

No. 724,805.

PATENTED APR. 7, 1903.

J. L. CARTER.
ROTATING STORM DOOR.

APPLICATION FILED JULY 19, 1902.

NO MODEL.

3 SHEETS—SHEET 2.

Fig. 3.

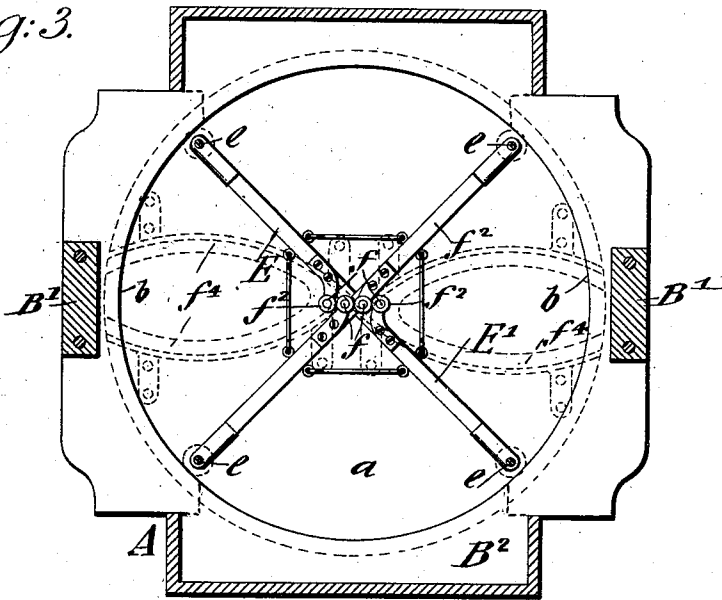
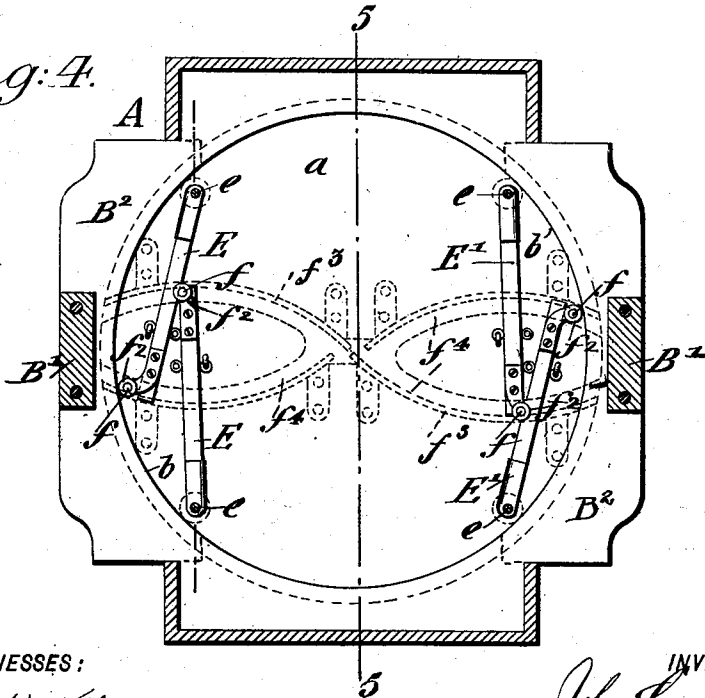


Fig. 4.



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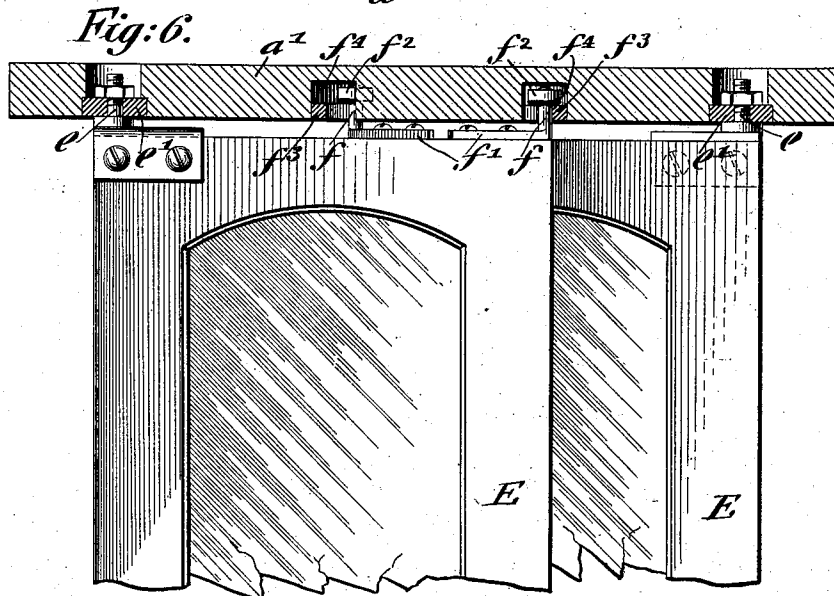
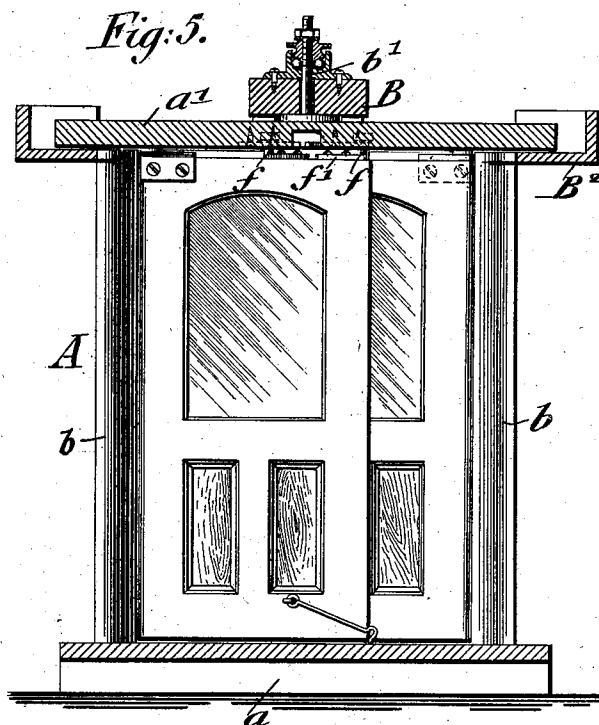
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UNITED STATES PATENT OFFICE.

JOHN LAWRENCE CARTER, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE CARTER ROTARY DOOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ROTATING STORM-DOOR.

SPECIFICATION forming part of Letters Patent No. 724,805, dated April 7, 1903.

Application filed July 19, 1902. Serial No. 116,146. (No model.)

To all whom it may concern:

Be it known that I, JOHN LAWRENCE CARTER, a citizen of the United States, residing in New York, borough of Brooklyn, and State of New York, have invented certain new and useful Improvements in Rotating Storm-Doors, of which the following is a specification.

This invention relates to certain improvements in that class of structures known as "rotating storm-doors" in which a doorway comprising segmental side walls is provided with a rotating door composed of wings, said wings being arranged radially and adapted to be locked together at their inner edges, so as to swing around a common center or movable independently of each other, so as to be arranged alongside of said segmental side walls when the doorway is to be cleared entirely; and for this purpose the invention consists of a rotating storm-door which comprises stationary segmental side walls, a disk-shaped ceiling provided with curved guideways extending across the same and intersecting with each other at the center thereof, means for rotatably suspending said ceiling, wings pivoted at their outer upper corners to said ceiling and guided by pins at their inner upper corners in the guideways of the ceiling, said guideways being each concentric to the pivot of its respective wing, and means for locking the inner edges of the wings in radial position when they are required for use.

The invention consists, further, of certain details of construction and combination of parts, that will be fully described hereinafter and finally pointed out in the claim.

In the accompanying drawings, Figure 1 is a front elevation of my improved rotating storm-door, showing the wings of the same in position for use. Fig. 2 is a horizontal section on line 2 2, Fig. 1. Figs. 3 and 4 are horizontal sections on line *x x*, Fig. 1, showing the arrangement of the radial wings of the storm-door for ordinary use and as moved sidewise to the side walls, the ceiling being shown in dotted lines. Fig. 5 is a vertical longitudinal section on line 5 5, Fig. 4, showing the wings folded up; and Fig. 6 is a detail vertical transverse section through the ceil-

ing, showing the means for suspending the wings from the same, said figure being drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the fixed supporting frame or casing of my improved rotating storm-door, said casing comprising a base *a*, a top plate or ceiling *a'*, and segmental side walls *b*. The ceiling *a'* is made disk shape and suspended from a hanger-bolt *b'* centrally from a transverse beam B, that is supported on short transverse pieces B', that are supported on an open ceiling B² of the stationary casing A, said transverse pieces being bolted to said ceiling B², as shown in Fig. 1. To the ceiling *a'* is attached the center bolt *b'*, that passes through the beam B and which turns in antifriction-bearings of the same, as shown clearly in Fig. 5. From the ceiling are suspended four wings, arranged in pairs E E', said wings being suspended by means of pivot-bolts *e*, that are attached by flanged portions to the outer upper corners of the wings E E', that are suspended from stationary plates *e'* in socket-holes of the ceiling, as shown clearly in Fig. 6. The wings are pivoted to the ceiling at points in a concentric circle adjacent to the circumference of the same, the pivots being equidistant from each other, so that two diametrically opposite wings can be swung inwardly toward the center of the ceiling in line with each other, as shown in dotted lines in Fig. 2 and in full lines in Fig. 3. The inner upper corners of the wings E E' are provided with guide-pins *f*, that are arranged at the ends of the angle-irons *f'*, that are bolted to the upper edges of the wings, said guide-pins being provided with antifriction-rollers *f*², that move on guideways *f*³, that are arranged in grooves *f*⁴ at the under side of the ceiling *a'*, said grooves being arranged concentrically to the pivot-bolts *e*, the grooves for each pair of wings being arranged between their pivots, forming loops that terminate near the center of the ceiling. These grooves permit of the swinging of the wings E E', by means of their guide-pins, from a radial po-

sition in grooves into position sidewise of the segmental side walls, as shown in Fig. 4, or vice versa.

The guide-pins at the inner upper corners 5 of the wings E E' are so arranged relatively to each other that the pin of one of the pairs of wings is located at a greater distance from the plane of the respective wings than the other, so that when placing the wings in radial position, as shown in Fig. 3, the guide- 10 pins are located sidewise of each other and in the center line passing longitudinally through the loops formed by the guide-grooves f^1 , as shown in Figs. 2 and 3. When the wings are 15 located in this position, they are connected by suitable locking devices, such as hooks, that are pivoted to eyes of one wing and inserted into eyes of the other wings, or any other suitable locking device by which the 20 wings can be locked together in radial position and can be easily unlocked, so as to permit of their being folded upon the pivot-bolts into the space formed by the side walls of the casing, may be used.

25 When it is desired to arrange the wings so as to form a rotating storm-door, one wing after the other is swung inwardly in their guide-grooves until their guide-pins abut against each other and are alongside of the 30 inner ends of the guideways, upon which the wings are locked together at their lower ends, the storm-door being now ready for use when rotating with the ceiling by pushing the wings in the same direction. The ball-bearing of 35 the suspension-bolt of the ceiling produces the easy noiseless motion of the ceiling and wings without requiring any marring of the floor by pivot-sockets or the like. Each wing may be provided with the usual hand-rails 40 and at their outer edges with yielding flanges made of rubber or other suitable material, so as to produce a close contact between the wings and the segmental side walls during

the rotation of the wings, so as to exclude wind, rain, &c. The guideways upon which 45 the rollers of the guide-pins are supported are attached along one edge of the arc-shaped grooves by means of lugs bent up from the same and bolts by which the lugs are attached 50 to the ceiling. This arrangement is shown in dotted lines in Figs. 2 and 4 and supports the rail of the guideways firmly on the ceiling and in the grooves, as shown in Fig. 2.

When it is desired to clear the passageway, the locking devices are disconnected, so 55 that the wings can be swung about their pivot, one after the other, in their respective guide-grooves and into position alongside of the segmental side walls, as shown in Fig. 4. In this position they are folded up out of the 60 way, ready for immediate connection again to form a storm-door whenever required.

Having thus described my invention, I claim as new and desire to secure by Letters 65 Patent—

In a rotating storm-door, the combination with a rotatably-suspended ceiling, of wings pivoted at their outer upper corners equidistantly from each other near the circumference of the ceiling, guide-pins at the inner 70 upper corners of said wings, offset from the plane of the wings so as to aline diametrically when the wings are in radial position, guide-grooves in said ceiling concentric with the pivots of said wings, and terminating 75 near the center of the ceiling and means for locking said wings together when in radial position, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses. 80

JOHN LAWRENCE CARTER.

Witnesses:

PAUL GOEPEL,
HENRY J. SUHRBIER.