

Sept. 8, 1925.

1,552,690

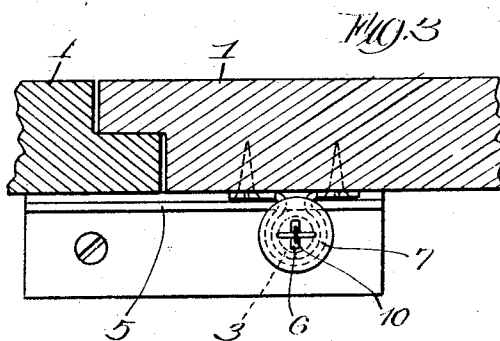
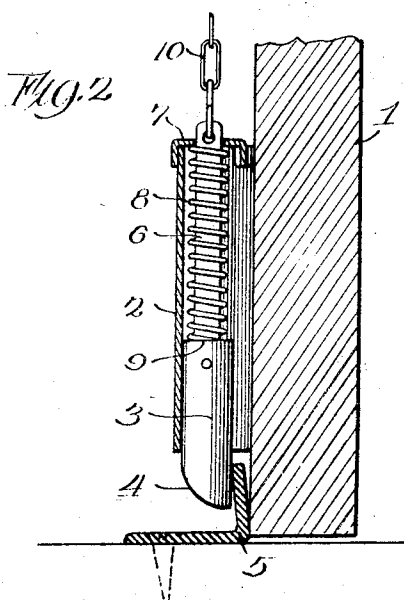
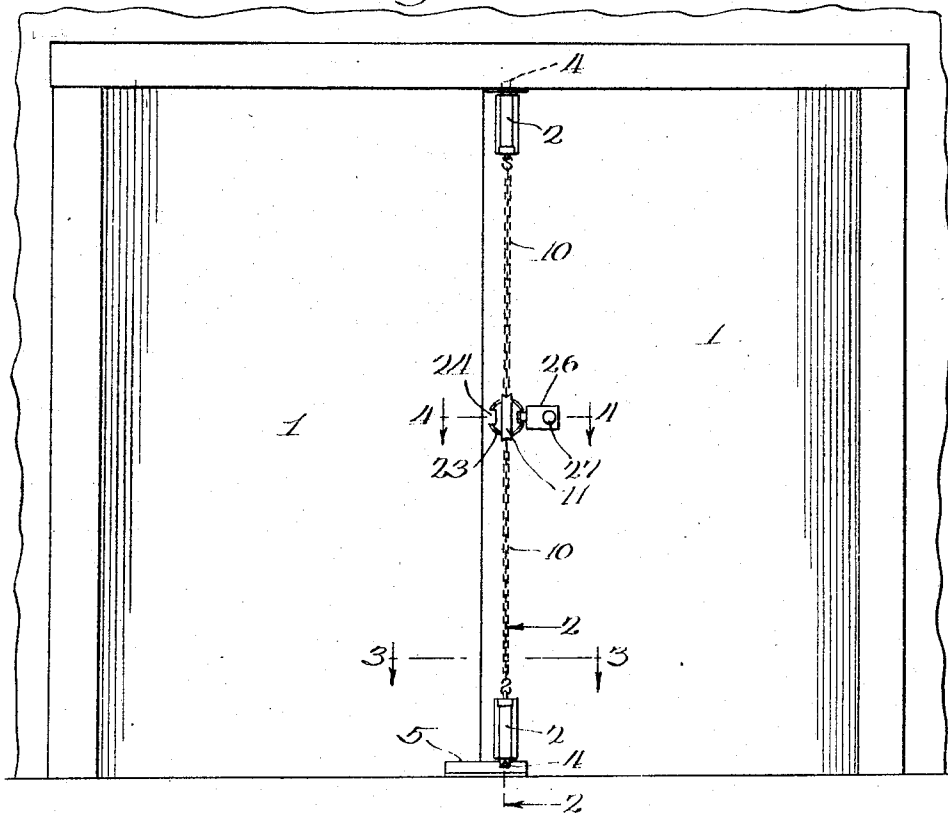
P. FRANTZ

LATCHING ARRANGEMENT FOR DOORS OR WINDOWS

Filed Nov. 5, 1924

2 Sheets-Sheet 1

FIG. 1



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Sept. 8, 1925.

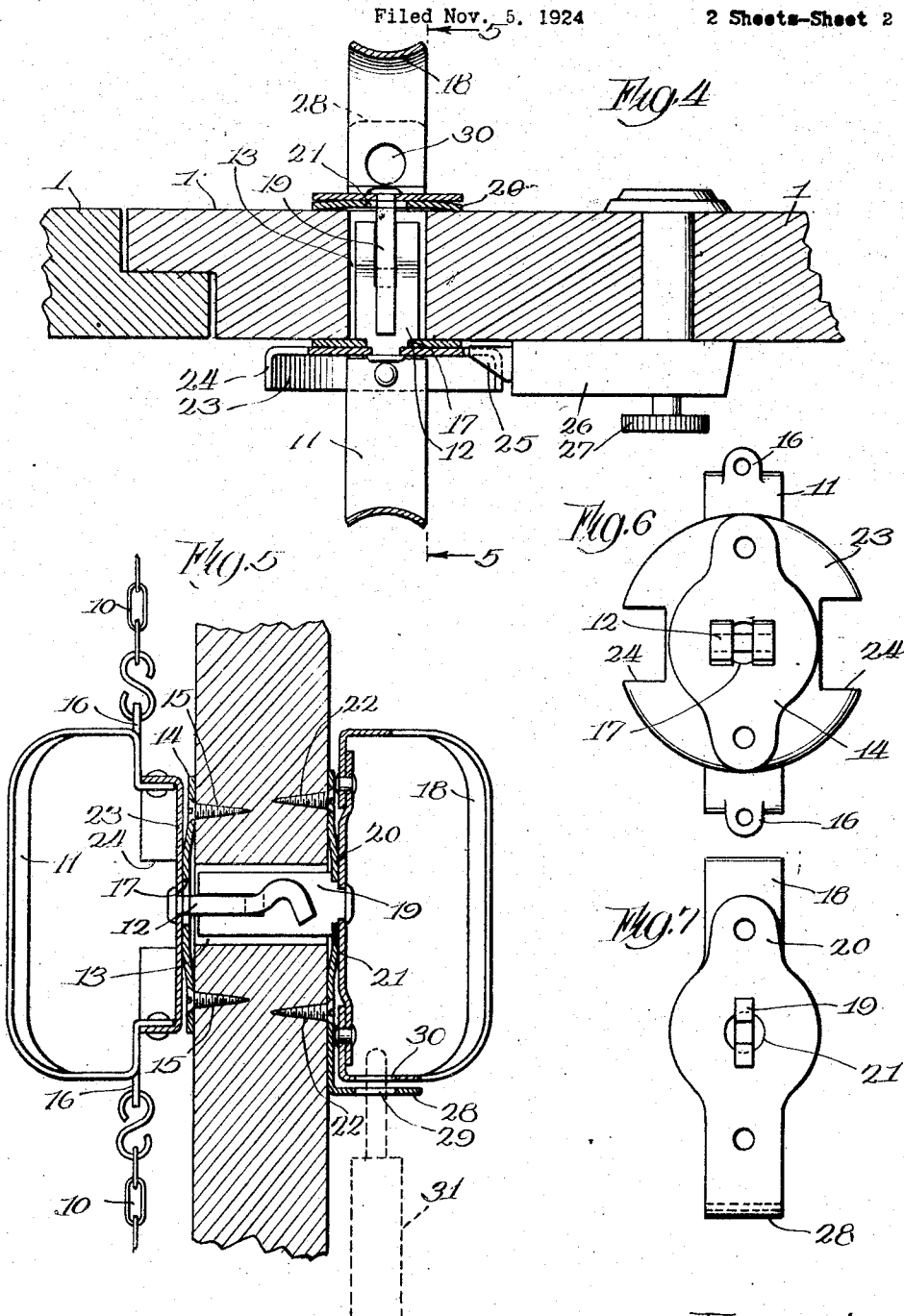
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2 Sheets-Sheet 2



Inventor:
Peter Frantz
By Arthur F. Durand
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UNITED STATES PATENT OFFICE.

PETER FRANTZ, OF STERLING, ILLINOIS, ASSIGNOR TO FRANZ MANUFACTURING CO.,
OF STERLING, ILLINOIS, A CORPORATION OF ILLINOIS.

LATCHING ARRANGEMENT FOR DOORS OR WINDOWS.

Application filed November 5, 1924. Serial No. 747,889.

To all whom it may concern:

Be it known that I, PETER FRANTZ, a citizen of the United States, and resident of Sterling, Whiteside County, Illinois, have
5 invented a certain new and useful Improvement in Latching Arrangements for Doors or Windows, of which the following is a specification.

This invention relates to latching devices
10 for doors and windows, and more particularly to those involving the use of bolts for securing the upper or lower end of the door, or of the swinging window, or both the top and bottom, in the well known manner.

Generally stated, the object of the invention is to provide novel and improved means for moving the bolt from the latching position thereof, when it is desired to open the door or window, and whereby the handle by
20 which the door or window is opened and closed, may be turned or oscillated to release the bolt from its locking engagement with the doorway, or whereby a plurality of bolts may be thus controlled, depending upon the character of the door or window, or
25 similar structure, upon which the invention is employed.

It is also an object to provide certain details and features of construction and combinations tending to increase the general efficiency and desirability of a latching bolt arrangement of this particular character.

To these and other useful ends, the invention consists in the matters hereinafter set forth and claimed, and as shown in the accompanying drawings, in which,—

Fig. 1 is an inside elevation of a latching bolt arrangement applied to a swinging door, involving the use of a bolt at the top and another one for the bottom of the door, involving the principle of the invention.

Fig. 2 is an enlarged vertical section on line 2—2 in Fig. 1.

Fig. 3 is an enlarged horizontal section on line 3—3 in Fig. 1.

Fig. 4 is an enlarged horizontal section on line 4—4 in Fig. 1.

Fig. 5 is a vertical section on line 5—5 in Fig. 4.

Fig. 6 is a detail view of a portion of the handle mechanism for controlling the latching bolts.

Fig. 7 is a similar view of another portion of said handle mechanism.

As thus illustrated, the invention com-

prises a door 1 mounted to swing outward, in any suitable or desired manner. Latching bolts having casings 2 are mounted at top and bottom of said door on the inner surface thereof, and each casing is provided with a sliding bolt 3, these bolts having their outer ends rounded or beveled at 4 to enable them to automatically slide over the strike piece 5 or other means for engagement with the bolt, thereby to latch the door in closed position. Each bolt has a reduced portion 6 forming a stem which slides in the guide formed by the end piece 7 of the casing 2 of the latching bolt device, and a coil spring 8 is applied to said stem 6, between the shoulder 9 and the guide 7, whereby the spring of each latching bolt device tends to keep the bolt in locking position. Chains 10 are connected to the outer ends of the stems 6 of the latching bolts, and by pulling on these chains, the springs 8 of the two bolts will be compressed, and the outer engaging end portions of the bolts will be disengaged from their strike pieces, which latter are secured to the doorway in fixed position in any suitable or desired manner.

The handle mechanism for operating the chains 10, whereby to control the two latching bolts, comprises an inside grip or loop-shaped handle 11 which is fixed on a bifurcated member 12, which latter extends through the opening 13 formed in the door. This member 12 is held in position for rotation, but against endwise displacement, by the bracket 14 which is secured to the door by screws 15 in the manner shown. Said handle 11 is provided with eyes 16 which engage the ends of the two chains 10, whereby rotation of this handle in its swivel bearing 17 will exert a pull on each chain, thus releasing the latching bolts from their locking engagement with the strike pieces on the door frame, so that the door can be opened by means of said handle. Outside the door a similar handle 18 is provided, which is fixed on the outer end of the member 19, this member being bifurcated, as shown, to receive the said member 12 in interlocking engagement, whereby rotation of one handle will turn the other. The member 19 is held against endwise displacement by the bracket plate 20, the latter having an opening providing a swivel bearing 21 in which the member 19 is free to turn. This bracket 20

is secured to the door by screws 22, as shown, and thus the two handles are connected axially, so that turning of one handle will turn the other, but by removing the screws 15 and 22, the handles can be disconnected from each other and from the door.

Inside the door, the portion 23 of handle 11 is formed with diametrically opposite notches 24 to engage a locking bolt 25 in the casing 26, said bolt being controlled by the handle 27, in the usual or any suitable manner. By having the two notches 24, the arrangement can be used either on a right or left door, and the bolt 25 will be arranged to engage one notch or the other, depending upon the circumstances. Thus, when the latching bolts 4 are in locking engagement with their respective strike pieces on the doorway, the door is held in closed position, and when the locking bolt 25 is in engagement with one of the notches 24, the outside handle 18 can be turned to unlatch and open the door. The person inside of the building can do this, of course, by operating the handle 27 to release the bolt 25 from its locking engagement with the portion 23, thereby to permit rotation of the handle 11, and the consequent withdrawal of the bolts 4 from latching engagement with their strike pieces.

In addition, the bracket 20 may have a lower portion 28 provided with an opening 29, and the handle 18 may have an opening 30 adapted to register with the opening 29, so that a padlock 31, of any suitable character, may be applied to these two openings to hold the handle 18 against rotation. With this arrangement, of course, the door may be locked from the outside, and may be unlocked from the outside thereof, by means of said padlock. When the door is closed from the outside, the locking bolt 25 can be withdrawn and held in its casing 26, so that it will not spring into the notch 24 when the handle 18 is released and after the door is closed. This leaves the door in condition to be opened, from the outside, when the padlock 31 is unlocked and taken off, for then by turning the handle 18 the two bolts 4 will be withdrawn from locking engagement with the strike pieces 5, which are fixed on the doorway at the top and bottom thereof.

Thus the rotation of the handle 11, or of the handle 18, will serve to exert a pull on both chains 10, so that both latching bolts 4 will be disengaged from latching engagement with their strike pieces 5, and thus either handle 11 or 18 is adapted not only to be rotated to unlatch the door, but is also adapted for use as a grip in opening and closing the door.

After the handle mechanism is unlocked, either handle is then simply rotated to unlatch the door, and without releasing the hand from either handle, the door is then

opened in the desired manner. Also, when the door is closed, by means of either handle 11 or 18, the latching bolts 4 are automatically pushed into their casings 2 by engagement of their rounded or beveled portions 4 with their strike pieces 5, and then the bolts spring into position behind these strike pieces, in the manner shown. Consequently, of course, the springs 8 of the two latching bolt devices employed in this way at the top and bottom of the door serve to hold the handle mechanism in normal position, for rotation of either handle is yieldingly opposed by the springs of the latching bolt devices, when the handle mechanism is not held against rotation by the ordinary latch bolt 25, or by the ordinary padlock 31, as previously explained.

The entire latching bolt and handle mechanism by which the bolts are controlled is easily and inexpensively applied to the door, and the construction of the handle mechanism and latching bolts is such that they are adapted to be inexpensively constructed from metal, mostly sheet metal, thus reducing the cost of production.

The screws 15 and 25 are covered by the handles 11 and 18 and cannot be taken out while the handles are locked in this position.

Without disclaiming anything, and without prejudice to any novelty disclosed, what I claim as my invention is:

1. In combination, a latching bolt for a door or other swinging closure, handle mechanism comprising a rotatable handle for opening and closing the door, a pull connection between said mechanism and said latching bolt, a separable rotary connection between the handle and said pull connection, and means secured to the door to prevent separation of said separable connection, whereby rotation of the handle serves also to automatically unlatch the door.

2. A structure as specified in claim 1, said handle mechanism comprising an inner handle and an outer handle, the separable connection comprising interlocking means between the two handles, extending through the door, and bracket plates forming swivel bearings for said separable connection, secured to the inner and outer surfaces of the door.

3. A structure as specified in claim 1, in combination with a locking device, said mechanism having means for engaging said locking device, thereby to lock the handle against rotation.

4. A structure as specified in claim 1, in combination with an ordinary lock bolt applied to the inner side of the door, said mechanism having means for engaging said lock bolt, thereby to lock the handle mechanism against rotation.

5. A structure as specified in claim 1, in combination with a padlock, said mecha-

nism having means outside the door to engage said padlock, thereby to lock said mechanism against rotation.

6. A structure as specified in claim 1, said
5 latching bolt being at the bottom of the door, in combination with a similar latching bolt at the top of the door, and a like connection from said upper latching bolt to said handle mechanism, whereby rotation
10 of said handle mechanism will control both latching bolts.

7. A structure as specified in claim 1, said handle mechanism comprising sheet metal grips forming inner and outer handles, a flat
15 member secured to the one handle, a bifurcated member secured to the other handle, said flat member and bifurcated member interlocking and forming said separable connection, extending through the door, the
20 bracket plate for said flat member forming a swivel bearing therefor, means to secure said bracket plate to the door, a second bracket plate for said bifurcated member forming a suitable bearing therefor, and
25 means to secure this second bracket plate to the door.

8. A structure as specified in claim 1, said handle mechanism and said latching bolt being some distance apart, and said connection between them being flexible, said mechanism being adapted to exert a pull on said flexible connection to control the latching
30 bolt and unlock the door.

9. The improved latching bolt arrangement on a door, comprising rotary handle mechanism for controlling the bolt, disposed
35 some distance therefrom, a pull connection extending between said handle mechanism and said bolt, a spring to yieldingly maintain the bolt in latching position, a rotary separable connection in the door between
40 said handle and said pull connection, and means secured to the door to prevent separation of said separable connection.

45 10. A structure as specified in claim 1,

said mechanism comprising axially alined inner and outer handles, plates in which said handles are rotatably mounted, screws to fasten said plates to the door and a lock to hold the handles against rotation, said handles when locked covering said screws to prevent removal thereof.

11. In combination, a locking bolt for a door or other swinging closure, handle mechanism comprising a rotatable handle
55 for opening and closing the door, and a connection from said mechanism to said locking bolt whereby rotation of the handle serves also to automatically unlock the door, said handle mechanism comprising an inner
60 handle and an outer handle, a separable interlocking connection between the two handles, extending through the door, and bracket plates forming swivel bearings for said separable connection, secured to the inner
65 and outer surfaces of the door.

12. In combination, a locking bolt for a door or other swinging closure, handle mechanism comprising a rotatable handle for opening and closing the door, and a connection
70 from said mechanism to said locking bolt whereby rotation of the handle serves also to automatically unlock the door, said handle mechanism comprising sheet metal grips forming inner and outer handles, a
75 flat member secured to the one handle, a bifurcated member secured to the other handle, said flat member and bifurcated member interlocking and forming a separable connection, extending through the door, the
80 bracket plate for said flat member forming a swivel bearing therefor, means to secure said bracket plate to the door, a second bracket plate for said bifurcated member forming a suitable bearing therefor, and
85 means to secure this second bracket plate to the door.

Specification signed this 31 day of Oct., 1924.

PETER FRANTZ.

Certificate of Correction.

It is hereby certified that the name of the assignee in Letters Patent No. 1,552,690, granted September 8, 1925, upon the application of Peter Frantz, of Sterling, Illinois, for an improvement in "Latching Arrangements for Doors or Windows," was erroneously written and printed as "Franz Manufacturing Co.," whereas said name should have been written and printed as *Frantz Manufacturing Co.*, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 13th day of October, A. D. 1925.

[SEAL.]

KARL FENNING,
Acting Commissioner of Patents.