July 2, 1929. R. S. POTTER 1,719,781

DOOR CLOSER

Filed Oct. 27, 1926 2 Sheets-Sheet 1

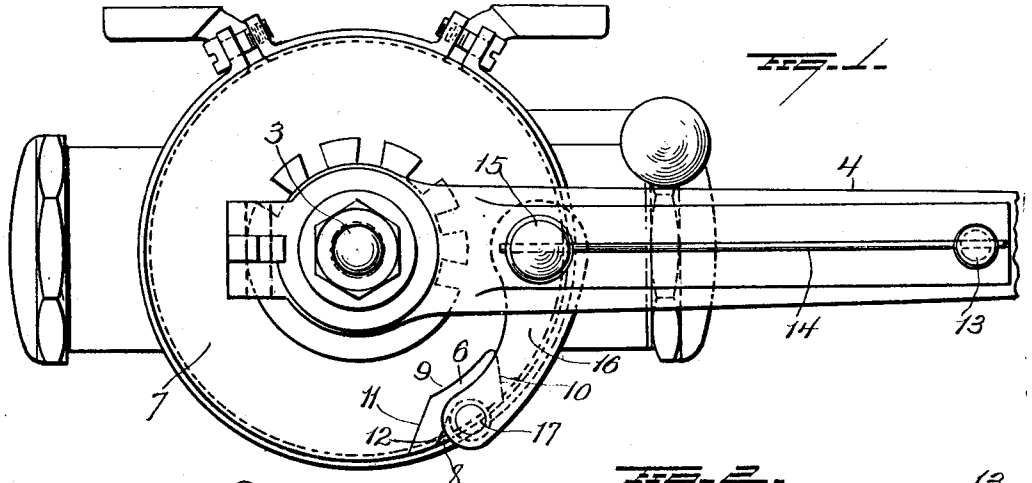


Fig. 1.

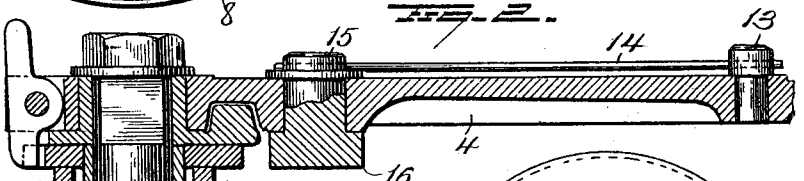
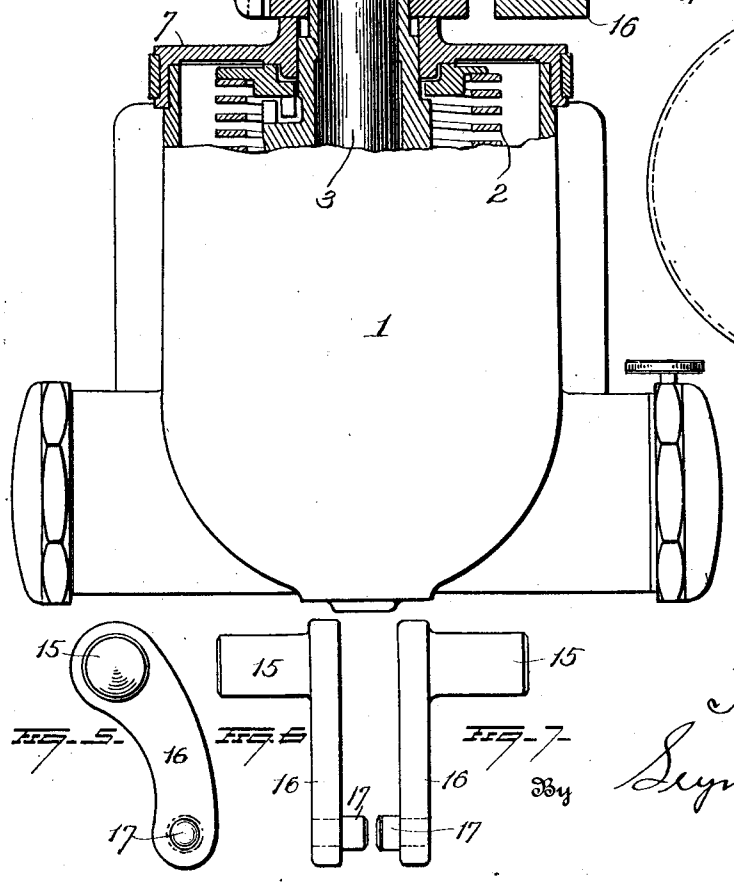


Fig. 2.



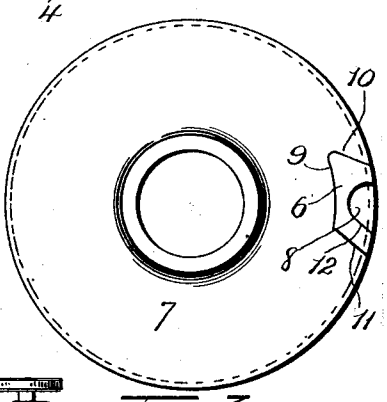


Fig. 3.

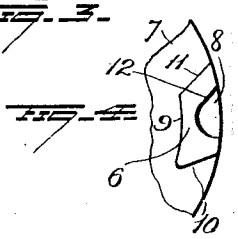


Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

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DOOR CLOSER

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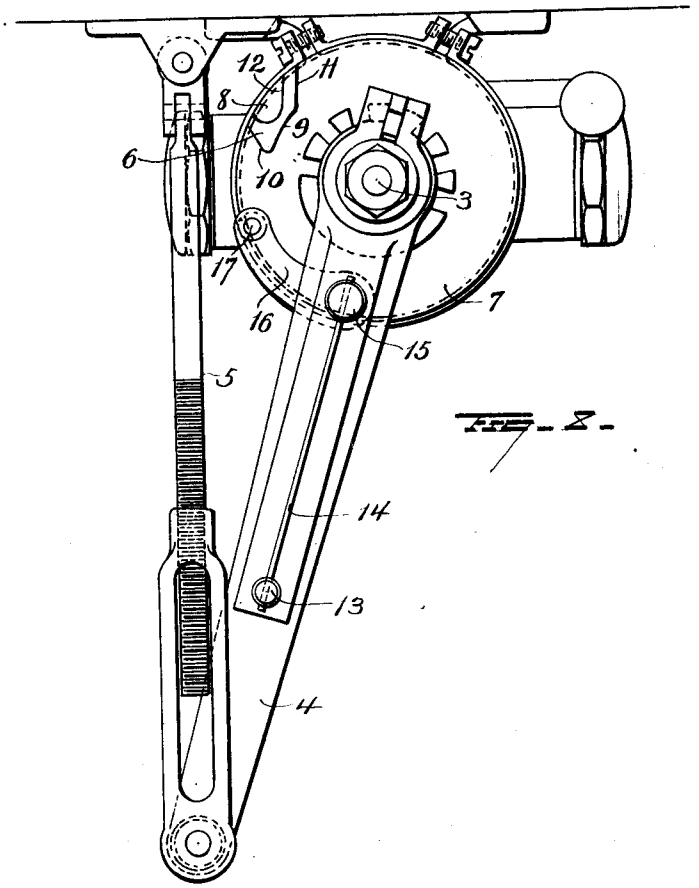


Fig. 2.

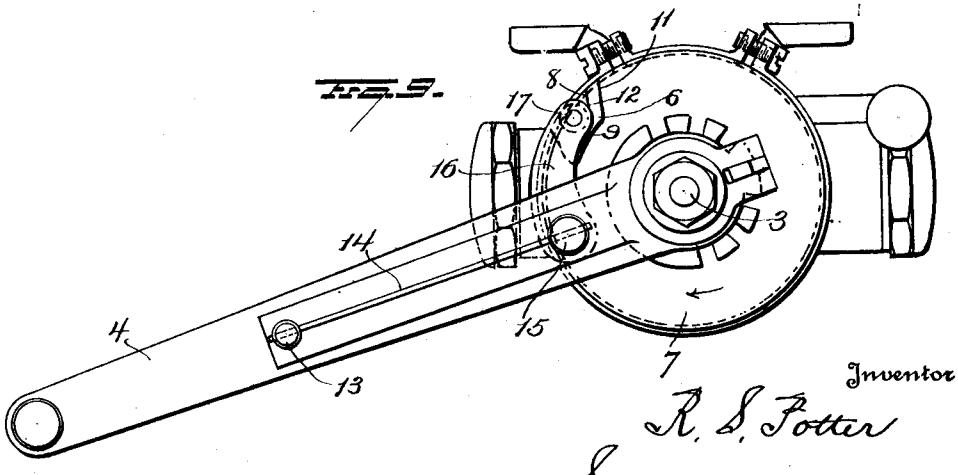


Fig. 3.

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UNITED STATES PATENT OFFICE.

ROBERT S. POTTER, OF GREENWICH, CONNECTICUT, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF STAMFORD, CONNECTICUT.

DOOR CLOSER.

Application filed October 27, 1926. Serial No. 144,575.

This invention relates to door closers for such structures as public telephone booths, and one object is to provide means whereby the door of the booth will be held partly open until a patron opens the door fully in order to enter the booth, indicating that the booth is unoccupied and permitting an inspection thereof. Another object is to provide mechanism for the stated purpose which will cause the door to close fully when the booth is occupied or the patron leaves the booth and maintain such position until an attendant again sets the door in its partly open position. These objects and other objects which will hereinafter incidentally appear are attained in such an apparatus as is illustrated in the accompanying drawings, and the invention resides in certain novel features which will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a top plan view of a door check and closer having the present invention applied thereto;

Figure 2 is a vertical sectional elevation of the same;

Figure 3 is a detail plan view of the top cap;

Figure 4 is a detail plan of the locking cam formed for a right hand closer;

Figure 5 is a detail plan view of the latch;

Figures 6 and 7 are detail edge views of the latch showing it arranged for a left hand and right hand closer respectively;

Figure 8 is a top plan view of the device in the position assumed when the door is fully closed;

Figure 9 is a similar view showing the position of the parts when the door is open about six inches.

The door check and closer proper comprises a casing 1 secured to the door and containing a spring 2, and a spindle 3 which carries a lever or main arm 4, the latter being connected to an anchoring arm 5 secured to the door frame. When the door is opened, the lever or main arm acts through the spindle and intermediate connections to place the spring under tension, and when the door-opening force is withdrawn the spring reacts through the lever to close the door, all these parts being of well-known construction, arrangement and operation.

In carrying out the present invention, a locking cam 6 is formed on the top cap 7 of the closer at the margin thereof, said cam having a notch 8 formed in its outer side while its inner side 9 defines an arc concentric with the periphery of the cap. The ends 10 and 11 of the cam are preferably straight but are arranged on angles to the radii of the cap so that they are oblique to the path of the latch which will be presently described. The forward wall 12 of the notch 8 is also straight and is preferably parallel with the end wall 11, as clearly shown in Figures 3 and 4, and it may be here noted that the cam may be adapted to either a right or left hand closer by merely inverting. In the lever or main arm 4 at a point removed from the closer cap is formed or secured a stud 13 having a diametrical opening therethrough to receive and hold the outer end of a fine spring or light resilient rod 14 which extends longitudinally of the lever and has its inner end engaged and held in a diametrical opening through the upper end of a pivot post 15 fixed at one end of a latch 16 and rotatably fitted in an opening provided therefor in the lever. The latch 16 is a curved arm or plate conforming substantially to the curvature of the cap and extending from the lever toward the locking cam, a stud 17 being provided at the free end of the latch to cooperate with the cam, the stud and the post projecting from one or the other side of the latch accordingly as it is to be applied to a right or left hand closer.

In manufacturing, it has been found desirable to cast the latch with a post on each side and to cut off the undesired post when the latch is to be assembled in a closer. The stud 17 is formed separately and secured in an opening provided therefor in the latch and may, of course, be disposed to project at either side of the latch.

Initially, the door is held partly open by engagement of the latch stud 17 in the notch 8 of the locking cam, the door-closer parts assuming the relative positions shown in Fig. 9. When a patron opens the door fully in order to enter the booth, the main arm or lever moves relative to the closer in the direction indicated by the arrow in Figure 9, the stud 17 being thereby caused to ride on the wall 12 of the notch 8 whereby the latch will be disengaged from the cam, the stud moving to a point beyond the end 11 of the cam. Then, when the door is permitted to close, the spring 14 holds the latch in such position that the stud 17 will engage the end 11 of the cam and ride inwardly thereon, thence along the inner side 9, and

come to rest at a point in front of the cam, as shown in Figure 8. When the patron opens the door to leave the booth, the stud 17 of the latch will be carried against the end surface 10 of the cam and be deflected outwardly to ride along the outer side of the cam and repeat the described movement as the door closes behind the departing patron. When the attendant desires to reset the door, he merely opens it slowly until the latch drops into engagement with the notch in the locking cam.

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

1. The combination with a door-closer including a lever, and a motor device acting on the lever to close the door, of a latch carried by the lever, and a cam in the path of the latch having a notch in its outer side to be engaged by the latch for holding the door partly open and having its ends disposed obliquely with respect to the latch whereby the latch will be deflected to the outer side of the cam on opening movement of the door and to the inner side of the cam on closing movement of the door.

2. The combination with a door closer including a pivoted lever and a motor device acting on the lever to close the door, of a latch pivotally mounted on the lever for movement about an axis parallel to the axis of movement of the lever, and a cam in the path of the latch having a notch in one of its sides to be engaged by the latch for holding the door partly open, and having its ends so shaped with respect to the latch that the latter will be deflected to one side of the cam on opening movement of the door, and to the other side of the cam on closing movement of the door.

3. The combination with a door closer, including a lever and a motor device acting on the lever to close the door, of a latch pivotally mounted on the lever, a cam in the path of the latch having a notch in its outer side to be engaged by the latch for holding the door partly open, and having its ends so shaped with respect to the latch that the latter will be deflected to the inner side of the cam on opening movement of the door, and to the outer side of the cam on closing movement of the door, and spring means for yieldingly holding the latch in a position to engage the cam when the lever is moved in either direction.

In testimony whereof, I have signed this specification.

ROBERT S. POTTER.