

Self-Closing Door.

Patented Apr. 14, 1868.

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G. M. McMAHAN, OF MOUNT STERLING, KENTUCKY.

Letters Patent No. 76,790, dated April 14, 1868.

IMPROVEMENT IN DOORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, G. M. McMAHAN, of Mount Sterling, in the county of Montgomery, and State of Kentucky, have invented a new and improved Self-Acting Door; and I do hereby declare the following to be a full, clear, and exact description of the same, sufficient to enable those skilled in the art to which my invention appertains to make use of it, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, and

Figure 2 a plan of my invention.

This invention is a door for houses, so constructed and operating, that, while at other times it remains closed, it will automatically open upon the approach of any person who desires to pass through.

In the drawings, A represents the partition-wall, and B the floor of the house, and D D doors operating automatically, as above described. The mechanism by which they are so operated will be understood by the following explanation.

Each door is opened and closed by the action of an upright rod, C, which rocks or partially rotates on its vertical axis, the top of the rod being connected with the door by an arm, *c*. The rod terminates at its lower end, under the floor, in a spur-wheel, *w*, which gears into a segment, *s*, attached to a rocking-rod, R. This rod is provided near its centre with a horizontal arm or arms, *a a*, underneath which is a spring, *m*, acting upwards against the arms, and keeping them in a horizontal position, and thereby, through the instrumentality of the segment, spur-wheel, and rod C, keeping the doors closed.

The doors being thus held closed by the spring *m*, any force which overcomes the spring, and moves the arms *a a* downward, will actuate the segment and rod R in the opposite direction to that in which they are actuated by the spring, and will open the doors.

Having thus constructed and arranged the machinery, by which the doors can be opened or closed at pleasure, by power applied under the floor, I cut a large hole through the floor, on either side of the door, and fill it with a horizontal platform, B', the upper surface of which is level with the floor. This platform is so constructed that the weight of a person stepping upon it will depress it, until a pin, *p*, on its under side, comes in contact with one of the arms *a a*, presses them down, and opens the door for the person to pass through.

In order to hold the platform so that it will ordinarily be level with the surrounding floor, yet capable of being depressed and of rising again, I support and guide it at its four corners by means of tubular supports, *e e*, enclosing the upper end of and sliding up and down upon short upright posts, *n n*, both the posts, and the tubes which work over them, being surrounded by a stout spiral spring, *u u*, which presses up against the platform, and holds it in position.

From the bottom of these posts spring arched beams, I I, which cross each other under the centre of the platform. The apparatus is so arranged that the pin, *p*, comes at the intersection of these beams with each other, and passes through a vertical hole in them at that point. The beams thus contribute to steady and guide the platform in its motion up and down, as well as to furnish a rest for it when depressed.

In fig. 1, the platform is represented as depressed, and resting upon the arched beams. The wood of the platform may be protected, where it comes in contact with the beams, by an iron plate, *i*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the door D, rods C R, gearing *w s*, arm *a*, and spring *m*, with the platform B', posts *n n*, hollow supports *e e*, springs *u u*, arched beams I I, and pin, *p*, when the said parts are constructed and arranged so as to operate in connection with each other, substantially in the manner and for the purposes set forth.

Witnesses:

J. C. WELLS,

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G. M. McMAHAN.