G. LABRIE.

EMERGENCY EXIT.

APPLICATION FILED NOV. 8, 1915.

1,188,086.

Patented June 20, 1916.

2 SHEETS—SHEET 1.

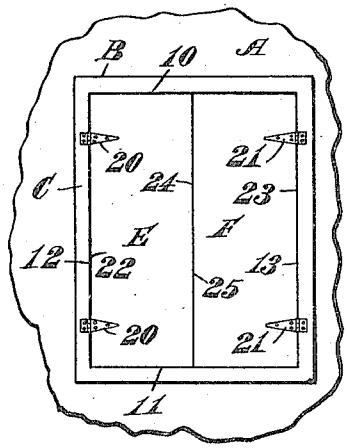


Fig. 1.

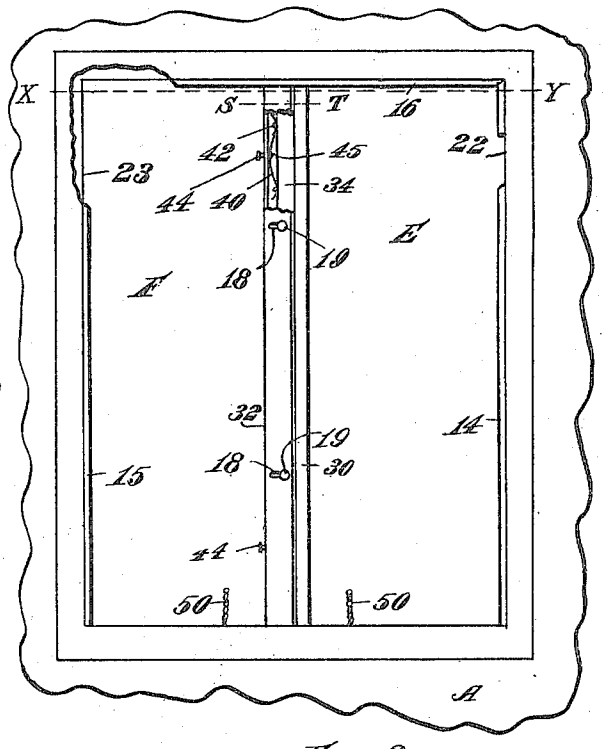
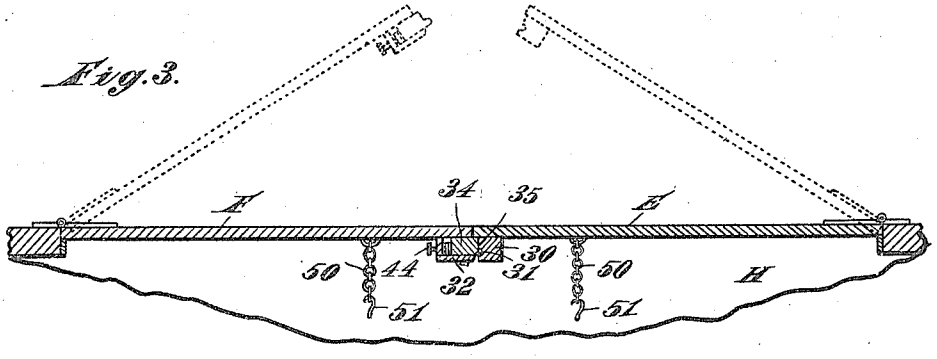


Fig. 2.

Fig. 3.



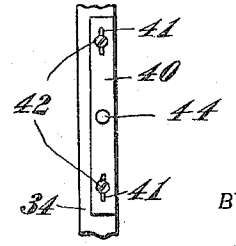


Fig. 4.

WITNESS:

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EMERGENCY EXIT.

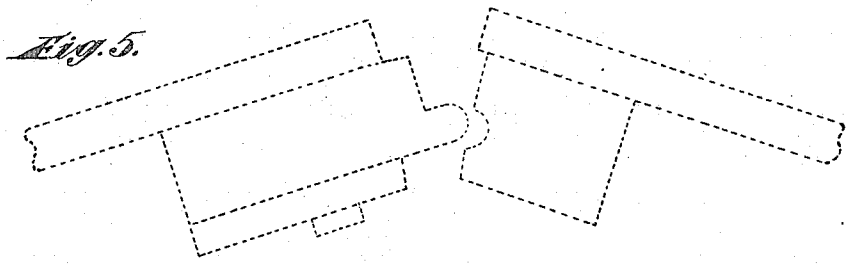
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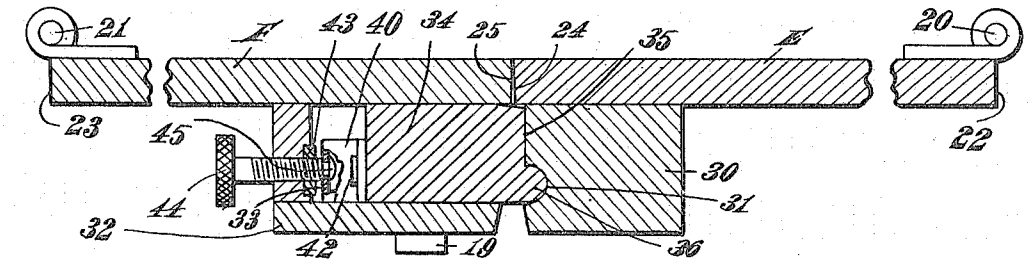
1,188,086.

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2 SHEETS—SHEET 2.

Fig. 5.





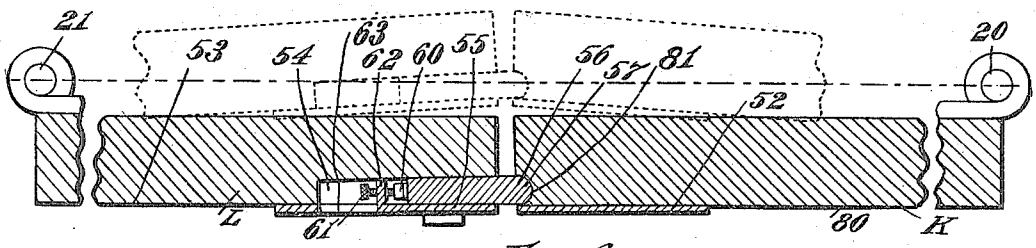


Fig. 6.

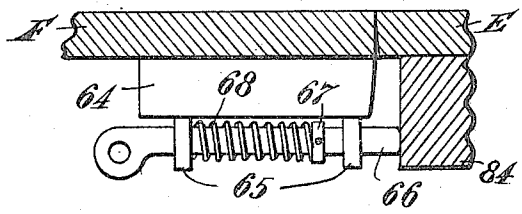


Fig. 8.

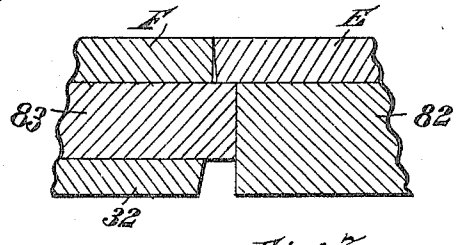


Fig. 7.

WITNESS

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UNITED STATES PATENT OFFICE.

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EMERGENCY-EXIT.

1,188,086. Specification of Letters Patent. Patented June 20, 1916.

Application filed November 8, 1915. Serial No. 60,404.

To all whom it may concern:

Be it known that I, GEORGE LABRIE, a citizen of Canada, residing at Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Emergency-Exits, of which the following is a specification.

This invention relates to emergency exits from buildings and to the doors used in connection therewith. Its principal purpose is to so arrange outwardly opening doors that they can be opened from the outside or front only with great difficulty, if at all, but can be readily opened from the inside or back when sufficient force or pressure is applied thereto.

My exit is especially adapted for theaters, schools, factories and other places where large numbers of people congregate and may be so arranged that it can be locked from the back at night or when few people are in the building and can be unlocked but kept closed by my device when the building is full of people.

In the preferred form of my device the amount of pressure required to open the doors can be regulated and the elastic member or bar is so arranged that it will tightly close the crack between the two doors thereby keeping out wind, rain and cold.

My device comprises an opening in the wall, preferably rectangular, with two doors hinged therein at their outside vertical edges in such a manner that their inside vertical edges will be adjacent. The hinges or pivots are placed at the front side, and back of these near the back of one door, is a slidable member which, when the doors are closed beyond the dead center line between the pivots, is held in elastic engagement with the adjoining inside edge of the other door at a point or line near its backside.

In the drawings, Figure 1 is an elevation of the outside of a building showing the front of the wall and of the doors. Fig. 2 is an elevation from the back or from the inside of the building. Fig. 3 is an enlarged section viewed from the top on line X—Y of Fig. 2. Fig. 4 is a detail of the spring construction. Fig. 5 is a horizontal section as on line S—T of Fig. 2 enlarged and also shows the pivots or hinges. Fig. 6 is a section similar to Fig. 5 of a modified construction. Fig. 7 is a similar view of another modification and Fig. 8 is still another modification.

A represents the wall of a building in which is a rectangular opening B around which is preferably a casing C having a top 10, bottom 11 and side edges 12 and 13. To the front side of this opening are pivoted the two doors E and F by means of hinges or pivots 20, 20, 21, 21, attached to the front of the outside vertical edge of each door and to the front side of the opening. By the outside vertical edge of each door, I refer to the vertical edges 22, 23 which are opposite from the inside edges 24 and 25.

I prefer that my doors should be of substantial thickness and that the vertical edges thereof 22 and 23 should be cut at right angles to the plane of the doors so that they will strike the sides 12 and 13 of opening B and will thereby limit or help to limit the backward movement of the doors when they are closed. I also prefer to attach moldings 14, 15 and 16 to the sides and top of opening B in a plane whose position will determine the backward movement of the doors. These moldings and the action of the vertical edges of each door in striking the inside of the opening serve as stops to limit the backward movement of the doors.

In Figs. 1 to 3 and 5, I show the door E as extended back by means of a block or strip 30 which extends parallel with its inside vertical edge. In this part of the door is a vertical groove 31 which extends along its inside edge near its back side and adjoining the inside edge of the other door. The other door F is extended backward by means of a vertical box 32 the inside of which forms a vertical guideway 33 which extends along the inside edge of the door near its back side adjoining the first described door. In this guideway 33 is a vertical member or bar 34 horizontally slidable therein and which has a shoulder 35 which when the doors are closed as shown in Fig. 5, extends beyond the inside edge 24 of the other door E. Bar 34 also has a tongue 36 which is adapted to loosely engage groove 31 when the doors are closed.

I prefer to support bar 34 against vertical displacement by passing thereinto through horizontal slots 18 in box 32 the headed screws 19.

As adjustable means for elastically forcing bar 34 toward door E, I use the springs

40 which may be of the well known carriage type bowed in the middle and having slots 41 through which pass headed screws 42 into bar 34. To increase or decrease the tension, I preferably attach threaded metal plates 43 to the inside of box 32 and through each of these engaging the threads thereof I pass the set screws 44. The ends of these set screws 44 preferably pass through the bowed part of springs 40 and are swiveled thereon as shown at 45. By turning the set screws 44, the tension between tongue 36 and groove 31, when the doors are closed, can be increased or decreased.

In order that the tongue 36 shall not bind in groove 31 when the doors are swung, I prefer to enlarge the mouth of the groove at the front and to make both tongue and groove wider than their depth or half round as shown.

In connection with my doors, I prefer to provide, at their back or inside, fastening means such as chains 50 attached thereto and detachable from hooks 51 fastened to the floor H. By means of these, in a factory at night or in a theater in the day time when there are few if any people assembled, the doors may be locked in position, while, when people congregate, the chains may be released allowing the doors to be held in position by the pressure of the springs 40 which together with the bar 34 form an elastic member which yieldably engages the inner edge of the other door E near the back side thereof.

The tension on the elastic member may be increased or decreased by means of the adjustable means which are set screws 44, and in order to open the doors to the front, the elastic member must be forced back until its point of contact with the other door is pushed frontward beyond the dead center line between the pivots of the doors. With this construction, as there are no handles nor other means of taking hold of the doors from the front, they can be opened if at all with great difficulty, while in case of a panic or other emergency wherein a crowd of people wish to pass through from the back, the force of their weight against the back of the doors will overcome the resistance of the elastic member thus opening the doors and providing ready exit.

In the construction shown in Fig. 6, the pivots 20 and 21 are located in the same position but the doors K and L have no block like 30 nor box like 32. Along the inside vertical edge 80 of door K near the back side thereof is a slot 81 and reinforcing plate 52 while along the inside edge 53 of door L near the back side thereof is a groove 54 which with plate 55 forms a vertical guideway in which is horizontally slidable a bar or member 56. This member is made elastic by springs such as 60 adjustable by means of set screws 61 which pass through suitable fixed plates 62 and can be reached for adjustment through holes 63 in plate 55. The inside edge of bar 56 forms a tongue 57 which enters groove 51.

Fig. 7 shows another modification wherein block 82 forms part of door E and is similar to 30 except that it has no groove. Box 32 forms part of door F and in the guideway formed thereby slides a bar or elastic member 83 which is similar to 34 except that it has no tongue. The operation is substantially the same.

Fig. 8 shows another modification in which a block 84 forms part of door E while to the back side of a block 64 which forms part of door F are attached one or more eyes 65 which serve as guideways for a bar or elastic member 66 slidable therein. This member is shown as having a collar 67 fixed thereto between which and one of the guide members 65 is a compression spring 68 which makes the member elastic whereby it will yieldably engage the inside edge of the other door near the back side thereof.

In all forms, the back of the inside adjoining edges of the doors should be cut away to clear each other when the doors are being opened, while the front of these edges may touch when the doors are closed, thus making a very tight joint.

The tongue and groove are preferably so located, that as shown by the dotted position in Fig. 5, they will be the first parts to engage, after which they will keep the doors in correct relation as they are being closed.

I claim:

1. An emergency exit which comprises a wall having an opening, combined with two doors each pivoted at the front of its outside vertical edge to the front side of the opening one of said doors having a vertical groove which extends along its inside edge near its back side and adjoining the inside edge of the other door, said other door having a vertical guide way which extends along its inside edge near its back side adjoining the first described door, a vertical bar horizontally slidable in said guide way and having a shoulder which when the doors are closed extends beyond the inside edge of the other door and a tongue adapted to engage the said groove, adjustable means for elastically forcing the bar toward the first named door, and stops to limit the backward movement of the doors.

2. An emergency exit which comprises a wall having an opening, combined with two doors each pivoted at the front of its outside vertical edge to the front side of the opening one of said doors having a vertical groove which extends along its inside edge near its back side and adjoining the inside edge of the other door, said other door having a vertical guide way which extends

along its inside edge near its back side adjoining the first described door, a vertical bar horizontally slidable in said guide way and having a tongue adapted to engage the said groove, and means for elastically forcing the bar toward the first named door.

3. An emergency exit which comprises a wall having an opening, combined with two doors each pivoted at the front of its outside vertical edge to the front side of the opening one of said doors having a vertical groove which extends along its inside edge near its back side and adjoining the inside edge of the other door, said other door having a vertical guide way which extends along its inside edge near its back side adjoining the first described door, a vertical bar horizontally slidable in said guide way and having a tongue adapted to engage the said groove, and adjustable means for elastically forcing the bar toward the first named door.

4. An emergency exit which comprises a wall having an opening, combined with two doors each pivoted at the front of its outside vertical edge to the front side of the opening one of said doors having a vertical groove which extends along its inside edge near its back side and adjoining the inside edge of the other door, said other door having a vertical guide way which extends along its inside edge near its back side adjoining the first described door, a vertical bar horizontally slidable in said guide way and having a tongue adapted to engage the said groove, means for elastically forcing the bar toward the first named door, and stops to limit the backward movement of the door.

5. An emergency exit which comprises a wall having an opening, combined with two doors each pivoted at the front of its outside vertical edge to the front side of the opening, one of said doors having a vertical guide way which extends along its inside edge near its back side, a vertical bar horizontally slidable in said guide way and adapted to engage the inside edge of the other door near the back side thereof, means for elastically keeping the bar in engagement with said other door when the doors are closed, and stops to limit the backward movement of the doors.

6. The combination with a wall having an opening, of two doors each pivoted at its outer edge to the front side of said opening so that their inner edges are adjacent, an elastic member so attached to the back side of one door that it will yieldably engage the inside edge of the other door near the back side thereof when the doors are closed so as to bring it back of the dead center line between the pivotal points of said doors, and stops to limit the backward movement of the doors.

In testimony whereof I hereto affix my signature in presence of two witnesses.

GEORGE his × mark LABRIE.

Witnesses:
HENRY RAGOT,
HARRY R. LAURENCE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."