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LOCKING MEANS FOR DOORS.

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To all whom it may concern:

Be it known that I, HENRY C. TROST, a citizen of the United States, and a resident of El Paso, in the county of El Paso and State of Texas, have invented certain new and useful Improvements in Locking Means for Doors, of which the following is a description, reference being had to the accompanying drawings, which form a part of my specification.

My invention relates to means more especially intended for locking and controlling doors arranged in opposite walls of a bath room or other compartment disposed intermediate of and accessible from adjacent rooms; that is to say, my means is especially intended for locking and controlling the doors leading from rooms located on opposite sides of the bath room, as for example in hotels and the like where the intermediate bath room is intended to be used by the occupants of the rooms disposed on opposite sides of the bath room.

The purpose of my invention is to provide means whereby the user of the bath room, upon entering the same from his room or compartment, may so adjust the means that the door leading from the opposite room will be locked to prevent the occupant of said room from entering the bath room while in use.

Another object of my invention is to provide means which will be simple in construction and application and at the same time easy of operation, whereby the simultaneous locking of the opposite doors leading from both compartments is accomplished and at the same time locking of the outer door leading from the occupant's compartment will be made impossible from the compartment-side thereof while the individual is in the bath room.

The invention and its advantages will be more readily comprehended from the detailed description of the drawings, wherein:—

Figure 1 is a sectional plan view of a bath room and portions of two adjacent compartments, illustrating the application of my improved locking means.

Figure 2 is a detail view, in perspective, of a portion of one end of the bath room with my improved locking means.

Figure 3 is a detail view, partially in section, illustrating the position of the locking means as shown at the right in Figure 2.

Figure 4 is a detail view, partially in section, illustrating the position of the means as indicated at the left in Figure 2.

Figure 5 is a detail view, in elevation, of the modification of my invention shown at the left hand end of Figure 1.

Figure 6 is a sectional view of the construction shown in Figure 5.

In the exemplification of the invention as disclosed in the first four figures of the drawings, the invention is shown applied to chambers or compartments disposed between two rooms; the one chamber representing a bath room while the other chamber represents a toilet, both of which are accessible by separate doors from the adjacent rooms; the right hand end of Figure 1 illustrating my improved means as employed in connection with double doors, while the left hand end of Figure 1 illustrates a modification of the invention as employed in connection with single doors.

In the embodiment shown at the right in Figure 1 and in Figure 2, the compartment or bath room is shown provided with double doors at each entrance, to-wit what may be termed an outer door 10 hinged to swing outwardly as indicated in dotted lines and an inner door 11 adapted to swing inwardly into the compartment as indicated in dotted lines; the two doors when completely closed being intended to be in slight spaced parallel relation with each other as shown in the lower right hand corner of Figure 1 and at the right in Figure 2. The closed position of both the inner and outer doors 11 and 10, however, can only be obtained when my locking means has been actuated by an individual occupying the bath room or toilet as the case may be.

The object of my invention is to provide mechanism which can only be operated from within the bath room or toilet and whereby the doors leading from the room or apartment on the opposite side of the bath room or toilet and therefore not occupied or belonging to the individual in the toilet or bath room will be locked from the bath room or toilet side so as to prevent entrance from the adjoining room or apartment; while the inner door leading from the room or apartment occupied or belonging to the user of the bath may be locked from the inside and the corresponding outer door, however, held in such position as to prevent the accidental closing or latching of

same and thereby prevent the individual leaving the bath or toilet.

To carry out this object, I provide oscillatably mounted means preferably illustrated in the nature of two rods 12 and 13 arranged in alignment and slidably secured in a tubular member 14 which latter may be provided with any suitable means, as for example the fastening screws or bolts 15, 15 adapted to extend through the tubular member 14 and have gripping relation with the inner ends of the rods 12 and 13, thereby maintaining the two rods in their adjusted positions laterally, and also causing said rods 12 and 13 to oscillate with the tubular member 14. The outer ends of the rods 12 and 13 are curved forwardly to cause them to extend substantially parallel with the inner doors 11, as shown at 16, 16 in Figure 2 when the means has been oscillated into locking position. The tubular member 14, at an intermediate point, is provided with a suitable outwardly disposed handle or extension 17 whereby the tubular member 14 with the rods may be oscillated. The tubular member 14 is secured to the wall 18 of the compartment, namely the wall disposed at right angles to the doors, by means of suitable clips or brackets 19, 19 of such construction as will permit free oscillation of the tubular member. The wall 18, at a point above the tubular member and in alignment with the handle 17 is provided with a suitable spring clip or latch member 20 which is shown in the nature of two corresponding spring members or prongs arranged in close spaced relation and bent to receive the handle 17 therebetween and provide gripping relation therewith when the handle has been forced upwardly therebetween as shown in Figure 2.

The inner doors 11 of the bath compartment are each provided with a latch member or dog 21 disposed through a suitable opening in the inner doors and pivotally secured therein in any convenient manner as illustrated at 22 so as to oscillate vertically. Each latch member 21 has the end, which is disposed between the correlated inner door 11 and outer door 10, formed in the nature of a downwardly disposed hook as at 23, while the other end extends through and protrudes on the compartment-side of the inner door 11. These latch members 21 are so formed or of such length and so pivoted that the ends protruding into the bath or toilet compartment are of greater weight than the hook-ends thereof in order that the outer ends will drop downwardly, through the action of gravity, and therefore maintain the hook-end 23 normally in raised and unlatched position.

The outer doors 10 are each provided, at a point in proximity to the latch members 21, with a lug or bracket 24 formed to provide

an upwardly disposed hook in spaced relation with the door 10 adapted to have the hook-end 23 of the latch member 21 pass over the top and engage the free end or hook of the bracket 24, thereby providing locking relation between the correlated inner and outer doors as indicated in Figure 3.

The composite locking rods 12-13-14, by reason of the forwardly presented curved ends 16, will automatically swing downwardly so as to bring the curved ends 16 parallel with the wall 18 in the manner indicated in dotted lines in Figure 2, when the handle 17 has been pulled from between or free of the spring clip 20. With the curved ends 16, 16 out of supporting relation with the latch-members 21, the latter will be allowed to tilt through the action of gravity, causing the hook-ends 23 to move upwardly and out of latching engagement with the lugs or brackets 24; a latching engagement normally being impossible, while at the same time permitting all of the doors to be completely closed.

The individual using the bath compartment upon entering leaves the outer door 10 leading from his apartment or room slightly ajar while his inner door 11 may be completely closed; he then grasps handle 17 and swings it upwardly between the spring clip 20. The upward movement of the handle oscillates the composite rod into the position shown in full lines in Figure 2, namely with the curved ends 16 brought upward beneath the protruding ends of the latch members 21, causing the latter to tilt on their respective pivotal points 22, and inducing the hook-ends 23 thereof to engage with the brackets or lugs 24 on the inner sides of the outer doors 10. In the case of the doors leading from the adjacent apartment, where both doors are in complete closed position, it is apparent that the hook-end 23 will engage rearwardly of the hook or bracket 24 and lock the outer door 10, leading from said adjacent apartment, to its respective inner door and preventing access to the bath from said apartment. On the other hand, by leaving his own outer door 10 partially open, the tilting of the latch member 21 on his inner door 11 will move the hook-end 23 thereof downwardly where it will be in the path of and abut against the lug or bracket 24 on his outer door 10, in the event that his outer door is swung toward closing position, and thus prevent said outer door from being completely closed, accidentally or otherwise, and therefore from becoming latched or locked from the room-side and prevent his egress from the bath compartment. On the other hand, the upwardly swung curved end 16 of the locking rod will prevent his inner door 11 being opened from the room-side.

The locking rod has been illustrated and described as consisting of the two rods 12, 130

13 and the tubular member 14, in order to provide a longitudinally extensible rod which may be readily adjusted to compartments of different widths.

5 In Figures 5 and 6 and at the left in Figure 1 I show a modification of my invention wherein it is applied in a situation where merely single doors are employed; that is to say, a single door leading to the compartment from the rooms or apartments on adjacent sides thereof as very clearly shown to the left in Figure 1. These doors 25 are adapted to swing into the compartment or toilet in a manner similar to the inner doors 11 at the right hand end of Figure 1 where the double door construction previously described is shown. In this form of the invention, the outer or room side of each door is provided with a bolt 26 slidably held in place by suitable brackets 27, 27. Each latch member or bolt is provided with a knob or grasp as at 28 see Figures 1 and 6, whereby the bolt may be moved to locking position from the room side of the door. 25 The doors 25, like the inner doors 11 of the double door construction, are each provided with a pivoted pawl or latch member 21' which may be substantially identical with the latch members heretofore described, except that the latch members 21' in this construction need not be provided with a hook-end, with the bath or toilet side of the latch member protruding a distance sufficient to be engaged on the under side thereof by the curved ends 16 of the locking rod which preferably consists of the members 12, 13 and 14 as previously described; the tubular member 14 being provided with the handle 17 which is adapted to be snapped between 40 the spring clip 20 when the locking rod has been oscillated upwardly so as to bring the two bent or curved ends upwardly away from the adjacent wall.

Each latch or bolt 26 at a point adjacent 45 to one end, namely the end farthest removed from the free edge of the door, is provided with a notch as at 29. This notch 29 is adapted to receive the short arm of the latch member 21', when said bolt 26 has been withdrawn from bolting position, and thus prevent the bolt 26 being inadvertently moved into locking position on the door leading from the apartment or room of the individual in the compartment or bath room. 50 On the other hand, the position of latch member 21', relative to the end of bolt 26, is such, that when the bolt 26 has been moved into locking position and the latch member 21' has been lifted by the ends of the locking rod, the short arm of latch member 21' will be in abutting relation with the rear end of the bolt 26 and prevent its withdrawal. This last mentioned condition is the one which would take place on the door 65 leading from the opposite apartment or

room and the latch member 21' will remain in abutting relation with the rear end of the bolt 26 as long as the composite locking rod is in its upwardly oscillated position with the curved ends 16 thereof holding the inner ends of the latch member 21' upwardly. 70

The constructions shown and described I believe are the simplest adaptations of my invention; permitting easy operation as well as the ready adjustment of the device to compartments of varying size relative to the doors leading from adjacent rooms; and I have described the same in terms employed merely as terms of description and not as terms of limitation, as structural modifications are possible and may be made without, however, departing from the spirit of my invention.

What I claim is:—

1. Means of the character described, comprising, in combination with doors arranged in the opposite walls of a bath room or toilet and leading from adjacent apartments, oscillatingly mounted means secured to the connecting wall of the bath room or toilet intermediate of the walls provided with said doors, and latching means secured to said doors, with a portion of said means, disposed on the bath room or toilet side thereof and in the path of said oscillatingly mounted means, whereby oscillation of said first means will control said latching means. 90

2. In combination with doors arranged in the opposite walls of a bath room or toilet and leading from adjacent apartments, latching means secured to the outer or apartment sides of the doors with portions thereof extending through to the inner or bath room sides of the doors, and means secured to the connecting wall of the bath room or toilet adjacent to the walls provided with said doors, common to both latching means, adapted to move said portions of the first means into latch controlling position. 100

3. In means of the character described, pivoted latching means adapted to be secured to the oppositely disposed doors of a compartment leading from adjacent rooms, with a portion of each member arranged on the inner or compartment side of the doors, and means oscillatingly arranged on the adjacent or connecting wall of said compartment adapted to swing into a position parallel with the doors and thereby cause both members to be simultaneously moved toward latching position. 110

4. In combination with a pair of oppositely disposed doors of a compartment, leading from adjacent rooms, locking means comprising a latch member pivotally secured to each door and extending therethrough, with the ends of said members disposed of the room-side being adapted to control the locking of said doors, and an extensible member, common to both latch members, 120 125 130

oscillatingly mounted on the adjacent or connecting wall of said compartment so as to swing across both doors and thereby move both latch members toward lock-controlling position.

5. In combination with a pair of oppositely disposed doors, leading from opposite rooms into an intermediate compartment and provided on the room sides with locking means, a latch member extending through each door and pivotally secured to swing vertically, the room-side ends of said latch members being adapted to cooperate with the locking means, an extensible member, common to both latch members, mounted on the adjacent or connecting wall of said compartment so as to swing vertically into contact with the latch members and cause the room-side ends of said latch members to move into the path of the locking means on the doors, and means whereby said extensible member will be held in operative position.

6. In means of the character described, a latch member extending through each door of a pair of oppositely disposed doors of a compartment, each member being pivoted at any intermediate point so that the members will normally swing downwardly out of latching position, the outer ends of said members being adapted to provide a latching means, a rod, oscillatably mounted intermediate of its ends on the adjacent or connecting wall of the compartment, with the ends disposed at an angle to the axis of said rod so as to swing across said doors and into engagement with the projecting end of the latch members of both doors and move the latch members into latching position, and means whereby the rod will be held in its oscillated position.

7. In combination with doors arranged in pairs in the opposite walls of a compartment, the outer door of each pair being hinged to swing into the adjacent room while the inner door of each pair is hinged to swing into said compartment, locking means for said doors comprising a latch member extending through and pivotally mounted on each inner door, means secured on the outer doors with which said latch members are adapted to engage, a rod oscillatably mounted on the connecting wall of the compartment adjacent to said doors so as to oscillate in a vertical direction, the ends of said rod being arranged at an angle to the axis of the rod so as to be disposed parallel with the inner doors when said rod is swung upwardly, said ends being adapted to simultaneously lift the latch member of both inner doors into latching position when the outer doors are in complete closed position, and means

whereby said rod may be locked in its upwardly oscillated position.

8. In combination with doors arranged in pairs in the opposite walls of a compartment, the outer door of each pair being hinged to swing into the adjacent room on opposite sides of said compartment, while the inner door of each pair is hinged to swing into said compartment, locking means for said doors comprising a latch member extending through the inner doors and pivotally secured thereto so as to normally swing into inoperative position, a hook member or bracket secured on the inner side of each outer door and adapted to form interlocking engagement with the adjacent end of the respective latch member, an extensible rod oscillatably mounted on the connecting wall of said compartment adjacent to said doors, adapted to rotate in a vertical direction, the ends of said rod being arranged at an angle to its axis so as to be disposed parallel with the inner doors when said rod is oscillated upwardly, whereby the ends are simultaneously brought into engagement with both latch members and the latter moved into engagement with the hook members or brackets on the outer doors, and a spring clip whereby said rod will be held in its upwardly oscillated position.

9. In combination with a pair of oppositely disposed doors leading from opposite rooms into an intermediate compartment, means oscillatably mounted on the adjacent or connecting wall of said compartment intermediate of said doors, said means being adapted to extend transversely of the doors when in locking position and parallel with said adjacent or connecting wall when in unlocking position, and means whereby said first means may be operated and held in door locking position.

10. In combination with a pair of oppositely disposed doors leading from opposite rooms into an intermediate compartment, an extensible member oscillatably mounted intermediate of its ends on the adjacent or connecting wall of the compartment with the ends of said member disposed at an angle to its axis so as to swing across said doors into holding engagement therewith and extend parallel with said connecting or adjacent wall when in inoperative position, and means whereby said member may be oscillated and held in door locking position.

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Witnesses:

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LOCKING MEANS FOR DOORS

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2 Sheets-Sheet 1

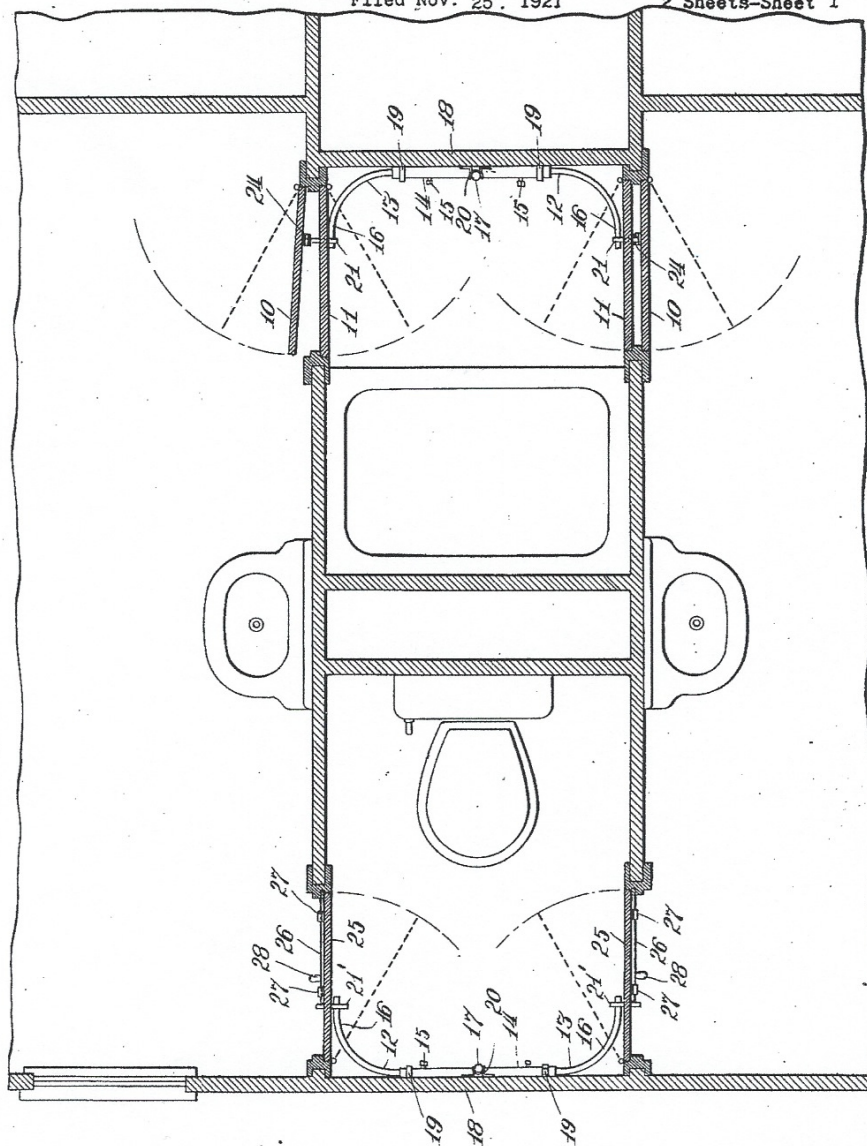


FIG. 1.

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2 Sheets-Sheet 2

