F. J. MATCHETTE.

SERVICE DOOR.

APPLICATION FILED JUNE 12, 1914.

1,222,963.

Patented Apr. 17, 1917.

4 SHEETS—SHEET 1.

Fig. 1

Room Side

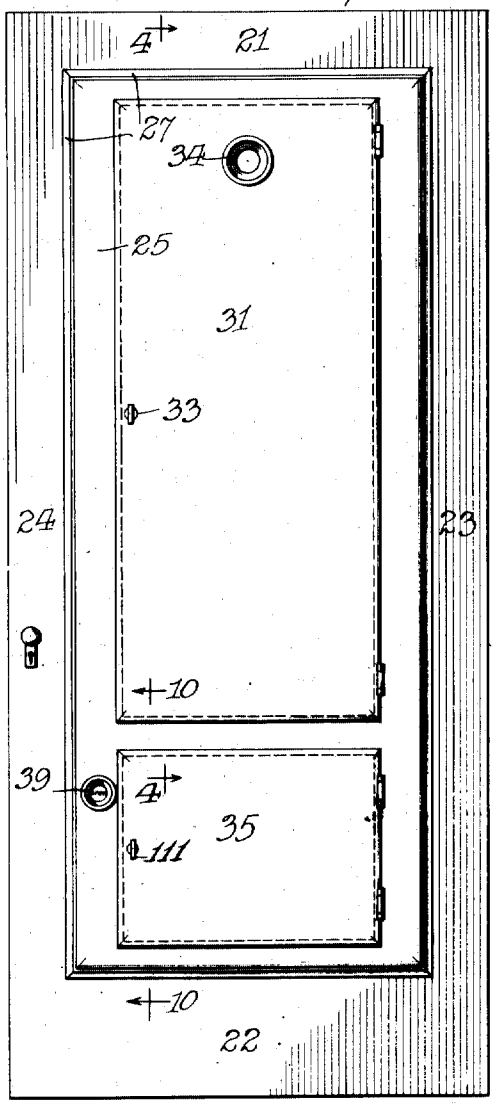
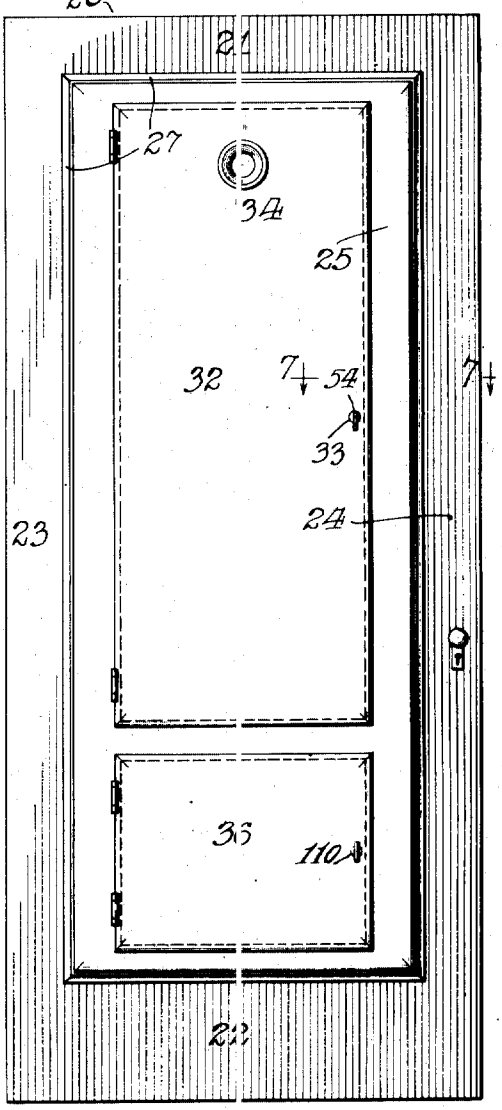


Fig. 2

Hall Side



Witnesses:

Leonard W. Novander

Leonard E. Bogue

Inventor

Frank J. Matchette

By Brown, Hanson & Bostwick

Attorneys

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4 SHEETS—SHEET 2.

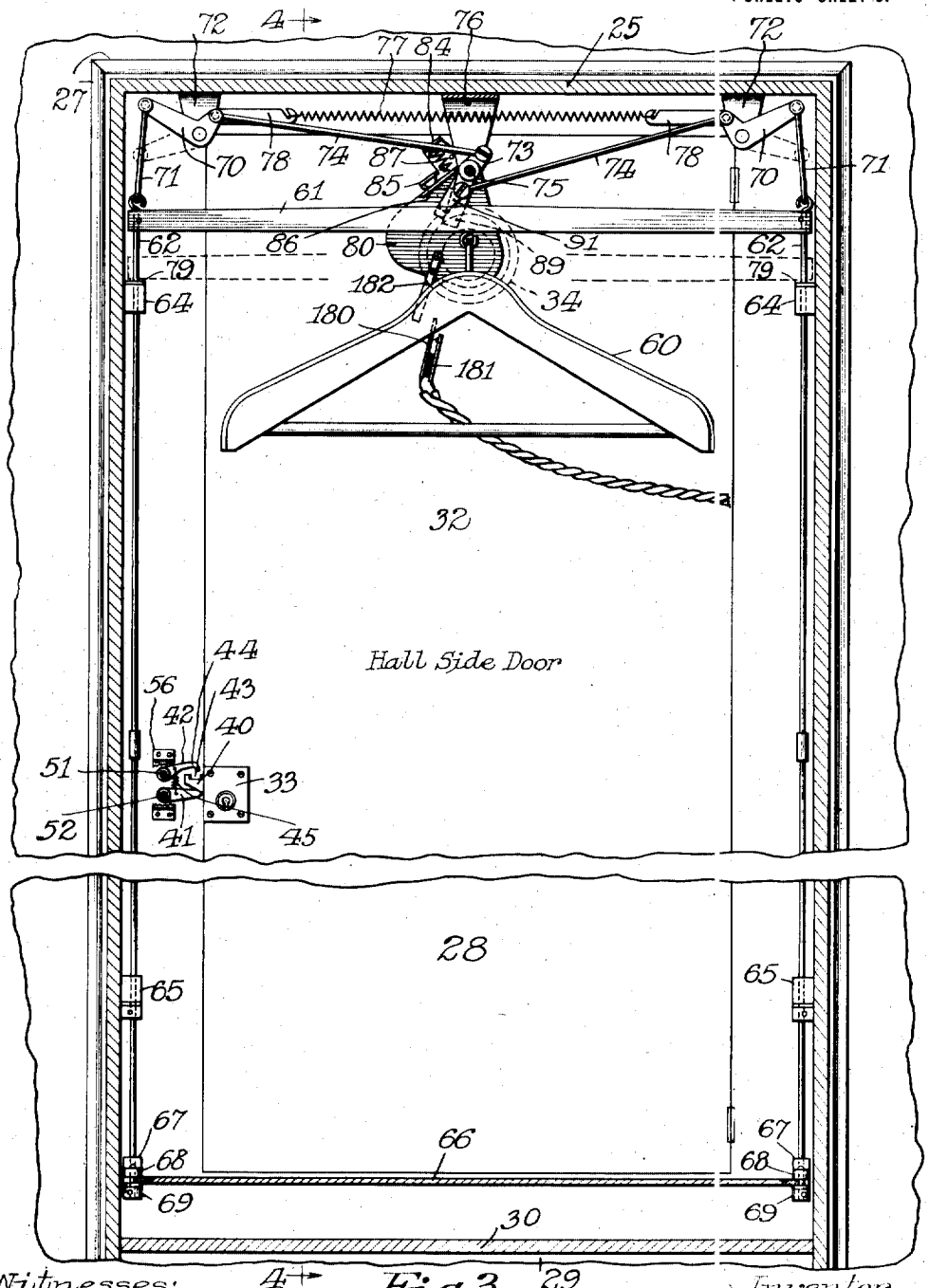


Fig. 3

Witnesses:
Leonard W. Novander
Leonard E. Bogue

Inventor
Frank J. Matchette
By Brown, Hauson & Boettcher
Attorneys

F. J. MATCHETTE.

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4 SHEETS—SHEET 3.

Fig. 5

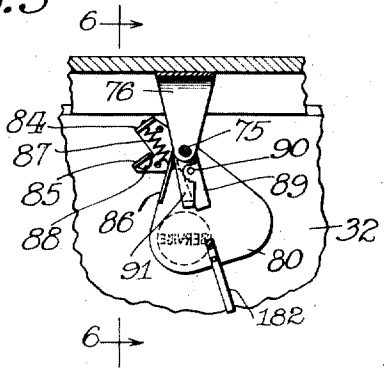


Fig. 4

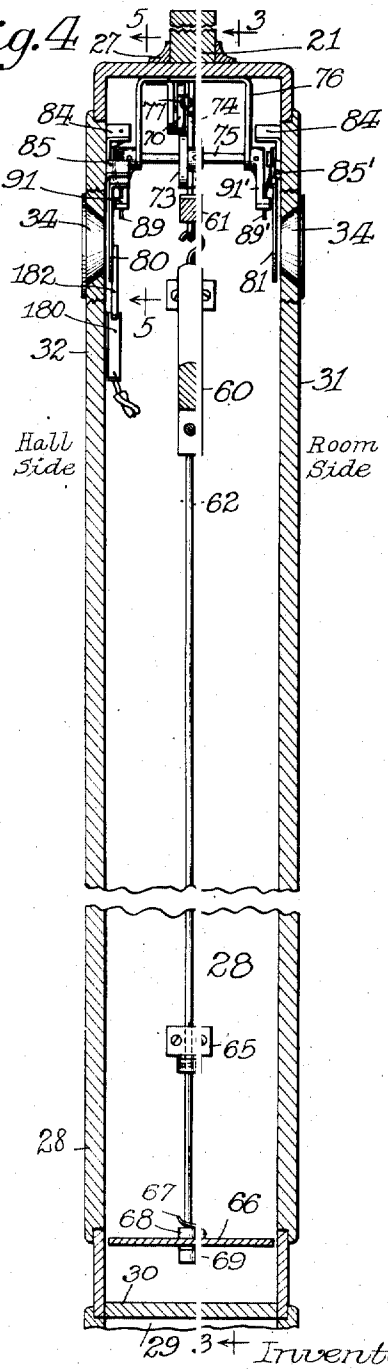
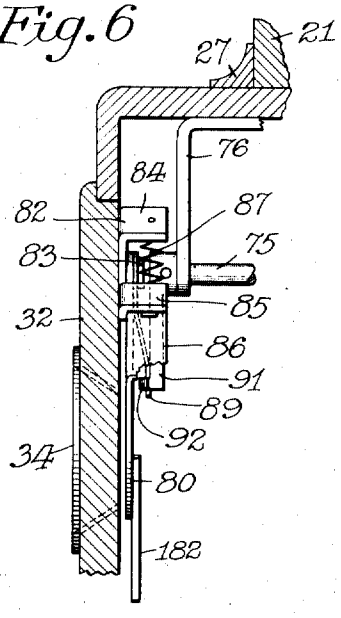


Fig. 6



Witnesses:
Leonard W. Novander
Leonard E. Bogue

Inventor
Frank J. Matchette

By Brown, Hanson & Boettcher
Attorneys

F. J. MATCHETTE.

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4 SHEETS—SHEET 4.

Fig. 7

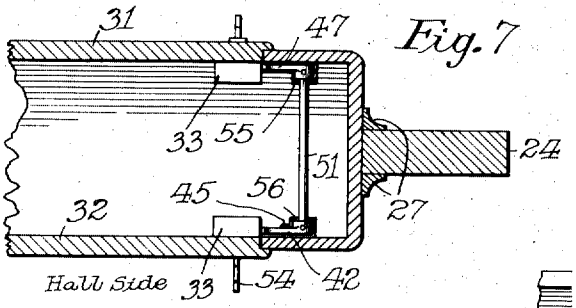


Fig. 8

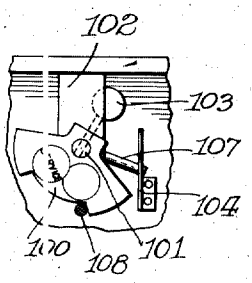


Fig. 9

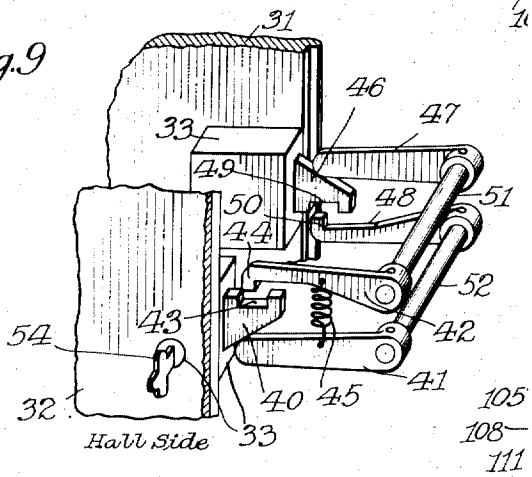


Fig. 10

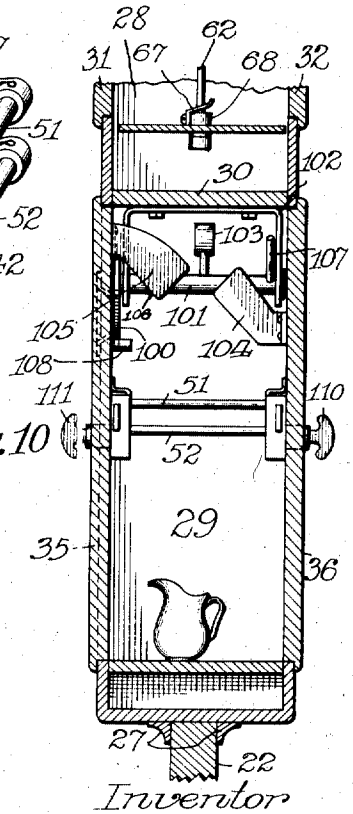
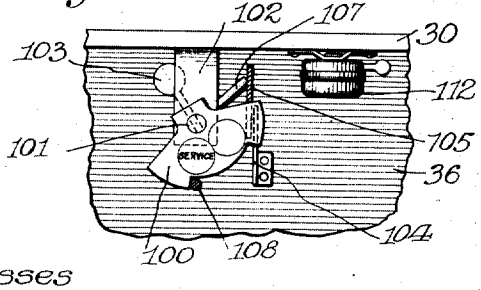


Fig. 11



Witnesses

Leonard W. Novander.

Leonard E. Bogue

Inventor

Frank J. Matchette

By Brown, Hancock & Goettcher

Attorneys

UNITED STATES PATENT OFFICE.

FRANK J. MATCHETTE, OF MILWAUKEE, WISCONSIN.

SERVICE-DOOR.

1,222,963. Specification of Letters Patent. Patented Apr. 17, 1917.

Application filed June 12, 1914. Serial No. 844,623.

To all whom it may concern:

Be it known that I, FRANK J. MATCHETTE, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Service-Doors, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The subject-matter of this invention is a service door.

Broadly stated, the chief object of this invention is to provide means for enabling better and more satisfactory service to be rendered to the patrons or guests of hotels, clubs, apartment houses, and the like, by the attendants or servants of the hotel, or the like.

The utmost inconvenience has heretofore been attendant upon transferring articles of clothing, supplies, and other objects, to and from the private room of a guest. Heretofore, any service rendered a guest has necessitated a violation of the privacy of his room. According to my invention this violation of the privacy of the room by entry to the room by servants for the purpose of receiving or delivering articles is entirely obviated.

I provide at a convenient point in the room a cabinet or closet accessible from both the inside of the room and from the outside thereof. Through this closet, which forms a seal or lock between the room and the hall or outside, articles may be delivered or received.

Another object of the invention is to provide a service door through which the guest may be enabled to transmit from and receive into his room various articles, maintaining meanwhile the privacy of his room.

A further object is the provision of signaling mechanism to indicate automatically to the servants of the hotel the existence of wants on the part of the guest and to the guest the attention given to his wants.

The cabinet forms a channel for the transmission of articles to and from the room and the coöperating signal mechanism apprises each of the interested parties of the action taken by the other with respect to the articles moving through said channel.

In its broader aspects the invention is capable of very wide application and of a great variety of uses, and, while one specific embodiment is described herein, this description is intended in no wise to limit the scope of the invention, but is a description of an operative embodiment for the purpose of complying with the statutes.

In the drawings—

Figure 1 is an elevation of the room side of one type of door embodying my invention;

Fig. 2 is an elevation of the hall side of said door;

Fig. 3 is a sectional elevation of the door shown in Figs. 1 and 2 taken on the line 3—3 of Fig. 4;

Fig. 4 is a sectional elevation of the door taken on the line 4—4 of Fig. 1, also indicated as 4—4 in Fig. 3;

Fig. 5 is a fragmentary sectional view taken on the line 5—5 of Fig. 4;

Fig. 6 is a fragmentary sectional view taken on the line 6—6 of Fig. 5;

Fig. 7 is a sectional detail view taken on the line 7—7 of Fig. 2;

Fig. 8 is a fragmentary view showing the signaling mechanism in the lower compartment of the service door;

Fig. 9 is a view in perspective of the interlocking mechanism for the type of door shown in the prior figures;

Fig. 10 is cross sectional elevation on the line 10—10 of Fig 1 showing the construction of the lower compartment;

Fig. 11 is a view similar to Fig. 8 showing the signaling mechanism of the lower compartment in a different position.

A remarkable advantage is secured by locating the cabinet within the door, because of the fact that the door is always kept clear of articles of furniture and the like on the inside of the room, and is, therefore, always accessible from the inside of the room. Furthermore, the door naturally marks the location of the room as viewed from the outside, and the hotel servant is enabled to locate quickly and conveniently the position of the cabinet corresponding to a given room on account of its unvarying and convenient location.

In Fig. 1, I have shown a door 20 having the usual top and bottom rails 21, 22, hanging stile 23, and lock stile 24. Coextensive with the inner edges of the stiles and rails is the casing 25 which forms the chamber or closet to which I have referred. This casing is of considerably greater thickness than the usual door and is mounted centrally of the frame members of the door so as to project about equally on each side.

Ornamental molding 27 may be mounted at the joint between the casing and the door to give the same a finished appearance as well as to aid in securing the casing to the frame members of the door.

On each side of the casing, doors are provided for allowing access to the interior of the casing. The interior of the casing is divided into an upper compartment 28 and a lower compartment 29 by the partition 30. Access can be gained to the upper compartment 28 from the room side by means of the door 31 and from the hall side by a similar door 32. Each of these doors is provided with a locking member 33, the locking member of the door 32 requiring a key.

In the top of each of the doors 31, 32 there is mounted an annulus of stamped metal for providing a sight opening 34 for a purpose to be described later.

The lower compartment 29 has doors 35 and 36 on the room side and hall side, respectively. These doors are also closed by suitable locking means and a sight opening 39 is provided in the casing 25 on the room side. The purpose of this will also be described later.

It can now be seen that I have provided a cabinet coextensive with the inner frame members of the door and mounted in said frame. This casing is provided with doors for allowing access to the interior of the casing and each of the doors may be locked and unlocked from the side of the main door on which it is located.

The casing fills in the place ordinarily occupied by panels or cross rails and serves not only its purpose as a service cabinet, but aids in bracing and supporting the frame members of the door and gives a finished appearance to the door.

The service door so far described may be employed for transferring articles to and from a room by unlocking one side of the cabinet, placing the articles therein and notifying the hotel servants of the fact. The articles may then be removed by unlocking the door on the other side of the cabinet. In a similar manner the articles may be transferred from the outside of the room to the inside. However, I prefer to employ further coöperating mechanism for insuring a certain manner of operation, as it is evident that the cabinet might be simultaneously opened from both sides and, as a consequence, the room would not be maintained in strict privacy, as access might be gained through the cabinet to the interior of the room.

Interlocking mechanism.

I preferably employ means for insuring that only one side of the cabinet will be open at a time. To this end I employ an interlocking mechanism for preventing the unlocking of the door on one side when the door on the other side is open. By this means the cabinet becomes an invariably effective seal or lock for the private room. The interlocking mechanism is shown most clearly in Fig. 9. The lock 33 on the hall side has a bolt 40 coöperating with two pivoted members 41 and 42. The bolt 40 is provided on one side with a notch 43 which coöperates with a catch 44 on the end of the member 42. The other side of the bolt 40 is cut away to form a surface coöperating with the member 41. The two members 41 and 42 are connected by a tension spring 45. The lock on the room side is similarly provided with a bolt 46 placed in a reverse relation to the bolt 40. Members 47 and 48, similar to members 41 and 42, coöperate with the bolt 46. The bolt 46 is provided with a notch 49 and the member 48 has a catch 50 coöperating therewith. The members 47 and 42 are keyed to a common shaft 51 and the members 41 and 48 are keyed to a similar shaft 52. A key 54 may be provided for the lock 33.

The operation of the interlocking mechanism is as follows:

Assuming that the guest wishes to open the door 31 on the room side of the casing, he must first unlock the door 31 by withdrawing the bolt 46. When this occurs the arm 47 is allowed to drop downward under the influence of the spring 45, such movement causing the catch 44 to enter the notch 43 in the bolt 40 on the hall side. The door 31 is now unlocked and may be opened but it is evident that the door 32 cannot be unlocked as the bolt 40 is held by the catch 44 and cannot be withdrawn at this time. As soon as the door 31 is again locked, the movement of the bolt 46 forces the arm 47 to its raised position and disengages the catch 44 of the notch 43 on the hall side. Of course it is evident that either side may be unlocked first as both locks are free to operate with equal facility, but after one bolt has been thrown to open the door, the other bolt cannot be withdrawn. In this manner access to the cabinet from only one side at a time is insured. This insures privacy of the room. Of course it is evident that the cabinet may be opened from the inside by any occupant of the room, but the outside door 32 may be opened only by an authorized person carrying the proper key 54. The doors 35 and 36 may be similarly provided with interlocking mechanism for the same purpose. The rods 51 and 52 may be suitably supported by the brackets 55 and 56 as shown in Fig. 7. It is evident that this interlocking mechanism is capable of very wide uses as will be explained further.

Upper compartment signaling mechanism.

In order to notify the hotel servants of

the wants on the part of the guest, I provide the above described service door with suitable signaling mechanism.

I also provide signaling mechanism for notifying the guest that his wants are being attended to. These signals may be automatically operated and aid materially in improving the service rendered the guest.

On the interior of the casing I prefer to mount a garment hanger 60. Whenever a guest places a garment on this hanger or deposits shoes or other articles in the base of the chamber 28 suitable signaling mechanism will be operated to notify the hotel servants of a desire for service on the part of the occupant of the room. The hanger 60 is suspended from a cross bar 61 connected to rods 62 in bearings 64—65 in the sides of the casing. A platform 66 is suspended from the rods 62 from which rods it may be readily detached for purposes of cleaning. A spring clip 67 mounted on a collar 68 holds the platform 66 against the collar 69 mounted on the end of the rod. The springs 67 may be released by pulling up on the end thereof. At the same time the collar 68 slides upward on the rod, and as the ends of the platform are slotted, this platform may readily be withdrawn. The upper ends of the rods 62 are connected to bell crank levers 70 by means of links 71. The bell cranks 70 are pivoted on brackets 72 mounted on the top wall of the casing 25. The short arms of the bell crank levers are connected to a signal actuating lever by means of links 74. The signal actuating lever 73 is mounted on a shaft 75 suspended from the top of the casing by bracket 76. A spring 77 is connected to the short arms of both of the bell crank levers by means of clips 78. This spring normally maintains the cross bar 61 and hanger 60 in raised position, shown in full lines in Fig. 3, with just sufficient tension to counter-balance the supporting frame and mechanism. Washers 79 of felt or the like may be mounted on the guides 64—65 to deaden the sound of the parts coming into contact.

When a garment is hung on the hanger 60 the cross bar 61 descends to the dotted line position shown in Fig. 3 extending the spring 77 and moving the signaling actuating lever 73. Movement of this signal actuating lever is transmitted by the shaft 75 to signaling disks which are visible through the opening 34 in the doors 31 and 32. These signaling disks 80 and 81 are similar and are each provided with a legend inscribed thereon, the display of which serves as an indication. The remainder of the disk is of the same finish as the outside of the casing 25 so as to be entirely inconspicuous when the signal is not displayed. The signaling disk 80 is mounted on a bracket 82 which is carried by the door 32 at the upper edge thereof. A pin 83 serves as a pivot for the signaling disk 80 and the bracket and the pin are so positioned that the disk 80 will be in register with the opening 34 at the top of the door 32. The bracket 82 is provided with two arms 84 and 85 and the disk 80 is provided with a flange 86. A spring 87 connects the arm 84 with the flange 83 of a signaling disk and tends to draw the flange 86 against the arm 85 which is provided with cushion 88 against which the flange strikes.

A flat leaf spring 89 is fastened to the disk 80 as by rivet 90 so that the spring and disk move in unison. The spring 89 is arranged to stand out from the back of the disk 80 sufficient to engage a projection 92 on the end of the arm 91 which is mounted on the signal actuating shaft 75.

It can now be seen that if the guest opens the door 31 and hangs a garment on the hanger 60, or deposits an object on the platform 66, the tension of the spring 77 will be overcome and the cross bar 61 will move to the dotted line position. At the same time the bell cranks 70 will be swung about their pivots and they will, in turn, rotate the shaft 75 in a counter-clock-wise direction as viewed in Figs. 3 and 5. The arm 91 being in engagement with the spring 89 will move the signaling disk 80 from the position shown in Fig. 3 to the position shown in Fig. 5 so as to display the legend on the front face of the disk through the opening 34 on the hall side of the cabinet. The hotel attendant, seeing the signal displayed, will open the door 32 and remove the garment or the other object, and the spring 77 will restore the parts to the position shown in Fig. 3. Of course, as soon as the door 32 is opened, the spring 89 and the actuating arm 91 will be disengaged and the spring 87 will restore the signaling disk 80 to its original position. The signaling disk 81 is similar in all respects to the signaling disk 80, but is constructed to face in the opposite direction. The signaling disk 81 is arranged to give an indication when the object is moving in one direction through this cabinet, and the signaling disk 80 gives an indication when the object is moving in the opposite direction.

Suppose, for instance, that the guest desires to have some garments cleaned or pressed, he opens the door 31 and in doing so disengages the arm 91′ from the spring 89′ so that movement of the garment hanger 60 will not effect the signal disk 81 at this time. The garments are placed on the supporting frame in this case upon the hanger 60 and the disk 80 is actuated as before explained to display the signal on the hall side. The door 31 is now closed and as this occurs the arm 91′ will appear on the opposite side of the spring 89′ from that

shown in Fig. 4 but as the cross bar 61 is in the lower position no indication will be given on the room side of the service door. The hotel servant opens the door 32 and in doing so disengages the arm 91 and the spring 89 on the hall side to allow the signaling disk 80 to be restored to normal. The garments are removed from the hanger 60 and the shaft 75 is rotated in the clockwise direction as shown in Fig. 3.

It will be noticed that the ends 92 and 92' of the arms 91 and 91' are beveled so as to allow the arm to ride over the corresponding spring. The arm 91' at this time rides back into the position shown in Fig. 4 to engage the spring 89'. The service cabinet is now empty and no signal is displayed on either side. As soon as the garments are to be returned to the guest the hotel servant opens the door 32 disengaging the arm 91 from the spring 89, places the garment upon the hanger 60, thereby operating the disk 81 to bring the legend in front of the opening 34 on the room side. The guest is thereby apprised that his garments have been returned to him. As soon as the door 32 is closed on the hall side, the door 31 on the room side may be opened and the arm 91' and the spring 89' are now disengaged. As soon as the garments are removed from the hanger 60 and the door is again closed, the signals will both be in the original non-indicating position.

From the above description it can be seen that when a garment or other object is placed in the cabinet by the guest that it will automatically indicate on the outside of the door a desire for service on the part of the guest. When the garment is removed from the cabinet toward the outside the signals are restored to indicate that the cabinet is empty. When the garments are returned from the outside they automatically give an indication of their return to the inside so that the transfer may be completed. In this manner the direction of travel is automatically indicated.

Lower compartment signaling mechanism.

The lower compartment is employed only for one way service. That is, for transferring objects from the outside into the guest's room. This compartment is not intended to be employed for outgoing and incoming service, as that is the function of the upper compartment. Consequently, only one signaling disk 100 is employed. This disk is visible through the opening 39 on the room side of the service door. The disk is mounted on a shaft 101 supported by a bracket 102 from the partition 30. A counter-balance 103 is connected to the shaft 101, this counterbalance being used to move the signal to the end of its stroke after the balance passes over the center line of the shaft 101. Cam shaped brackets or fins 104 and 105 are mounted on the hall door and room door, respectively. The cam 105 engages the edge 106 of the signal disk 100. A rod 107 projecting from the shaft 101 is adapted for engagement with the cam 104 as will be later described. A pin 108 limits the movement of the signaling disk.

Assuming that the guest desires some object which can be supplied him by the hotel servants, for instance, stationery, books, towels, ice water, he calls for the same by means of the usual room telephone, and the same is brought to his service cabinet.

The lock 110 on the hall door 36 of the cabinet is released, the door is opened and the pitcher of ice water, for example, as shown in Fig. 10, is placed in the lower service compartment. The hotel servant may operate a signal 112 to apprise the guest of the service finished.

It is not necessary to provide a separate key for the locks on the lower compartment as the guest is immediately notified of the disposal of an object in said compartment, and, furthermore, it is intended that this compartment be used for supplies which are regularly furnished the patrons and for the unauthorized removal of which there would be no incentive.

When the door 36 is opened, the cam 104 engages the rod 107 and tilts the weight 103 into the position shown in Figs. 10 and 11 to display the legend in front of the opening 39. This apprises the guest of the arrival of the supplies ordered and he opens the door 35 by releasing the lock 111. In moving outward, the cam 105 moves the signaling disk 100 from the position shown in Figs. 10 and 11 to the position shown in Fig. 8 obliterating the indication.

It can be seen that in this form of signal mechanism, the article in each case is preceded by a signal indicating its position.

Electric annunciator signals.

In order to notify the valets or other hotel servants of the placing of a garment or other object in the service door, I may employ an annunciator system to indicate at a central point when service is required at any of the rooms of a hotel. The annunciator should be operated only when service is required, and at no other time. I place a pair of contacts 180 and 181 on the hall side door of the cabinet as indicated in Fig. 3. A finger 182 attached to the signaling disk sweeps over the end of the spring 180 in moving to the indicating position and causes a brief contact between the springs 180 and 181 sufficient to cause an indication on the annunciator signal. As the signaling disk 80 returns to zero when the door is open, the arm 182 does not cause contact between the springs 180 and 181 as the

movement is such as to separate the springs instead of causing contact between them. By this means the annunciator is actuated automatically by the placing of a garment or other object in the cabinet to indicate a want on the part of a guest. The annunciator contacts may be employed on any of the forms of service door above described.

Résumé.

One underlying idea obtains. This is the provision of a seal or lock for the private room of a guest. This seal or lock is a space set apart to be accessible to both the guest and the hotel servant. That is, it serves as a channel between the private room and the outside or public space.

The structure also embodies the idea of allowing access to the space or compartment from either side but insuring such access from only one side at a time. This is to preserve the privacy of the room by keeping the hotel servant from coming in the presence of the guest. The signaling mechanism in each of the structures described indicates on the door in advance of the direction in which the article is moving, the presence of such article in the cabinet as well as the direction in which it is to move.

It can be seen that the service door above described provides a means for eliminating "tipping" of the hotel servants as the hotel servants never come into the presence of the guest and all of the guests are given uniformly prompt service.

Although I have not indicated in the above description the material from which the door may be constructed it is to be understood that any material suitable for constructing doors heretofore known may be employed. The structure is capable of being embodied in an all metal door for fire proof construction.

I claim—

1. A main door having an opening therethrough, a secondary door arranged on each side of said main door to close said opening, a compartment being thereby completed by said secondary doors, and a lock for each of said secondary doors for electively locking it in closed position exclusively from its own side of the main door, said locks being normally operative one only at a time so that each of said secondary doors when locked closed forms part of the main door as a complete normally operative barrier structure while the other secondary door may be opened at any time to expose said compartment.

2. A main door having an opening therethrough, a secondary door arranged on each side of said main door to close said opening, a compartment being thereby completed by said secondary doors, a key lock for exteriorly locking and unlocking one of said secondary doors, and a lock exclusively accessible from its own side of the main door for locking in closed position and unlocking the other secondary door, said locks being normally operative one only at a time so that each of said secondary doors when locked closed forms a part of the main door as a complete normally operative barrier structure while the other secondary door may be opened at any time to expose said compartment.

3. In combination, a private inclosure having a doorway leading to a relatively public space, a main door mounted to close said doorway and to be opened, locking means for securing said door in said doorway, said main door having an opening therethrough, a secondary door arranged on each side of said main door to close said opening, a compartment being thereby completed by said secondary doors, a key lock for exteriorly locking and unlocking the secondary door on the public space side in closed position, and a lock exclusively accessible from the private inclosure for locking in closed position and unlocking the other secondary door, said locks being normally operative one only at a time so that each of said secondary doors when locked closed forms a part of the main door as a complete normally operative barrier structure against unauthorized entry into said private inclosure while the other secondary door may be opened at any time to expose said compartment.

4. A main door having an opening therethrough, a secondary door arranged on each side of said main door to close said opening, a compartment being thereby completed by said secondary doors, means for locking each of said secondary doors in closed position, and means for preventing the simultaneous operation of said locks so that each of said secondary doors is automatically retained locked closed to form a part of the main door as a complete normally operative barrier structure while the other secondary door is open.

5. A main door having an opening therethrough, a secondary door arranged on each side of said main door to close said opening, a compartment being thereby completed by said secondary doors, a key lock for exteriorly locking and unlocking one of said secondary doors, and means exclusively accessible from its own side of the main door for locking in closed position and unlocking the other secondary door, and means for preventing the simultaneous operation of said locks so that each of said secondary doors is automatically retained locked closed to form a part of the main door as a complete normally operative barrier structure while the other secondary door is open.

6. A main door having an opening therethrough, a secondary door arranged on each

side of said main door to close said opening, a compartment being thereby completed by said secondary doors, means for locking each of said secondary doors in closed position, and means interlocking said locks, said locks being operable exclusively from the outside of said secondary doors and said interlocking means operating to prevent the simultaneous operation of said locks so that each of said secondary doors is automatically retained locked closed to form a part of the main door as a complete normally operative barrier structure while the other secondary door is open.

In witness whereof, I hereunto subscribe my name this 25 day of June, A. D. 1914.

FRANK J. MATCHETTE.

Witnesses:

DOUGLAS M. SUTHERLAND,

PERCY S. KAUFMAN.