

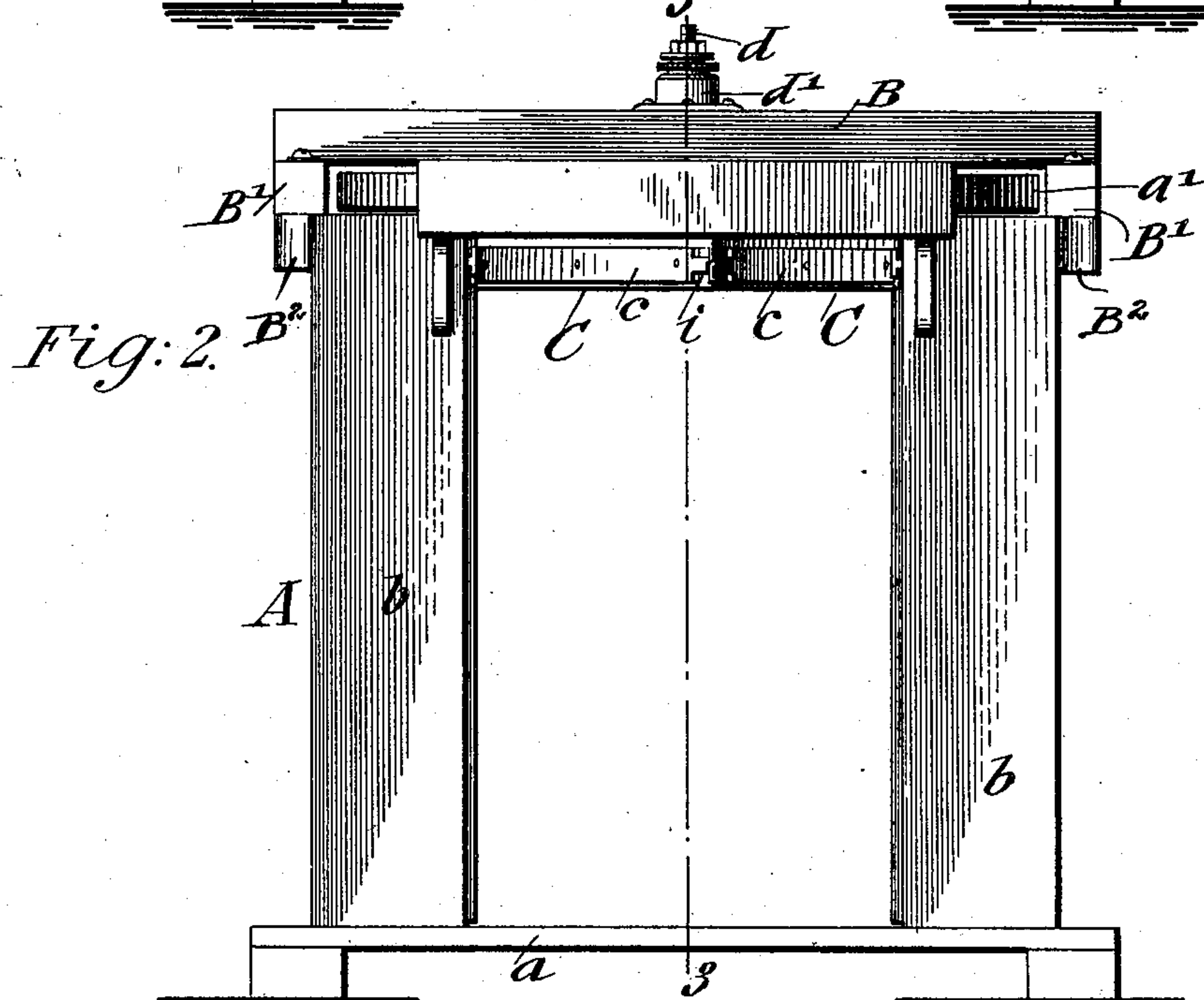
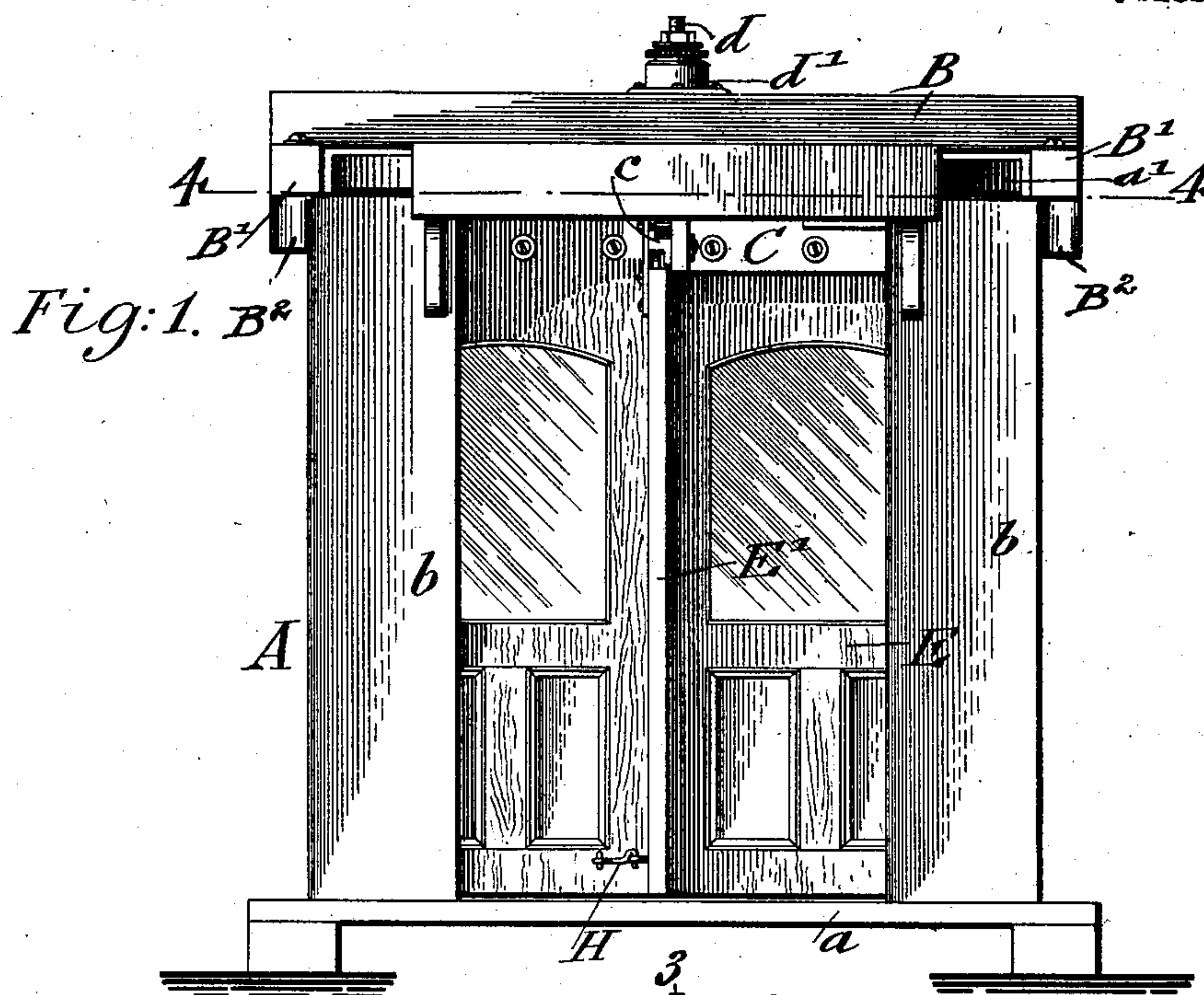
No. 724,804.

PATENTED APR. 7, 1903.

J. L. CARTER.
ROTATING STORM DOOR.
APPLICATION FILED JULY 19, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

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4 SHEETS—SHEET 2.

Fig. 3.

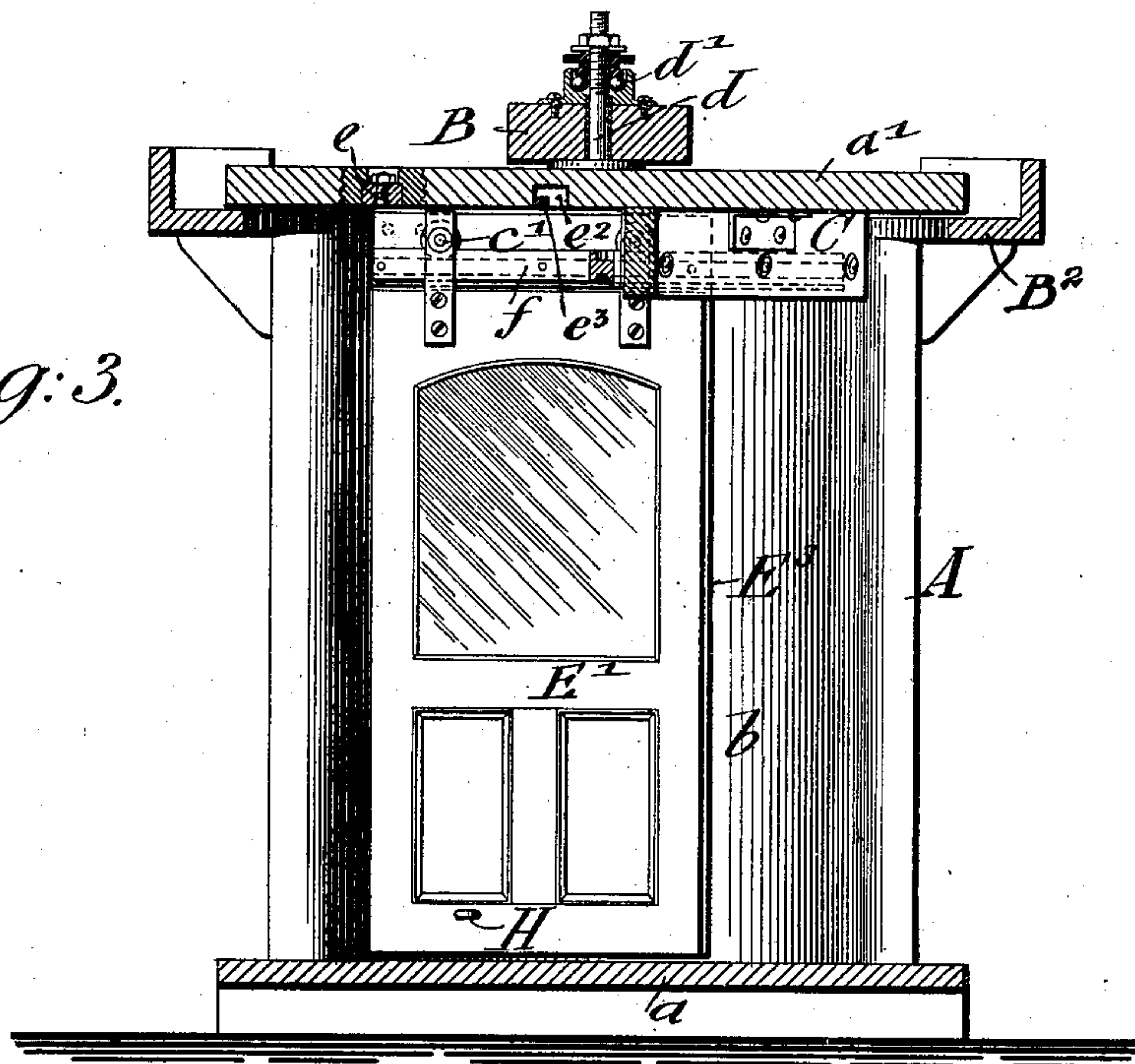
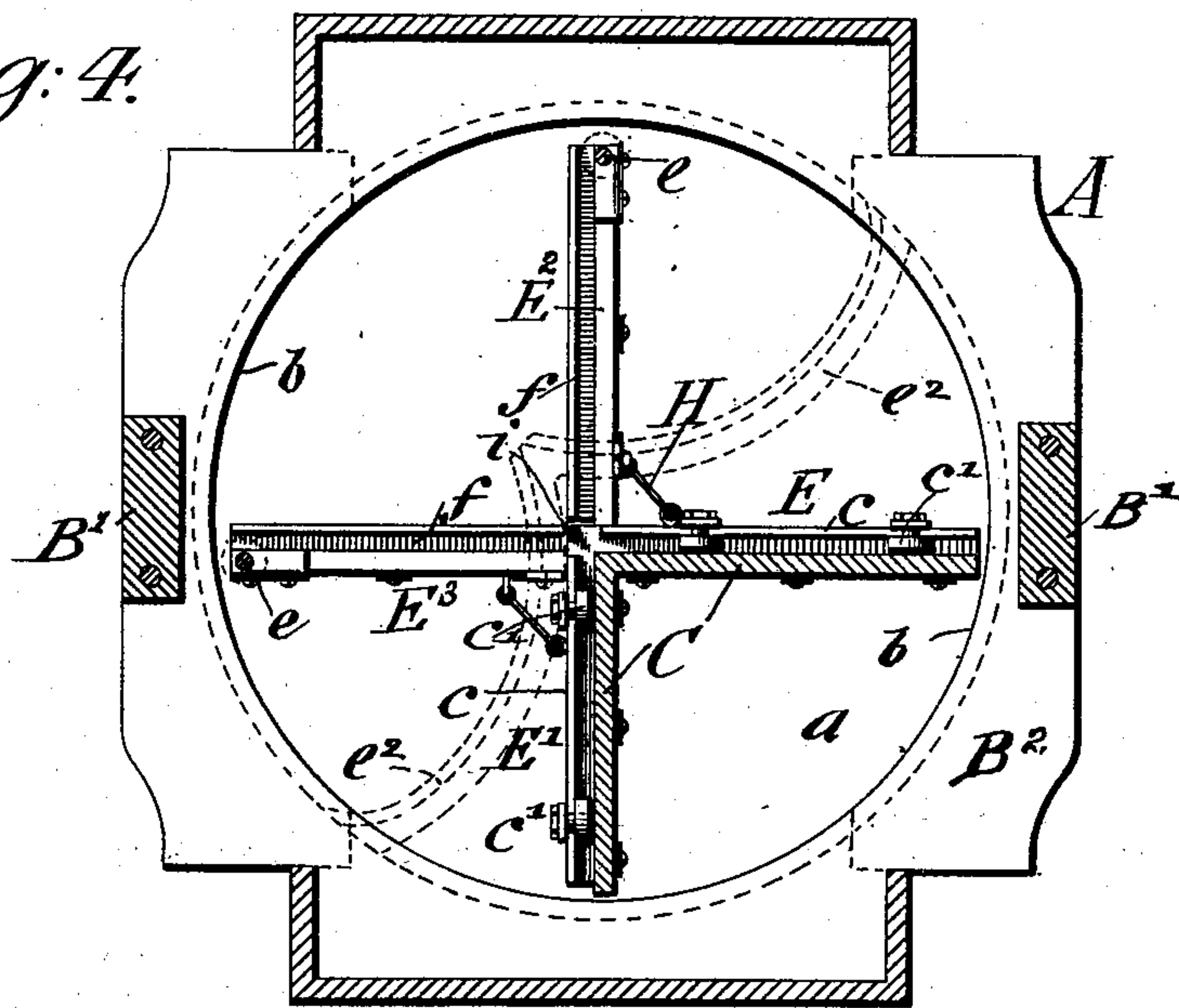


Fig. 4.



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4 SHEETS—SHEET 3.

Fig:5.

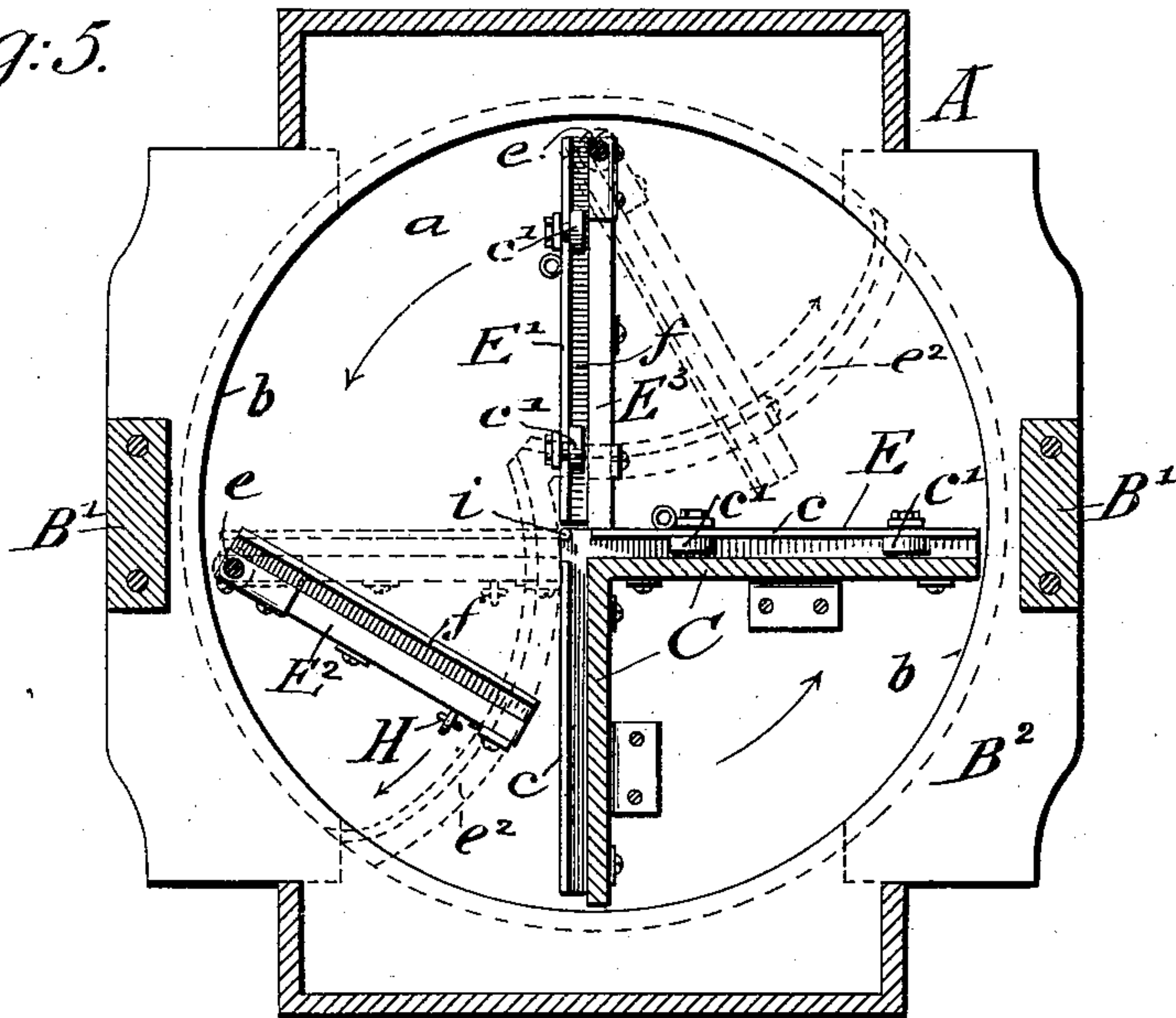
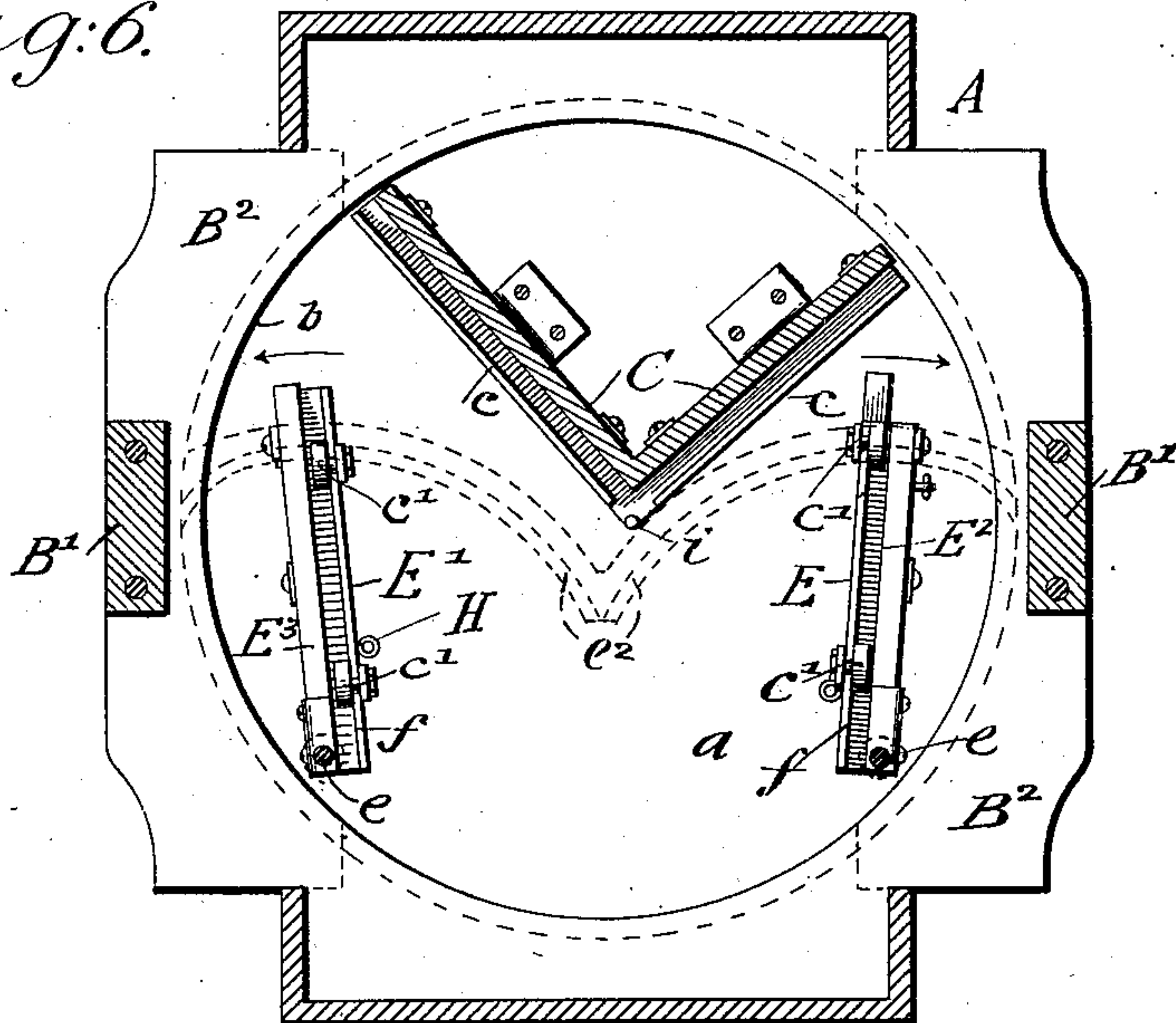


Fig:6.



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4 SHEETS—SHEET 4.

Fig:7.

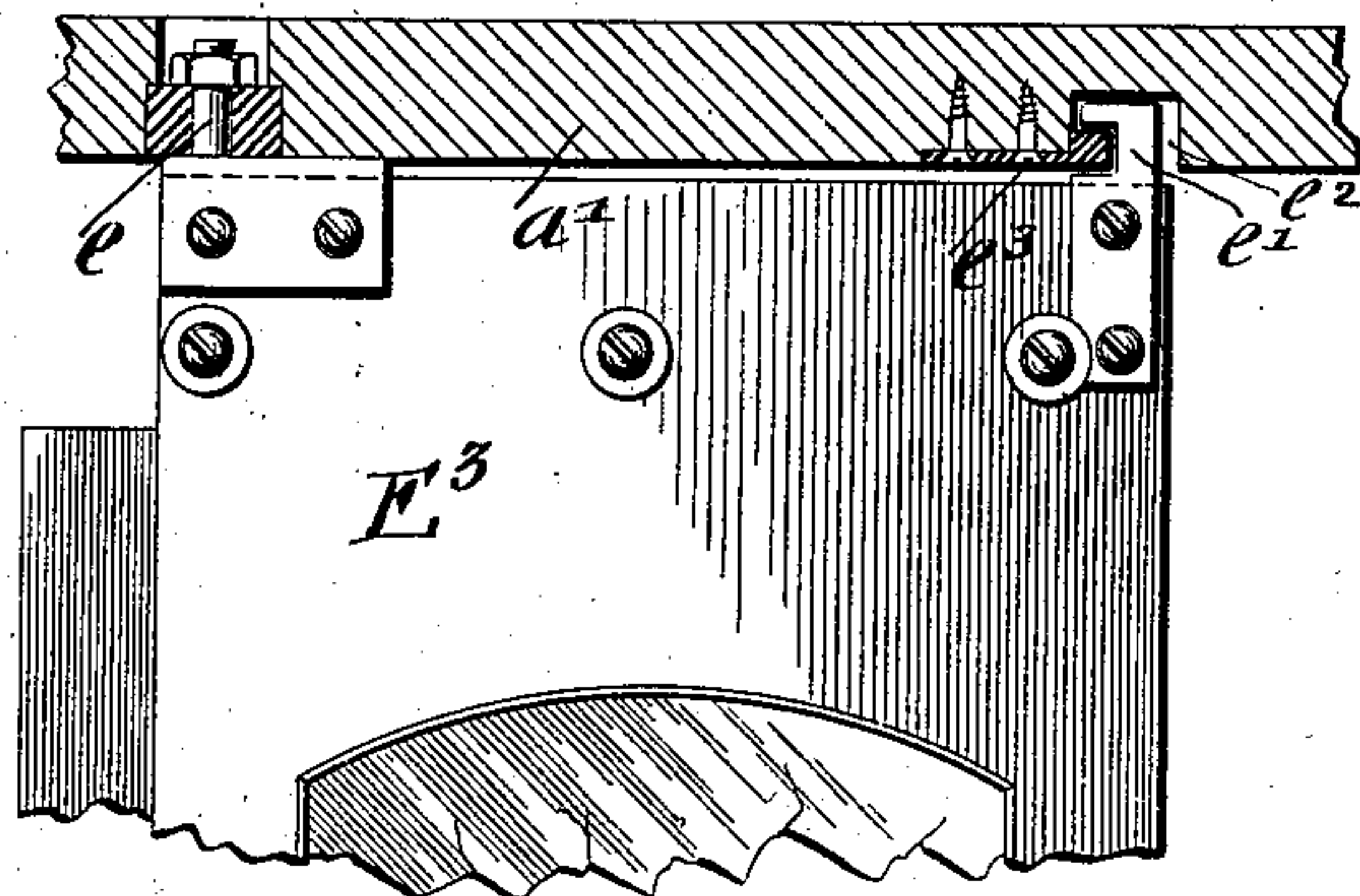


Fig:8.

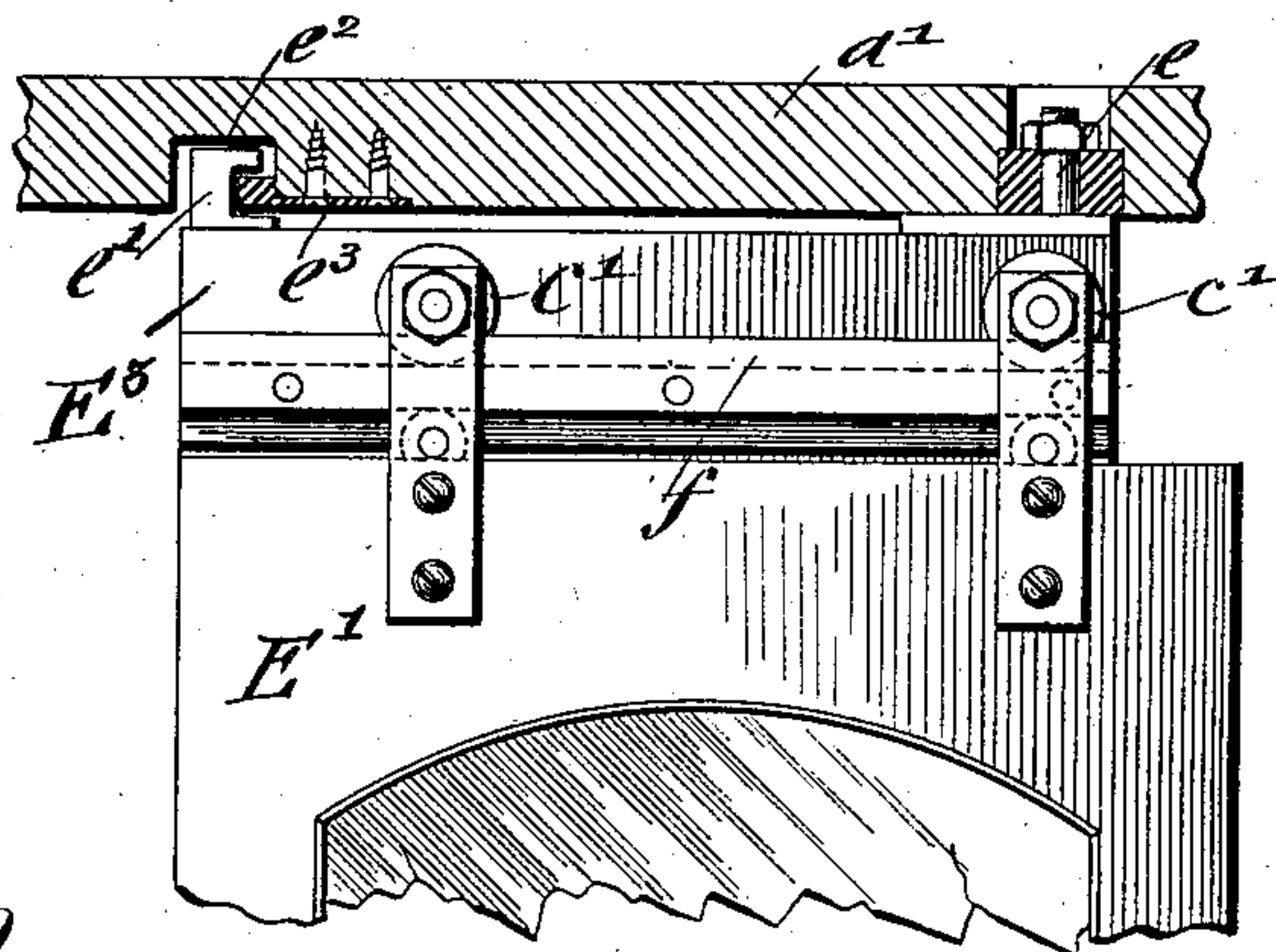


Fig:9.

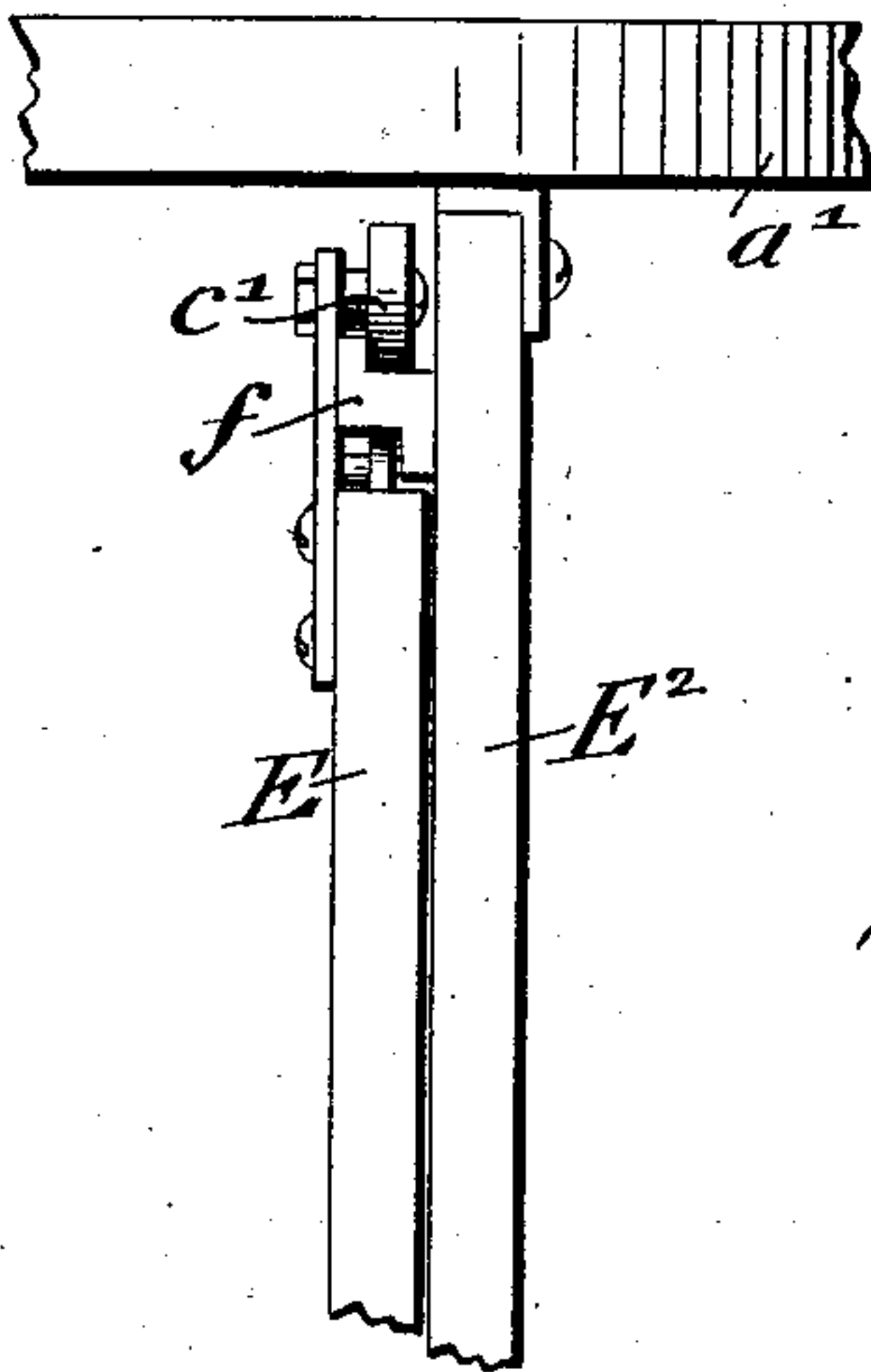
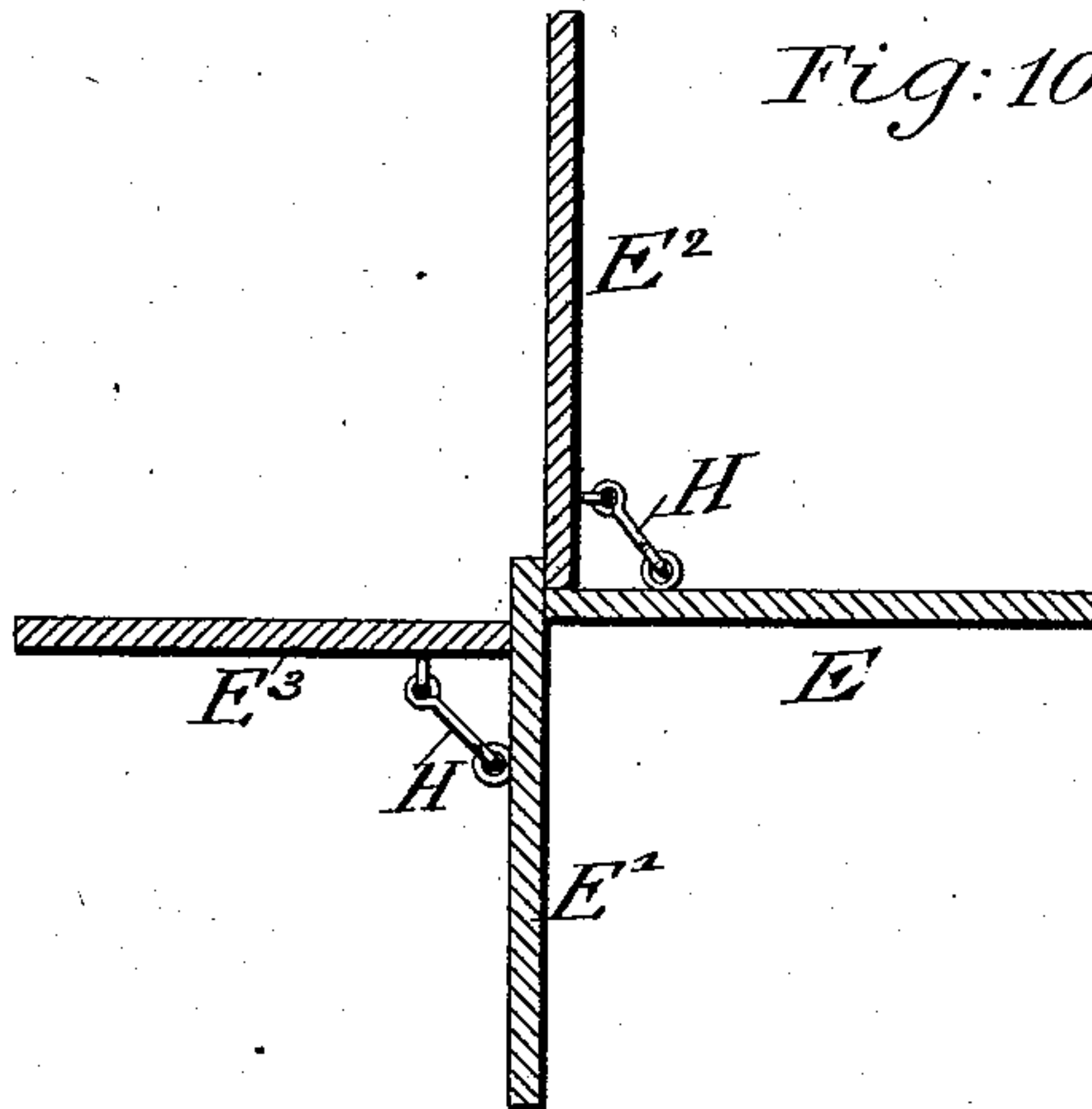


Fig:10.



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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. 724,804, dated April 7, 1903.

Application filed July 19, 1902. Serial No. 116,145. (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 an improved rotating storm-door of that class in which a number of radial wings are rotated within a stationary casing having segmental side walls, said wings being capable of rotary motion, so as to permit ingress and egress through the passage-way of the stationary casing, or being capable of folding, so as to be swung into position at opposite sides of the passage-way along the segmental side walls; and for this purpose the invention consists of a rotating storm-door which comprises stationary segmental side walls, a disk-shaped ceiling, means for rotatably suspending said ceiling, folding wings suspended from said ceiling, and means for locking said wings together at their inner edges, said wings being rotatable with said ceiling.

The invention consists, further, of segmental grooves in the under surface of the ceiling for guiding the folding wings, so as to permit of their being moved to a position alongside of the segmental side walls of the stationary casing, and guideways at the upper ends of two of the folding wings which are adapted to receive the other wings that are supported normally on angularly-arranged guideways on the ceiling, so as to permit them to be folded alongside of the side walls; and the invention consists, lastly, of certain details of construction, which will be more fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of my improved rotating storm-doors, showing the folding wings of the same in radial position for use. Fig. 2 is a front elevation of the door, showing the wings folded alongside of the segmental side walls of the casing, so as to provide an open passage-way. Fig. 3 is a vertical section on line 3 3, Fig. 2. Fig. 4 is a horizontal section on line 4 4, Fig. 1, the rotating ceiling being re-

moved and shown in dotted lines. Figs. 5 and 6 are similar sections showing the wings respectively in folding and folded positions. Figs. 7 and 8 are respectively detail elevations of a pivoted wing and a sliding wing in relation to the ceiling. Fig. 9 is a detail end view of one of the sliding wings carried on a pivoted wing; and Fig. 10 is a horizontal section of the wings, showing their relative position when arranged radially to one another and connected or locked for rotary motion.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the fixed supporting portion or casing of my improved storm-door. This casing comprises a base *a*, a top plate or ceiling *a'*, and segmental side walls *b b*. The ceiling *a'* is made disk shape and is suspended centrally from a beam B, that is supported on short sleepers B', that are supported on an open stationary ceiling B², to which they are bolted, as shown in Fig. 1. To the ceiling *a'* is attached a center bolt *d*, that turns in antifriction-bearings *d'* of the beams B, as shown in Fig. 3. To the under side of the ceiling are secured guideways C, that are arranged at right angles and are provided with flanged guide ways or rails *c* for guiding the antifriction-rollers *c'* of the shiftable wings E E', which are suspended by means of hangers from said flanged guideways in such a manner as to be readily slidable thereon, either for being entirely removed from the same or for being moved onto the guideways *f*, that are attached to the upper ends of two pivoted wings E² E³, the outer upper corners of which are suspended by pivoted bolts *e* from the ceiling *a'* and guided by means of L-shaped lugs *e'* in grooved segmental ways *e²* at the under side of the ceiling, said ways *e²* being provided along one edge of the same with metallic guide-rails *e³*, as shown clearly in Figs. 7 and 8.

When the wings E E' E² E³ are arranged in position for rotary motion within the stationary casing A, as shown in Figs. 4 and 10, the lower ends of the wings E and E² E' and E³ are connected or locked by means of hook-and-eye devices H or in any equivalent man-

ner, so as to hold the lower ends of the wings firmly together. In the radial position of the wings when they are locked together by the locking devices the wing E abuts against the inner end of the wing E', while the wing E² abuts against the inner end of the wing E, and the inner end of the wing E³ abuts against the inner end of the wing E', as shown clearly in Fig. 10. It will be seen from Fig. 10 that the connection of the wings is not absolutely radial nor that the wings are all of equal width, the wing E² being slightly longer than the wings E and E', which are of equal width, and E³, which is still shorter, and in this arrangement they are suspended from the ceiling and rotate therewith. The wings may be provided with hand-rails or other suitable devices for this purpose.

The inner corners or apex of the stationary guideways C at the under side of the ceiling are recessed, so as to permit the free sliding of the rollers of the shiftable wings from the stationary guideways to the guideways *f* of the pivoted wings E² E³. A corner-piece *i*, in line with the flanges of the guideways, facilitates in guiding the shiftable wings from the guideways of the ceiling onto the guideways of the pivoted wings. Whenever it is desired to fold up the wings, so as to form a clear passage-way, as is the case during warm weather or when rotary doors are applied to the doors of churches, &c., where a large number of people leave the building at a certain time, the devices H are disconnected and the pivoted wing E² placed into position shown in Fig. 5, sidewise in such position that the shiftable wing E' is enabled to pass beyond the inner edge of the same onto the guideway at the upper end of the pivoted wing E³. Then the sliding or shiftable wing E' is moved over alongside of and parallel with the pivoted wing E³, as shown in Fig. 5, while the pivoted wing E² is returned into line with the shiftable wing E, so that this wing can be moved over from its guideway on the ceiling to the guideway on the pivoted wing E² alongside of and parallel with the same, so that both pivoted doors E² E³, with the shiftable wings E E', can be moved along the segmental guide-grooves of the ceiling into position alongside of the segmental side walls *b* of the casing, as shown in Fig. 6 by dotted lines, the arrows showing the direction of motion of the pivoted wings when each pair of wings is swung into position adjacent to the segmental side walls. In this position the passage-way of the casing is entirely open, as shown in Fig. 2, so as to permit the free and unobstructed passage of persons and of large articles, such as furniture and the like, through the passage-way.

Whenever it is desired to replace the wings into radial position, so as to be used as a storm-door, the pivoted wing E³ is swung inwardly into position in line with one of the guideways C of the ceiling, so that the wing

E' can be shifted from the same. After this motion the pivoted wing E² is swung inwardly until its guideway is in line with the other guideway C, so that the shifting of the wing E can take place next, whereupon the wings are locked in the radial position thus obtained, so that the wings of the door may be rotated with the ceiling.

The outer vertical edges of the wings, as well as the top and bottom edges of the same, may be provided with flexible edge strips for preventing the ingress of air, as is customary in doors of this class.

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

1. In a rotary storm-door, the combination, with a stationary casing provided with segmental side walls and an open passage-way between them, of a rotatably-suspended ceiling, and folding wings carried by said ceiling, two of said wings being pivotally supported on said ceiling and the other two being slidably supported on the same, the latter wings being adapted to shift diametrically on the ceiling to and upon said pivotally-supported wings so as to swing with the same to a position adjacent the segmental side walls of the casing, substantially as set forth.

2. In a rotating storm-door, the combination, with a stationary casing having segmental side walls and an open passage-way, of a rotatable ceiling centrally suspended in said passage-way, guideways attached to the under side of said ceiling and arranged at right angles with each other, shiftable wings suspended by hangers from said ways, pivoted wings pivoted at their upper outer corners to said ceiling and guided at their inner corners in segmental grooves of the ceiling, ways on said pivoted wings for receiving said shiftable wings, and means for locking together the lower ends of said sliding wings and pivoted wings, substantially as set forth.

3. In a rotating storm-door, the combination, with a stationary casing having segmental side walls and an open passage-way, of a ceiling suspended rotatably at the center of said passage-way, two radial guideways attached to the under side of said ceiling and arranged at right angle with each other, shiftable wings suspended by hangers from said ways, pivotal wings pivoted at their upper outer corners to said ceiling, lugs at their inner upper corners guided in segmental grooves in said ceiling, and guideways on the upper ends of said pivoted wings for receiving said shiftable wings so as to permit them to be swung with said pivoted wings into position alongside of the stationary segmental side walls for clearing the passage-way, substantially as set forth.

4. In a rotating storm-door, the combination, with a stationary casing having segmental side walls and an open passage-way between them, of a ceiling suspended rotatably from a top beam of the casing, stationary

guideways attached to said ceiling at right angles with each other, shiftable wings supported by hangers from said guideways, swinging wings supported at their outer upper corners 5 to the ceiling and guided at their inner upper corners in grooved segmental ways of the ceiling, and guideways attached to the upper ends of the pivoted wings, said last-mentioned guideways permitting the sliding of the shiftable wings from the stationary guideways of 10 the ceiling to the guideways of the pivoted

wings and the moving of the thus-connected wings in pairs alongside of the segmental side walls, substantially as set forth.

In testimony that I claim the foregoing as 15 my invention I have signed my name in presence of two subscribing witnesses.

JOHN LAWRENCE CARTER.

Witnesses:

PAUL GOEPEL,
HENRY J. SUHRBIER.