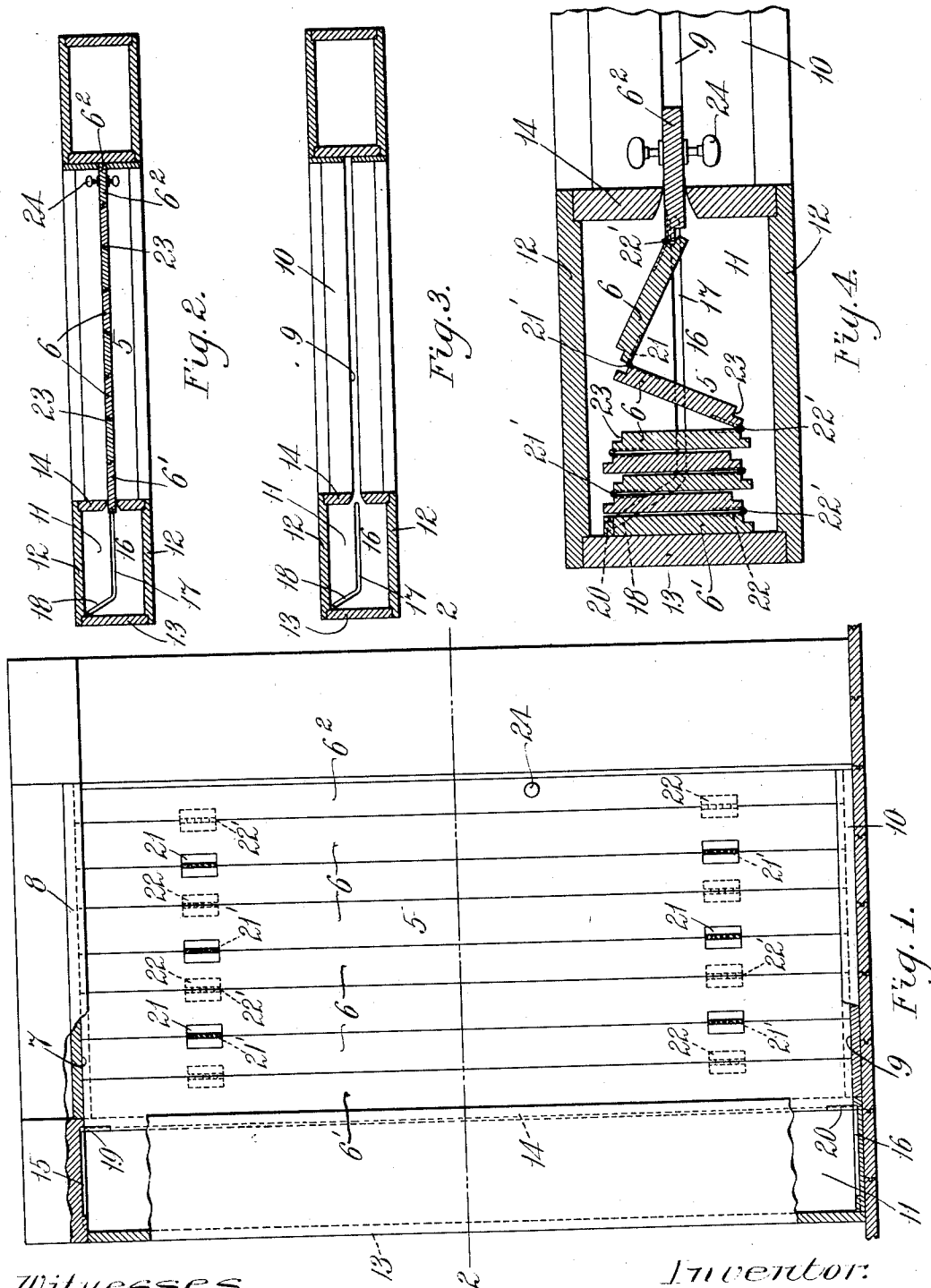


H. HEDWALL.
COLLAPSIBLE DOOR.
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Patented May 24, 1910.

958,961.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENNING HEDWALL, OF QUINCY, MASSACHUSETTS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENNING HEDWALL, a subject of Gustav V of Sweden, residing at Quincy, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Collapsible Doors, of which the following is a specification.

This invention relates to an improvement in collapsible doors, the object of the invention being to provide a collapsible door which, when the door is open, will collapse inside a pocket or chamber provided in the interior of the door casing between the opposite walls thereof and outside the door frame.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings: Figure 1 is a front elevation of my improved door showing the same closed or extended and with a portion of the door casing broken away. Fig. 2 is a sectional plan taken on line 2—2 of Fig. 1. Fig. 3 is a sectional plan similar to Fig. 2, with the door removed. Fig. 4 is an enlarged section on line 2—2 of Fig. 1 through the casing and the side of the door frame, illustrating the door in its collapsed position within the casing.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 5 is the collapsible door which consists of a series of vertical strips 6, 6, 6, one of the side strips being indicated by the numeral 6'. The tops of the side strips 6, 6, 6' project into a groove 7 in the lintel 8. This groove is about the width of the thickness of said strips. The bottoms of the strips 6, 6, 6' project into another groove 9 extending longitudinally of the threshold 10.

The chamber 11, which is adapted to hold the door 5 when the same is collapsed, is inclosed between the casing walls 12, 12 and 13 and one side of the frame 14. At the top and bottom of the chamber 11 are provided grooves 15 and 16, respectively. These grooves are duplicates of each other and the groove 16 is shown in plan view in Figs. 2 and 3 consisting of a portion 17 extending in the same direction as the door 5 when the same is closed and an angle portion 18 which extends at an obtuse angle to the portion 17.

Stop pins 19 and 20 are provided in the

top and bottom, respectively, of the side strip 6' and extend longitudinally therebeyond at the top and bottom and into the grooves 15 and 16, respectively. These stop pins fit loosely in said grooves and when the door is extended or closed, as in Figs. 1 and 2, the pins 19 and 20 will abut against the right hand ends of the grooves 15 and 16, respectively. Thus said pins, together with the ends of the grooves 15 and 16, form stops to prevent the side strip from being entirely withdrawn from the chamber 11.

It will be noted that the grooves 15 and 16 are narrower than the grooves 7 and 9, so that when the door is pushed into the chamber the ends of the strips are too wide to drop into the groove 16. It will also be noted that the grooves 15 and 16 are located above and below the grooves 7 and 9, respectively.

It will be particularly noted that the strips 6, 6, 6 and 6' are hinged together by hinges 21, 21 and 22, 22. The pivotal pins 21', 21', 21' of the hinges 21, 21, 21 and the pivotal pins 22', 22', 22' of the hinges 22, 22, 22 are located upon opposite sides of the door when the same is extended, the object of this particular construction being to insure the folding of the door in the manner indicated in Fig. 4.

The strips 6, 6 are preferably rabbeted as at 23, 23 in order to make the door tight and also to increase its strength against any lateral pressure which may be brought to bear against it from either side. 24 is a knob of any suitable construction attached to the side strip 6'.

The operation of my improved collapsible door is as follows: Assuming the door to be in the position illustrated in Figs. 1 and 2—that is, in its closed or extended position, and it is desired to open the same and collapse said door within the chamber 11, the user pushes the door to the left from the position illustrated in Figs. 1 and 2 to that illustrated in Fig. 4. When the door is first pushed toward the left by the user, the strips of which the door is composed slide along the grooves 7 and 9 and the side strip 6' first slides into the chamber 11 to be followed by the other strips 6, 6, 6. The pins 19 and 20 in said strip 6' first slide along the straight portion 17 of the slots 15 and 16 and then when they arrive at the angle portions 18, the pins are guided to one side of the chamber until they arrive at the ends

of said slots adjacent to the side wall 12 of the casing. The following strip 6 pushes the side of the strip 6' opposite to that side to which the pins 19 and 20 are fastened around and against the side casing wall 13, in the position shown in Fig. 4, the pins 19 and 20 acting during this latter movement of the strip 6' as pivots upon which said strip rotates. The next strip 6 rotates upon its pivot 22'; the following strip upon its pivot 21'; the next strip upon its pivot 22' and the following strip upon its pivot 21', as shown in Fig. 4. The sixth strip rocks upon its pivot 22' to the angular position illustrated in Fig. 4 and the seventh strip rocks upon its pivot 21' and also upon its pivot 22' to the angular position illustrated in Fig. 4. The side strip 6² has now passed partly within the chamber 11 and the door is in its collapsed position. To close the door or place the same in its extended position, the same is pulled, by means of the knob 24, toward the right from the position illustrated in Fig. 4 until it assumes the position illustrated in Figs. 1 and 2.

If desired, in heavy doors rollers may be placed upon the door to run upon a suitable track or upon a threshold, and further it will be noted that in large and heavy doors with a wide opening the chamber 11 may be duplicated upon the opposite side of the door and the door divided in the middle so that half of the door will collapse in a chamber at the right hand side thereof and the other half of the door will collapse in a chamber at the left hand side thereof without departing from the spirit of my invention.

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

1. In combination, a collapsible door consisting of a series of vertical strips hinged together, a door frame having a chamber at one side thereof adapted to hold said door when the same is collapsed, said frame being provided with a vertical slot through which said members are adapted to pass into and out of said chamber, a pin fast to one of the side strips of said door, and means provided with a groove in which said pin is located, a part of said groove leading from a point adjacent to said vertical slot and extending in the same direction as the plane of said door when extended and a part of said groove extending beyond and laterally with respect to said first part and at an obtuse angle thereto, said strips being disposed transversely of said first part of said groove when said door is collapsed.

2. In combination, a collapsible door consisting of a series of vertical strips hinged together, a pin fast to one of the side strips of said door and projecting longitudinally therebeyond, and means provided with a

groove in which said pin is located, a part of said groove extending in the same direction as the plane of said door when extended and a part of said groove extending beyond and laterally with respect to said first part and at an obtuse angle thereto, said strips being disposed transversely of said first part of said groove when said door is collapsed.

3. In combination, a collapsible door consisting of a series of vertical strips hinged together, a door frame having a chamber at one side thereof adapted to hold said door when the same is collapsed and provided with a groove in the bottom thereof, a threshold provided with a groove, and a stop pin fast to one of the side strips of said door and projecting downwardly therefrom into the first-mentioned groove, the lower ends of said strips being adapted to slide in the second-mentioned groove, the second-mentioned groove being located above the first-mentioned groove.

4. In combination, a collapsible door consisting of a series of vertical strips hinged together, a door frame having a chamber at one side thereof adapted to hold said door when the same is collapsed and provided with a groove at the bottom thereof, a threshold provided with a groove, and a stop pin fast to one of the side strips of said door and projecting downwardly therefrom into the first-mentioned groove, the lower ends of said strips being adapted to slide in the second-mentioned groove, the second-mentioned groove being wider than the first-mentioned groove.

5. In combination, a collapsible door consisting of a series of vertical strips hinged together, a door frame including a lintel provided with a groove, said frame having a chamber at one side thereof adapted to hold said door when the same is collapsed and being provided at the top and bottom thereof with grooves, a threshold provided with a groove, and stop pins projecting upwardly and downwardly from opposite ends, respectively, of one of said side strips into said grooves in the top and bottom of said chamber, the upper and lower ends of said strips being adapted to slide in said grooves in said lintel and threshold, respectively, said grooves in said lintel and threshold, respectively, being greater in width than said grooves at the top and bottom, respectively, of said chamber and being located, respectively, below and above said grooves at the top and bottom of said chamber.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENNING HEDWALL.

Witnesses:

LOUIS A. JONES,
SADIE V. MCCARTHY.