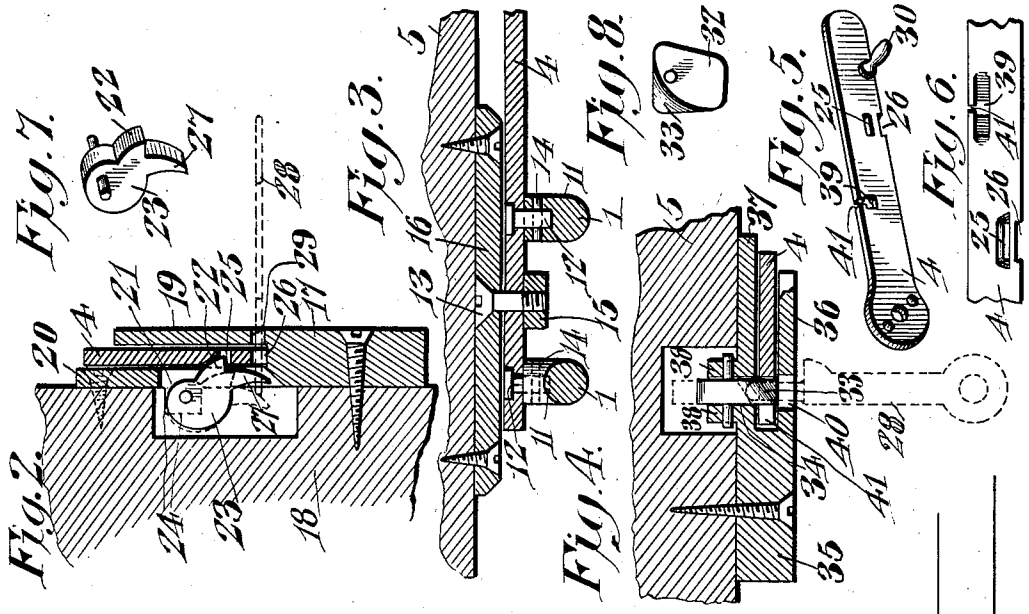
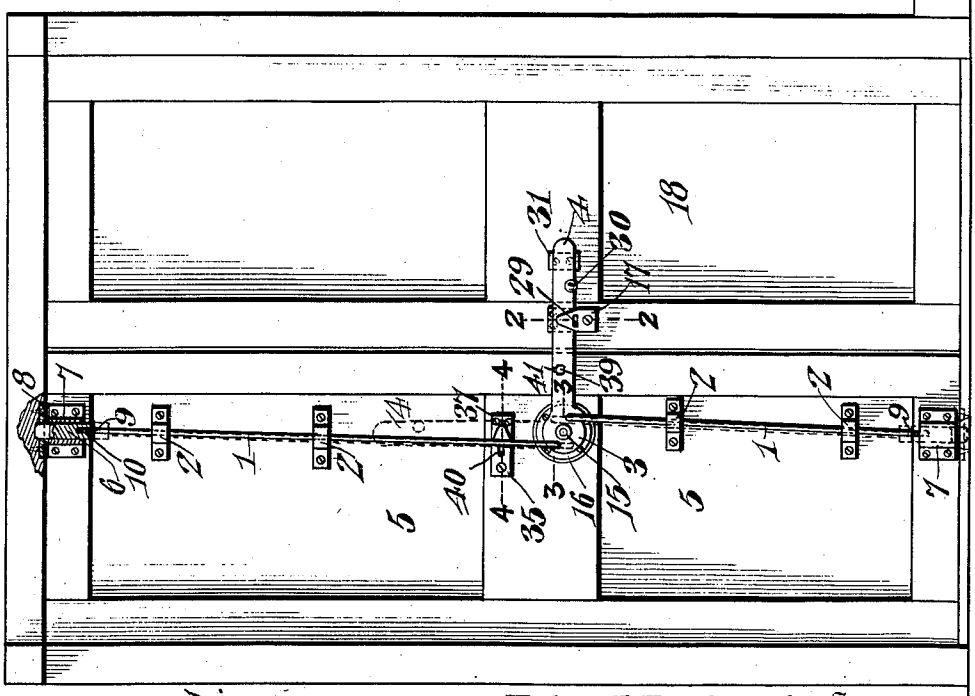
J. W. PHEILS.

DOOR LOCK.

APPLICATION FILED APR. 17, 1909.

956,162. **Patented Apr. 26, 1910.**





Witnesses

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UNITED STATES PATENT OFFICE.

JOHN WEBSTER PHEILS, OF TOLEDO, OHIO.

DOOR-LOCK.

956,162. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed April 17, 1909. Serial No. 490,439.

To all whom it may concern:

Be it known that I, JOHN WEBSTER PHEILS, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Door-Lock, of which the following is a specification.

The invention relates to improvements in locking devices for doors.

The object of the present invention is to provide for school buildings and other public institutions and analogous places a locking mechanism of simple and comparatively inexpensive construction, adapted for either single or double doors, and capable of being operated only from the inside.

Another object of the invention is to provide a door lock of this character, equipped with key-operated mechanism for fastening it in its locked and unlocked positions, whereby it will be impossible to operate the lock to fasten or unfasten a door without a key.

With these and other objects in view, the invention consists in the construction and novel combination of parts, hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is an elevation of a door lock, constructed in accordance with this invention and shown applied to a double door. Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1. Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 1. Fig. 4 is a similar view on the line 4—4 of Fig. 1. Figs. 5 and 6 are detail views of the operating member. Fig. 7 is a detail view of the gravity catch for locking the operating lever in a horizontal position. Fig. 8 is a similar view of a gravity catch for locking the operating lever in a vertical position.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

The door lock comprises in its construction upper and lower locking rods 1, mounted in guides 2 and eccentrically connected with a head 3 of an operating lever 4, adapted, when the locking is employed for double doors, as illustrated in Fig. 1 of the drawing, to operate as a locking bar for securing one of the doors in its closed position. The guides 2 are mounted on the doors 5 adjacent to the free edge thereof, and the locking rods are equipped at their outer ends with rectangular bolts or members 6, slidable in suitable casings or housings 7 and engaging socket plates 8, secured to the top and bottom of the door frame or casing in the usual manner. The outer ends 9 of the locking rods are threaded and adjustably engage threaded sockets 10 of the bolts or members 6, whereby the parts may be adjusted to secure the proper engagement with the socket plates.

The inner ends 11 of the locking rods are bent at an angle and are pivotally connected with the head 3 of the locking lever by means of screws 12, or other suitable fastening devices piercing the lever at opposite sides of the pivot 13 thereof. The fastening devices 12 have heads counter-sunk in the inner face of the operating lever, and they are secured in sockets of the inner ends 11 of the locking rods by means of pins 14, piercing the said ends 11 and the fastening devices 12, as clearly illustrated in Fig. 3 of the drawing. The pivot 13, which is equipped with a suitable nut 15, preferably consists of a screw having its head countersunk in the rear face of an attaching plate 16, secured to the door 5 by screws, or other suitable fastening devices. When the lever is oscillated, the locking rods 1 are moved outward and inward, the rods 1 being at the limit of their outward movement when the operating lever is in a horizontal position, as illustrated in Fig. 1 of the drawing. The operating lever, when in this position, extends beyond the free edge of the door 5 and engages a keeper or casing 17, mounted on the door 18.

The keeper or casing 17 has its upper portion bifurcated to form two spaced projecting portions 19 and 20 and an intervening slot or opening for the reception of the operating lever, as clearly illustrated in Fig. 2 of the drawing. The end wall at the lower end of the slot or bifurcation forms a stop for limiting the downward swing of the lever. The inner projecting portion 20 extends beyond the outer portion 19 to receive fastening devices, and it is provided with a slot 21 through which projects a lug 22

of a gravity catch 23, pivoted between perforated ears or flanges 24 of the keeper or casing. The ears or flanges 24 extend from the inner projecting portion 20 and are located at opposite sides of the slot 21. The gravity catch 23 is provided with a body portion, rounded, as shown, and arranged to swing the lug 22 inward into engagement with the locking lever, which is provided with a suitable slot 25, located near its lower edge when the lever is in a horizontal position. The slot 25 is beveled at the upper portion, as shown, and the lever has a notch 26, adapted to expose a finger 27 to a key 28, illustrated in dotted lines in Figs. 2 and 4. The finger 27 depends from the body portion of the gravity catch at the base of the lug 22, and when the key 28 is inserted in a slot 29 of a casing or keeper, it engages the finger 27 and swings the lug 22 out of the slot 25 of the operating lever thereby releasing the same. The operating lever is equipped with a suitable handle 30, and it is swung upward while the key holds the catch out of engagement with the lever. The door 18 is provided with a plate 31, arranged to receive the free end of the operating lever when the latter is in a horizontal position.

The operating lever is swung upward to a vertical position to withdraw the locking rods, and the said lever is locked in its vertical position by means of a gravity catch 32 of substantially rectangular form having a beveled engaging corner or portion 33, and operating in a slot 34 of a horizontally disposed keeper or casing 35, provided with spaced projecting portions 36 and 37, arranged horizontally and forming a slot or opening for the reception of the operating lever. The slot 34 is vertical, and the gravity catch 32 is pivoted between ears or flanges 38, extending from the inner projecting member 37 and located at opposite sides of the slot 34. When the operating lever is swung into the slot or bifurcation of the horizontal casing or keeper, it strikes the beveled portion 33 of the gravity catch and swings the same backward, whereby the gravity catch is caused to engage an opening 39 of the operating lever. The horizontal keeper or casing 35 is provided with a horizontal key-receiving slot 40, and the operating lever has a slot 41 registering with the slot 40, when the operating lever is in a vertical position and extending to the side edges of the operating lever and adapted to permit the key to engage the gravity catch 32 and swing the same out of engagement with the operating lever. The slot 41 permits the lever to swing downward while the key holds the catch 32 out of engagement.

When it is desired to apply the device to a single door, the locking rods are arranged near the free edge of the door, and the operating lever is reversed so as to extend toward the hinged edge of the door. As this is obvious, illustration thereof is deemed unnecessary.

This door lock can be used on doors swinging either in or out and on any length of door, and can be made out of material as heavy as desired.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A door lock including upper and lower locking rods, a pivoted operating lever eccentrically connected with the inner ends of the locking rods and adapted to move the same inward and outward, the locking rods being at the limit of their inward movement when the lever is horizontal, a vertical keeper having a slot or bifurcation at its upper portion, and a key operated device for securing the operating lever in the slot or bifurcation.

2. A door lock including upper and lower locking rods, a pivoted operating lever eccentrically connected with the inner ends of the locking rods and adapted to move the same inward and outward, the locking rods being at the limit of their inward movement when the lever is horizontal, a vertical keeper having a slot or bifurcation at its upper portion, and a key-operated gravity catch arranged to engage the lever for locking the same in the slot or bifurcation of the keeper.

3. A door lock including locking rods, a pivoted operating lever eccentrically connected with the inner ends of the rods, a keeper having a slot arranged to receive the operating lever, a pivoted gravity catch having a projecting lug arranged to engage the lever, said catch being also provided with a finger arranged to be operated by a key.

4. A door lock including locking rods, a pivoted operating lever eccentrically connected with the inner ends of the rods, a keeper having spaced projecting portions forming a bifurcation to receive the lever and provided with slots, and a catch mounted on the keeper and operating through the slot of one of the projecting portions and provided with means for engaging the lever and having means arranged to be operated by a key introduced into the slot of the other projecting portion.

5. A door lock including locking rods, a pivoted operating lever eccentrically connected with the inner ends of the rods, a vertical keeper having inner and outer spaced projecting portions forming a bifurcation and having slots, a gravity catch pivoted to the keeper and arranged at the slot of the inner projecting portion and provided with a lug to engage the lever and having a finger arranged opposite the slot of the outer projecting portion and adapted to be engaged by a key.

6. A door lock including locking rods movable inwardly and outwardly, a pivoted lever eccentrically connected with the rods and provided with a slot and having a notch, a vertical keeper having inner and outer spaced projecting portions forming a bifurcation to receive the lever and provided with slots, the slot of the outer projecting portion being arranged opposite the notch of the lever when the latter is arranged in the keeper, and a pivoted catch mounted at the slot of the inner projecting portion and provided with a lug for engaging the slot of the lever and having a portion located opposite the notch of the lever and the slot of the said outer portion of the keeper and adapted to be engaged by a key.

7. A door lock including oppositely movable locking rods, a pivoted operating lever connected with the rods, and a horizontal keeper having a slot or bifurcation to receive the operating lever and provided with a vertically disposed pivotally mounted key-operating catch.

8. A door lock including oppositely movable locking rods, a pivoted operating lever connected with the rods, a horizontally disposed keeper provided with a bifurcation and having inner and outer slots, and a substantially rectangular catch mounted at the inner slot and provided with a beveled projecting edge arranged to engage the lever.

9. A door lock including locking rods, a lever connected with the locking rods and provided with an aperture and having a slot extending therefrom, a horizontal keeper arranged to receive the lever when the latter is in a vertical position and provided with inner and outer slots, and a catch operating through the inner slot for engaging the aperture of the lever, the outer slot of the keeper and the slot of the lever being in alinement to expose the catch to a key introduced into the said outer slot.

10. A door lock including an attaching plate having a pivot, a lever mounted on the said pivot, locking rods having their inner ends bent at an angle and arranged eccentrically of the lever, and headed fastening devices piercing the operating lever and counter-sunk in the inner face thereof and concealed by the same and pivoting the inner ends of the locking rods to the same.

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

JOHN WEBSTER PHEILS.

Witnesses:

FRANK G. CRANE,

EMMA KEMM,

B. L. PAINE.