

No. 725,552.

PATENTED APR. 14, 1903.

A. F. GERALD.
DOORWAY.

APPLICATION FILED JUNE 3, 1902.

NO MODEL.

Fig. 1.

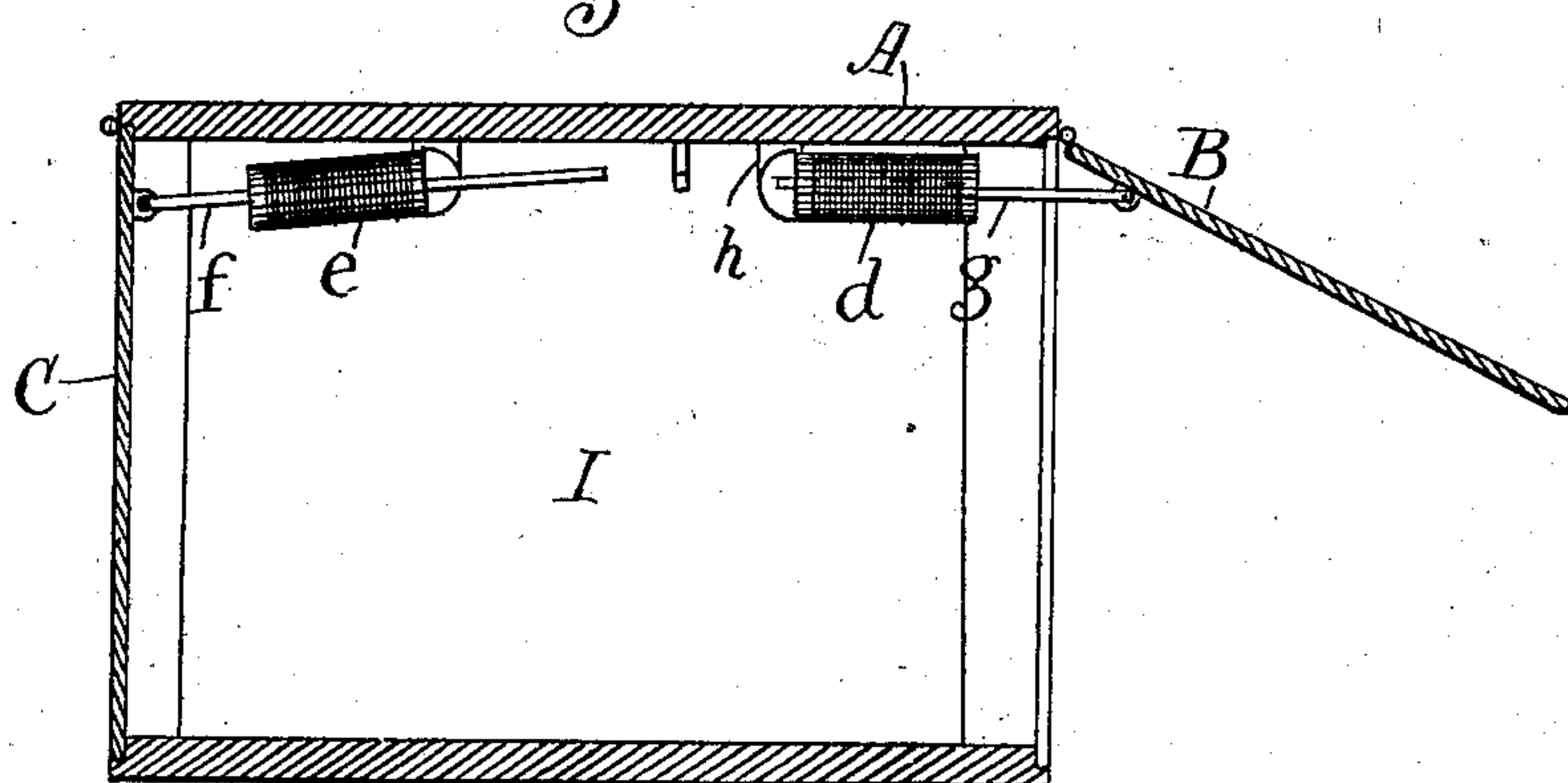
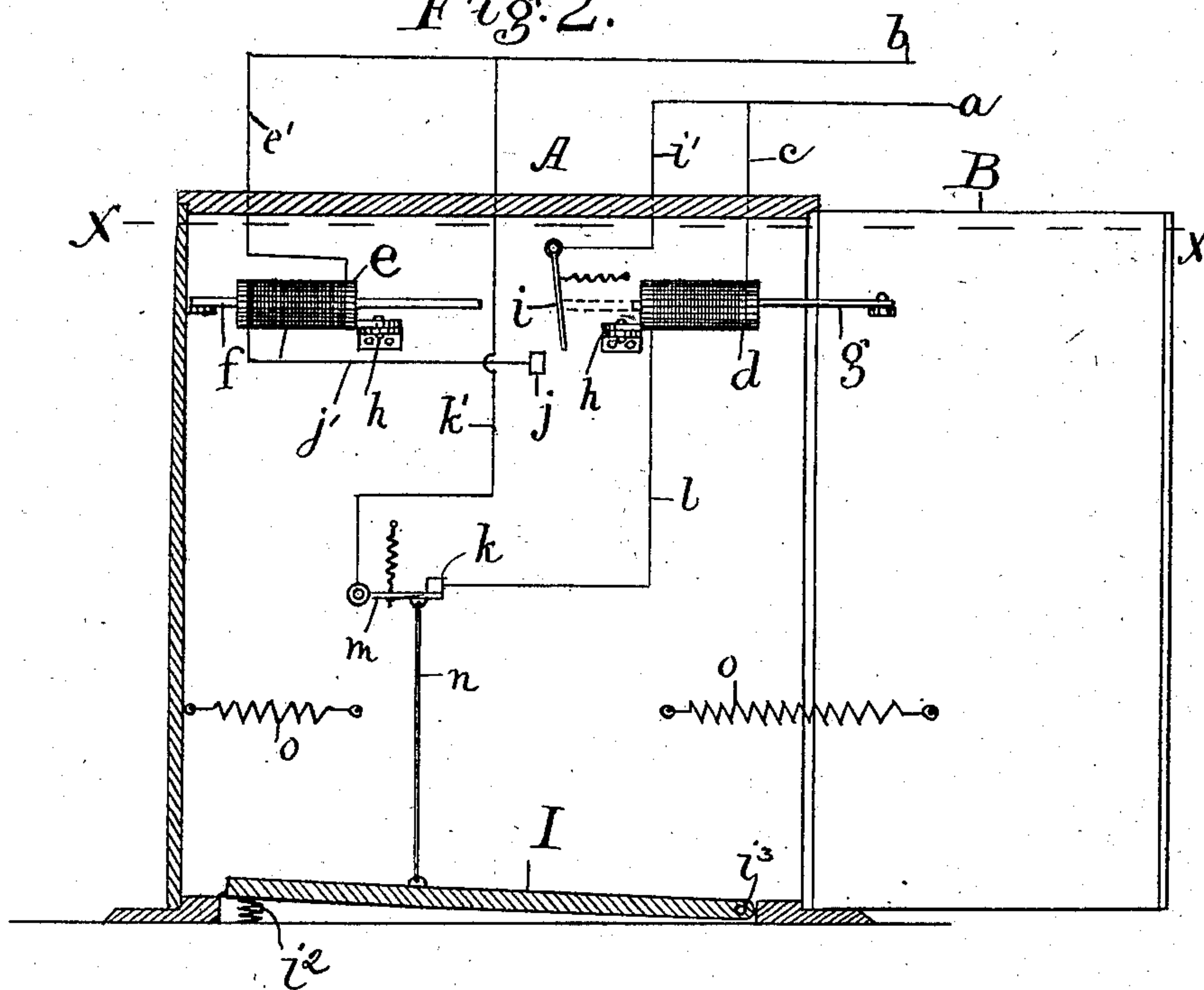


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

AMOS F. GERALD, OF FAIRFIELD, MAINE.

DOORWAY.

SPECIFICATION forming part of Letters Patent No. 725,552, dated April 14, 1903.

Application filed June 3, 1902. Serial No. 110,045. (No model.)

To all whom it may concern:

Be it known that I, AMOS F. GERALD, a citizen of the United States of America, and a resident of Fairfield, Somerset county, State of Maine, have invented certain new and useful Improvements in Doorways, of which the following is a specification.

My invention relates to a doorway or passage-way opening from a room or leading from one room to another, and it is particularly designed to take the place of the ordinary swinging doors which are now used for connecting the serving-rooms and dining-rooms of hotels, for connecting the interiors of buildings with out of doors, and other like cases where it is desirable to prevent the air in one room from passing into the other or from the outside to the inside of the building.

The object of the invention is to provide such a passage-way that a person in passing through it will not be obliged to open or close the door and that one door or one set of doors will be always closed between one room and the other.

The invention consists, essentially, of a cabinet having a door or a pair of doors at each end, with a treadle on the floor of the cabinet placed in such a position that it will be naturally stepped on by a person passing through, and mechanism for opening and closing the doors actuated by the movement of the treadle, preferably so connected that when one door is closed the other will open. One of the doors is designed to be normally open, so that a person passing through the open door will step on the treadle, which will set in motion the mechanism by which the door behind first closes, the door in front opens, and after leaving the cabinet the latter door closes, thereby opening the other door to its normal position. It is designed to have two of these cabinets placed side by side and opening in opposite directions, so that an open door will be presented to persons approaching from either direction.

The advantages of my invention will be readily seen. In case it is used in hotel dining-rooms, where now it is necessary to have a long passage-way separating the kitchen from the dining-room to exclude the smell, by the use of my device they may be placed nearer together, as there is always one set

of doors closed between the two rooms. A waiter approaching with a tray always finds one door open, and after passing through this door and stepping on the floor of the cabinet the other door opens, allowing him to pass through without touching any door.

When the device is used for an exit or an entrance to a public building in the winter-time, the cold air of the exterior is kept out from the building, because one door is always closed.

I illustrate my invention by means of the accompanying drawings, in which—

Figure 1 is a horizontal section through the line xx of Fig. 2, and Fig. 2 is a vertical section taken from one end to the other of the cabinet.

A represents a cabinet having, as here shown, a single door at each end—the door B, which is normally open, and the door C, which is normally closed. The cabinet is to be inserted in the doorway between the two adjacent rooms or in either room in line with the open doorway. Springs O of suitable form are provided for closing the doors and positive mechanism is provided for forcing the doors open. Any suitable mechanism may be employed for this purpose; but for the purpose of illustration I show an electrical apparatus adapted to force open each door and so connected that when one door closes the other opens automatically.

The door B is opened by means of a solenoid d , having a core g pivoted to the door, the solenoid itself being pivoted to the side of the cabinet by means of a bracket h . The door C is forced open in the same manner by a solenoid e , having a core f pivoted to the door C, the solenoid being pivoted to the bracket h . One terminal of each of the solenoids is connected with the main line a and the other terminal is connected with the return-line b , both lines being connected with a battery or a suitable source of supply. (Not here shown.) The positive terminal of the solenoid d is connected with the line a by the wire c and the negative terminal is connected to the line b by the wire l , switch km and wire k' . The switch is composed of the fixed contact-point k and the movable arm m , which is held normally up against the contact-point by a suitable spring. Means are provided by which the

switch *km* is opened when the floor of the cabinet is depressed. As here shown, the floor of the cabinet is pivoted to form a treadle, so that it will be depressed when it is stepped
 5 on. The floor is pivoted at *v*³ and has a spring *i*², which keeps it normally raised. A rod *n* connects the floor or treadle with the movable arm of the switch *km*, so that when the floor is depressed the switch is opened
 10 and when the floor is released the switch closes automatically. The negative terminal of the solenoid *e* is connected with the line *b* by the wire *e'* and the positive terminal is connected with the line *a* by the wire *i'*,
 15 switch *ij*, and wire *j'*. The switch *ij* is composed of a fixed contact-point *j* and a movable arm *i*, which is held normally open, but is in position to be closed by the rear end of the core *g* of the solenoid *d* when the core is
 20 at its inner position and the door is closed. My device is operated as follows: The door B is held normally open by the solenoid *d*, the circuit of which is completed by the closing of the switch *km*. The person using the de-
 25 vice walks through the open door and steps on the floor or treadle, which is immediately depressed, opening the switch *km* and breaking the circuit in the solenoid *d*. The solenoid *d* not offering any resistance, the spring
 30 O closes the door, and as the door closes the inner end of the solenoid hits the arm *i* of the switch *ij* and closes that switch, thus completing the circuit through the solenoid *e* and causing the core to force open the door C.
 35 As the door C opens the person steps from the floor out of the cabinet, releasing the arm *m*, which automatically closes the switch *km* and completes the circuit in the solenoid *d*, causing it to force open the door B to its normal position. As soon as the core *g* begins
 40 to move out the switch *ij* opens, breaking the circuit in the solenoid *e* and allowing the spring to close the door C. The device is thus set for the next person to pass through.
 45 It will be understood that only a portion of

the floor may be made movable so long as it is a portion that will be stepped on by a person passing through and that many modifications may be made in the device as shown here while keeping within the terms of my
 50 invention. It will be further understood that double doors as well as single doors may be used on each end of the cabinet and that two of these devices are supposed to be located side by side, one for incoming and the other
 55 for outgoing persons.

Although I have shown an electrical apparatus for operating the doors, it is evident that other forms of mechanism may be used.

I claim—

1. The combination in a doorway of a cabinet, outwardly-operated doors hinged upon opposite ends of the cabinet, a pivoted treadle secured to the floor of the casing, and an electrically-operated mechanism set in opera-
 60 tion by the treadle to open one door and close the other alternately.
2. In a doorway the combination of a cabinet, hinged closures in opposite ends of the cabinet, a pivoted treadle mounted in the
 70 floor of the cabinet, a solenoid adjacent to each closure, and electrically-operated circuits operated by the treadle to energize the solenoids to open one door and close the other.
3. In a doorway, the combination of a cabinet having hinged closures in opposite ends thereof, a pivoted treadle mounted in the
 75 floor of the cabinet, a solenoid mounted in the cabinet adjacent to each closure, the cores 80 of the respective solenoids being each secured to its proper closure, an electrical circuit operated by the treadle to energize the solenoids to open one closure and close the other.

Signed at Fairfield, Maine, this 30th day
 85 of May, 1902.

AMOS F. GERALD.

Witnesses:

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