

D. W. TOWER.  
LATCH.  
APPLICATION FILED MAY 15, 1908.

900,800.

Patented Oct. 13, 1908.

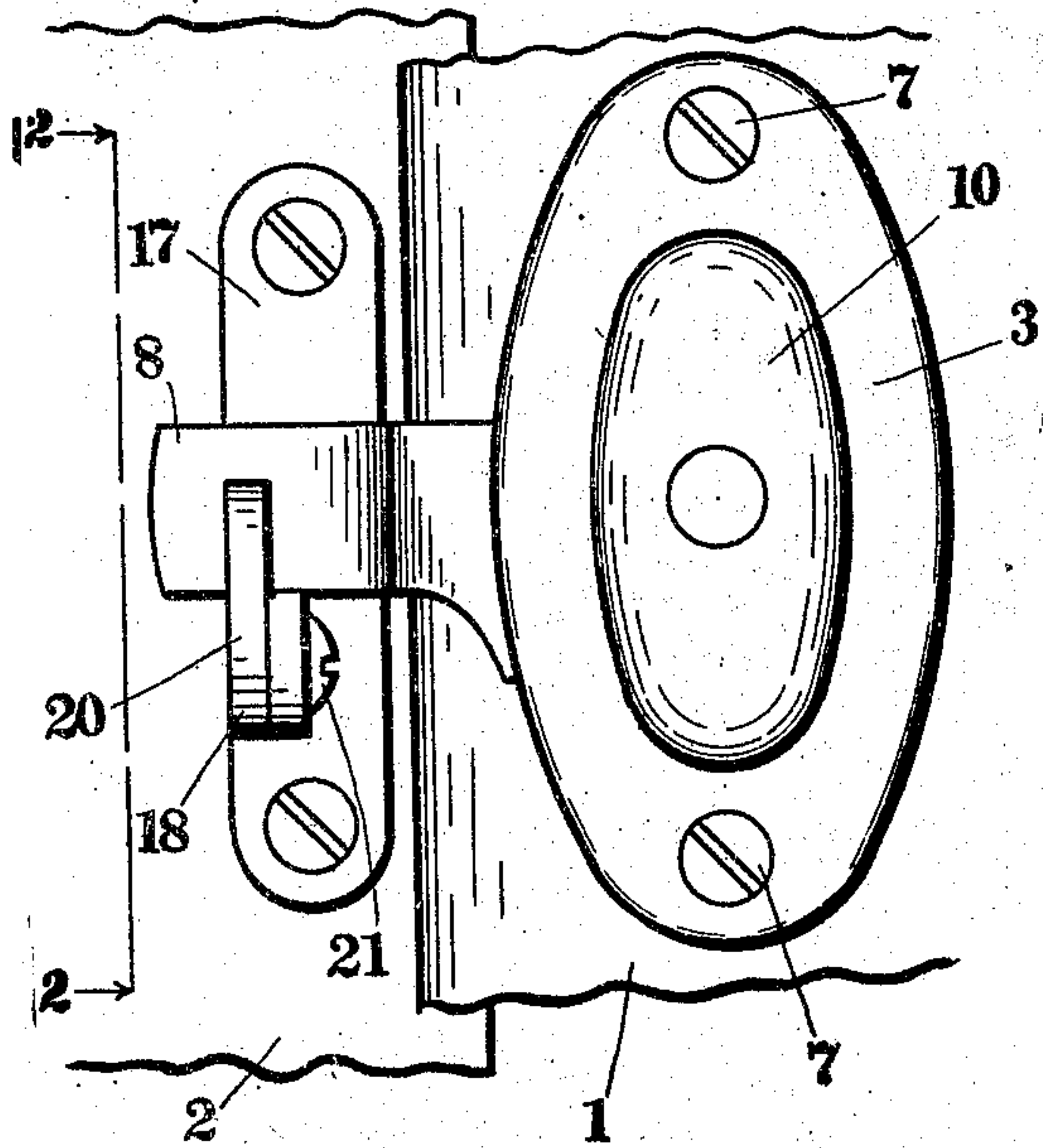


Fig. 1.

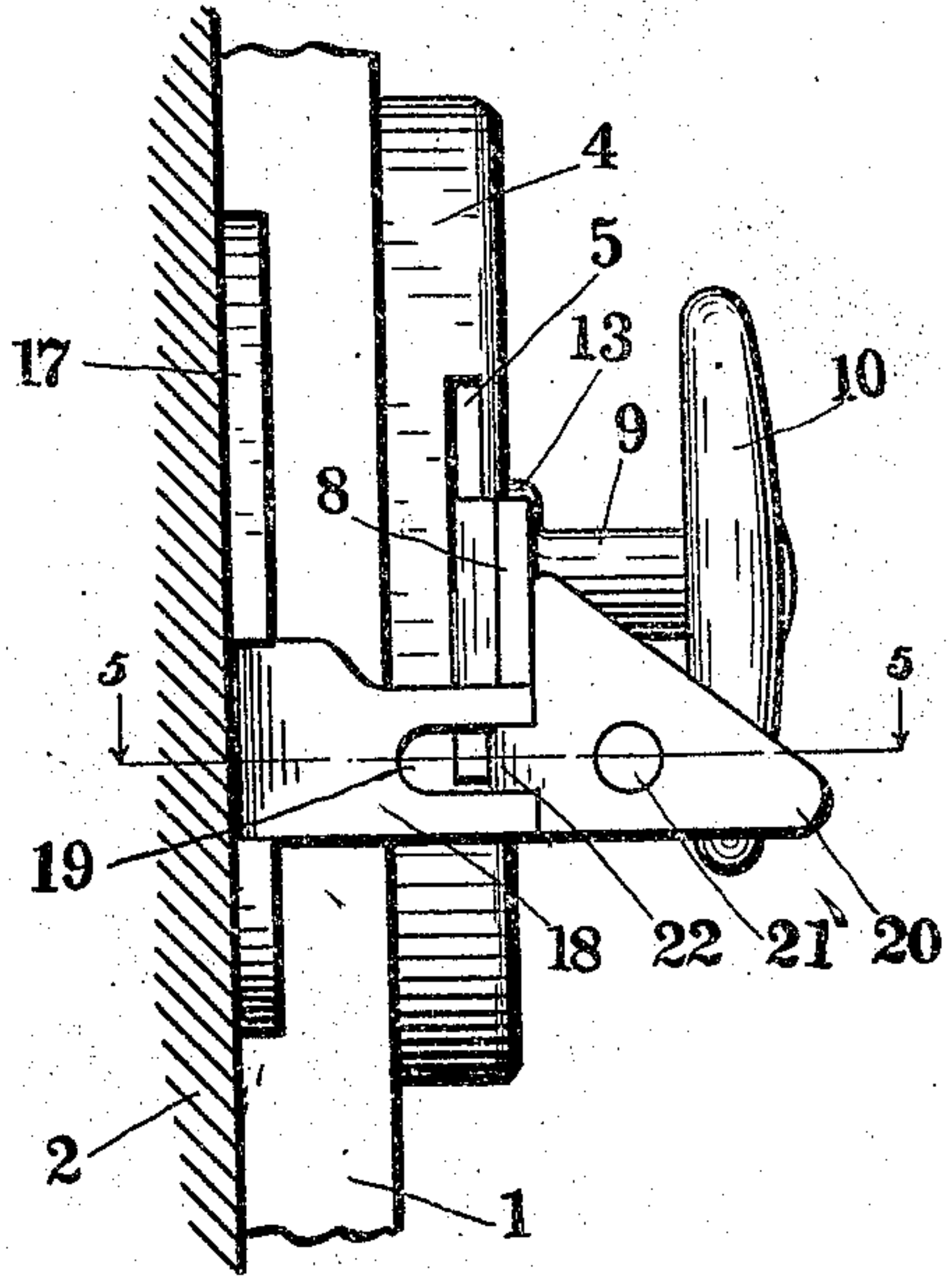


Fig. 2.

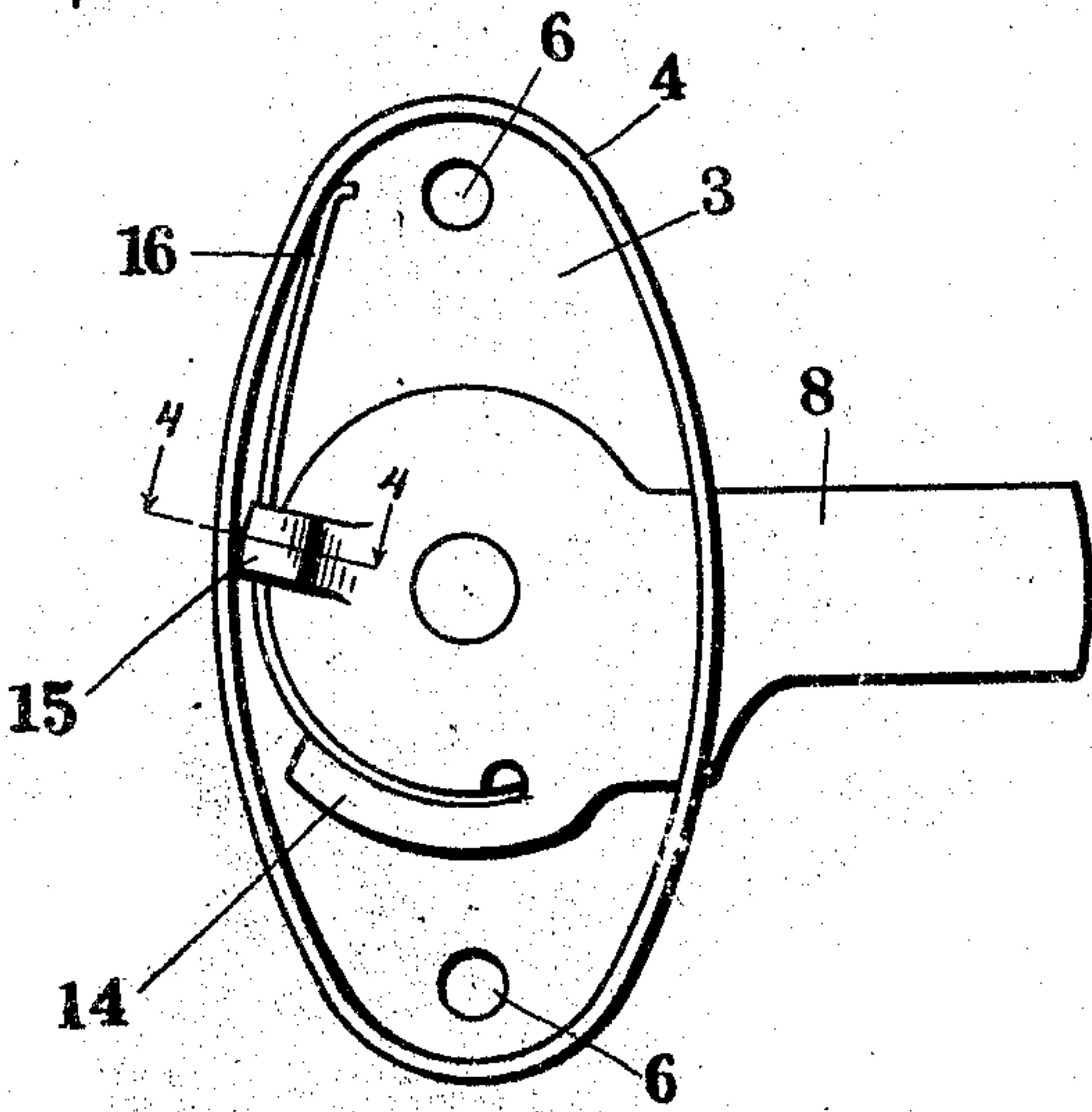


Fig. 3.

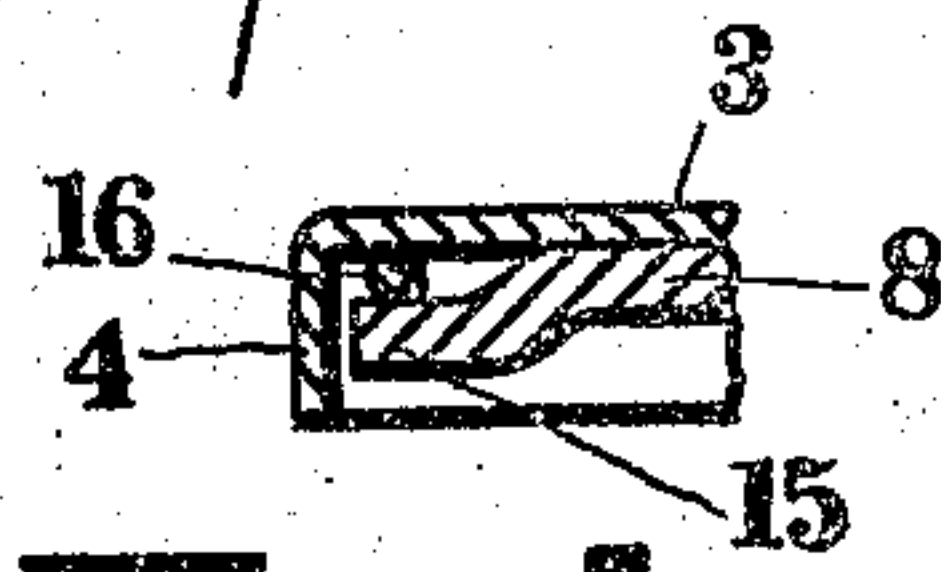


Fig. 4.

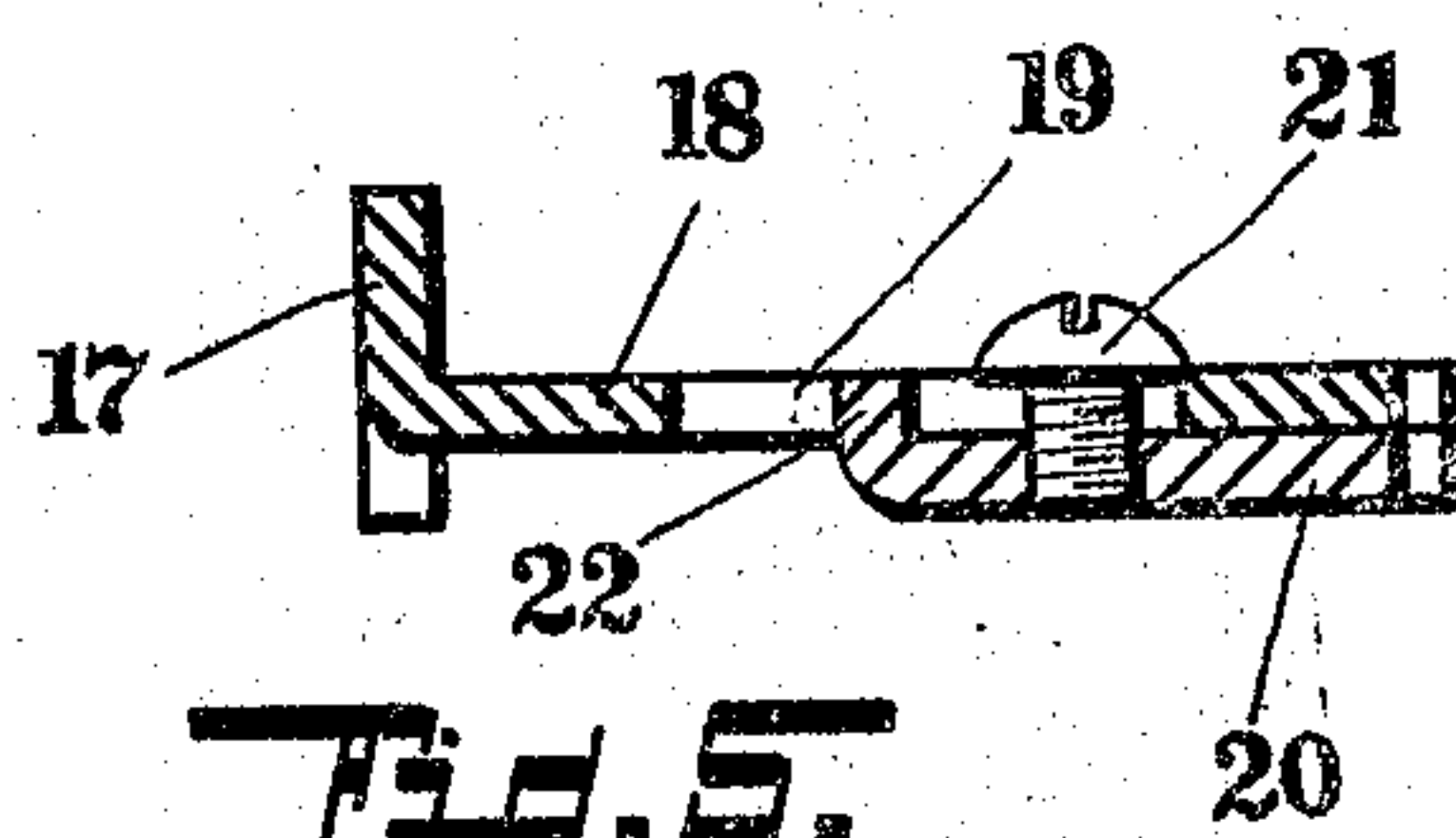


Fig. 5.

Witnesses

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# UNITED STATES PATENT OFFICE.

DANIEL W. TOWER, OF GRAND RAPIDS, MICHIGAN.

## LATCH.

No. 900,800.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed May 15, 1908. Serial No. 433,032.

*To all whom it may concern:*

Be it known that I, DANIEL W. TOWER, a citizen of the United States, residing at the city of Grand Rapids, county of Kent, State of Michigan, have invented certain new and useful Improvements in Latches, of which the following is a specification.

This invention relates to improvements in latches.

10 The main objects of this invention are:—  
First, to provide an improved latch which is very simple in form and in the arrangement of its parts, and, at the same time, is a desirable structure. Second, to provide  
15 an improved latch, the parts of which are made up almost wholly of sheet metal stampings. Third, to provide an improved latch which is very economical to produce, and, at the same time, one which is attractive in  
20 appearance.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention  
25 by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my  
30 invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which,

Figure 1 is a detail elevation of a structure embodying the features of my invention. Fig. 2 is a vertical section taken on a line corresponding to line 2—2 of Fig. 1. Fig. 3 is an inverted plan of my improved  
35 latch. Fig. 4 is an enlarged detail, taken on a line corresponding to line 4—4 of Fig. 3, showing means for retaining the latch spring. Fig. 5 is a detail section taken on a line corresponding to line 5—5 of Fig. 2, showing an improved latch strike.

45 In the drawing, similar numerals of reference refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, 1 represents a  
50 door and 2 a door casing, my improved latch being shown in Figs. 1 and 2 in its operative relation. The latch plate 3 is provided with an inturned flange 4 forming the latch casing. These are formed preferably  
55 of an integral sheet metal stamping. On one side the flange 4 is provided with a slot

5, the inner edge of the slot being located in the same plane as the inner face of the latch plate, as clearly appears from the drawing. The latch plate is provided with suitable  
60 holes 6 to receive the screws, as 7, by which the casing is secured to the door. The latch bolt 8 is pivotally mounted on the inner end of the stem 9 of the knob 10, so that it rests against the inside of the latch plate. The  
65 stem 9 is preferably provided with a shoulder 13 so that, in assembling the parts, the stem is arranged through the latch plate and the latch bolt and its inner end riveted, thereby  
70 securing the latch bolt in position.

The latch bolt is preferably provided at one side of its inner end with a spring-securing finger 14 and at its inner end with a  
spring retaining lug 15, the lug being offset, as clearly appears in Fig. 4, so that the latch  
75 bolt spring 16 may be arranged between the lug and the latch plate. The inner end of the latch bolt 8 is preferably enlarged, as illustrated, to form a better fulcrum for the  
80 spring, one end of which is secured by the securing finger 14, its free end being arranged under the retaining lug 15 to bear against the latch plate flange. The latch  
85 bolt and the spring securing finger and retaining lugs are preferably an integral sheet metal stamping, as illustrated. The finger  
14 is formed by slitting the metal and the spring is inserted between it and the body  
90 of the latch bolt, and the spring finger swaged down thereon. This forms a simple and effective means for securing the spring and reduces the number of the parts to a minimum.

The structure is very simple and economical to produce, and, with the exception of  
95 the knob stem and the spring, is made of three sheet metal stampings, which makes it very light and very inexpensive in the matter of material; also, in the cost of manufacturing and assembling the parts. At the  
100 same time, the structure is attractive in appearance and desirable for the purpose intended.

I preferably use my improved latch in  
105 connection with an improved strike comprising a base plate 17 having an arm 18 with a longitudinal slot 19 therein. The engaging member 20 of the strike is adjustably secured by means of the set screw 21, which is  
110 arranged in the slot 19. On the inner end of the engaging member 20 is a lug 22 adapted to engage in the slot, so that the one



screw 21 effectively secures the adjustable engaging member in position.

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

1. The combination with a casing comprising a latch plate having an inturned flange at its edges, said flange having a slot therein at one side, said latch plate and flange being an integral sheet metal stamping; a latch bolt provided with a spring-securing finger at one side and a projecting offset spring retaining lug at its inner end, said latch, spring-securing finger and retaining lug being an integral sheet metal stamping; a spring secured to said latch bolt at one end by swaging said spring-securing finger thereon and arranged between said spring-retaining lug and said latch plate with its free end in engagement with said latch plate flange; and a knob stem pivoted in said latch plate, said latch bolt being arranged through said slot in said flange, the ends of which serve as stops therefor.

2. The combination with a casing comprising a latch plate having an inturned flange at its edges, said flange having a slot therein at one side; a latch bolt provided with a spring-securing finger at one side and a projecting offset spring retaining lug at its inner end; a spring secured to said latch bolt at one end by swaging said spring-securing finger thereon and arranged between said spring retaining lug and said latch plate with its free end in engagement with said latch plate flange; and a knob stem pivoted in said latch plate, said latch bolt being arranged through said slot in said flange, the ends of which serve as stops therefor.

3. The combination with a casing comprising a latch plate having an inturned flange at its edges, said flange having a slot therein at one side, said latch plate and flange being an integral sheet metal stamping; a latch bolt provided with a spring-securing finger at one side and a projecting offset spring retaining lug at its inner end, said latch spring-securing finger and retaining lug being an integral sheet metal stamping; a spring secured to said latch bolt at one end by said spring-securing finger and engaged under said spring retaining lug; and a knob stem pivoted in said latch plate, said latch bolt being secured to said stem, said latch bolt being arranged through said slot in said flange.

4. The combination with a casing comprising a latch plate having an inturned flange at its edges, said flange having a slot therein at one side; a latch bolt provided with a spring-securing finger at one side and a projecting offset spring retaining lug at its inner end; a spring secured to said latch bolt at one end by said spring-securing finger and engaged under said spring retaining lug; and a knob stem pivoted in said latch plate, said latch bolt being secured to said stem, said latch bolt being arranged through said slot in said flange.

5. The combination with a casing comprising a latch plate having an inturned flange at its edges, said flange having a slot therein at one side; a latch bolt having a spring retaining lug at its inner end; a spring secured to said latch bolt at one end and arranged between said spring retaining lug and said latch plate with its free end in engagement with said latch plate flange; and a knob stem pivoted in said latch plate, said latch bolt being arranged through said slot in said flange, the ends of which serve as stops therefor.

6. The combination with a casing comprising a latch plate having an inturned flange at its edges, said flange having a slot therein at one side; a latch bolt having a spring retaining lug at its inner end; a spring secured to said latch bolt at one end and arranged under said spring retaining lug with its free end in engagement with said latch plate flange; and a knob stem pivoted in said latch plate, said latch bolt being secured to said stem.

7. The combination with a casing comprising a latch plate having an inturned flange at its edges, said flange having a slot therein at one side; a latch bolt; a spring secured to said latch bolt at one end and fulcrumed thereon and arranged with its free end in engagement with said latch plate; and a knob stem pivoted in said latch plate, said latch bolt being secured to said stem, said latch bolt being arranged through said slot in said flange, the ends of which serve as stops therefor.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

DANIEL W. TOWER. [L. S.]

Witnesses:

H. M. BERTELSON,  
P. C. PECKHAM.