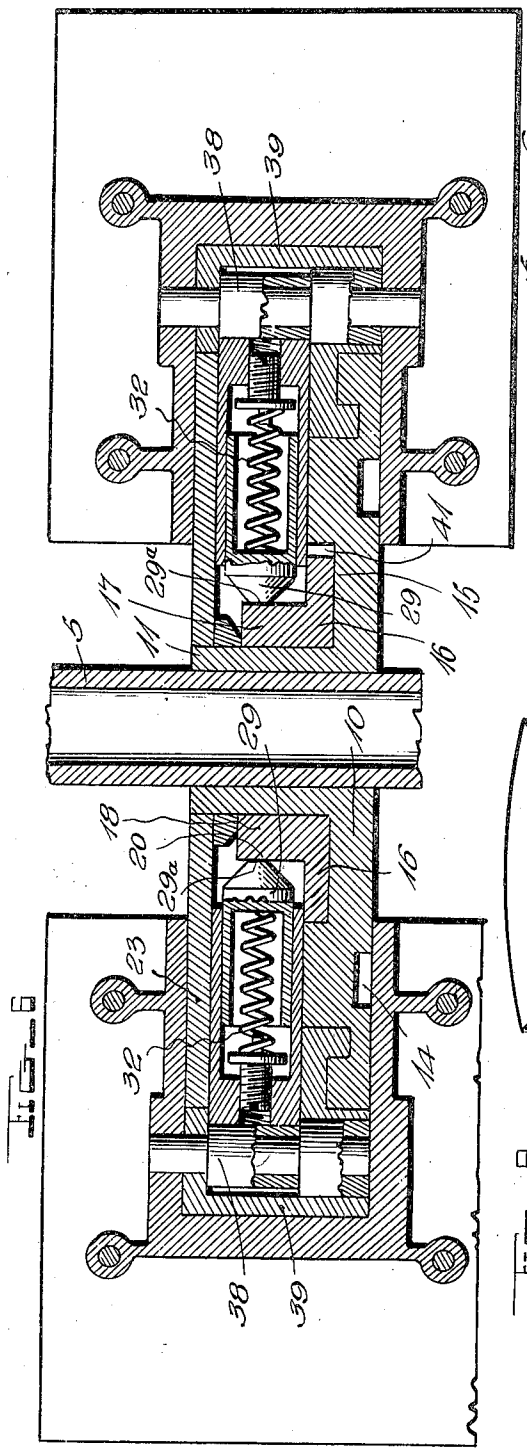
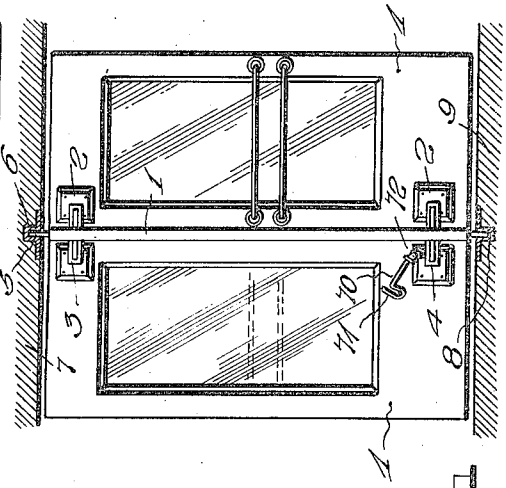
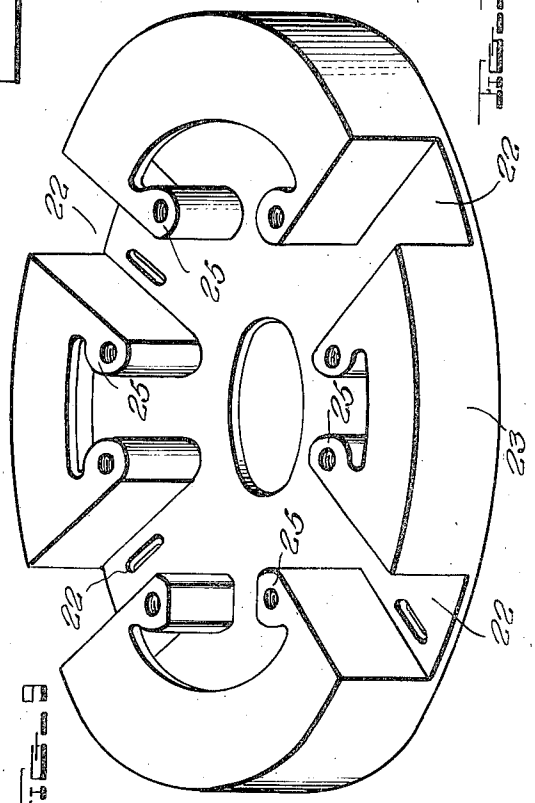
March 15, 1938. T. M. HAGENBOOK 2,111,182

REVOLVING DOOR MECHANISM

Filed April 26, 1937 6 Sheets-Sheet 1







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REVOLVING DOOR MECHANISM

Filed April 26, 1937 6 Sheets-Sheet 2

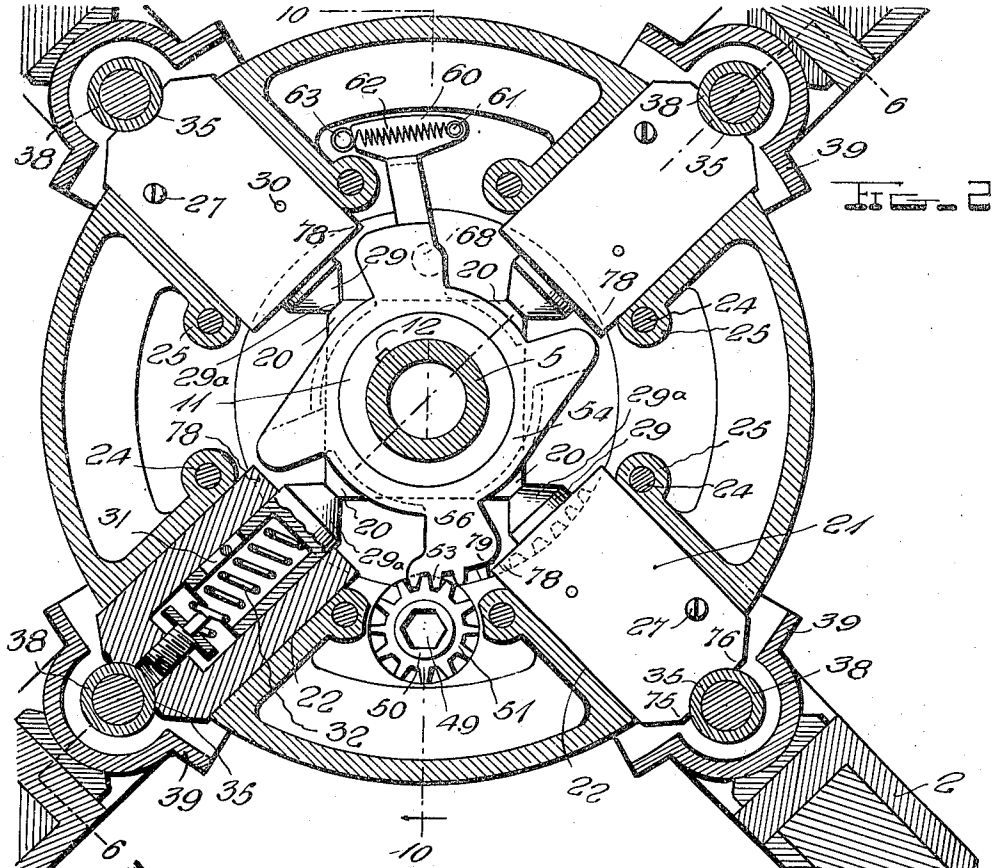


Fig. 2

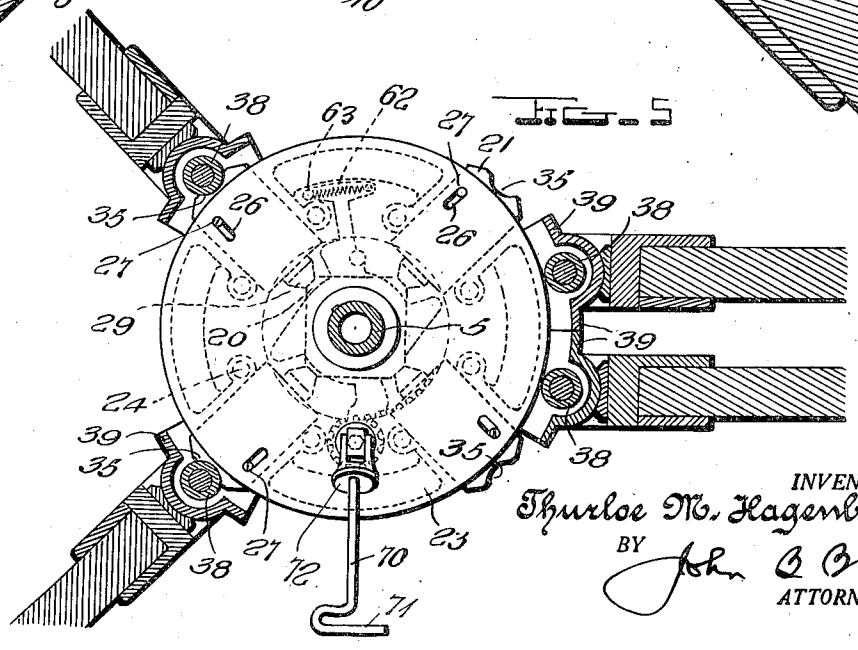


Fig. 5

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REVOLVING DOOR MECHANISM

Filed April 26, 1937 6 Sheets-Sheet 3

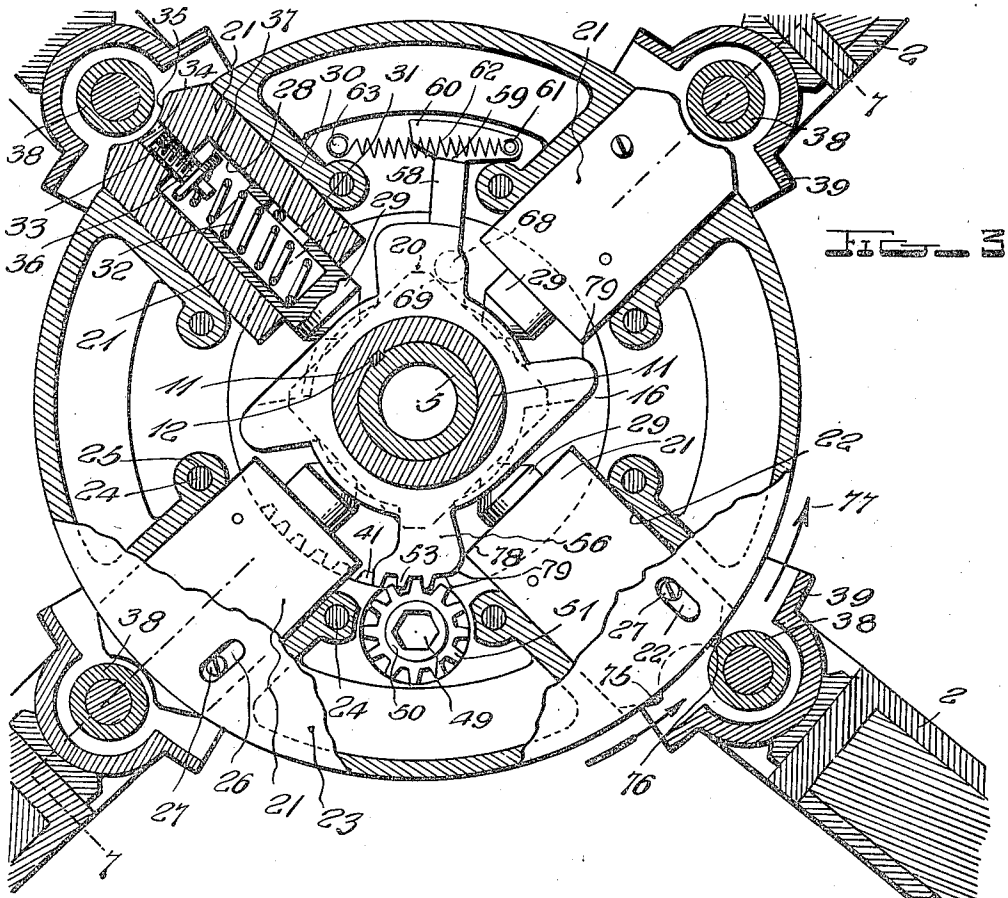


FIG. 3

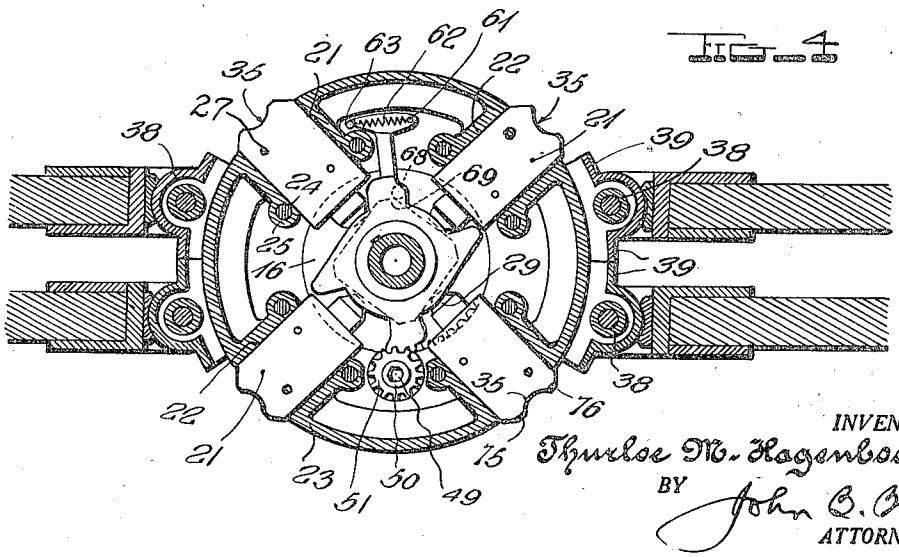


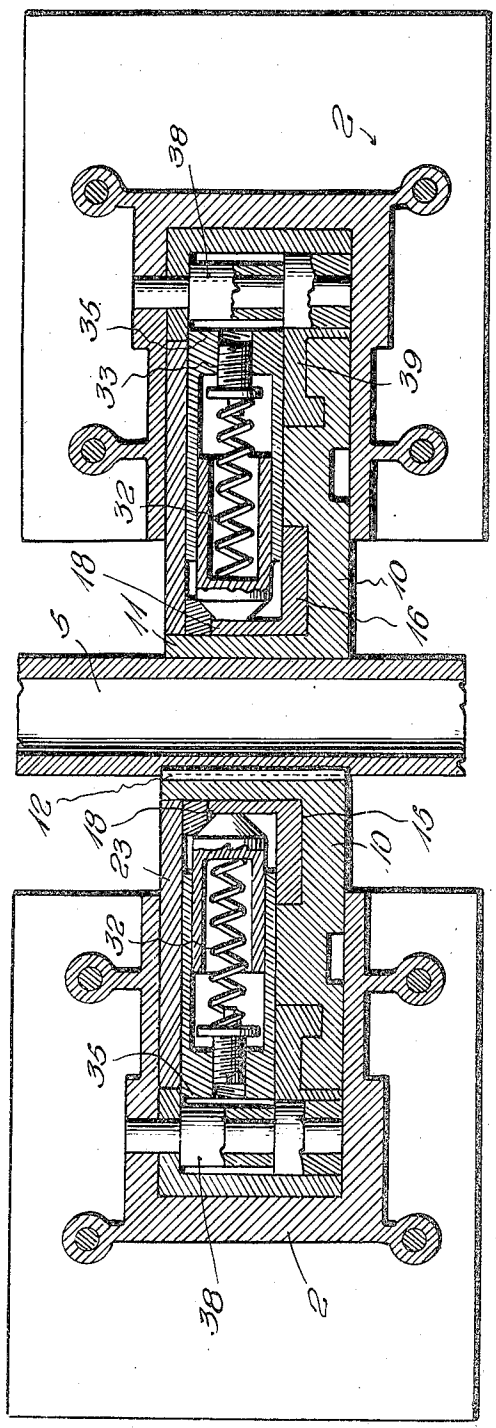
FIG. 4

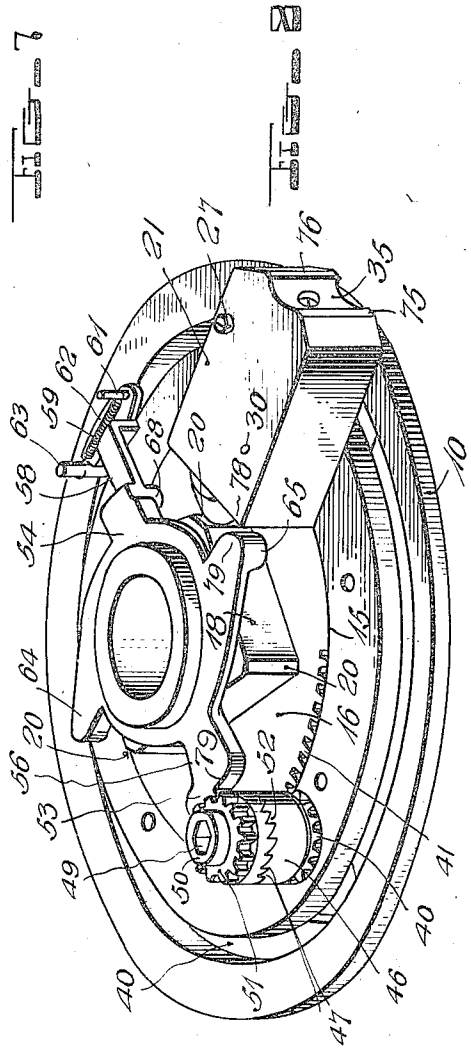
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REVOLVING DOOR MECHANISM

Filed April 26, 1937 6 Sheets-Sheet 4



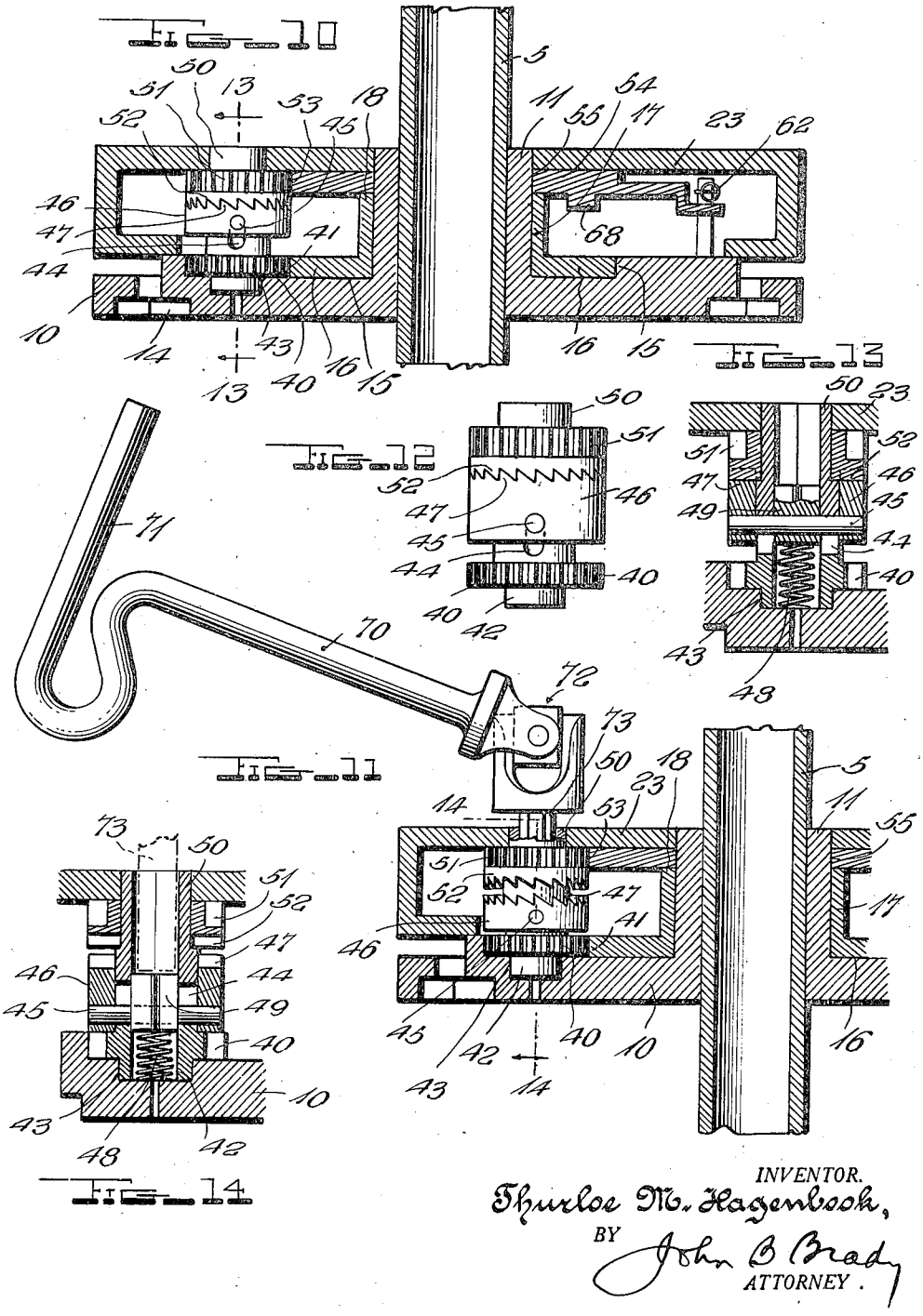


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Filed April 26, 1937 6 Sheets-Sheet 5



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REVOLVING DOOR MECHANISM

Filed April 26, 1937 6 Sheets-Sheet 6

FIG. 15

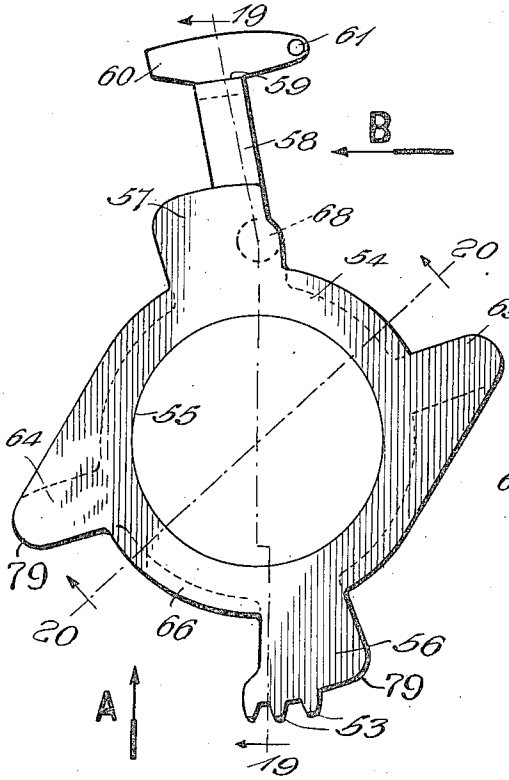


FIG. 16

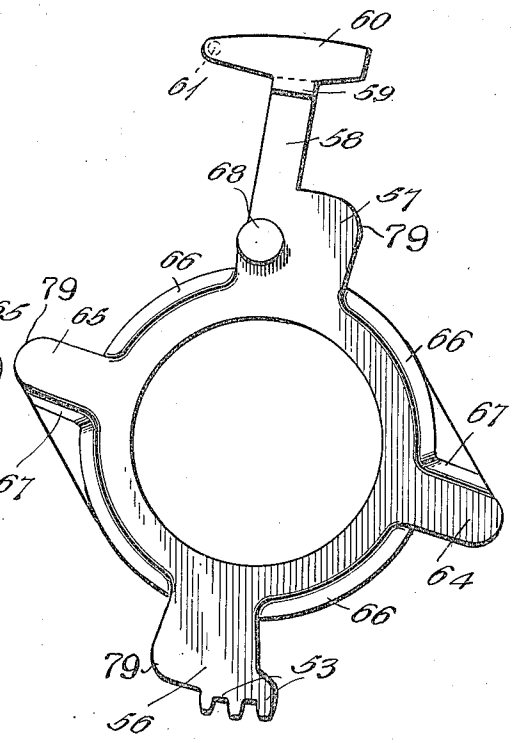


FIG. 17

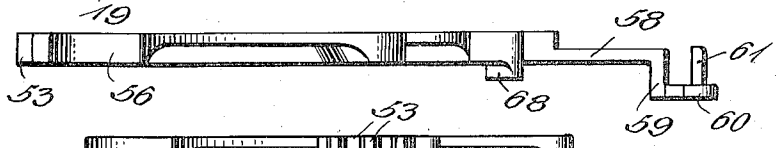


FIG. 18

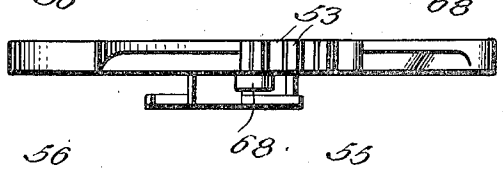


FIG. 19

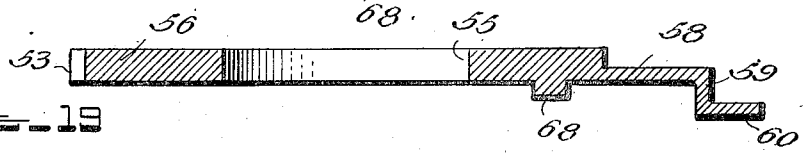
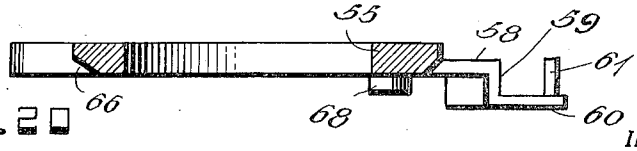


FIG. 20



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Patented Mar. 15, 1938 2,111,182

UNITED STATES PATENT OFFICE

2,111,182

REVOLVING DOOR MECHANISM

Thurloe M. Hagenbook, Evansville, Ind., assignor to International Door Company, Evansville, Ind., a corporation of Illinois

Application April 26, 1937, Serial No. 139,079

23 Claims. (Cl. 20—18)

My invention relates broadly to revolving door mechanism and more particularly to a construction of revolving door mechanism having special provision for effecting simultaneous collapse of the revolving door wings under conditions of panic.

One of the objects of my invention is to provide a construction of revolving door mechanism having means for facilitating the collapsing of revolving door wings to a parallel collapsed position or a bookfold.

Another object of my invention is to provide a construction of revolving door mechanism which includes in addition to the mechanism for latching the revolving door wings in normal position, a simultaneous release mechanism for all of the revolving door wings which becomes effective upon the application of excessive pressure against any one of the revolving door wings.

Another object of my invention is to provide a construction of pin cam for use in association with the main cam of a revolving door mechanism and operative under conditions of abnormal pressure against any one of the revolving door wings for effecting a quick release of all of the revolving door wings for permitting a quick collapsing of all of the revolving door wings under condition of panic.

Another object of my invention is to provide a construction of revolving door mechanism having means for presetting the revolving door wings in latched positions for normal operation of the revolving door in combination with means adapted to be automatically coupled with the presetting means for effecting a quick release of the latched revolving door wings under conditions of excessive pressure applied against any one of the wings.

Still another object of my invention is to provide a construction of revolving door mechanism having a pair of coacting cam devices with means for uncoupling the devices in presetting the revolving door wings in original latched position while closely coupling the coacting cam systems after completion of the latching operation, the second cam system being operative under conditions of abnormal pressure applied against any one of the revolving door wings for imparting movement to the first cam system and effecting simultaneous release of all of the revolving door wings.

A still further object of my invention is to provide a construction of auxiliary cam mechanism operative within a limited angular path of movement in coaction with the main cam mechanism of a revolving door for effecting the simultaneous release of all of the revolving door wings of a revolving door assembly when abnormal pressure is exerted against any one of the revolving door wings.

A still further object of my invention is to provide a construction of clutch device interconnecting the main cam and auxiliary cam of a revolving door mechanism for allowing the presetting of the main cam independently of the auxiliary cam for latching the revolving door wings in normal positions while allowing the auxiliary cam mechanism to drive the main cam mechanism for effecting simultaneous release of all of the revolving door wings under conditions of excessive pressure applied against any one of the revolving door wings.

Other and further objects of my invention reside in the construction of revolving door mechanism as set forth more fully in the specification hereafter following by reference to the accompanying drawings, in which:

Figure 1 illustrates the revolving door mechanism of my invention applied to a revolving door assembly; Fig. 2 is a horizontal sectional view through the revolving door mechanism of my invention with certain of the reciprocatory plungers, the pin cam, the main cam and the actuating pinion for the pin cam illustrated in elevation, the parts being shown in normal positions with the revolving door wings latched in radial planes; Fig. 3 is a plan view partially broken away and with parts illustrated in section showing the cam mechanism shifted to release position pursuant to abnormal pressure exerted against one of the door wings in the direction of the arrow indicated in the lower right portion of the figure, with the door wings free to be collapsed into parallel or bookfold positions; Fig. 4 illustrates the relationship of parts of the revolving door mechanism with the several parts shifted to release position and illustrating the door wings shifted into collapsed positions parallel one with respect to another; Fig. 5 shows the revolving door mechanism restored to latched position with two of the door wings restored to latched position and two of the door wings prepared for return to normal latched position; Fig. 6 is a vertical sectional view taken substantially on line 6—6 of Fig. 2 with certain of the parts illustrated in elevation; Fig. 7 is a vertical longitudinal sectional view taken substantially on line 7—7 of Fig. 3 with certain of the parts illustrated in elevation; Fig. 8 is a perspective view showing the relationship of the main cam, the

auxiliary cam, one of the reciprocatory plungers, the actuating pinions and the clutch device embodied in the revolving door mechanism of my invention; Fig. 9 is a perspective view of the coacting housing embodied in association with the structure illustrated in Fig. 8; Fig. 10 is a vertical sectional view taken substantially on line 10—10 of Fig. 2 and illustrating more particularly the actuating pinions and the clutch mechanism shown in elevation; Fig. 11 shows a portion of the view illustrated in Fig. 10 illustrating the manner of presetting the main cam by disengagement of the clutch mechanism by use of the manually insertable wrench illustrated in the drawings; Fig. 12 is an enlarged elevational view of the clutch mechanism and actuating pinions embodied in the structure of my invention; Fig. 13 is a vertical sectional view through the pinions and associated clutch mechanism taken substantially on line 13—13 of Fig. 10 with certain of the parts shown in side elevation; Fig. 14 is a vertical sectional view of the clutch and pinion assembly taken substantially on line 14—14 of Fig. 11 and showing the clutch faces disengaged for enabling the position of the main cam to be adjusted upon insertion of the wrench as illustrated; Fig. 15 is a top plan view of the pin or auxiliary cam embodied in the construction of my invention; Fig. 16 is a bottom plan view of the pin or auxiliary cam illustrated in Fig. 15; Fig. 17 is a side elevational view of the pin or auxiliary cam looking in the direction of arrow B in Fig. 15; Fig. 18 is an end elevational view of the pin or auxiliary cam looking in the direction of arrow A; Fig. 19 is a transverse sectional view taken substantially on line 19—19 of Fig. 15; and Fig. 20 is a transverse sectional view taken substantially on line 20—20 of Fig. 15.

My improved construction includes a pin or auxiliary cam which is controllable from a pinion device actuated by an insertable hand tool. The main cam is shiftable within a range of not more than 60°. The pinion is associated with a ratchet tooth clutch by which disengagement of the pin cam is effected while imparting angular movement to the main cam. The cam mechanism includes a pin cam and a main cam which are concentrically mounted for simultaneous or independent movement. Simultaneous movement of the pin cam and the main cam occurs under panic conditions. Independent movement of the main cam without movement of the pin cam is accomplished by inserting a tool in the pinion device and effecting disengagement of the pin cam while allowing an angular shifting of the main cam. The pin cam will be automatically restored to its initial position by action of the spring device on the pin cam.

The pinion device includes a main pinion meshing with the gear teeth on the main cam and a pinion engageable through the operation of a clutch with gear teeth carried on one of the arms of the pin cam.

In the assembled revolving door hardware employing radially positioned reciprocatory plunger members individual to each of the door wings, the main cam has the faces thereof coacting with the plungers and effecting a projection of the plungers or allowing a retraction thereof. When excess pressure is applied simultaneously against any two of the door wings as is likely to occur under conditions of panic, there is a tendency to cause a recession of the plungers individual to the door wings to which excessive pressure is applied. The recession is brought about by the tendency of the latching roller individual to each revolving door wing to ride against the abutting projecting face of the plunger, thereby tending to force the plunger inwardly. As the plunger moves inwardly the end of the plunger abuts one arm of the pin cam, tending to angularly shift the pin cam clockwise. Shifting of the pin cam clockwise angularly moves one arm of the pin cam having teeth formed therein, which engage with one of the pinions on the pinion device which operates through the associated clutch for imparting movement to the other pinion which correspondingly shifts the position of the main cam. This shifting precedes relative displacement of the ratchet teeth in the clutch device as the main cam completes its movement which allows the simultaneous release of pressure on the latching rollers individual to each of the revolving door wings permitting collapsing of the revolving door wings to parallel collapsed position or a bookfold.

When it is desired to restore the door wings to normal position, the tool is inserted in the socket provided in the pinion device, which action disengages the ratchet tooth clutch, and the main cam is returned to normal position. The tool is allowed to remain in the socket of the pinion device so that the associated clutch between the main cam and the pinion cam remains disengaged. The revolving door wings may now be restored to normal position and snapped into place. The tool is then removed allowing the clutch to be engaged, thereby securing unitary action of the two pinion members and allowing simultaneous control of both the pin cam and the main cam. This automatically sets the simultaneous release preparatory to a panic condition.

It is understood that the use of the pin cam is confined to the lower unit only and is not embodied in the upper hardware unit. The upper unit is similar to the structure set forth in the copending applications of John W. Shields, Serial No. 757,941, filed December 17, 1934, now issued as Patent 2,081,774, and Serial No. 125,508, filed February 12, 1937.

The construction of my invention also permits the plunger members to be loaded to heavier tension, allowing the telescoping member to be projected a shorter distance inwardly from the plunger block than in the constructions of the aforesaid applications. The advantage of this is that when the main cam is in the position of a full collapse, the plunger members are withdrawn to a point where the normal engaging member is practically clear, thus allowing the further collapse of the door with little or no pressure. This makes a simultaneous release mechanism much more effective than has been possible heretofore.

The pin cam is normally maintained in position under the action of a spring acting upon one arm of the pin cam. I have provided on the pin cam, a lug that will contact one point of the main cam when the main cam has been rolled to a full collapsed position. This lug then holds the points of the pin cam out of the path of the plungers. Any travel of any other plunger, therefore does not cause a movement of the pin cam. Without this lug further movement of any other plunger would cause further rotation of the main cam, the pin cam always returning to the normal position through the ratcheting effect of the clutches. This extra movement added to the main cam after it has assumed a full collapsed position would cause damage to the teeth cut

on the periphery of the large part of the main cam, because the teeth on the main cam constitute a mutilated gear having a limited number of teeth. The operating pinion being a full circle of teeth would be damaged when the uncut section of the main cam would reach the teeth on the pinion.

Referring to the drawings in more detail, reference character 1 designates the revolving door wings of a revolving door assembly utilizing the revolving door mechanism of my invention. The revolving door wings are carried by hangers 2 connected with the revolving door mechanism indicated at 3 and 4 supported by the revolving shaft indicated at 5. The revolving shaft is indicated schematically as mounted between upper journal 6 in ceiling structure 7 and lower journal 8 in foundation structure 9. I have represented the manner of mounting the revolving door wings 1 schematically as it will be understood that the revolving door wings may be supported in various ways.

The revolving door hardware designated generally at 3 constituting the upper support for the revolving door wings has the form set forth more particularly in John W. Shields copending application Serial No. 125,508, filed February 12, 1937, supra. The revolving door mechanism indicated generally at 4 constituting the lower mounting for the revolving door wings is shown in detail in the remaining figures of the drawings herein. The revolving door hardware indicated at 4 includes a disc member 10 having a central upwardly extending tubular portion 11 which surrounds and conforms with the shaft 5 of the revolving door. A suitable key and keyway connection indicated at 12 is provided between shaft 5 and sleeve 11 of disc member 10. The disc member 10 is provided with quadrilaterally shaped grooves 14 on the exterior face thereof and a central recess 15 on the adjacent interior face thereof for receiving the end flange portion 16 of the main cam 17. The main cam 17 has a cylindrical central sleeve portion 18 concentrically disposed about the central cylindrical sleeve portion 11 of the disc member 10. The sleeve portion 18 of the main cam 17 is shaped to provide a plurality of diametrically disposed cam faces which I have shown generally at 20 in Figs. 2, 5, 6 and 8. The cam faces 20 are arranged to coact with the plungers of the radially shiftable latching members 21 shown more particularly in Figs. 2–9, inclusive. The radially shiftable latching members 21 are mounted for radial movement in confined paths through the radially disposed channels 22 provided in the coacting housing member 23. The coacting housing member 23 is aligned with the disc member 10 when assembled and compactly encloses all of the parts of the revolving door mechanism. Suitable means are employed for maintaining the coacting housing 23 in alignment and connection with disc 10 such as screw members indicated generally at 24 passing through disc member 10 and into screw threaded recesses 25 on opposite sides of the channel-ways 22 provided at coacting housing 23. The channel-ways 22 through which the latching members 21 are adapted to radially shift are each provided with a limiting slot 26 through which a confining pin 27 carried by the individual latching members 21 extends and serving to limit the radial movement of each of the latching members so that the latching members are never wholly displaced through the channel-ways 22.

The latching members 21 are each provided with a radially extending bore 28 in which the plunger 29 is movable within limits controlled by pin 30 passing through latching member 21 and through slot 31 in plunger 29. The plunger 29 is spring pressed to projected position by means of coil spring 32, the tension on which is adjusted by set screw 33 adjustable through screw threaded aperture 34 in the arcuate shaped latching face 35 in latching member 21. The set screw 33 is provided with a shoulder 36 with respect to which annular member 37 is aligned for providing an abutment with the end of variable tension coil spring 32.

Each of the latching members 21 have the arcuate shaped faces 35 arranged for engaging the roller members 38 carried by each of the revolving door wing carriers 2. Each of the roller members 38 are mounted in the wing carriers concentrically with respect to the groove engaging members 39. The groove engaging members 39 each coact with the annular groove 40 in disc 10 for guiding the wing carriers 2 to collapsed or bookfold positions. The groove engaging members 39 each project on opposite sides of the wing carriers 2 sufficiently to provide limiting stops for determining the minimum spacial relation of the wing carriers when in collapsed positions, as indicated for example in Figs. 4 and 5.

The revolving door wings may be moved from collapsed or bookfold positions to radial positions in which the latching faces 35 of the latching members 21 engage the roller members 38. The revolving door wings are then firmly latched in radial position by rotatably shifting the main cam 17 to a position in which the faces 20 thereof engage the frusto-conical ends 29a of the plungers 29 increasing the loading on springs 32 and correspondingly increasing the pressure of latching faces 35 against roller members 38. The rotation of main cam 17 is accomplished by operation of pinion 40 which meshes with the gear teeth 41 formed on a portion of the periphery of the flange 16 of main cam 17. The pinion 40, as shown more particularly in Figs. 10–14 has a hollow hub 42, one end of which projects into the recess 43 in disc member 10, providing a journal for pinion 40. The other end of the hollow hub is provided with a pair of diametrically opposed slots 44 through which a pin member 45 carried by the cylindrical member 46 extends. The cylindrical member 46 is provided with a clutch face constituted by ratchet teeth 47 formed about the upper peripheral edge thereof. The cylindrical sleeve member 46 is continuously spring pressed to an upward engaging position as illustrated in Figs. 10, 12 and 13 by means of coil spring 48 which continuously acts against the slidable central member 49 through which the diametrically extending pin 45 extends. The hub 42 of pinion 40 has a cross section corresponding in cross section with that of the central member 49 of polygonal shape for preventing any relative rotation between cylindrical member 46 and pinion 40 while allowing longitudinal or slidable displacement of cylindrical member 46 with respect to pinion 40 as indicated in Figs. 11 and 14. I have shown in Figs. 2, 3, 4 and 8 the cross section of member 49 and the parts coacting therewith as hexagonal.

Housing 23 is apertured in alignment with the vertical axis of pinion 40 and is provided with a depending tool engaging socket member 50 which extends into substantial abutment with the slotted end 44 of the hollow hub 42 of pinion 40. The socket 50 provides a sleeve with respect to which

the cylindrical member 46 is displaceable. The socket member 50 and sleeve constituted thereby serves as a guide for cylindrical member 46 as cylindrical member 46 shifts to engaging or disengaging position. Sleeve 50 is concentrically surrounded by the pinion member 51 having integrally connected ratchet teeth 52. The ratchet teeth 52 form in coaction with ratchet teeth 47, opposite parts of an engageable and disengageable clutch.

The pinion 51 meshes with gear teeth 53 on the end of the pin cam 54, shown more particularly in Figs. 15–20. The pin or auxiliary cam 54 is substantially flat in contour and is capable of independent movement with respect to the main cam 17. The pin or auxiliary cam 54 is centrally apertured at 55 and fits concentrically about tubular portion 11 of the main cam 17 and between the upper extremity of the tubular portion 11 of the main cam and the under face of the coacting housing 23. The pin or auxiliary cam has a radially extending portion 56 on which the teeth 53 are formed. A diametrically opposite extension 57 is provided on the pin cam and from this extension there projects an arm 58, the end of which is off-set as indicated at 59, and provided with a substantially lateral portion 60. The lateral portion 60 carries a pin 61 which serves as a connecting means for coil spring 62 which connects with stud 63 fixed in disc 10 as shown more clearly in Fig. 8, whereby the pin cam 54 is maintained under continuous tension with teeth 53 in mesh with the teeth on pinion 51. The pin cam 54 is also provided with a pair of diametrically opposite extensions 64 and 65 on axes substantially normal to the axes on which extensions 56 and 57 are disposed. Each of the extensions 56, 57, 64, and 65 are shaped to provide cam faces which coact with the shiftable latching members 21 as illustrated more clearly in the plane assembly views, Figs. 2, 4 and 5. The top surface of the cam is illustrated in Fig. 15. In the reversed position, Fig. 16, it will be observed that the cam faces as well as the exterior of the central portion of the auxiliary cam is chamfered as shown at 66 and 67. The lower face of the cam is provided with a depending lug 68 which serves as a limiting abutment with respect to the main cam 17 when the main cam has been rolled to a full collapsed position illustrated in Figs. 3 and 4. That is to say, the lug 68 abuts against the side wall portion 69 of main cam 17. This abutment thus provides for maintaining the pin cam out of the path of the plungers. Any travel of any other plungers therefore will not cause movement of the pin cam. If it was not for the provision of the lug 68, a further movement of any other plunger would cause further rotation of the main cam. Because of the ratcheting effect of the clutch faces 47 and 52, the pin cam returns to normal position. Extra movement added to the main cam 17 after it has assumed a full collapsed position would cause damage to the gear teeth cut on the periphery of the flange of the main cam at 41 because there are but a limited number of teeth constituting a mutilated gear on the main cam. The lug 68 contacting with portion 69 of the main cam, serves as a limiting stop to prevent operating pinion 40 from being injured by any tendency of the teeth of pinion 40 rolling upon the toothed peripheral portion 41 of the flange 16 of the main cam.

In Figs. 1, 5 and 11, I have illustrated the manner in which the socket wrench 70 is inserted in the socket of the sleeve 50 in effecting a resetting of the cam mechanism. The wrench 70 includes a handle portion 71 and parts of a universal joint 72 from which there extends an insertable wrench head 73. The insertable wrench head 73, as indicated in Fig. 14, contacts slidable central member 49, shifting cylindrical sleeve member 46 and disengaging the ratchet teeth 47 with respect to the ratchet teeth 52 thereby allowing movement to be imparted directly through sleeve 50, slidable central member 49 and cylindrical sleeve member 46 through diametrically extending pin 45, hub 42 and pinion 40. Pinion 40 meshing with teeth 41 on flange 16 of main cam 17 allows main cam 17 to be moved into a position in which the cam faces 20 contact the frusto-conical shaped end 29a of the plungers 29, thereby moving plungers 29 against the pressure of coil springs 32 for maintaining latching members 21 in projected position. During the resetting operation, no movement is imparted to pinion 51. Accordingly, the position of the pin or auxiliary cam 54 is wholly controlled by spring 62 yieldingly maintaining the end of lateral portion 60 of arm 58 in abutment with stud 63 preparatory to a quick simultaneous release operation of the door wings under condition of panic.

The normal latched position of the revolving door wings is shown in Fig. 2. In the event of sudden abnormal pressure against any one of the door wings, such as the door wing represented in Fig. 3 in the lower right-hand corner of the drawings, roller member 38 drives radially shiftable latching member 21 inwardly. This operation is similar to the operation set forth in John W. Shields copending application Serial No. 125,508, filed February 12, 1937, and arises by virtue of the differential faces 75 and 76 on opposite sides of the latching faces 35 of the latching members 21 and wherein the projection of the face 76 is shorter than the projection of face 75 so that pressure exerted against the revolving door wing in the direction of the arrow 77 in Fig. 3, tends to force latching member 21 radially inward against the yielding pressure of coil spring 32. The inner face 78 of latching member 21 engages the cam shaped face 79 of the adjacent coacting radially extending portion of the pin or auxiliary cam 54 and imparts rotative movement to the pin or auxiliary cam against the force of the coil spring 32. As the pin or auxiliary cam 54 rotates the teeth 53 meshing with pinion 51, tend to rotate pinion 51 in a counterclockwise direction. Pinion 51 drives ratchet teeth 52, which are in engagement with ratchet teeth 47, because of the fact that the socket wrench has been wholly removed from the socket 50 and coil spring 48 is continuously effective to maintain ratchet teeth 47 and 52 in engagement. Accordingly, pinion 40 is rotated through the interconnection of ratchet teeth 52 and 47 in a counterclockwise direction. This operation imparts movement to the toothed periphery 41 of the flange 16 of the main cam 17, thereby rotating the main cam 17 in a clockwise direction and shifting the cam faces 20 out of alignment with the frusto-conical ends 29a of plungers 29. Such action results in the immediate shifting of the main cam 17 under action of the ends 29a of all of the plungers 29 relieving the effective pressure of coil springs 32 upon latching members 21 so that rollers 38 individual to each of the revolving door wings are free to move out of the latching faces 35 to collapsed position illustrated in Fig. 4 or to complete bookfold position. Thus it will be seen that the pin or auxiliary cam 54 is closely coupled and coacts with the

main cam 17 for effecting simultaneous release of the revolving door wings under conditions of panic. However, it will be observed that in presetting the revolving door hardware the close coupling between the pin or auxiliary cam and the main cam is interrupted as indicated in Fig. 11, allowing independent movement within limits of the main cam with respect to the auxiliary cam. The provision for limiting the movement of the pin or auxiliary cam with respect to the main cam by virtue of the abutment between lug 68 and face 69 of the main cam, insures complete protection of the pinion 40 with respect to the toothed flange of the main cam.

It will be readily seen that when the revolving door wings are restored to normal position and latched by the latching members 21, that the pin or auxiliary cam is ready at all times to perform its assisting function in effecting simultaneous release of the revolving door wings under conditions of panic.

While I have described my invention in certain of its preferred embodiments, I desire that it be understood that modifications may be made and that no limitations upon my invention are intended other than may be imposed by the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is as follows:

1. Revolving door mechanism comprising in combination with the wings of a revolving door, each having separate latching means, a main cam for presetting the latching means for maintaining the door wings in radial positions, an independent auxiliary cam operative under conditions of excessive pressure against any one of said wings, and means interconnecting said auxiliary cam with said main cam for imparting movement to said main cam and effecting a disengagement of said latching means and allowing simultaneous release of all of said door wings.

2. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an independent auxiliary cam, means interconnecting said auxiliary cam with said main cam, and means for imparting movement to said main cam through said auxiliary cam when any one of said wing latching members is displaced from latching position for effecting simultaneous release of all of said latching members.

3. Revolving door mechanism comprising in combination with the wings of a revolving door, each having separate latching means, a main cam for presetting the latching means for maintaining the door wings in radial positions, an auxiliary cam, means for operating said main cam independently of said auxiliary cam and presetting said main cam in a position maintaining said latching means in latched positions, means interrupting the operation of the aforesaid means and intercoupling said auxiliary cam for simultaneous movement with said main cam, and means for displacing said auxiliary cam under conditions of excess pressure against any one of said door wings for imparting movement to said main cam and effecting a simultaneous release of all of said latching means.

4. Revolving door mechanism comprising in combination with the wings of a revolving door, each having separate latching means, a main cam for presetting the latching means for maintaining the door wings in radial positions, an auxiliary cam, means for operating said main cam independently of said auxiliary cam and presetting said main cam in a position maintaining said latching means in latched positions, means interrupting the operation of the aforesaid means and intercoupling said auxiliary cam for simultaneous movement with said main cam, said auxiliary cam having portions thereof extending into the path of movement of each of said latching means whereby displacement of any one of said latching means under conditions of excess pressure against the associated door wing, effects an engagement of the said latching means with the associated extension on said auxiliary cam for imparting angular movement to said auxiliary cam and correspondingly shifting said main cam for effecting simultaneous release of all of said latching means.

5. Revolving door mechanism comprising in combination with the wings of a revolving door, each having separate latching means, a main cam for presetting the latching means for maintaining the door wings in radial positions, an independent auxiliary cam having extensions thereon projecting into the path of movement of each of said latching means and engageable by any one of said latching means upon radial inward movement of said latching means, whereby said auxiliary cam is angularly shifted, and means interconnecting said auxiliary cam and said main cam for imparting movement to said main cam and effecting a disengagement of all of said latching means for allowing simultaneous release of all of said door wings.

6. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, said main cam and said auxiliary cam each having a toothed peripheral portion, and pinion devices interconnecting the toothed peripheral portions of said cams.

7. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, said main cam and said auxiliary cam each having a toothed peripheral portion, pinion devices interconnecting the toothed peripheral portions of said cams, and a clutch for connecting or disconnecting said pinion devices.

8. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, said main cam and said auxiliary cam each having a toothed peripheral portion, pinion devices interconnecting the toothed peripheral portions of said cams, and a ratchet faced clutch interconnecting said pinion devices for driving said main cam and said auxiliary cam simultaneously in one direction while allowing independent movement of said cams in the opposite direction.

9. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, said main cam and said auxiliary cam each having a toothed periph-

eral portion, pinion devices interconnecting the toothed peripheral portions of said cams, and a multi-toothed clutch interconnecting said pinion devices, said clutch having clutch faces normally spring pressed into engagement for effecting simultaneous movement of said auxiliary cam and said main cam, said clutch faces being separable for allowing movement of said auxiliary cam independently of said main cam.

10. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, each of said cams having a toothed peripheral portion, a coupling unit including a pair of pinion devices, one of which is engaged with the toothed peripheral portion of each of said cams, a clutch device and spring means for normally interengaging said pinion devices through said clutch device, said clutch device being displaceable for disengaging said pinion devices, whereby movement of said auxiliary cam may be transferred to said main cam when said clutch device is engaged, and whereby said auxiliary cam may move independently of said main cam when said clutch device is disengaged.

11. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, means interconnecting said auxiliary cam with said main cam, means for imparting movement to said main cam through said auxiliary cam when any one of said wing latching members is displaced from latching position for effecting simultaneous release of all of said latching members, and a lug carried by said auxiliary cam adapted to coact with said main cam for limiting the movement of said auxiliary cam with respect to said main cam.

12. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, means interconnecting said auxiliary cam with said main cam, means for imparting movement to said main cam through said auxiliary cam when any one of said wing latching members is displaced from latching position for effecting simultaneous release of all of said latching members, and resilient means for normally restraining said auxiliary cam against movement.

13. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, means interconnecting said auxiliary cam with said main cam, means for imparting movement to said main cam through said auxiliary cam when any one of said wing latching members is displaced from latching position for effecting simultaneous release of all of said latching members, a lug carried by said auxiliary cam and adapted to coact with said main cam after a predetermined angular movement of said auxiliary cam, and means for yieldingly restraining the movement of said auxiliary cam.

14. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam actuated by said wing latching members, coupling means extending between said cams and engageable or disengageable for transferring, when engaged, angular movement of said auxiliary cam to said main cam under conditions of excessive pressure against any one of said wings, and spring means connected with said auxiliary cam for restoring said auxiliary cam to initial position.

15. Revolving door mechanism comprising in combination with a housing for revolving door hardware including a plurality of radially displaceable wing latching members, a main cam for presetting said wing latching members in latched positions, an auxiliary cam, means interconnecting said auxiliary cam with said main cam, means for imparting movement to said main cam through said auxiliary cam when any one of said wing latching members is displaced from latching position for effecting simultaneous release of all of said latching members, and means for restoring said auxiliary cam to normal position independent of said main cam.

16. Revolving door mechanism comprising in combination with a main actuating cam engageable with wing latching members, an auxiliary trigger cam having pairs of oppositely directed cam faces disposed on axes substantially normal to each other and engageable by said wing latching members, one of said cam faces having a toothed peripheral edge adjacent thereto for connecting said auxiliary cam with said main cam.

17. In a revolving door mechanism, an auxiliary cam comprising a relatively flat member having pairs of oppositely projecting cam faces disposed on axes substantially normal to each other, said cam being actuated by pressure on any one of said cam faces, one of said cam faces having an actuating toothed peripheral edge adjacent thereto, and another cam face having stop means extending adjacent thereof.

18. An auxiliary cam for revolving door mechanism comprising a relatively flat member having oppositely projecting cam faces disposed on axes substantially normal one to another, said cam being actuated by pressure on any one of said cam faces, one of said cam faces having an actuating toothed peripheral edge adjacent thereto, a stop arm extending adjacent another cam face, and a separate abutment stop extending from said stop arm.

19. An auxiliary cam for revolving door mechanism comprising a relatively flat member, cam faces projecting from said relatively flat member on axes extending substantially at right angles to each other, said cam being actuated by pressure on any one of said cam faces, an arm off-set from the plane of the flat member constituting said cam and connected adjacent one of said cam faces for controlling the position of said cam, and gear actuating teeth on the peripheral edge of a portion adjacent another of said cam faces.

20. An auxiliary cam for revolving door mechanism comprising a centrally apertured relatively flat member, cam faces projecting in opposite directions from said relatively flat member on axes substantially normal to each other,

said cam being actuated by pressure on any one of said cam faces, an abutment stop disposed beneath one of said cam faces, a control arm extending adjacent said last mentioned cam face for controlling the position of said cam, a laterally extending abutment head on said control arm, and actuating gear teeth formed on the peripheral edge of a portion adjacent another of said cam faces.

21. In combination, a shaft having a plurality of latched wing members extending radially therefrom, means for simultaneously releasing all said wing members upon the displacement of any one thereof, and means for maintaining the aforesaid means inoperative for individually restoring said wing members to latched position.

22. In combination, a shaft having a plurality of latched wing members extending radially therefrom, trigger means for effecting simultaneous release of all said wing members upon the displacement of any one thereof, and means for disengaging said trigger means for permitting individual restoration of said wing members to latched positions.

23. In combination, a shaft having latching means engaged with a plurality of wing members extending radially from said shaft, trigger means connected with said latching means and operable upon the displacement of any of said wing members for simultaneously releasing all said wing members, and means for disconnecting said trigger means with said wing members released for individually restoring said wing members to latched positions.

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