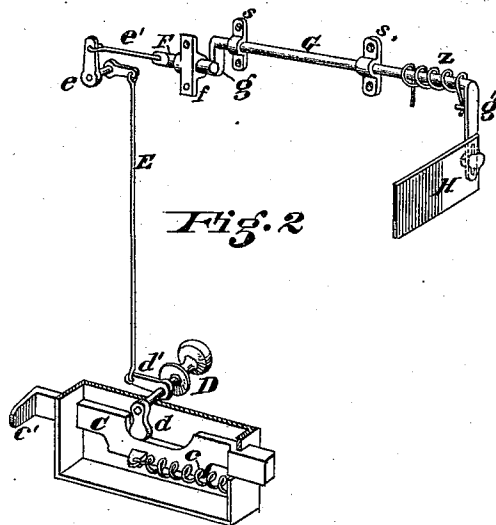
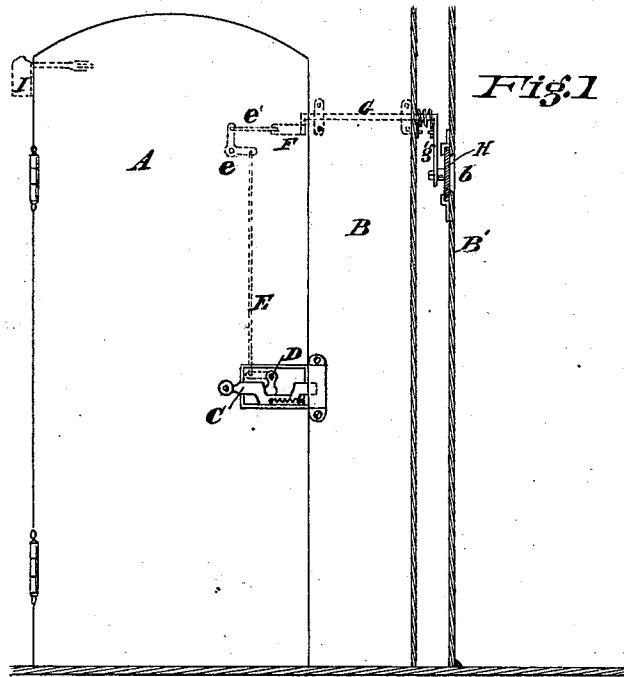


D. R. BAKER.
Signal for Water-Closets.

No. 227,403.

Patented May 11, 1880.



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SIGNAL FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 227,403, dated May 11, 1880.

Application filed August 22, 1879.

To all whom it may concern:

Be it known that I, DELOS R. BAKER, of Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Signals for Water-Closets, of which the following is a specification.

Referring to the drawings, Figure 1 is a sectional elevation of a water-closet embodying my improvements, and Fig. 2 is a perspective view of my improvements in detail.

My invention has for its object to invariably indicate to persons generally throughout the car the occupancy of the water-closet, and thus dispense with the necessity of going to it and trying the door, which is always a very embarrassing proceeding, and especially so to ladies.

Furthermore, it aims to assist the conductor in the matter of collecting fares, as a glance will indicate to him whether or not the closet is occupied, which he can, from the present form of closet, find out only by trying the door, and in some cases looking behind it, a proceeding of a very embarrassing nature to the occupant in case he had neglected to bolt the door. Then, in its general application to all water-closets the objects are of the same nature and the inconveniences to be obviated just as unpleasant.

To effect the above object completely it must, of course, be beyond the power of the person taking possession of the closet to prevent the display of the proper signal or notice, so that its non-appearance will indicate positively and beyond a doubt that the closet is not occupied, and enable the conductor to rely implicitly upon it.

To this end my invention consists in means whereby the shutting of the door from the inside of the closet will display the signal, and by which the shutting of the door from the outside will obscure it, these devices being more fully described in detail hereinafter.

Referring to the drawings, A is the door of the water-closet, which is formed in one corner of the car by the partitions B B'. The door opens inwardly in the usual manner, and is provided with a spring-lock, C, having a handle, D, to operate it from the outside, and a thumb-catch, *c'*, to operate it from the inside independently of the said handle.

The bolt C is formed with a square end, and the socket in the jamb of the door-frame has

no inclined guide, so that the door cannot be closed with a slam, and unless the bolt is first drawn back by the thumb-catch *c'* or the handle D.

The object of this arrangement is to compel the person closing the door to turn the handle D, so that the motion thus provided may be utilized for the purposes of the invention, which I shall explain presently.

Secured in the partition B is a rod, G, oscillating in bearings *s s*, and provided at one end with a short arm, *g*, and at the other end with a longer arm, *g'*.

The long arm *g'* is slotted at its outer end and engages with a stud upon the shield H. This shield is secured in the partition B' within slideways, so that it may be reciprocated behind an opening, *b*, in the outer wall of the partition. One half of it is painted and grained in imitation of the wood of which the partition is made, or it may be itself of the same material, thus avoiding the necessity of graining, and the other half is painted in some contrasting color, as red or white, and may have painted or engraved thereon suitable indicating-characters, such as "Occupied," "Unoccupied," "Open," "Closed," &c.

The opening *b* is of such size that one color upon the board will be sufficient in extent to fill it, so that the opening may be entirely concealed by the portion of the board harmonizing with the partition, or so that it may expose a color in strong contrast to the partition and conspicuous enough to attract attention accordingly as the board is moved into one of two positions.

The rod G is provided with a spring, Z, so strained and adjusted as to operate, through the rod and arm *g'*, to hold the shield H firmly in such position as that the part harmonizing with the partition shall be visible through the opening *b*. This will therefore be the normal position of the shield, and to which it will always return when relieved of interference.

The end of the rod G, having short arm *g*, protrudes from the door-jamb sufficiently to engage with a tripping-finger, F, secured within the door, which finger, when the door is closing, acts to rotate the rod by pressing against the arm *g*, thereby throwing the shield from its normal position and exposing its contrasting color through the signal-aperture *b*.

In this manner it will be seen that the clos-

ing of the door effects the exposure of the signal; and in order to attain the object of the invention it must be that the closing of the door by a person from the inside only will do this, else the closing from the outside would leave the signal exposed at times when the closet was empty, and consequently it would be no indication of whether or not the closet was occupied. I have therefore provided the handle D with a crank-arm, *d'*, to operate, through connecting-rod E, bell-crank *e*, and link *e'*, upon the tripping-finger F, to draw it back in its bearing *f* when the said handle D is operated to retract the bolt C in the act of closing the door from the outside.

It will readily be seen that when the finger F is thus retracted it will fail to engage the arm *g* upon rod G, and that consequently there will be no movement of the rod, and hence no display of the signal; but on the other hand, in closing the door from the inside the only means of retracting the bolt C is the thumb-catch *c'* upon the bolt, and as the bolt itself has no connection to the tripping-finger F, any retraction of it will not molest the said finger, and consequently the signal will be displayed by the action of the finger upon rod G.

As the handle D is the only means by which the finger F may be retracted, and as it is not accessible from the inside of the closet when in the act of closing the door, it is evident that the signal must be exposed when the door is closed by an occupant, and hence the conductor may implicitly rely upon the signal to indicate the occupancy of the closet.

The spring *e*, which draws the bolt C forward, may be relied upon also to draw the tripping-finger F forward to a normal position, although, if found desirable, an extra spring may be applied to said finger.

When the door is closed from the outside by operating the handle D, the finger F, which will have been drawn back to escape contact with the arm *g*, will shoot forward after having passed said arm, and may, if the arm is provided with a stop against inward movement, act as a bolt to secure the upper part of the door.

In order at all times to cause the door to stand conspicuously open when not bolted, I have provided a spring, I, for that purpose. The object of this spring is to show the conductor at a glance that if the door be almost but not quite completely closed there must be somebody inside holding it in that position, seeing that otherwise the spring would have forced it very widely open.

As a modification of the means for retracting the tripping-finger F when closing the door from the outside, and enabling me to use, instead of the square-headed bolt C, which necessitates a rotation of handle D in order to close the door, a bevel-headed bolt which will require no rotation of the said handle, but will retract itself by coming in contact

with its socket, I provide for the horizontal movement of the handle in its bearings, and communicate this movement in any desirable manner to the tripping-finger.

In arranging the above means for retracting the tripping-finger it will be seen that I have looked to a construction which will prevent a person from closing the door with a slam without operating the said devices, and thereby causing a display of the signal, the same as if the door had been closed from the inside; and in the event that I use a bolt which will not require the turning of the handle D to close the door, I must invariably employ a spring, I, which will prevent the slamming of the door and compel a person to pull the door shut by the handle, so that the necessary motion to retract the tripping-finger will be produced by the horizontal movement of the handle when being pulled upon.

There are, of course, various means by which the movements of the door may be made to indicate the occupancy or vacancy of the closet, and it is evident that the improvement may be applied to any water-closet whatever, in private houses, hotels, railway-cars, and steamboats, with equally beneficial results.

Having thus described my invention, what I claim is—

1. The combination of a water-closet door provided with an interior lock-bar operating a tripping device through the intervention of suitable mechanism, such as described, with a signal attached to an oscillating shaft engaging with the tripping device, whereby the signal is exposed by the closing of said door from the inside and obscured by the opening of said door, substantially as described, and for the purpose set forth.

2. In a water closet or compartment, the combination of a movable signal with a tripping-finger connected to an exterior opening device, whereby the door may be opened from the exterior and the tripping-finger operated thereby independently of the signal-actuating mechanism, substantially as described, and for the purpose set forth.

3. The tripping-finger F, in combination with links *e'* E, crank-arm *e*, and handle D, having the interior arm, *d*, and exterior arm, *d'*, substantially as described, and for the purpose set forth.

4. The combination of the spring lock-bar *e*, having shoulders to engage a bar, *d*, of the exterior opening device, with links E *e'*, crank-arm *e*, shaft F, and the signal-actuating mechanism, substantially as described, and for the purpose set forth.

In testimony of which invention I have hereunto set my hand this 15th day of August, A. D. 1879.

DELOS R. BAKER.

Witnesses:

EDGAR J. GROSS,
C. F. HESSER.