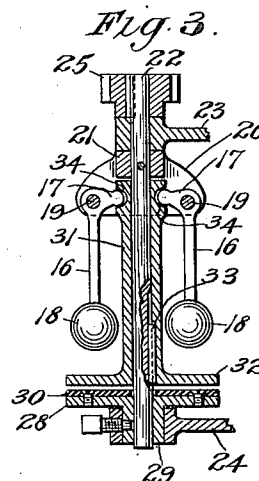
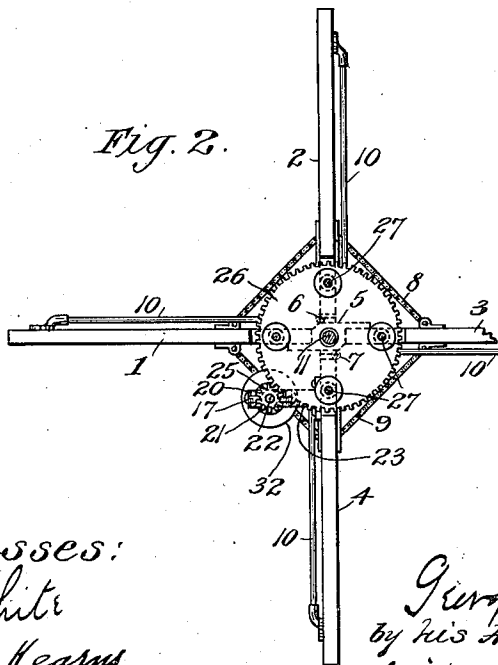
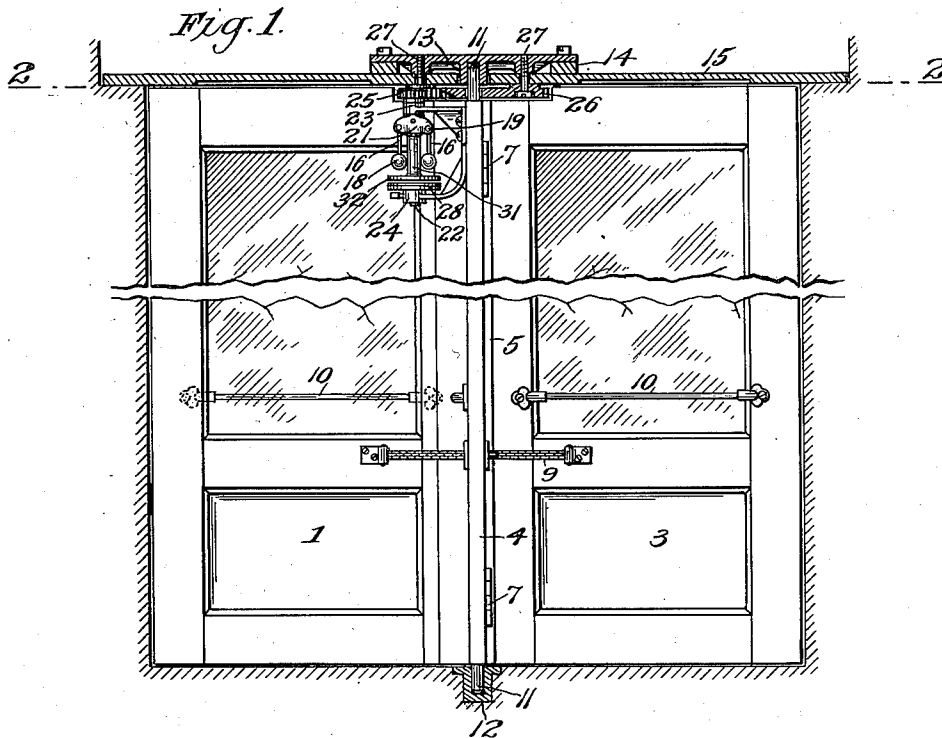


G. C. BLICKENS DERFER.
 SPEED CONTROLLING MECHANISM FOR REVOLVING DOORS.
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Witnesses:
 A. White
 John J. Kearns

Inventor:
 George C. Blickensderfer
 by his Atty's:
 Philipp Sawyer Rice & Kennedy

UNITED STATES PATENT OFFICE.

GEORGE C. BLICKENSDEFFER, OF STAMFORD, CONNECTICUT.

SPEED-CONTROLLING MECHANISM FOR REVOLVING DOORS.

1,014,997.

Specification of Letters Patent.

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Application filed March 29, 1909, Serial No. 486,528. Renewed June 6, 1911. Serial No. 631,568.

To all whom it may concern:

Be it known that I, GEORGE C. BLICKENSDEFFER, a citizen of the United States, residing at Stamford, county of Fairfield, and State of Connecticut, have invented certain new and useful Improvements in Speed-Controlling Mechanism for Revolving Doors, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in speed controlling mechanism for revolving doors.

Revolving doors comprising a plurality of sections or divisions are now widely used. As ordinarily constructed, these doors are mounted on shafts or pivots which permit them to rotate freely, the doors being put in motion by the persons passing through the doors. Such doors are liable to cause injuries to persons passing through them, due to the fact that some one, in passing through, unduly accelerates the movement of the door, thus causing some other person who may also be passing through it to be struck by the section or division of the door behind him. In many places where such doors are in constant use because of the numbers of persons passing through them, such, for instance, as in stores, hotels, etc., in order to prevent such accidents the services of an attendant are required whose sole duty it is to watch the door and prevent any undue acceleration of its movement. The services of such attendants are a considerable source of expense, particularly where a large number of doors are in use.

The present invention has for its object to provide a suitable controlling means by which the rate of movement of a revolving door may be automatically controlled, thus preventing accidents due to undue acceleration of its movement.

With this and other objects not specifically referred to in view, the invention consists in certain constructions, and in certain parts, improvements and combinations as will be hereinafter fully described and then specifically pointed out.

Referring to the accompanying drawings, Figure 1 represents, in side elevation, partly in section, a revolving door provided

with the improved speed controlling means. Fig. 2 is a sectional top plan view, the section being taken on the line 2—2 of Fig. 1. Fig. 3 is a sectional elevation of a part of the speed controlling mechanism.

The drawings illustrate an ordinary revolving door construction embodying four sections or divisions 1, 2, 3, 4. In the particular construction illustrated, the door is provided with a central rotating stud or shaft 5 to which the divisions 1 and 3 are immovably secured. The sections 2 and 4 are hinged to the shaft by hinges 6 and 7, respectively, this construction permitting the sections 2 and 4 to be folded back onto the sections 1 and 3 when desired. The sections 2 and 4 are held in operative position by means of chains 8, 9, and each section is shown as provided with a rail, as 10, to be grasped by persons passing through the door. The shaft 5 is provided with journals or pivots 11, the lower journal being stepped in a socket 12 mounted in the floor and the upper journal being stepped in a socket 13 in a plate supported on sills 14 above the ceiling 15 of the door opening.

The construction so far described is an ordinary one, and it is to be understood that any other construction of revolving door may be substituted therefor, as the invention is not confined to use with any particular type of revolving doors.

Constructions embodying the invention will include a speed controlling device by which the rate of movement of the door is automatically controlled. While the details of construction of this speed controlling device may be widely varied, in the best constructions embodying the invention, it will include a governor mechanism. The particular form of governor mechanism employed may be varied, but as shown the governor is, in its general features, of the ordinary centrifugal type comprising a pair of bell-cranks 16, 17, the arms 16 being provided with balls 18, as is usual. In the particular construction illustrated, these bell-cranks are pivoted at 19 to ears 20 formed in one piece with a hub 21.

When a governor device is employed, suitable connections will be provided whereby the governor may be operated by the door itself. While these connections may vary, in the construction shown, the hub 21

is secured to a shaft 22 supported in the arm 23 of a two-armed bracket 23—24 mounted on one of the door-sections, as 4. The upper end of the shaft 22 is provided with a small gear or pinion 25 which meshes with a stationary gear 26 secured in place above the door. In the particular construction illustrated, screws, as 27, pass through the gear and the ceiling of the door opening and are threaded in openings in the plate 13 before referred to.

Constructions embodying the invention will include means whereby the governor mechanism when employed will be made effective to control the rate of movement of the door. While these means may be varied, in the particular construction illustrated, they include a brake mechanism comprising a flange 28 extending from a hub 29 supported in the arm 24 of the bracket 23—24 which is mounted on the door. Where this flange construction is employed, it may, if desired, be faced with fiber, as 30, or other suitable substance, for increasing the friction. In the particular construction illustrated, the shaft 22 is surrounded by a sleeve 21, the lower end of this sleeve being provided with a flange 32 overlying the flange 28, this sleeve, as shown, being connected to the shaft by a spline connection, as 33, this construction causing the sleeve to turn with the shaft but permitting it to have a lengthwise movement thereon. The upper end of this sleeve is provided with recesses 34 which are engaged by the arms 17 of the governor bell-cranks before referred to.

The operation will be readily understood from the foregoing description of the construction. The governor will, of course, be arranged to permit the rotation of the door at a predetermined speed. Should it be attempted to move the door at an increased speed, the governor balls will fly out forcing the sleeve 31 and its flange 32 down against the fiber facing 30, this braking the shaft 22. The rotation of the gear 25 will thus be checked and this in turn checks the movement of the door.

It will be observed that the construction is exceedingly simple, and, furthermore, it is of such a character that it can be readily applied to the revolving doors now in use.

As has been indicated, changes and variations may be made in the construction by which the invention is carried into effect. The invention is not, therefore, to be confined to the particular construction herein-

before described and illustrated in the accompanying drawings.

What is claimed is:—

1. The combination with a door mounted to revolve, of a speed controlling device, and connections between said device and the door whereby the rate of movement of the door is automatically controlled.

2. The combination with a door mounted to revolve, of a speed controlling device carried by the door, and connections between said device and the door whereby the rate of movement of the door is automatically controlled.

3. The combination with a door mounted to revolve, of a governor mechanism, operating connections between the door and said mechanism, and means whereby the governor mechanism controls the rate of movement of the door.

4. The combination with a door mounted to revolve, of a governor mechanism mounted on the door, operating connections between the door and said mechanism, and means whereby the governor mechanism controls the rate of movement of the door.

5. The combination with a door mounted to revolve, of a governor mechanism, operating connections between the door and said mechanism, a brake for the door, and connections between the governor mechanism and the brake.

6. The combination with a door mounted to revolve, of a governor mechanism carried by the door, operating connections between the door and said mechanism, a brake for the door, and connections between the governor mechanism and the brake.

7. The combination with a door mounted to revolve, of a centrifugal governor, a friction brake mechanism for the door, operating connections between the brake mechanism and the governor, and between the door and the governor.

8. The combination with a door mounted to revolve, of a bracket secured to the door, a centrifugal governor supported in the bracket, means whereby the door drives the governor, and a brake mechanism for the door thrown into operation by the governor when the speed of the door is excessive.

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

GEORGE C. BLICKENSDEFFER.

Witnesses:

JAMES Q. RICE,
A. WHITE.