(No Model.)

J. D. BENSON & R. B. FOGLE.

DOOR.

No. 280,785. Patented July 10, 1883.

Fig. 1

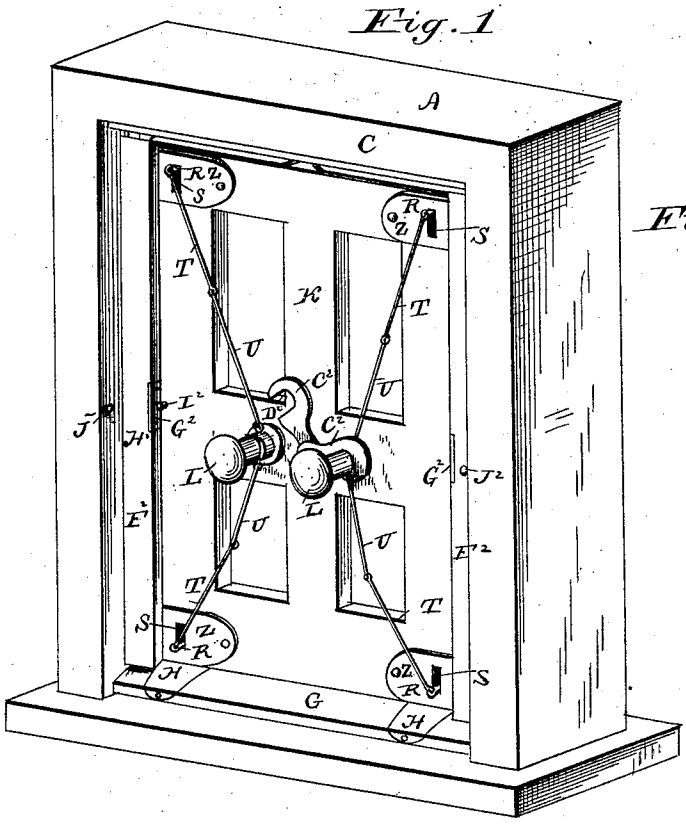


Fig. 2.

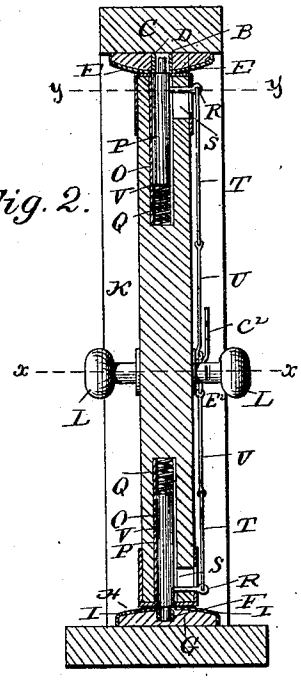
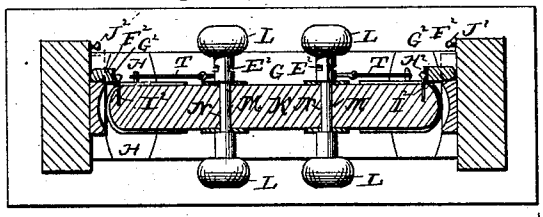


Fig. 3.



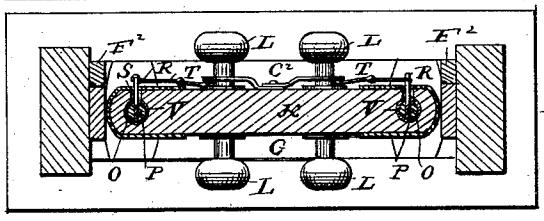


Fig. 4

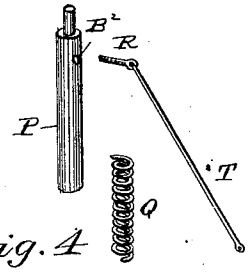


Fig. 5

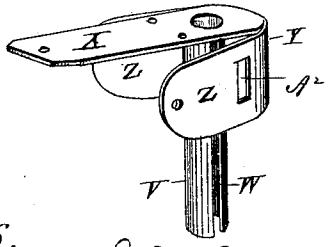
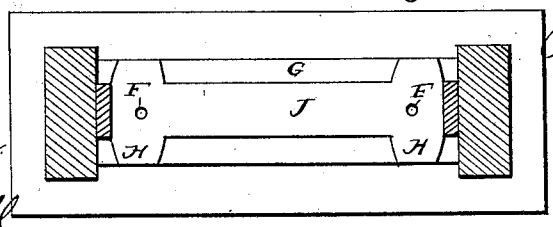


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES D. BENSON AND R. BRUCE FOGLE, OF CRANBERRY, WEST VIRGINIA.

DOOR.

SPECIFICATION forming part of Letters Patent No. 280,785, dated July 10, 1883.

Application filed May 8, 1883. (No model.)

To all whom it may concern:

Be it known that we, JAMES D. BENSON and R. BRUCE FOGLE, citizens of the United States, residing at Cranberry, in the county of Preston and State of West Virginia, have invented a new and useful Door, of which the following is a specification, reference being had to accompanying drawings.

This invention relates to doors of that class which will open in either direction; and its object is to provide a door especially adapted for use in halls, railroad-cars, boats, and other places where crowds are liable to assemble, and that will possess superior advantages in point of simplicity, inexpensiveness, durability, general efficiency, and safety.

To this end it consists in an improved door that will not only open from either direction, but can be be opened from either of its side edges, and can also be readily removed from the door-frame or be thrown down.

In the drawings, Figure 1 is a perspective view of a door embodying our improvements. Fig. 2 is a vertical longitudinal sectional view taken through the door and door-frame, and through the latch-bolts in the former. Fig. 3 is a horizontal sectional view of the same, taken on the line *x x*, Fig. 2. Fig. 4 is a detail perspective view of the bolt, its actuating mechanism and its casing detached. Fig. 5 is a transverse horizontal sectional view on the line *y y*, Fig. 2. Fig. 6 is a plan view of the threshold.

Referring to the drawings, A designates the door-frame, which may be mainly of any suitable construction, and has holes or recesses B B in the under side of the top piece, C, near its ends, which recessed portions are provided with a friction-plate, D, beveled at each side E E to these holes. Corresponding holes or recesses, F F, are formed in the threshold G, and corresponding friction-plates, H, are provided, these plates being beveled to the holes, as shown at I I, and connected by a plate, J, extending longitudinally on the threshold.

K is the door, which, also, may be mainly of the usual construction. The door is provided with a pair of double knobs, L L, the shanks M M of which have bearings N N through the door. At the four corners of the latter are provided vertically-disposed holes or recesses O, in each of which is arranged a bolt, P, that is forced from the mouth of the said recess by a coiled spring, Q, seated in the bottom of the latter, and is provided with a lateral arm, R, that works through a longitudinally-disposed slot, S, and is connected by a pair of interlinked pivoted connecting-rods, T and U, with the shank of one of the pairs of knobs. It will be observed that the top and bottom bolts at each side edge of the door are both connected to the shank of the double knob at the same side, so that by turning the latter in either direction, or from either side of the door, both of the said bolts will be drawn from engagement with the top and bottom recesses in the door-frame, and the door can be turned in either direction on the top and bottom bolts at the opposite side edge of the same. This operation is the same when either of the pairs of bolts at the side edges of the door are operated, and by operating both knobs at once the bolts are all withdrawn from engagement with the recesses in the door-frame, so that the door is completely disengaged from the frame, and can be removed or thrown down in case of emergency. The bolts P are preferably inclosed in a tubular casing, V, that is arranged in the recess O. This casing has a longitudinal slot, W, in its side for the arm R, and is provided with a main securing-plate, X, extending along the top edge of the door, and having a right-angular auxiliary plate, Y, arranged against the end edge of the door, and provided with two wings or flanges, Z Z, that clamp or embrace the sides or faces of the said door, in one of these wings being provided a slot, A^2, registering with the slot S. The arm R is preferably screwed into a screw-threaded hole or recess, B^2, in the bolt P.

C^2 C^2 are locking-plates that are pivoted to the door, and are provided with recesses D^2 in their edge, to engage corresponding grooves in the stem of the knob, these grooves being designated by E^2.

Longitudinal vertical strips F^2 F^2 are pivoted in the door-frame, and are provided on their outer edge with a catch-plate, G^2, having a depression, H^2, which is engaged by the head of a pin, I^2, projecting from the door-frame, to retain these strips back against the frame, out of the way of the door. When it is desired to

close the crack between the edge of the door and the frame, these strips have only to be turned on their hinges against the face of the door, when a pin, J^2, projecting from the latter, will engage the depression H^2 to retain the strips in this position.

The operation and advantages of our invention are obvious. It is very simple and efficient in construction, and can be readily and conveniently operated. In case of a panic in a public building or other place having our improved doors, they could be quickly thrown open from whatever side they are approached, and could be as readily thrown down by simply operating the two knobs.

In doors of this class, having vertical bolts at each side serving as pivots, the bolts have heretofore been arranged outside the door in suitably-disposed brackets, and connected directly to the operating knob or spindle at different sides of its pivot; but in our invention the bolts are protected in holes or recesses at the ends or corners of the door, and are provided with the lateral arms, by which they are connected by independent pivoted rods with the knobs, this form being more durable and rendering the parts less liable to displacement or damage.

We claim as our invention—

1. The combination, with the door having holes or recesses at its top and bottom corners, of the bolts fitting in these recesses and provided with lateral arms working through slots in the sides of the latter, the springs or cushions arranged in the recesses to exert their tension to force the bolts from the mouth of the same, the knob having its shank or stem journaled in the door, and the connecting pivoted rods extending from the lateral arms to the stem of the knob, as and for the purpose set forth.

2. The combination, with the door-frame having the holes or recesses near its ends at the top and bottom, of the door having the vertically-disposed holes or recesses at its four corners, the bolts fitting in these recesses and provided with lateral arms which work in slots in the sides of the recesses, the pair of double knobs having their shanks journaled in the door, and the connecting-rods pivoted to the lateral arms of the bolts and to the stems of the knobs, the top and bottom bolts at each side edge of the door being independently connected to the same knob, as and for the purpose set forth.

3. The combination, with the knob having the journaled stem, by which it is adapted to operate the bolts against the tension of the spring, the said stem being provided with grooves, of the plate pivoted to the door and provided with the recess in its edge to engage the grooves in the stem of the knob to lock the latter, as set forth.

4. The combination of the door-frame, the door provided with the bolts at its corners, arranged to engage the frame and operated by the knobs, and the pivoted vertical strips arranged at the sides of the frame and adapted to be turned against the door to cover the crack between the latter and the frame, as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

JAMES D. BENSON.
R. BRUCE FOGLE.

Witnesses:
JAMES M. HERNDON,
SCOTT T. JONES.