an oscillatable cam having an operating handle thereon projecting from the lock, said cam having a plurality of curved slots each extending from a point near the center to a point near the circumference, a plurality of bolts extending from the cam in different directions, each having a pin thereon for engaging one of said slots, one of the slots being provided with a radial off-set extending inwardly toward the center of the cam for receiving the pin on the bolt operated by that slot, and a spring for yieldingly forcing said bolt outwardly, whereby when the bolts are all in outward or locked position, the bolt having the spring can be turned back by hand without interfering with the position of the other bolts.

4. As an article of manufacture, a lock comprising a casing, a plurality of bolts extending outwardly through the walls of the casing, each bolt having a transverse passage in its inner end extending clear through it, a cam pivotally mounted in the casing and extending into each of said passages, said cam having a plurality of slots therein, one crossing each of the bolts, each bolt having a pin fixed thereon projecting into the corresponding slot of the cam, one of said slots having a radial off-set projecting toward the center of the cam for receiving the pin in one of the bolts, the last named bolt having a knob or handle projecting through the outer wall of the casing, whereby when the other bolts are in locked position the bolt having the knob can be unlocked.

In testimony whereof we have hereunto set our hands, in the presence of two subscribing witnesses.

JOSEPH LEDOUX.
ARTHUR LEDOUX.

Witnesses:

A. E. FAY,
C. I. HARTNETT.