(No Model.)

E. BYRNES.

DOOR FASTENER.

No. 596,050. Patented Dec. 28, 1897.

Fig. 1.

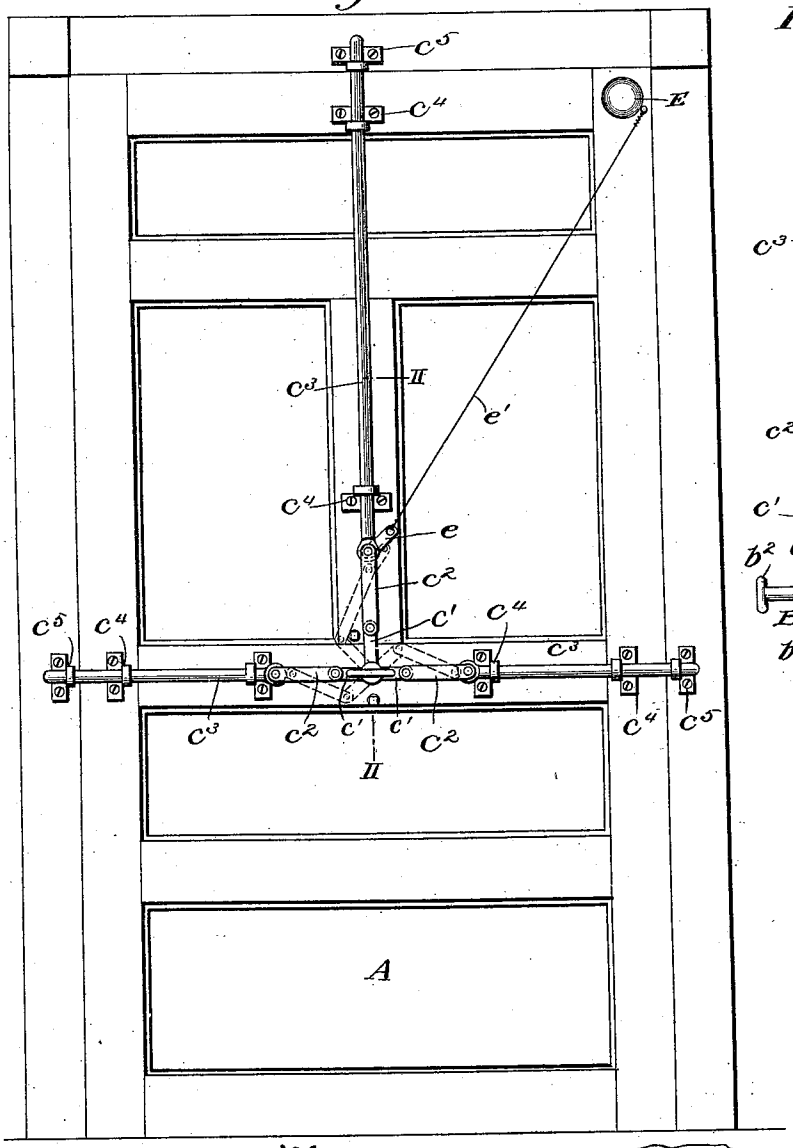


Fig. 2.

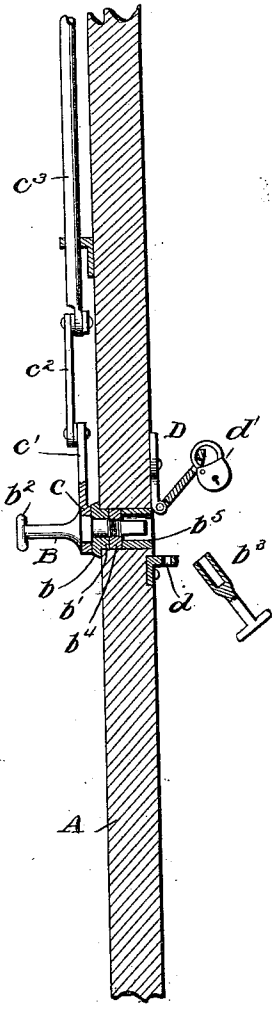


Fig. 3.

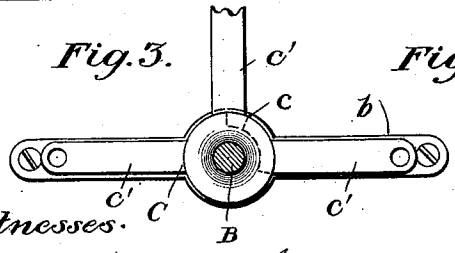


Fig. 5.

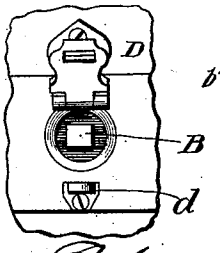
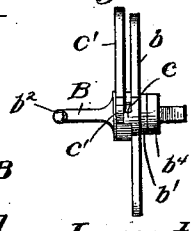


Fig. 4.



Witnesses.
Edw. D. Duvall, Jr.
Charles E. Riordon

Inventor.
Edward Byrnes
By Burton Mitchell & Dowell
his Attys

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

UNITED STATES PATENT OFFICE.

EDWARD BYRNES, OF NEW YORK, N. Y.

DOOR-FASTENER.

SPECIFICATION forming part of Letters Patent No. 596,050, dated December 28, 1897.

Application filed February 4, 1897. Serial No. 621,941. (No model.)

To all whom it may concern:

Be it known that I, EDWARD BYRNES, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Door-Fasteners; 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 appertains to make and use the same.

This invention relates to locks, but more particularly to locks or fasteners for doors.

The primary object of the invention is to provide a lock or fastener for doors and the like adapted to be operated from either side of the door, so as to effectually lock and hold the same from movement when desired and to conceal and prevent access from the outside to the fastener-operating mechanism, thereby permitting the locking mechanism to be operated from the inside at all times, but preventing a person either tampering with or releasing said mechanism from the outside of the door.

A further object of the invention is to provide a simple, efficient, and inexpensive fastener which may be readily applied to various forms and constructions of doors and similar devices.

The invention will first be hereinafter more particularly described, and then pointed out in the claims at the end of the description.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is an elevation, looking at the inside of a door, illustrating in full lines the invention in position for fastening the door and in dotted lines when released. Fig. 2 is a fragmentary vertical sectional view, on an enlarged scale, partly in elevation, taken on the line II II of Fig. 1 and illustrating one form of key for rotating the fastener-operating spindle or axle and the means for concealing the same from the outside of the door. Fig. 3 is a vertical sectional view immediately inside of the spindle or axle handle, showing a portion of the rotating element and the securing or thimble plate. Fig. 4 is a detail side elevation of the spindle, securing-plate, and rotating element, illustrating one means for limiting the rotary motion of the spindle; and Fig. 5 is a fragmentary front elevation of the door with the means for concealing the outer end of the spindle in position to permit the fastener to be operated.

In the drawings, A may designate a door of any preferred form suitably arranged in the door-case by hinging or otherwise and provided upon its inner side with a securing or thimble plate b, secured thereto by screws or in any suitable manner and having a projecting tubular boss or thimble b', adapted to fit in a transverse aperture in the door. A spindle or axle B may be journaled in the securing-plate b, so as to extend through the aperture in the door, and may have its inner end provided with a suitable handle, as at b^2, secured to or formed integrally therewith, and its outer end with a polygonal or otherwise-formed end adapted to be engaged by a suitable key, as at b^3, Fig. 2, so that said spindle may be rotated either from the inside or the outside of the door. The spindle may be rotatably held to the securing-plate by a cylindrical nut, as at b^4, arranged on a screw-threaded portion of said spindle and keyed or suitably secured thereto, a thimble, as at b^5, fitting the aperture of the door and abutting against the outer surface of said nut, being provided, when desired, to serve as a bearing-surface for the key b^3. The spindle or the shank of the handle b', as the case may be, may have a portion thereof of a polygonal form, upon which may be arranged an element or casting C, so as to rotate therewith, said element or casting being preferably provided with a recessed portion in which a projection c on the plate b is adapted to work or slide, so as to engage the sides of said recessed portion to limit the movement of the spindle B to a partial rotation. The casting may have one or more arms c', in this case three, forming a substantially T-shaped body with the arms extending in different directions, though in some instances apertures or other securing means may be employed. These arms may be radially arranged with respect to the spindle and may have their outer ends pivoted to links c^2, having their outer ends pivoted to the inner ends of bolts c^3, so as to cause said bolts to be drawn toward or forced from the spindle when the latter is rotated. A guide or guides, as at c^4, provided with suitable eyes may be secured

to the door, in which the bolts c^3 may slide, and a catch or locking-plate, as at c^5, similarly formed to said guides may be arranged in the path of movement of each bolt, so as to engage the outer end thereof, said bolts as arranged being in substantially the same plane as the arms of the casting while engaging the catches, so as to form a dead-center therewith, but which may be readily withdrawn from the catches through the links c^2 and arms c' of the casting by rotating the spindle B. By this means a simple and powerful fastening device is provided which may be readily operated from either side of the door.

For the purpose of concealing or preventing tampering with the fastening mechanism from the outside of the door I may arrange a hasp or hinged plate D on the outside of the door above the outer end of the spindle, so as to have the free end of the pivoted or hinged member swing across the face or outer end of said spindle to conceal it from view. The free end of the hinged member may have a slot adapted to fit over a staple, as at d, and when thus engaged a padlock, as at d', may have its shackle passed through the staple, so as to rigidly hold the swinging member of the hasp over the outer end of the spindle B, though of course any suitable means may be employed to prevent tampering with the operating-spindle, and the hasp and lock may in some instances be dispensed with and a rosette or escutcheon-plate similar to that used on night-latches employed, if desired.

In some instances it is desirable to inform an occupant of the house or other person when the locking-bolts have been released, and for this purpose I may provide a suitable alarm—as, for instance, a gong—as at E, Fig. 1, having, preferably, a flexible connection with the bolt-operating mechanism. A plate, as at e, may be secured to one of the bolts where it is pivoted to one of the links, to which a cord e' or other flexible connection may be secured, and to the gong, so that when the bolts are released the gong will be sounded, and when bolted or caused to engage the catches c^5 said connection will yield or be taken up, so as not to sound the alarm.

The construction and operation of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings.

Assuming the parts to be in the position shown in full lines, it will be seen that the spindle or axle B may be rotated either by the handle b^2 from the inside or by the key b^3 from the outside of the door, so as to throw the casting C, the links c^2, and the bolts c^3 to the released position or that shown in dotted lines, or to the fastened or locked position by rotating the spindle in the opposite direction, the projection c, engaging the sides of the recessed portion of the casting, serving to limit the rotary motion of the spindle. By forcing the pivoted member of the hasp over the end of the staple d and securing the padlock in position after the bolts c^3 engage the catches c^5 the door will be securely fastened and tampering with the operating-spindle B from the outside of the door avoided.

I thus provide simple and efficient means whereby the door may be bolted or fastened from either side thereof and the means for operating the fastening mechanism effectually concealed to prevent tampering or the possible operation thereof from the outside.

The end of the spindle which the key is adapted to fit may be variously formed, so that no two keys will be exactly alike, and keys may be made to fit variously-formed apertures in the spindle instead of engaging its outer surface.

It is obvious that the bolts may be of any desired number and variously arranged to suit different constructions of doors, that where the word "door" is employed it is intended to include devices operating in a similar manner, and that some of the parts may be dispensed with or others substituted therefor without departing from the spirit of my invention.

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

1. In a door-securing mechanism, the combination of a flanged tubular bearing secured in an opening made through the door and having a projection, an operating-spindle journaled in said bearing and projecting therefrom on one side of the door where it has a suitable handle for turning purposes, a plate fastened on said spindle adjacent to the tubular beairng and having an arc-shaped recess receiving the projection on the latter whereby the oscillations of the spindle are limited, and locking-bolts operatively connected with said plate, substantially as described.

2. In a door-securing mechanism, the combination with the door having an opening extending transversely through it; of a flanged tubular bearing engaging said opening with its flange extending on the inner side of the door and secured thereto; a spindle engaging said tubular bearing and projecting on the inner side of the door where it has an operating-handle and exposed at the outer side of the door without projecting therefrom, this outer end of the spindle being formed for rotative engagement therewith of a key, and said spindle having a screw-threaded portion; a nut engaging the said screw-threaded portion and bearing against the inner end of the tubular bearing to prevent inward movement of the spindle; one or more locking-bolts on the inner side of the door; and eccentric connections between the same and the spindle.

3. In a door-securing mechanism, the combination with the door having an opening extending transversely through it; of a flanged tubular bearing engaging said opening with its flange extending on the inner side of the door and secured thereto; a spindle engag-

ing said tubular bearing and projecting on the inner side of the door where it has an operating-handle and exposed at the outer side of the door without projecting therefrom, this outer end of the spindle being formed for rotative engagement therewith of a key, and said spindle having a screw-threaded portion; a nut engaging the said screw-threaded portion and bearing against the inner end of the tubular bearing to prevent inward movement of the spindle; a thimble in the door-opening constituting a bushing for the same between the said nut and the outer end of the opening; one or more locking-bolts on the inner side of the door; and eccentric connections between the same and the spindle.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD BYRNES.

Witnesses:

MARTIN HIGGINS,

MARTIN BYRNES.