To all whom it may concern:

Be it known that I, DANIEL W. BLACKWELL, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented a certain new and useful Bolt Apparatus for Doors and Windows, of which the following is a specification.

My invention relates to bolt apparatus for securing and locking doors, windows and screens and the objects of my invention are:

First, to provide an apparatus of the class described which will securely hold the door, window or screen in a closed position; second, to provide an apparatus of the class described which will hold the door, window or screen at both top and bottom thus securely bolting the same even though said door, window or screen may be distorted or warped; fourth, to provide means for releasing both bolts with one action; fifth, to provide an apparatus of the class described which is concealed in the stile of said door, window or screen; sixth, to provide an apparatus of the class described which is novelly constructed and seventh, to provide an apparatus of the class described which is simple and economical of construction, durable, easy to adjust and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application, in which:

Figure 1 is a fragmentary front elevational view of a window showing the bolts of my apparatus projecting beyond the upper and lower edges of said window; Fig. 2 is an edge view thereof, showing the exterior plates and strips covering or concealing the bolt operating apparatus; Fig. 3 is a partial sectional and partial elevational view of a window showing my apparatus in position, portions being cut away to facilitate the illustration; Fig. 4 is an enlarged fragmentary sectional view of my apparatus in position in a door, window or screen stile taken through 4-4 of Fig. 5; Fig. 5 is a fragmentary sectional view taken through 5-5 of Fig. 4; Fig. 6 is a fragmentary sectional view taken through 6-6 of Fig. 4; Fig. 7 is a fragmentary front elevational view, partly in section, of a door showing a modified form of my bolt apparatus in position; Fig. 8 is a fragmentary edge view thereof showing the exterior plates and U strips concealing the mechanism; Fig. 9 is a fragmentary sectional view taken through 9-9 of Fig. 7; Fig. 10 is a fragmentary front elevational view, partly in section, of another modification of my bolt apparatus in position; Fig. 11 is a fragmentary transverse sectional view through 11-11 of Fig. 10; Fig. 12 is a fragmentary sectional view through 12-12 of Fig. 7, and Fig. 13 is a fragmentary sectional view through 13-13 of Fig. 7.

Like characters of reference refer to similar parts and portions throughout the several views of the drawings.

The knob or handle 1, shank 2, plate 3, primary operating arm 4, secondary operating arm 5, casing 6, operating cables 7, clevis 8, bolt 9, spring 10, angle plate 11, plate 12, and wire concealing strip 13 constitute the principal parts and portions of my structure.

The knob or handle 1 is secured to the square shank 2 by means of a screw 1', said shank projecting through a circular opening 3' in the plate 5 is allowed to turn in said plate and retained in position therein by the washer 2" and pin 2". Said plate 3 is secured to the door, window or screen stile by the screws 3". The primary operating arm 4 is provided with a square socket 4" to receive one end of said square shank 2. Said operating arm 4 is also provided with projections or teeth 4" to engage teeth 5" of the secondary operating arm 5, which is pivotally mounted at 5" on the pin 6" of the casing 6. The arms 4" and 5" of the respective operating arms 4 and 5 are provided with a series of holes 4" and 5" equally spaced. The extended arms are notched on the edges between the various holes so that said arms may be conveniently broken off at any desired length, said length varying with the location of the casing 6 with respect to the edge of the door, window, or screen stile, said casing being preferably located in the center of the stile. The primary operating arm 4 is provided with bosses 4" and 4" which are pivotally mounted in 6" of casing 6 and casing cover 6". Said casing is inserted in
a mortise in the face of the stile of the door provided for the same and secured to said stile by means of the screws 6." To each operating arm at the end hole is attached a cable 7, which has attached to the other end thereof a clevis 8 which is loosely mounted on the reduced square portion 9° of the bolt 9 and retained thereon by the pin 9." Said bolt is reciprocally mounted in the angle clip 11 and projects through an opening 11° of the clip 11 and conforms in shape to that of the outer portion of said bolt. The bolt is also secured in a transverse position at its reduced square portion by the clip 11" secured to clip 11. Mounted over the bolt 9 is a coil compression spring 10 interposed between the short leg of plate 11 and the clip 11° forcing the bolt in its outward position and therefore keeping the door, window, or screen closed. The operating arms 4 and 5 are concealed at the edge of the door stile by the plate 12 and the cable 7 are concealed by the U-shaped strip 13 as shown best in Fig. 6 of the drawings.

It is obvious, therefore, that by turning the knob or handle 1 in the counter clockwise direction as shown in Fig. 4 of the drawings, that the operating arms positively engaged, exert tension on the cables 7, therefore pulling the bolt 9 inwardly or disengaging the same from the door, window or screen sash, and compressing the spring 10.

In the modified forms of construction shown in Fig. 7 to Fig. 13 of the drawings I have shown a positive tripping device for actuating the bolt. The tripper 14 as shown best in Fig. 11 of the drawings is pivotally mounted at 14° on pin 15 fixed to the angle clip 11. Said tripper is provided with an extended portion 14° which engages a slot 9° at the outer portion of the bolt and is kept in engagement therewith by a spring 16, one end of which is fixed to the pin 15 and the other end of which is engaged with a raised portion 14° on the tripper which also serves as a stop for the rod 17. Said rod is reciprocally mounted at its flattened end in the raised portion 11° of the clip 11 and is externally threaded at its other end adapted to be screwed into the plunger 18. Said plunger is reciprocally mounted in the raised flanges of the clip 19 and is held in its outward position by the coil spring 20 mounted on said plunger and interposed between the shoulder 18 of said plunger and the inner flange of the clip 19. The plunger 18 is provided with a stop 18° thus limiting its outward movement. Said plunger is also provided with a slot in its outer end to receive a screw driver or other tool for adjusting the space between the rod 17 and the stop 14° of the tripper 14, thus fixing the tripping position to the position of the door relative to the sash.

It is obvious that as the door is closed the outer portion of the plunger 18 engages the inner face of the sash frame thus compressing the plunger against the spring 20 and bringing the rod 17 in engagement with the stop 14° of the tripper 14 disengaging the extended tripper portion 14° from the slot 9° of the bolt 9, thus bolting the door. It is further obvious that by turning the knob, as previously described, the bolt 9 is pulled within the door stile, the tripper 14 is forced by the tension of the spring 16 to engage said bolt 9 at the slot 9°, thus positively disengaging the bolt from the door.

Although I have shown and described a particular construction, combination and arrangement of parts and portions and certain modifications thereof I do not wish to be limited by this particular construction, combination and arrangement nor to the modifications, but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

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

1. An apparatus of the class described, including a closure member, bolt members reciprocally mounted in the ends of said closure member, wire links connected to said bolt members, variable length operating arms, positively engaged with each other and swivelly connected to the free ends of said wire links, and a knob pivotally mounted in the closure member operatively connected with one only of said operating arms.

2. An apparatus of the class described, including a closure member, bolt members reciprocally mounted in the ends of said closure member, coil springs mounted on said bolt members forcing the same outwardly, wire links connected to said bolt members, variable length operating arms, interlocked with each other and the one operating the other and swivelly connected to the free ends of said wire links, and a knob pivotally mounted in the closure member engaged with and operating one only of said operating arms.

3. An apparatus of the class described, including a closure member, bolt members reciprocally mounted in the ends of said closure member, a plate supporting and concealing the same therein, coil springs mounted on said bolt members forcing the same outwardly, wire links connected to said bolt members, variable length operating arms, interlocked with each other and the one operating the other and connected to the other end of said wire links, a knob pivotally mounted in the closure member, engaged with and operating one only of said operating arms.
said operating arms, plates concealing said operating arms and a strip concealing said wire links in the closure member.

4. An apparatus of the class described, including a closure member, bolt members reciprocally mounted in the ends of said closure member, a plate supporting and concealing the same therein, coil springs mounted on said bolt members forcing the same outwardly, wire links connected to said bolt members, variable length operating arms, positively engaged with each other and connected to the other end of said wire links, a knob pivotally mounted in the closure member, engaged with and operating one of said operating arms, plates concealing said operating arms and a strip concealing said wire links in the closure member, and positive means for tripping said bolt members as the closure member is nearing its closed position.

5. An apparatus of the class described, including a closure member, bolt members reciprocally mounted in the ends of said closure member, a clip supporting and concealing the same therein, coil springs mounted in said bolt members forcing the same outwardly, wire links connected to said bolt members, variable length operating arms, positively engaged with each other and connected to the other end of said wire links, a knob pivotally mounted in the closure member operatively engaged with one of said operating arms, a tripper for releasing said bolt members as the closure member is nearing its closed position, an adjustable reciprocating plunger engaging said tripper at one end and the closure member at its other end, and a spring forcing said tripper in engagement with a slot in said bolt members when the bolts are in their withdrawn position.

In testimony whereof, I have hereunto set my hand at San Diego, California, this 13th day of February, 1922.

DANIEL W. BLACKWELL.