

(No Model.)

E. MUCHMORE.
SWINGING AND SLIDING DOOR.

No. 552,879.

Patented Jan. 7, 1896.

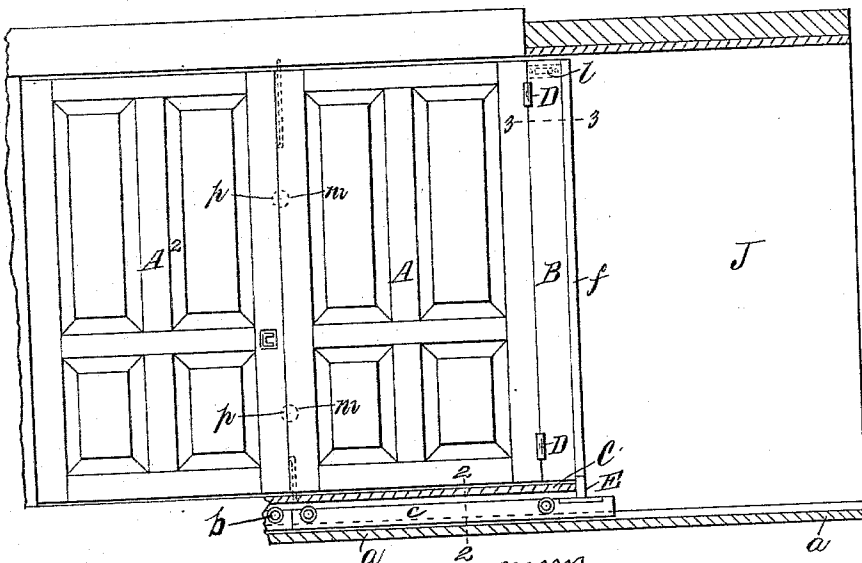


Fig. 1.

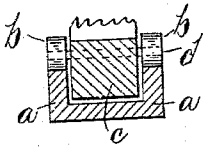


Fig. 2.

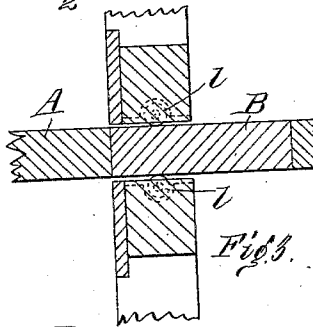


Fig. 3.

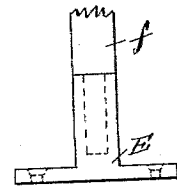


Fig. 4.

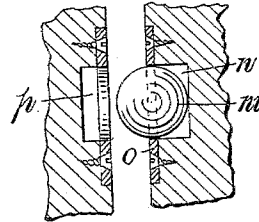


Fig. 5.

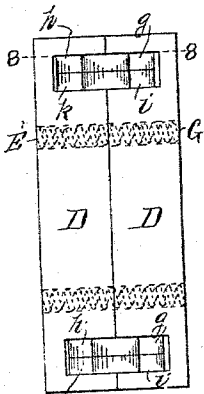


Fig. 6.

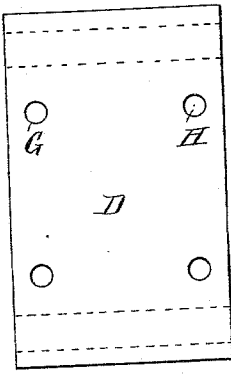


Fig. 7.

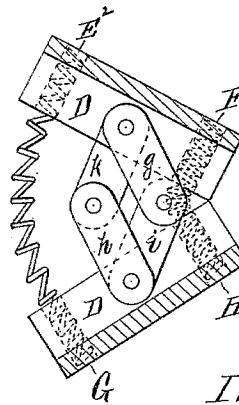


Fig. 8.

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UNITED STATES PATENT OFFICE.

ELMER MUCHMORE, OF CINCINNATI, OHIO.

SWINGING AND SLIDING DOOR.

SPECIFICATION forming part of Letters Patent No. 552,879, dated January 7, 1896.

Application filed May 10, 1895. Serial No. 548,836. (No model.)

To all whom it may concern:

Be it known that I, ELMER MUCHMORE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Swinging and Sliding Doors, of which the following is a specification.

My invention relates to both swinging and sliding doors, my improvement in doors being such that they may be operated to turn upon their axis in the line of one of their vertical edges, or be pushed diametrically apart. When opened to turn upon their axis in the line of their vertical edges, swung open, they are so constructed that they automatically close and fasten, and also so constructed that when slid apart upon the rollers provided they are not liable to get out of order, as all doors heretofore constructed to be slid apart upon rollers are. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation in part section of doors and partition; Fig. 2, a section on line 2 2 of Fig. 1; Fig. 3, a section on line 3 3 of Fig. 1; Fig. 4, a detail of the post and socket-foot for same. Fig. 5 is an enlarged section showing elastic ball and recess in door. Fig. 6 is an end elevation of hinge. Fig. 7 is a side elevation of hinge; Fig. 8, a section on line 8 8 of Fig. 6, showing hinge partially open.

Similar letters refer to similar parts throughout the several views.

Substantially U-shaped troughs *a* are suitably sustained beneath the floor, preferably upon joist, the upper edges of the trough made smooth and straight for the rollers *b* to run upon. A beam *c* is placed longitudinally within the trough, and loosely fitting is sustained there by the rollers and their axles *d*, which pass at right angles through the beam. The beam thus sustained within the trough is susceptible of longitudinal motion a slightly greater distance than the width of the door, and is kept in place by the sides of the trough. Near the end of the beam and securely attached to it is the socket *E*, preferably of metal, having a tubular recess in which the upright post *f* is fitted. The case *B*, of the same thickness as the upright post, is securely nailed or otherwise fastened to said post lengthwise, the

lower end coming near to but not quite touching the surface of the floor *C*. An upper and a lower hinge *D* is countersunk and suitably attached to the case *B* and the edges of the doors *A* near the top and bottom of the doors, the edges of contact between said case and door being planed at right angles to their face.

The hinge-plates *D D* have recesses near their ends at right angles to their length, in which closely fit the interfulcrumed levers *g h i k*, which are pivotally attached to each other near their ends and pivotally attached to the plates *D D* near the center of said plates. Said plates are also provided with holes near their ends at right angles to their lengths and near their sides, into which spiral springs are drawn taut and by suitable means rigidly attached to the backs of the plates at *E² F G H*.

The doors when opened horizontally apart enter into recesses formed each by two upright partitions extending downward beneath the floor, into which recess protrude the pivotally-attached rollers *l* to prevent the doors from scraping contact with the partitions when opened or closed by horizontal movement.

The doors when swung to and fro around the hinges are formed to be caught and held closed by the flexible ball *m*, confined in a recess *n* by the plate *o*, in which is a round hole having a less diameter than the ball through which the ball protrudes, and engages with a similarly constructed recess in the lock-style of the door *A²*, the springs *E² G F H* serving to close the doors.

My improvements are operated as follows: The door *A*, Fig. 1, is held in place at its lower edge just above the floor by the upright post *f*. It requires but slight force to shove it diametrically to the right, for its weight rests upon the rollers *b*, and is kept near the perpendicular by the rollers *l*. When pushed to the right its full width it is hidden from view by the partitions upon either side of it, and it is substantially a sliding door upon rollers that are hidden from view; but when closed it may also be operated as a swinging door, automatically self-closing and self-fastening. Being swung open and made to rotate in either direction upon its sustaining interfulcrumed lever-hinges *g h i k*, it is at once drawn to by either

the spiral spring G E² or F H and made fast in place by the flexible balls *m* engaging with the recesses *p*.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a swinging and sliding door, the substantially U shaped trough *a*., with straight upper edges in combination with a beam *c*. formed to play longitudinally within the trough, and sustained by rollers running upon the upper edges of the trough, and kept in place by the sides of the trough, the beam being provided with a socket foot E., and an upright post *f*., secured within the recess of the socket, and extending upward at right angles to the beam to which upright post is nailed or suitably secured along its length, the case B. to which the door is secured by hinges, and sustained above the floor the under edge of

the door suspended near to but not in contact with the floor as described and for the uses and purposes set forth.

2. The swinging and sliding door A., sustained by the trough *a*., the rollers *b*., the axle *d*., the beam *c*., the socket foot E., the upright post *f*., the case B., and the hinges D., in combination with the rollers *l*., pivotally attached to the partitions and extending within the recess between the partitions and made to engage with the sides of the door near its upper edge when opened or closed by horizontal movement, as described and for the uses and purposes set forth.

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Witnesses:

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