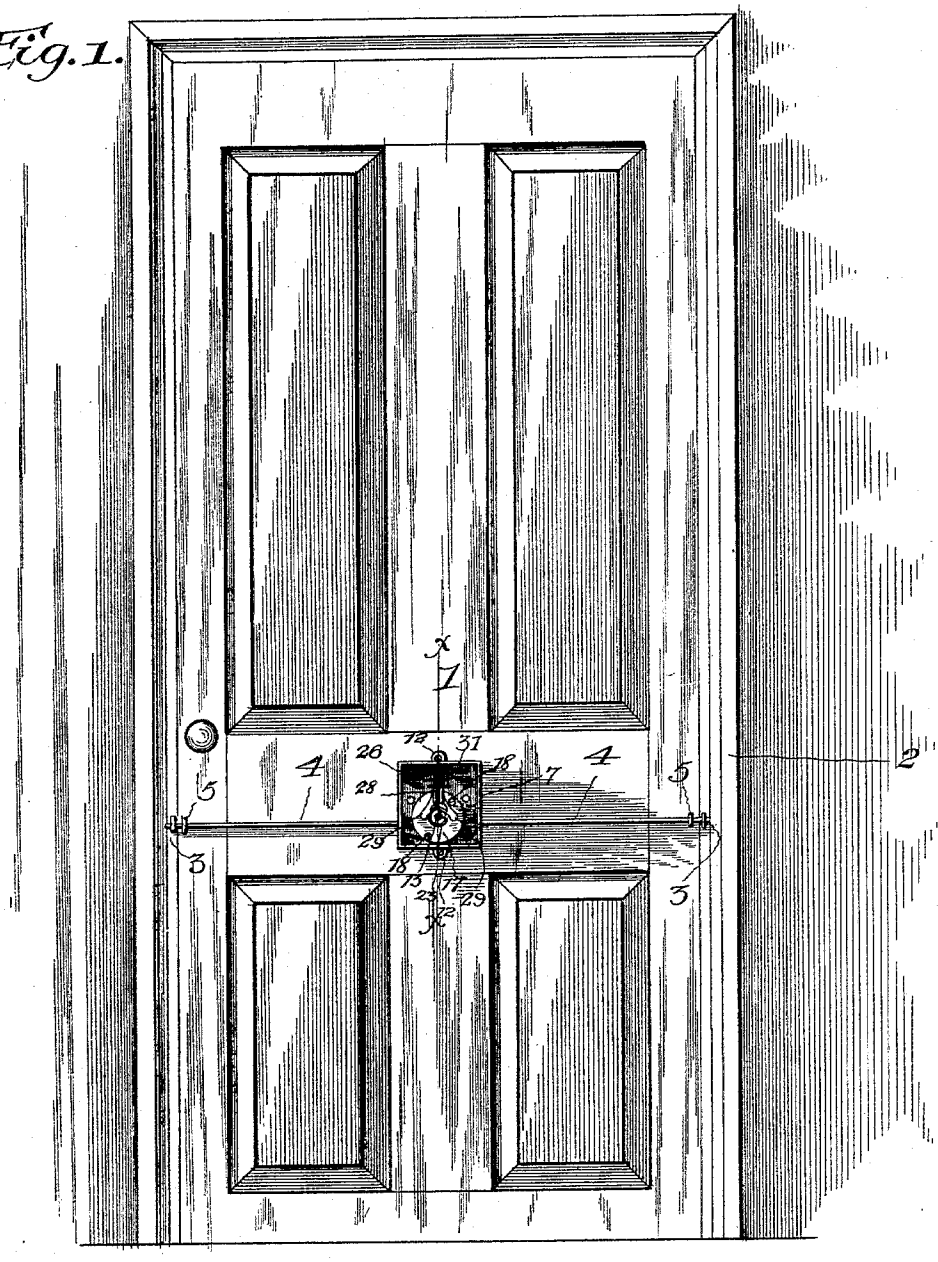
(No Model.) 2 Sheets—Sheet 1.

H. BOYLES.

LOCKING BAR FOR DOORS.

No. 596,956. Patented Jan. 4, 1898.

Fig. 1.



Inventor

Witnesses
A. Roy Appleman
Edwin Cruse.

By his Attorneys,
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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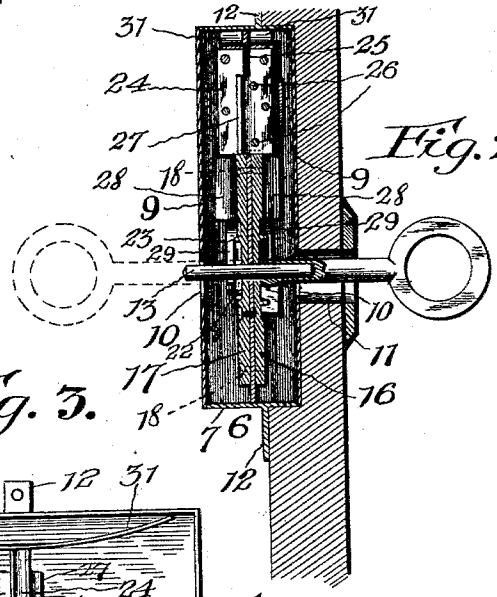


Fig. 2.

Fig. 3.

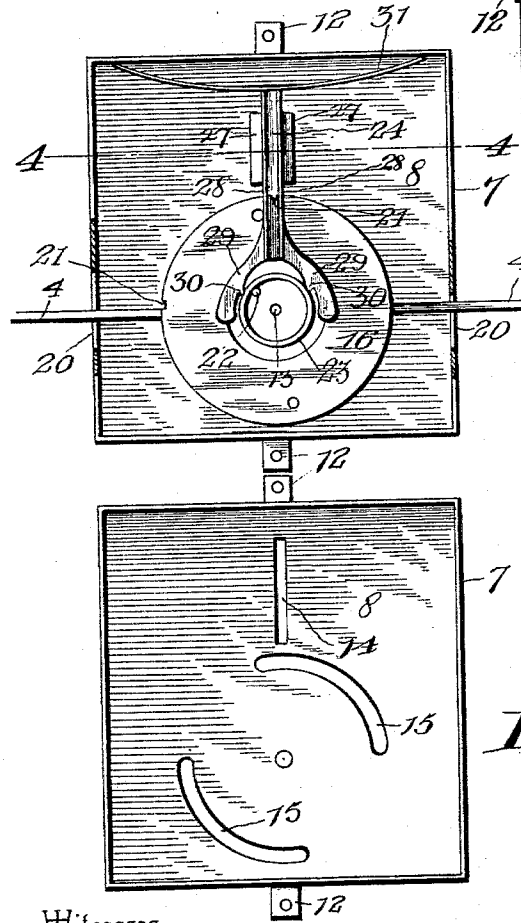


Fig. 4.

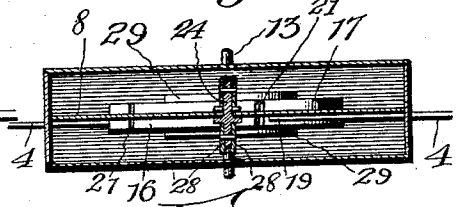


Fig. 6.

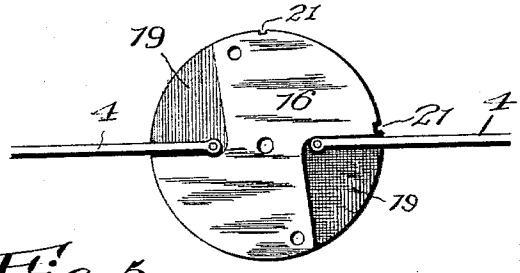


Fig. 5.

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UNITED STATES PATENT OFFICE.

HYSON BOYLES, OF JANELEW, WEST VIRGINIA, ASSIGNOR OF TWO-THIRDS TO WILLIAM A. JACKSON AND W. WIRT SMITH, OF SAME PLACE.

LOCKING-BAR FOR DOORS.

SPECIFICATION forming part of Letters Patent No. 596,956, dated January 4, 1898.

Application filed October 30, 1897. Serial No. 656,948. (No model.)

To all whom it may concern:

Be it known that I, HYSON BOYLES, a citizen of the United States, residing at Janelew, in the county of Lewis and State of West Virginia, have invented a new and useful Locking-Bar for Doors, of which the following is a specification.

This invention relates to locking-bars for doors, its object being to provide a simple and efficient device of this character in which the bars can be operated from either inside or outside the door by means of a key and having automatic devices to lock the bars in either of their positions.

With this object in view the invention consists of the several details of construction and combination of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a door and door-frame equipped with my improved locking-bars, one of the cover-plates of the lock-case being removed. Fig. 2 is a vertical transverse section on the line *x x* of Fig. 1, on an enlarged scale. Fig. 3 is a plan view of the locking-case with one of the cover-plates removed. Fig. 4 is a section on the line 4 4 of Fig. 3. Fig. 5 is a plan view showing the dividing-plate of the lock-case. Fig. 6 is a plan view of one of the operating-disks.

Similar reference-numerals indicate similar parts in the several figures.

1 indicates the door, and 2 the door-frame, the latter being provided with keepers 3 of any desired form to receive the outer ends of the locking-bars 4.

5 indicates guides secured in the door 1 to properly direct the bars into their respective keepers.

The bolt operating and locking mechanism is inclosed in a casing 6, which is partially let into the door on its inner side, as clearly shown in Fig. 2. The casing consists of a rectangular frame 7, a dividing-plate 8, secured within the frame in any suitable manner to divide it into two substantially equal compartments, and cover-plates 9, which are secured to the opposite edges of the frame 7 in any approved manner. Each cover-plate is provided with a key-slot, (indicated by 10,) and the door is also provided with a keyway 11, opening out on the outside thereof and registering with the key-slot in the inner cover-plate. The rectangular frame is provided with ears 12, by means of which it can be firmly secured to the floor.

13 indicates a pin firmly secured in the dividing-plate and extending through the key-slots in the cover-plates. This pin serves as a pivot on which the bar-operating disks, to be hereinafter described, are supported and also as a guide for the key which operates the disks. The dividing-plate 8 is provided with a vertical slot 14 in the same vertical plane as the pin 13 and with two oppositely-disposed curved slots 15, concentric with the pin 13.

16 and 17 indicate, respectively, the two disks, which are arranged on opposite sides of the dividing-plate 8 and centrally perforated to fit over the pin 13. These disks are connected together by screws or rivets 18, which also extend through the slots 15 and allow the disks to turn on the pin 13 a distance equal to the length of the slots 15. The disk 16 is provided with two oppositely-disposed V-shaped recesses 19 in its inner face, and at the apexes of these recesses the inner ends of the respective locking-bars 4 are pivoted. Slots 20 are formed in opposite sides of the frame 7 for the passage of the bars, and the parts are so arranged that when the casing is secured in position on the door the bars will emerge from the casing and lie close against the face of the door.

Each disk is provided with two notches 21 in its periphery, spaced apart a distance equal to the length of the slots 15, and each disk is also provided with a pin 22, eccentric to the pin 13 and projecting outwardly from the outer faces of the disks. Any arrangement of wards may be formed on the outer face of each disk, such as shown at 23 in the drawings, and these wards may be varied on different locks, as will be readily understood.

In order to lock the disks at the extremities of their movement, I provide a locking-plate 24, which extends through the slot 14 in the dividing-plate 8 and across the peripheries of the disks 16 and 17, and the lower edge of this plate is adapted to seat in the

notches 21. This locking-plate is provided at its upper edge with a slot 25 to receive the dividing-plate 8 and permit the locking-plate to have vertical movement. Any suitable devices may be employed to hold the locking-plate in the slot and guide it in its vertical movement, such as pins 26, which are shown on one side of the plate 8 in the drawings, or flanges 27, which are shown on the other side of the plate 8, such devices to be secured to the locking-plate in any suitable manner to engage the opposite faces of the dividing-plate. A pair of spring-arms 28 are secured to the locking-plate at each end thereof, and to the lower end of the arms bars 29 are secured to extend at an angle therefrom in opposite directions. Each of these bars is provided with a lug 30, which projects in the path of travel of the key to be engaged thereby. These lugs are so arranged that the key will engage them just previously to engaging the pins 22, which project outwardly from the disks. Bow-springs 31 are supported in the upper end of the casing on each side of the dividing-plate and engage the upper edge of the locking-plate 24 to normally hold it in engagement with the disks.

Assuming the parts of the locking mechanism to be in position shown in Fig. 3, the locking-bars 4 will be in engagement with the keepers and the door be securely fastened. Assuming now that it is desirable to unlock the bolts from the outside of the door, the key will be inserted through the keyway 11 and the key-slot in the inner cover-plate and turned to the right. This will cause the key to first engage the lug 30 on the bar 29, which will have the effect of lifting the locking-plate out of engagement with the notches 21 in the disks on both sides of the dividing-plate, and the further movement of the key will cause it to engage the pin 22 on the disk 16, and just as soon as the disk begins to turn on the pin 13 the key will pass out of engagement with the lug 30 and the bow-spring will return the locking-plate into engagement with the periphery of the disks. The disks can now be turned until the pins or rivets 18, which started from one end of the slots 15, will be engaged with the opposite ends of such slots, when the further movement of the disks will be prevented. As soon as the disks stop the other notch 21 will have been brought below the locking-plate 8 and the latter will be forced into it by the action of the bow-springs 31, and the disks will then be locked against rotary movement until the locking-plate is again released by the key.

From the foregoing description it is obvious that the bars can be operated from either the inside or outside of the door and also that they will be locked in position either when engaged with their keepers or disengaged from them, and it is to be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what I claim is—

1. The combination with a door and door-frame, of keepers secured to the frame on opposite sides thereof, a pair of locking-bars slidably supported on the door to engage or disengage with the keepers, a lock-case secured to the door and having a dividing-plate, a pair of disks pivoted respectively on opposite sides of said plate and connected to turn together, the inner ends of the locking-bars being connected to one of said disks, a key to engage either of said disks to operate the bars, and a locking device common to both disks, substantially as described.

2. The combination with a door and door-frame, of keepers secured to the frame on opposite sides thereof, a pair of locking-bars slidably supported on the door to engage or disengage with the keepers, a lock-case secured on the door and having a dividing-plate, a pin secured in said plate and projecting on each side thereof, a pair of disks pivoted respectively on the pin on opposite sides of the dividing-plate, to one of which disks the inner ends of the locking-bars are pivotally connected, said disks being connected together to have simultaneous movement on the pin, a spring-actuated locking device supported within the lock-case and common to both disks, and a key to turn either of said disks to operate the sliding bars, substantially as described.

3. The combination with a door and door-frame, of keepers secured to the frame on opposite sides, a pair of locking-bars slidably supported on the door to engage or disengage with the keepers, a lock-case secured in the door and having a dividing-plate, a pin secured in said plate and projecting on each side thereof, a pair of disks pivoted respectively on the pin on opposite sides of the dividing-plate, one of said disks having oppositely-disposed V-shaped recesses in one of its faces, in the apexes of which the inner ends of the respective rods are pivoted, means to connect the disks together for simultaneous movement on the pin, a locking device supported within the casing common to both disks, and a key to engage the locking device on either side of the dividing-plate and operate the disks, substantially as described.

4. The combination with a door and door-frame, of keepers secured to the frame on opposite sides thereof, a pair of locking-bars slidably supported on the bar to engage or disengage with the keepers, a lock-case secured to the door and having a dividing-plate, a pin secured in said plate and projecting on each side thereof, said plate having a vertical slot in the plane of the pin and two oppositely-disposed curved slots concentric with the pin, a pair of disks pivoted respectively on the pin on opposite sides of the dividing-plate

and to one of which disks the inner ends of the locking-bars are connected, pins connecting said disks together and extending through the curved slots, a locking-plate supported in said vertical slot and extending across the peripheries of the disks to engage notches therein, and a key adapted to engage the locking-plate on either side of the dividing-plate and to turn the disks to operate the sliding bars, substantially as described.

5. The combination with a door and door-frame, of keepers secured to the frame on opposite sides thereof, a pair of locking-bars slidably supported on the door to engage or disengage with the keepers, a lock-case secured in the door and having a dividing-plate, a pair of disks pivoted respectively on opposite sides of the dividing-plate, to one of which disks the inner ends of the locking-bars are connected, said disks having spaced notches in their peripheries in alinement with each other, means to connect the two disks to move simultaneously on their pivots, a locking-plate supported in the case and adapted to engage the notches in the peripheries of the disks, a pair of spring-arms connected to each end of the locking-plate, divergent bars secured to the lower ends of the arms of each pair, and each bar having a lug projecting into the path of travel of the operating-key, and a spring to normally hold the locking-plate in contact with the disks, substantially as and for the purpose specified.

6. The combination with the locking-bars, of a lock-case secured on the door and having a dividing-plate, a pin secured in said plate and projecting on each side thereof, a pair of disks pivoted respectively on the pin on opposite sides of the dividing-plate, one of said disks having oppositely-disposed V-shaped recesses in one of its faces, in the apexes of which the inner ends of the respective locking-bars are pivoted, and each disk having a pair of spaced notches in its periphery, said dividing-plate having a vertical slot in the plane of the pin and two oppositely-curved slots concentric with the pin, pins connecting said disks together and extending through the curved slots, a locking-plate supported in said vertical slot and extending across the peripheries of the disk to engage the notches therein, a pair of spring-arms connected at each end of the locking-plate, diverging bars secured to the lower ends of the arms of each pair, each bar having a lug projecting into the path of travel of the operating-key, and a spring to normally hold the locking-plate in contact with the disks, substantially as and for the purpose specified.

7. In a lock of the class described, the combination of a casing having a partition, a pair of disks pivoted respectively on opposite sides of the partition and connected to turn together, locking-bars connected to one of said disks, and a locking device common to both disks and adapted to be disengaged therefrom by the operating-key from either side of the casing, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HYSON BOYLES.

Witnesses:
W. W. SMITH,
E. S. HAYS.