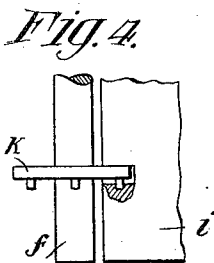
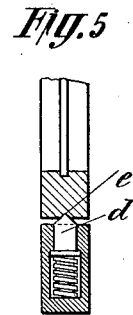
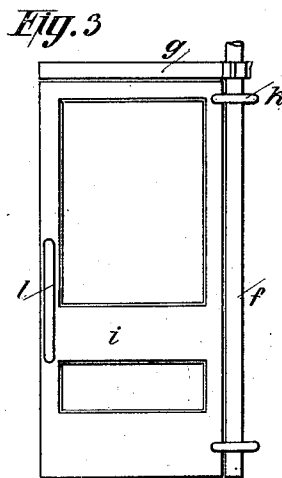
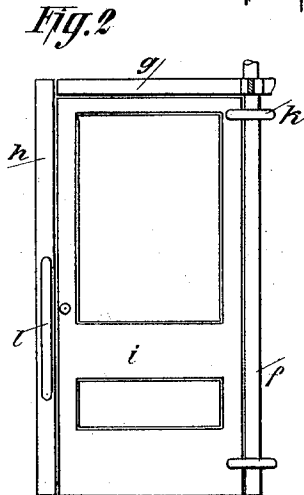
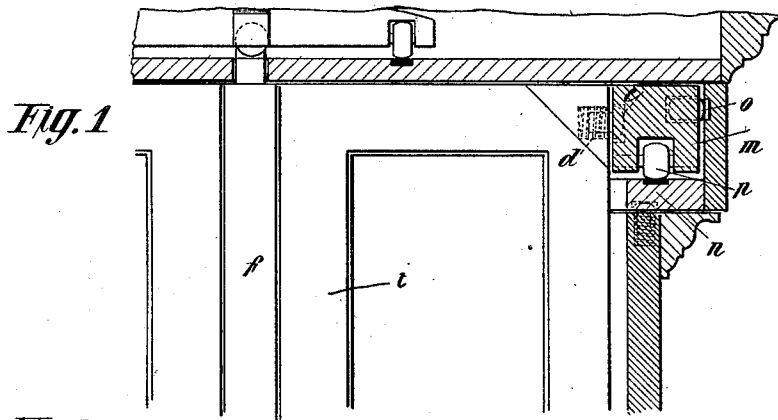


1,030,266.

K. O. S. RAMONDT.
REVOLVING DOOR.
APPLICATION FILED JAN. 12, 1910.

Patented June 18, 1912.

3 SHEETS-SHEET 1.



Witnesses:
L. E. Barkley.
am Luch

Inventor:
Karl Otto Hengervoet Ramondt,
by Frank. Appleman
atty.

1,030,266.

K. O. S. RAMONDT.
REVOLVING DOOR.
APPLICATION FILED JAN. 12, 1910.

Patented June 18, 1912.

3 SHEETS—SHEET 2.

Fig. 6

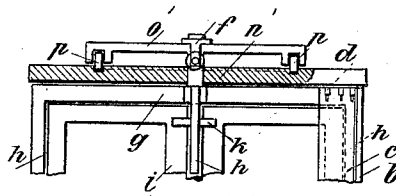
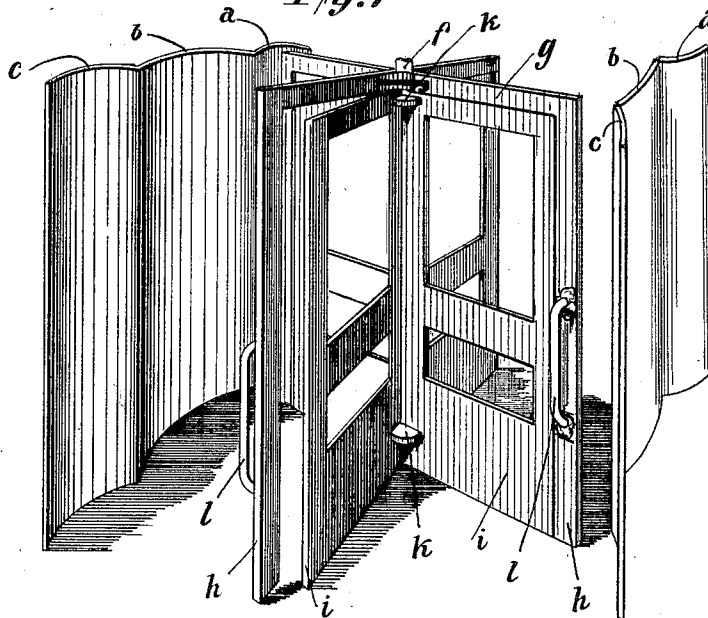


Fig. 7



Witnesses:

L. E. Barkley
attorney

Inventor:

Karl Otto Slingersted Ramondt
by Frank A. Aulerman
att'y.

Fig. 8.

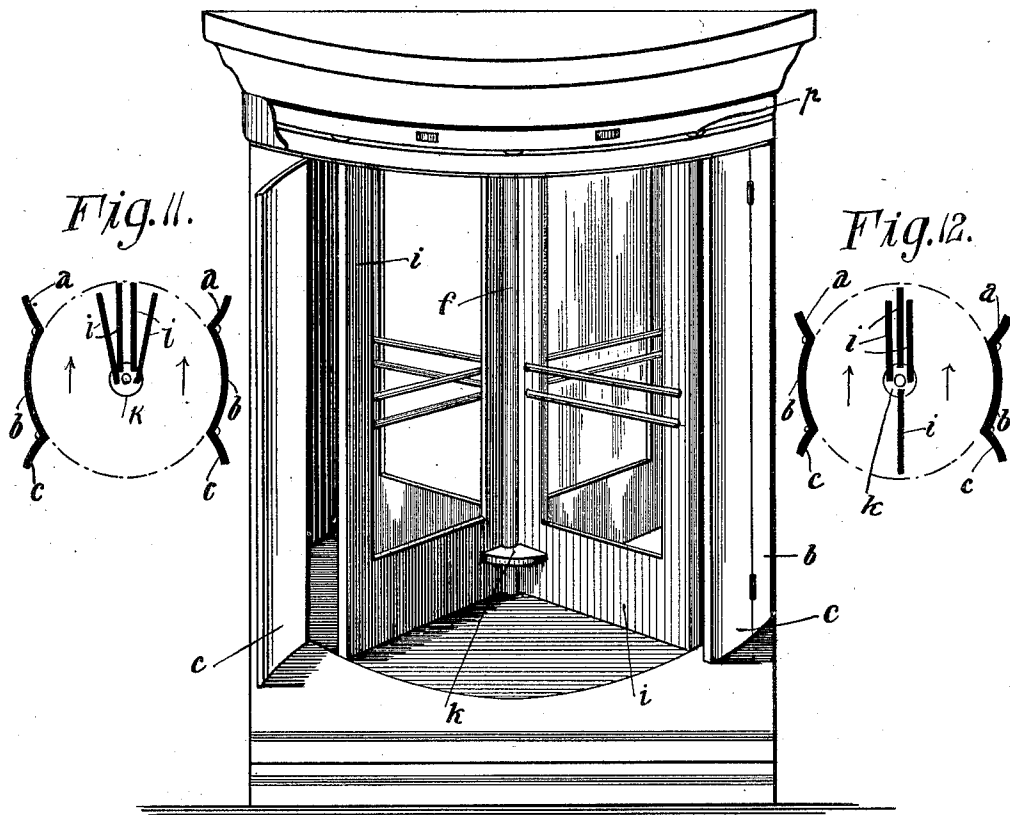


Fig. 11.

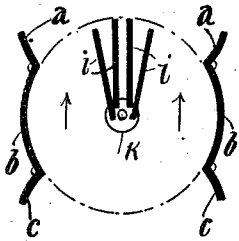


Fig. 12.

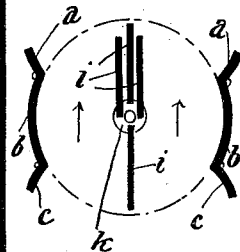


Fig. 9.

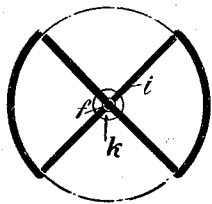
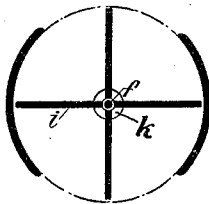


Fig. 10.



Witnesses:

R. E. Sackley
attorney

Inventor:

Karel Otto Slingerboel Ramondt
by Frank. Ahlmann
att'y

UNITED STATES PATENT OFFICE.

KAREL OTTO SLINGERVOET RAMONDT, OF HAARLEM, NETHERLANDS.

REVOLVING DOOR.

1,030,266.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed January 12, 1910. Serial No. 538,228.

To all whom it may concern:

Be it known that I, KAREL OTTO SLINGERVOET RAMONDT, engineer, citizen of the Netherlands, subject of the Queen of the Netherlands, residing at Haarlem, 11 Jansweg, in the Kingdom of the Netherlands, have invented certain new and useful Improvements in Revolving Doors, of which the following is a full, clear, and exact description.

This invention relates to improvements in revolving doors employed in hotels, business houses and the like, which are designed to exclude draft and dust while at the same time facilitating entry and egress. Such doors have proved to be by no means free from disadvantages in cases of sudden danger such as would necessitate the prompt escape of a large number of persons from a theater, concert-hall, or similar place and in such cases there is the risk of the door becoming jammed, especially when, in the case of sudden danger pressure is exerted on it from opposite sides. It has been attempted to overcome these defects by constructing the door in such manner, that the wings of which it is composed can be folded together either all in the same direction or in opposite directions so as to provide a divided exit.

The doors are so constructed, that whether three, four or more in number, all the wings can at any moment by the exercise of a pressure only slightly exceeding the normal pressure required for moving them be brought into a position, wherein all the wings can be folded together. It is, moreover one of the special advantages of the construction, in accordance with this invention, that it is possible, to open a revolving door immediately upon the occurrence of danger, even when the wings are subjected to abnormal pressure by the people trying to press out in a direction opposite to that required to bring them into the opening position. All this is effected, automatically without requiring any manipulation of the doors or other operation by means hereinafter described.

In order to be provided for sudden and urgent emergencies the outer casing itself is, moreover, so arranged as to provide a very wide aperture, this being effected by

so arranging the walls forming the casing that two outer portions thereof are attached by hinges or the like to a stationary central portion, these portions being kept in their normal positions by catches similar to those already referred to, which can be opened only by pressure exceeding that normally employed. These catches may have the form of spring studs such as are shown in Fig. 5, spring studs of this kind being sufficiently strong to retain the wings and the walls under ordinary circumstances in their normal condition. When, however the pressure to which they are subjected becomes considerably greater than the normal, these spring studs will yield and the doors and walls will be moved and brought into the position required for opening solely by the excessive pressure exerted on them.

The movable wings can swing freely outward in both directions with the result that should a panic occur they will yield and be brought into the position for opening irrespective of the direction from which people anxious to pass out may press against the doors. The wings will assume the position in which they can be folded together even when pressure in opposite directions is exerted at the same time on more than one wing.

The principle of this invention consists in the arrangement by means of which the wings can at once be brought from the normal position into the position required for opening, this being due to the fact that the wings are retained in the normal position under ordinary circumstances by means of special stiffening and fixing devices, the action of which can only be rendered inoperative by pressure exceeding the normal and by no other means.

The accompanying drawings illustrate apparatus in accordance with this invention wherein—

Figure 1 shows a vertical section of the portion above the casing having built into it a circular ring, together with a view of the wings and of the central shaft supporting them. Fig. 2. shows a wing of a door in accordance with this invention, having a surrounding frame portion bent at right angles. Fig. 3 shows a similar door furnished only with the upper horizontal part

of each frame. Fig. 4 is a detail view showing the mounting of the hinged wing. Fig. 5 shows the form of spring catch employed in connection with the outer parts of the door-casing and the wings: Fig. 6 shows in cross section a modified construction of the top of the casing with a door frame carried thereon by means of rollers. Fig. 7, is a perspective view of a revolving door with the casing opened out and with one wing caused to swing aside; Fig. 8, is a perspective view of a revolving door of the construction shown in Fig. 1; Figs. 9 and 10 are diagrammatic views of the doors with the wings in spread position, and Figs. 11 and 12 are like views, with the wings in collapsed position.

As shown in the drawings the door consists of the outer casing, which is formed of a pair of walls of circular curvature, which are each subdivided into three parts *a* and *b* and *c* jointed together by hinges. The parts *a* and *c* are normally maintained in the closed position by spring catches such as are shown in Fig. 5. Either at the top or at the bottom there are arranged spring-actuated projecting studs *d* which engage with the notches *e* in the parts *a* and *c*. It is obvious that the arrangement may be such that the notches are at the top or at the bottom and the studs in the parts *a* and *c*. When the pressure exerted against these parts exceeds the normal the pins *d* will be forced back and the walls will be opened.

In the construction shown in Fig. 1, *m* indicates the circular ring built into the casing which is guided by means of rollers *o* and *p* mounted in grooves and which is carried by means of the rollers *p* on a support *n*. The notches *e* may be arranged in the ring and the studs *d* in the wings or vice versa. It is readily seen that the ring will rotate with the wings and the rotary shaft. When, however the pressure exceeds the normal or when pressure is exerted from the opposite direction in which case the ring cannot rotate with the door, the catches will yield and the wings will fold together. In this construction and in the modifications the wings are attached to the rotary axis by means of hinges. In the modification shown in Figs. 2, 6, and 7, the parts *g* of the frame are rigidly connected to the central axis of rotation *f* and other downwardly-extending parts *h*, are connected to the parts *g*. In the latter parts of the frame move the wings *i*, which are hinged in the usual manner to circular disks or rings *k* carried by the rotary axis. The wings *i* are likewise kept in position in their normal condition that is to say, when closed, by means of spring studs such as shown in Fig. 5. The outer parts of the frame are provided in the usual manner with handles *l* which serve for setting the

revolving door in motion. If, however the pressure exceeds the normal the wings *i* will be moved in relation to the outer parts of the frame and will be brought into the position for folding together irrespective of the position of the other parts of the frame.

Fig. 3 illustrates a modification wherein there are provided only the upper parts *g*. The construction in all other respects is similar to that shown in Figs. 2, 6, and 7.

The construction of the door may advantageously be such as to permit of the axis *f* passing through a suitable aperture in the ceiling *n* and there being supported by means of a girder device *o'* furnished with rollers *p* running on rails to which the whole weight of the door is thus transferred in the manner in Fig. 6.

It is obvious from a glance at the drawings that the doors will open under pressure exerted in any possible direction and that this construction therefore affords the greatest possible security against danger.

Having now particularly described and pointed out the nature of my said invention and in what manner the same is to be constructed what I claim is:

1. In a revolving door the combination with a casing of a central rotatable axis, wings hingedly secured to the axis, a ring encircling the wings and means for connecting the wings to the ring to hold them in position but under excessive pressure permitting the wings to be released therefrom and folded together.

2. In a revolving door the combination with a casing of a central rotatable axis, wings hingedly secured to the axis, a ring encircling the wings and a catch on each wing engaging the ring whereby the wings are held in position but under excessive pressure they will be released from said ring and folded together.

3. In a revolving door the combination with a casing of a central rotatable axis, wings movably secured to the axis, a ring encircling the wings, means for connecting the wings to the ring and permitting them to be automatically released therefrom under excessive pressure, a support beneath said ring and rollers seated in the ring adapted to travel on the support.

4. In a revolving door the combination with a casing of a central rotatable axis, wings movably secured to the axis, a ring encircling the wings, means for connecting the wings to the ring and permitting them to be automatically released therefrom under excessive pressure, a support beneath said ring, rollers rotatably mounted in the ring adapted to travel on the support and other rollers seated in the outer face of said ring adapted to travel on the casing.

5. The combination in a revolving door, of a casing, an axis rotatable within the cas-

ing, wings hingedly supported on the axis,
a ring encircling the wings, and supporting
the axis, a support under the ring, means
for detachably connecting the wings to the
5 ring, and rollers intervening the ring and
the support whereby the ring may travel
around the support.

In witness whereof, I subscribe my signature, in presence of two witnesses.

KAREL OTTO SLINGEROET RAMONDT.

Witnesses:

J. V. ALEMA,

T. H. HULSHOFF.

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