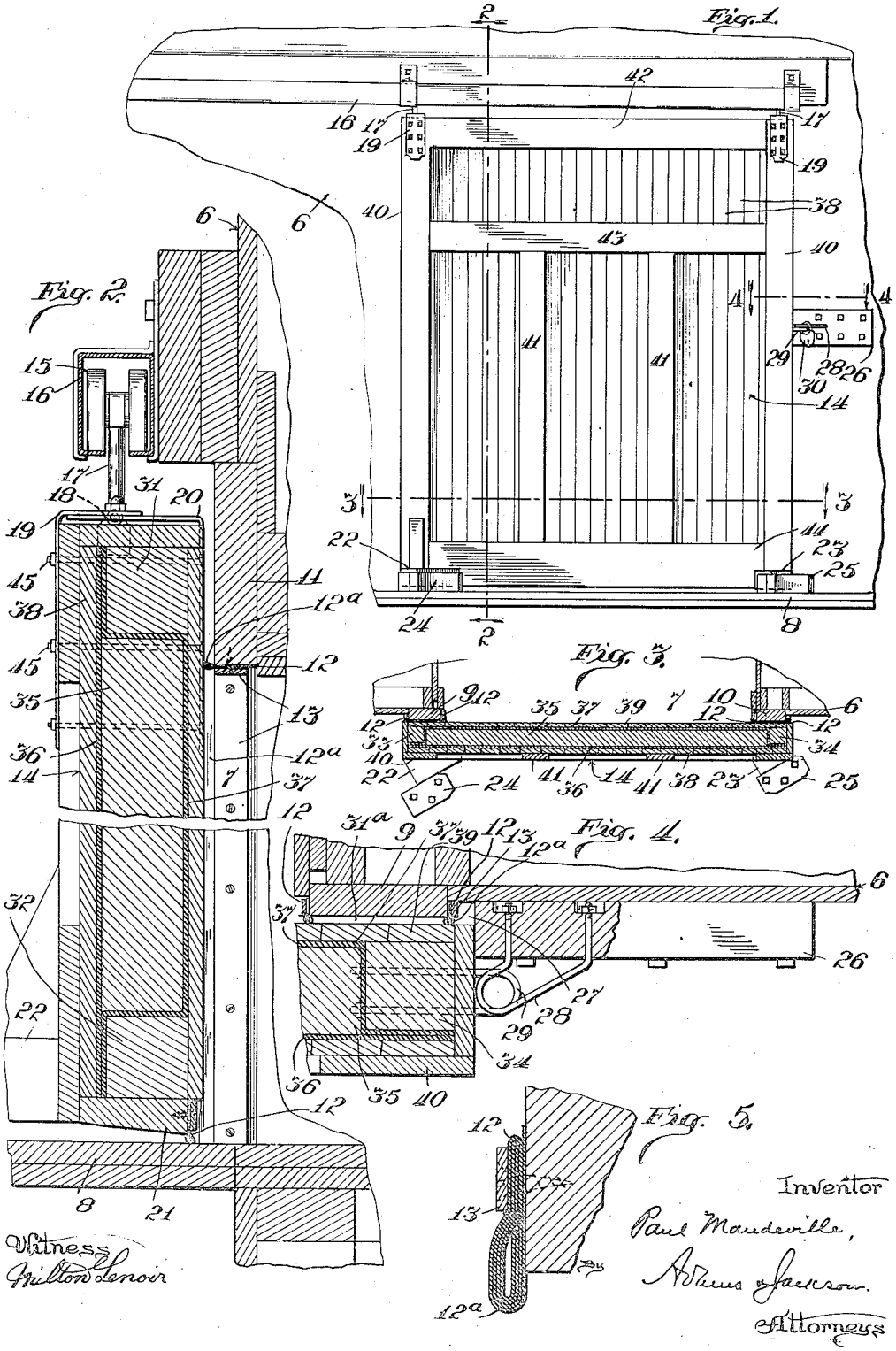
Apr. 17, 1923. 1,452,306

P. MANDEVILLE

STORAGE BUILDING

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UNITED STATES PATENT OFFICE.

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STORAGE BUILDING.

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To all whom it may concern:

Be it known that I, PAUL MANDEVILLE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Storage Buildings, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to buildings used for cold storage or pre-cooling purposes in which the interior of the building must be insulated as completely as possible from the outside atmosphere, such for example as that shown and described in my pending application, Serial No. 273,788, filed January 29, 1919. As is well understood by those familiar with such buildings, it is of the utmost importance that the door or doors of such buildings be so constructed as to provide adequate insulation around the doorway when they are closed, and be capable of being opened and closed easily and quickly. It is also important that the door be so constructed and arranged as to be movable completely away from the doorway so that it will not interfere with the passage of loaded trucks. To provide a construction which meets the exacting conditions of such service is the object of my present invention, which object I accomplish as illustrated in the drawings and as hereinafter described. What I regard as new will be set forth in the claims.

In the drawings which illustrate part of of the side of a warehouse showing the doorway and the door for closing the same,—

Fig. 1 is a partial front elevation showing the door closed, or in what may be termed its operative position;

Fig. 2 is an enlarged vertical section on line 2—2 of Fig. 1;

Fig. 3 is a horizontal section on line 3—3 of Fig. 1;

Fig. 4 is an enlarged partial sectional view on line 4—4 of Fig. 1; and

Fig. 5 is a greatly enlarged partial horizontal section of one of the casing boards of the doorway showing the construction of the insulating strips.

Referring to the drawings,—6 indicates the warehouse wall, and 7 the doorway thereof. 8 indicates a floor or platform outside the doorway. 9—10 indicate vertically disposed casing boards at the sides of the doorway 7, and 11 indicates a horizontal casing board which extends over the doorway. 12 indicates insulating strips which are secured along both side margins of the casing boards 9—10, as shown in Figs. 3 and 4, and also along the lower margin of the casing board 11, as shown in Fig. 2, in such manner as to project beyond the outer surfaces thereof, as shown in said figures. In Fig. 5 I have illustrated an improved form of insulating strip which I prefer to use for this purpose, said strip being made of a canvas strip folded and refolded longitudinally to form a looped propecting portion 12^a, the folded strip being secured in position back of the said looped portion by retaining strips 13 screwed or otherwise suitably secured to the casing board or other part to which the insulating strip is attached. I thus provide a resilient insulating strip which encloses a dead air space so that it is a good non-conductor of heat and cold and wears well under severe conditions.

14 indicates an insulating door, which is mounted to slide into and out of position with respect to the doorway, and is hung on door hangers of any suitable type which will permit the door to swing to a slight extent toward and from the wall of the building. For this purpose I have shown it as being pivotally suspended from door hangers 15 running in a longitudinally disposed track 16 which extends over the doorway and for a sufficient distance at one side thereof to permit the door to be moved so as to completely expose the doorway. The track is inclined slightly so that as the door is moved away from the doorway it is lifted sufficiently to be clear of the floor. The door is, however, hung so that its lower margin is horizontal in order to permit it to bear closely on the floor when it is in operative position. (See Figures 1 and 2). In the construction illustrated the door is suspended from the hangers 15 by straps 17 which are connected by pivots 18 with overlapping straps 19—20 secured to the upper portion of the door, but any other suitable construction may be employed. As best shown in Fig. 2, the door is connected with the hangers at a point outside of its transverse center so that the door naturally tends to assume a position inclined to the vertical with its lower portion farther from the wall of the building than its upper portion. The purpose of this arrangement is to facilitate the sliding of the door into and out of operative position, and

to preserve the insulating strips 12 from wear occasioned by the sliding of the door, as will more fully hereinafter appear. The inner face of the door is a plain or flat surface so that when it is in operative position over the doorway it will bear against the projecting portions of the several insulating strips 12. At its lower side the door is provided with a beveled bottom piece 21 arranged so that its thicker edge is toward the doorway, and an insulating strip 12 is secured to the inner face of said bottom piece so that it projects below the same into engagement with the floor 8 when the door is in its vertical or operative position, as shown in Fig. 2.

22—23 indicate wedge blocks secured to the outer side of the door adjacent to its lower edge and adapted to engage inclined blocks 24—25, respectively, secured to the floor 8 approximately opposite the sides of the doorway. The purpose of these blocks is to move the lower portion of the door inwardly into tight contact with the insulating strips 12 when the door is moved into operative position in front of the doorway. 26 indicates a plate in the form of a heavy plank which is secured to the wall of the building in position to form a stop for the door when it reaches its operative position. This stop plate is preferably set a short distance away from the adjacent margin of the casing board 9, as shown at 27 in Fig. 4, to insure good contact between the door and the strip 12. 28 indicates an approximately U-shaped bracket which is adapted to overlap a staple 29 carried by the door, so that by means of a padlock 30 passed through the overlapping portions of said members the door may be locked in its closed position.

When the door is in its open or inoperative position, it is suspended from the higher portion of the track 16 so that its lower margin is out of contact with the floor 8, and owing to the off center position of the hanger connections, it normally hangs so that its lower portion stands away from the wall of the building, as has been explained. The inner face of the door is therefore out of contact with the wall of the building and is far enough away therefrom so that when it is slid toward its operative position it does not bear against the strips 12 around the doorway. While in this inclined position the door is slid edgewise until it arrives over the doorway, when the blocks 22—24 and 23—25 come into engagement respectively with each other and a slight further movement of the door in the same direction accordingly forces the door over laterally into close contact with the insulating strips 12, the door then assuming a vertical position. At this time the insulating strip 12 which extends over the doorway provides insulation at the top, and the two insulating strips 12 at each side of the doorway cooperate with the door to form dead air spaces 31^a, shown in Fig. 4, thus providing complete insulation at those points. At the bottom insulation is provided by the strip 12 carried by the bottom piece 21 which then bears closely for its entire length on the floor 8 but when the door is not in its operative position said strip is out of contact with the floor. In opening the door considerable force is required to loosen it from the blocks 24—25, but after it has been loosened its lower portion swings outwardly and it may then be slid along easily from in front of the doorway. The block 24 is set farther from the door than the block 25, as shown in Fig. 3, so that the block 23 can pass the block 24 to permit the door to be moved completely away from in front of the doorway. As the door moves easily after it has been disengaged from the blocks 24—25 it will be apparent that it can be opened and closed very quickly thereby facilitating the maintenance of the low temperature required in buildings of this character.

The door itself is constructed in a novel manner which is peculiarly adapted to the way in which it is mounted. As the door is not subjected to the strains which must be resisted by hinged doors it can be made of much lighter construction and is better adapted for thorough insulation. As shown in Figs. 1, 2 and 3, the frame of the door is composed of upper and lower rails 31—32 and stiles 33—34 secured together in the form of a rectangle. This frame is filled in with a mass of insulating material 35 such as cork board or any other light rigid insulation. This insulation is also enclosed by sheets of felt 36—37, or other suitable insulating material, one of said sheets, as 37, being extended between the insulation 35 and the door frame, as shown in Fig. 2. 38—39 indicate vertically disposed matched strips of lumber which form the facing for the outer and inner sides of the door, as shown in Figs. 1 and 2. On the outside the door is preferably trimmed with a series of vertical strips 40—41 and horizontal strips 42—43—44, as shown in Fig. 1. The door hanger straps 19—20 are secured to the facing strips 39, the vertical strips 40 and the upper rail 31 by bolts 45, as shown in Fig. 2, so that the suspension strains of the door are taken up by said facing and vertical strips. I thus provide a very effective insulating door which may be made quite light so that it can be easily handled.

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

1. The combination with a building having a doorway, of a sliding door adapted to close said doorway, said door being piv-

otally suspended to swing outwardly about a horizontal axis, and means operating on the lower marginal portion of the door by edgewise movement thereof into operative position to move the door laterally so that its side and top margins are brought into close contact with the frame of the doorway.

2. The combination with a building having a doorway, of a sliding door adapted to close said doorway, said door being pivotally suspended to swing outwardly about a horizontal axis, means operating on the lower marginal portion of the door by edgewise movement thereof into operative position to move the door laterally so that its side and top margins are brought into close contact with the frame of the doorway, and insulating strips interposed between the door and the frame of the doorway.

3. The combination with a buiding having a doorway, of a sliding door adapted to close said doorway, suspending means hinged to the upper marginal portion of said door to permit the same to swing outwardly, and wedging means operating on the lower corner portions of the door by edgewise movement thereof into operative position to move the door laterally so that its side and top margins are brought into close contact with the frame of the doorway.

4. The combination with a building having a doorway, of a sliding door, suspending means hinged to the upper marginal portion of said door and connected therewith at a point outside of the transverse center thereof so that the lower margin of said door normally tends to swing away from the wall of the building, and means operating in the edgewise movement of the door on the lower marginal portion of the door for moving it laterally to carry its side and top margins into close contact with the frame of the doorway.

5. The combination with a building having a doorway, of a sliding door, suspending means hinged to the upper marginal portion of said door and connected therewith at a point outside of the transverse center thereof so that the lower margin of said door normally tends to swing away from the wall of the building, means operating in the edgewise movement of the door on the lower marginal portion of the door for moving it laterally to carry its side and top margins into close contact with the frame of the doorway, and insulating strips interposed between the upper and side margins of the door and the frame of said doorway.

6. The combination with a building having a doorway, of a sliding door adapted to close said doorway, said door being pivotally suspended to swing about a horizontal axis, means operating on the lower corner portions of the door by edgewise movement thereof into operative position to move the door laterally to carry its side and top margins into close contact with the frame of the doorway, and an insulating strip carried by and projecting below the lower margin of the door and adapted to contact with the floor when the door is closed and to be out of contact therewith when the door is not closed.

7. The combination with a building having a doorway and insulating strips secured to the frame of said doorway at the sides and top thereof and projecting outwardly therefrom, of a door movable edgewise and laterally into position to close said doorway and bear against said strips, said door being pivotally suspended to swing about a horizontal axis, and means operating on the lower corner portions of the door for holding it in close contact with said strips.

8. The combination with a building having a doorway and insulating strips secured to the frame of said doorway at the sides and top thereof and projecting outwardly therefrom, of a door movable edgewise and laterally into position to close said doorway and bear against said strips, said door being pivotally suspended to swing about a horizontal axis, means operating on the lower corner portions of the door for holding it in close contact with said strips, and an insulating strip secured to and projecting downward from the lower margin of the door into position to engage the floor when the door is closed and adapted to be lifted out of contact with the floor when the door is swung outwardly.

9. The combination with a building having a doorway and insulating strips secured to the frame of said doorway at the sides and top thereof, of an edgewise movable door, an inclined track from which said door is pivotally suspended to swing outwardly, and an insulating strip carried by the door and projecting down beyond the lower margin thereof into engagement with the floor when the door is closed and adapted to be lifted out of contact with the floor when the door is swung outwardly.

10. The combination with a building having a doorway and insulating strips at the sides and top of said doorway and projecting outwardly therefrom, of a sliding door pivotally suspended so that it normally tends to swing away from the wall of the building, an inclined track from which said door is suspended and along which it is movable edgewise, means operated by edgewise movement of the door for moving it into close contact with said strips, and an insulating strip carried by and projecting down below the lower margin of the door.

11. The combination with a building having a doorway, of a door movable edgewise and laterally into position to close said door-

way, said door being pivotally suspended from its upper margin to swing outwardly, insulating strips forming dead air spaces between said door and the frame of the doorway when the door is in its closed position, and means operating on the lower corner portions of the door by edgewise movement thereof for moving the same laterally into close engagement with said insulating strips.

12. The combination with a building having a doorway, of a sliding door adapted to close said doorway, said door being pivotally suspended to swing laterally, wedge blocks secured to the door at the lower corner portions thereof, and stationary inclined blocks in position to be engaged by said wedge blocks respectively when the door is moved edgewise into operative position, to move the door laterally into close contact with the frame of said doorway, the wedge block at the forward corner of the door being adapted to pass the inclined block which engages the other wedge block.

13. The combination with a building having a doorway, of a sliding door adapted to close said doorway, said door being pivotally suspended to swing laterally, wedge blocks secured to the door at the lower corner portions thereof, and stationary inclined blocks in position to be engaged by said wedge blocks respectively when the door is moved edgewise into operative position, to move the door into close contact with the frame of said doorway, said inclined blocks being at different distances from the doorway, whereby the wedge block at the forward corner of the door is adapted to pass the inclined block which cooperates with the other wedge block.

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