

(No Model.)

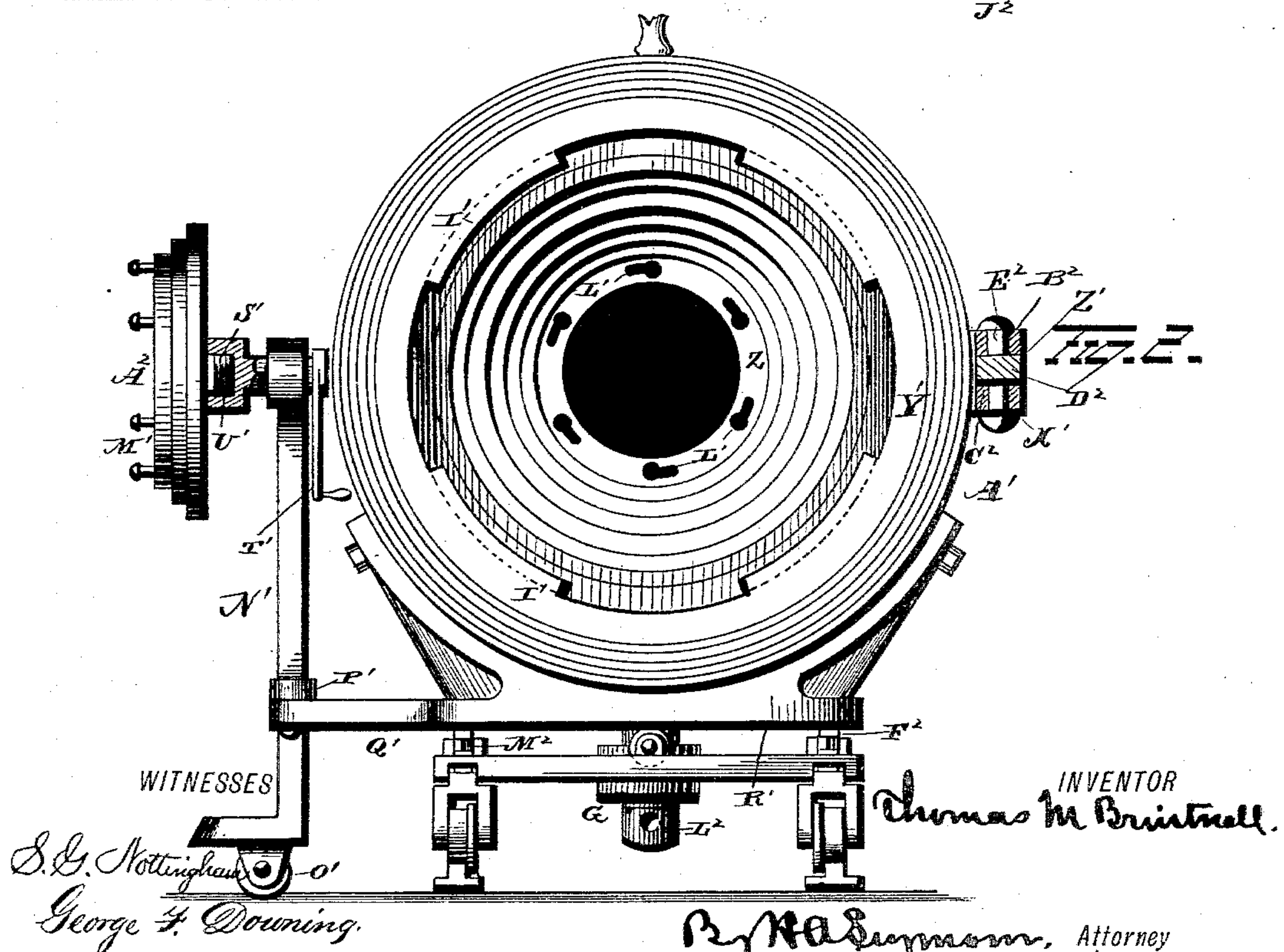
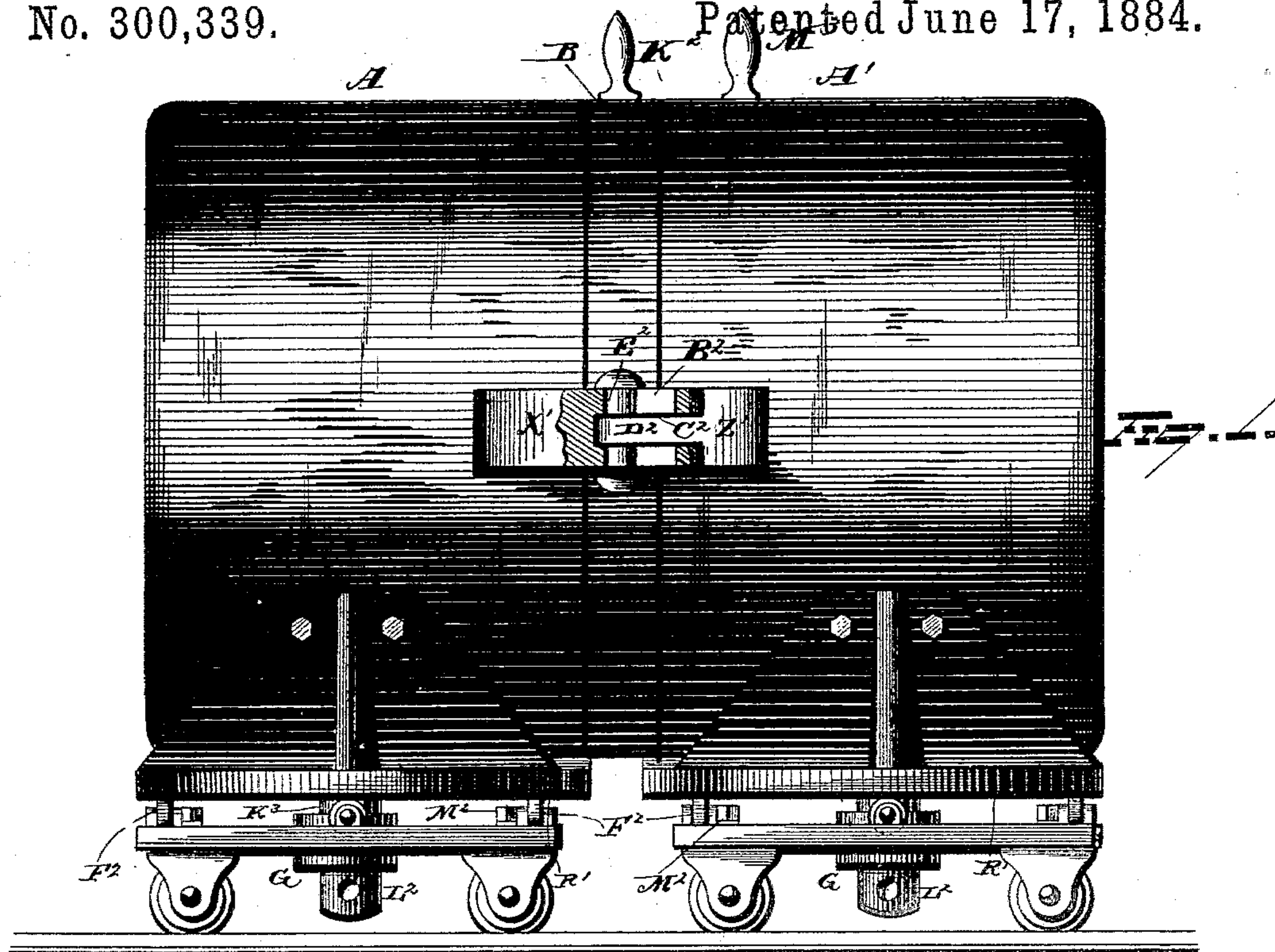
2 Sheets—Sheet 1.

T. M. BRINTNALL.

SAFE.

No. 300,339.

Patented June 17, 1884.





(No Model.)

2 Sheets—Sheet 2.

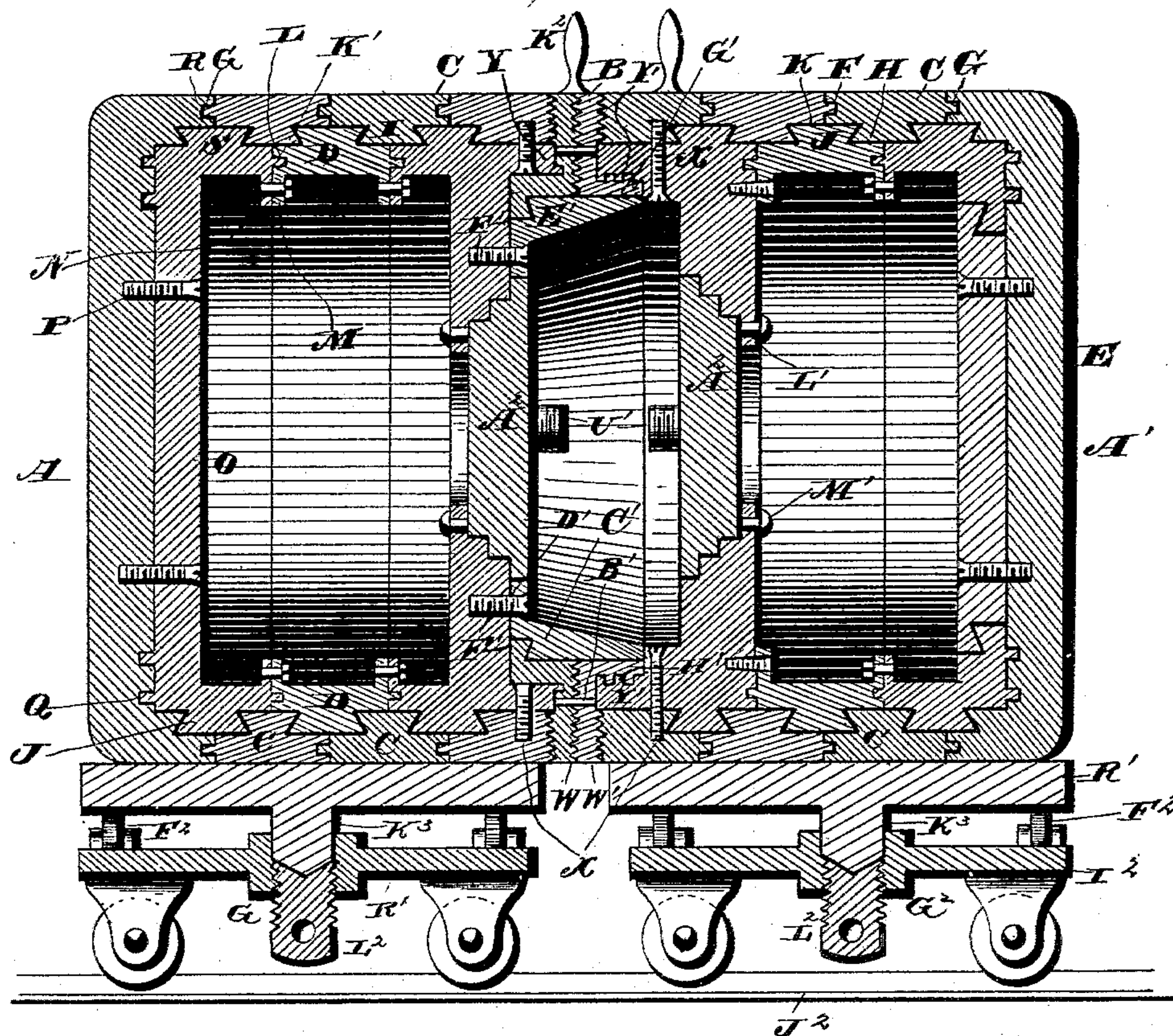
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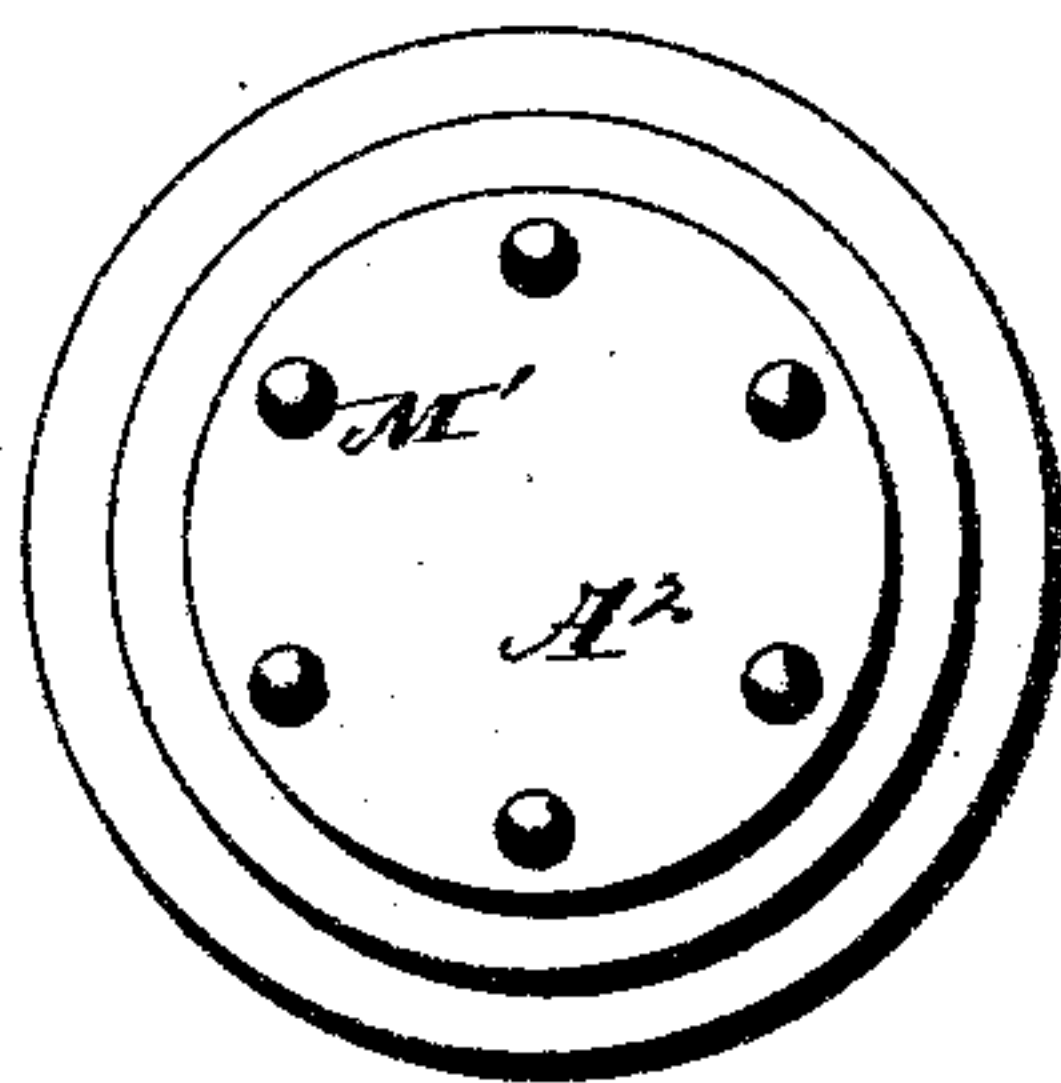
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**Fig. 3.**



**Fig. 4.**



WITNESSES

*George F. Downing.*  
*J. E. Nottingham.*

INVENTOR

*Thomas M. Brintnall*  
*B. H. Symmons,*  
Attorney



# UNITED STATES PATENT OFFICE.

THOMAS M. BRINTNALL, OF KANSAS CITY, MISSOURI.

## SAFE.

SPECIFICATION forming part of Letters Patent No. 300,339, dated June 17, 1884.

Application filed January 25, 1883. Renewed March 22, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS M. BRINTNALL, of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Safes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improvement in burglar-proof safes, the object being to produce a safe adapted by its form and construction to resist a forced entrance.

With this object in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in rear elevation of a safe embodying my invention. Fig. 2 is an elevation of the open end of one section of the safe, showing also the carrier employed to remove and replace the door thereof. Fig. 3 is a view of the safe in vertical longitudinal section, and Fig. 4 is a view in elevation of the inner face of one of the safe-doors.

The safe is composed of two sections, A and A', and a ring, B, which is associated with the open end of the section A', being arranged to be locked to the exposed face of the ring, as will be described hereinafter. The sections of the safe are composite in structure, being made up of chilled cast-steel rings C and D and disks E, the latter forming the ends of the sections. The opposite faces of the rings C, of which there may be any desired number, according to the capacity of the safe, are respectively provided with mortises F and tenons G, whereby the rings are joined together. The inner peripheries of said rings are provided with dovetails H, adapted to fit in mortises I, formed in the outer peripheries of the rings D, the outer faces of which are provided with dovetails J, adapted to fit in mortises K, formed in the inner faces of rings C, the dovetails J being located below and extending across the lines on which the rings C are joined. The opposite faces of the said rings D are respectively provided with mortises K' and tenons L, whereby the rings are adapted to be secured together. The said rings are also provided with inwardly-projecting lugs, M, which are

united by bolts N, substantially as shown. In virtue of the peculiar construction and arrangement of the said rings C and D, the joints are so broken as to preclude the entrance of appliances of whatever character for forcing the rings apart. If, for instance, an effort to separate the rings C should be successful, the broad flat faces of the dovetails J of the rings D will obstruct further progress.

Both the construction and mode of attaching the disks E to the rings C and D may be varied within certain limits. Two of these constructions are respectively embodied in the sections, A and A' of which sections are shown in Fig. 3 of the drawings. The endmost of the rings D of the section A is made integral with a disk, O, to which the disk E, forming the end of said section, is secured by means of screws P. The outer face of the disk O is provided with annular shoulders Q, fitting into corresponding grooves formed in the inner face of the disk E, the edges whereof are provided with mortises R and S, respectively arranged to interlock with the tenon G of the endmost of the rings C, and with the dovetail J of the endmost of the rings D. The end of the section A' of the safe is different only from the end of the section A in that its disk O is formed independently of and interlocked with the endmost of the rings D, instead of being made integral with it. The exposed faces of the outer rings, C, of the sections A and A' are corrugated to interlock with the corrugated outer faces of the sections W and W' of the central ring, B, the said rings C being secured by bolts X to annular flanges Y and Y', respectively formed integral with the said rings D, substantially as shown; but, if desired, they may be formed independently thereof, and secured in the open ends of the safe-sections in any suitable manner. The inner faces of the sections W and W', which compose the central ring, B, are corrugated and interlocked, as shown, the said sections being secured together by bolts B'. The said ring B is supported by a ring-bearing, C', secured by bolts D' to the bearing of the door of the section A, the ring being secured in position on its bearing by means of a dovetail, E', formed thereon, and arranged to interlock with a suitable mortise, F', formed in the inner face of the section W of the ring. The section W'



of the said ring is provided with a screw-threaded extension,  $G'$ , which is divided into four equidistant segments,  $H'$ , the same being adapted to be engaged with equidistant internally-screw-threaded segments or projections  $I'$ , formed by cutting away portions of the inner periphery of the extension  $Y'$  of the section  $A'$  and forming the recesses  $J'$ , as shown in Fig. 2 of the drawings.

10 The operation of locking the safe consists in adjusting the ring to cause the segments  $H'$  to register with the recesses  $J'$ . This done, the ring  $B$  is rotated by its handle  $K^2$ , to engage the said extensions  $H'$  with the internally-screw-threaded segments or projections  $I'$ . It is to be stated that the screw-threads of the said segments are cut on a sufficient pitch to act as a lever to draw the sections  $A$  and  $A'$  of the safe together and effect a close union between the corrugated faces of the ring  $B$  and the safe-sections. It should also be remarked that by effecting the locking and unlocking of the safe by rotating the ring  $B$  through a short arc, the rotation of the heavy safe-sections and the disturbance of their contents is avoided. The use of the ring also facilitates the operation of locking and unlocking the safe, as it reduces the amount of labor and time required for such operations.

30 The bearings  $Z$  of the doors  $A^2$  are provided with slots  $L'$ , having enlarged ends, said slots being adapted to receive studs  $M'$ , having enlarged heads, and attached to the inner faces of the doors  $A^2$ .

35 In locking the doors the studs  $M'$  are registered with and inserted into the larger ends of the slots  $L'$  of the bearings  $Z$ . This done, the doors are rotated to engage the studs with the smaller portions of the slots, in which adjustment they are prevented from being withdrawn by the enlarged heads of the studs. If desired, the inner faces of the bearings with which the studs engage may be slightly inclined to draw the doors into place. The doors are removed and replaced by carriers, one of which is represented in Fig. 2 of the drawings. It consists of an upright,  $N'$ , mounted on a roller,  $O'$ , and provided with an arm,  $P'$ , the outer end of which is pivoted to an extension,  $Q'$ , of the standard  $R'$  of the section  $A'$ . An interiorly-screw-threaded sleeve,  $S'$ , journaled in the upper end of the upright  $N'$ , is provided with a handle,  $T$ , by which it is rotated, to be engaged with or disengaged from the studs  $U'$  of the doors.

To remove the doors, the carriers are moved to positions in front of them. The sleeves  $S'$  of the carriers are now engaged with the studs  $U'$  of the doors, which are now rotated sufficiently to register the enlarged heads of the studs  $M'$ , secured to their inner faces, with the enlarged ends of the slots  $L'$ , formed in the bearings  $Z$ . This done, the carriers having the doors attached to them are moved out of the way, as shown in Fig. 2.

The sections  $A$  and  $A'$  of the safe are hinged together by a hinge consisting of parts  $X'$  and

$Z'$ , respectively, formed integral with or attached to the said sections. The part  $X'$  is provided with an elongated vertical slot,  $B^2$ , and with an elongated horizontal slot,  $C^2$ , while on the other hand the part  $Z'$  of the hinge is provided with a tenon,  $D^2$ , the outer end of which is perforated to receive the bolt  $E^2$ , which plays in the slot  $B^2$  and holds the two parts together. When the safe is closed, as shown in Fig. 1 of the drawings, the bolt  $E^2$  is located in the inner end of the slot  $C^2$ . In unlocking the safe, however, the said bolt is moved to the outer end of the slot, thereby permitting the segments  $H'$  and  $I'$  to be disengaged, and the sections  $A$  and  $A'$  to be rotated with their standards  $R'$ , to present both of their open ends to the front. The said standards  $R'$  are rotated on short centers  $K^3$ , journaled in bearings  $G^2$ , formed in the carriages  $I^2$ , which run on the same trackways  $J^2$ . Small rollers  $F^2$ , mounted on the platform of the carriages, serve to support the edges of the standards and to facilitate the operation of rotating them. The standards are rendered adjustable to compensate for any loss of adjustment between the two sections of the safe by set-screws  $L^2$ , which impinge on the lower ends of the centers  $K^3$ . The platforms of the carriages are rendered adjustable with respect to their wheels by means of set-screws  $M^2$ , located in said platforms and impinging on the bearings of the wheels, as shown in Fig. 1 of the drawings.

In opening the safes the ring  $B$  is first rotated to disengage the segments  $H'$  and  $I'$ . This done, the sections are moved away from each other on their respective carriages, to withdraw the segments  $H'$  from all connection with the segments  $I'$ . The handle  $K^2$  of the ring  $B$  and the handle  $M^2$  of the section  $A'$  are now grasped and the sections rotated to present their front faces to the operator.

Safes constructed in accordance with the invention herein disclosed are practically impregnable. The doors to the compartments in which the valuables are placed are beyond reach of attack until the shell of the safe has been penetrated, and the structural character of the shell precludes the application of appliances of whatever character they may be for rupturing it. The joints are everywhere defended by unbroken surfaces of metal, and the parts are so interlocked that they can neither be removed nor separated.

I would have it understood that I do not limit myself to the exact construction herein shown and described, but that I hold myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. The combination, with a safe consisting of two sections, of a ring associated with the open end of one section, and adapted to be rotated independently thereof, and provided



with devices constructed to engage and interlock with like devices carried by the open end of the other section, substantially as set forth.

2. In a safe consisting of two sections, the combination with one section and a movable ring associated with its open end, the exposed face of the ring being provided with screw-threaded segments, of the other section of the safe, having its open end provided with segmental screw-threaded projections arranged to interlock with the segments of the ring, substantially as set forth.

3. In a safe, the combination, with the rotary doors thereof, of studs having enlarged heads secured to the inner faces of said doors, and bearings or jambs formed to receive the doors, and provided with curved slots having enlarged ends to receive the stud-heads, whereby the studs are passed through the jamb and their heads brought to bear up against the inner side thereof, and the doors locked when partially rotated, substantially as set forth.

4. In a safe consisting of two sections, the combination, with removable doors fitting into said sections and having screw-threaded studs projecting from their outer faces, of detachable carriers for removing and replacing said doors, and consisting, essentially, of uprights mounted on rollers and pivoted to the standards of the respective safe-sections, and internally-threaded sleeves journaled in the upper ends of the uprights, and provided with handles, substantially as set forth.

5. A safe the shell of which is composed, essentially, of a series of outer and a series of inner peripherally-interlocked rings, the inner rings being arranged to break the joints of the outer, substantially as set forth.

6. A safe the shell of which is composed of a series of the outer rings having interlocked edges, and a series of inner rings having interlocked edges and bolted together, the contiguous faces of the inner and outer rings being

mortised and dovetailed, as described, to interlock, substantially as set forth. 45

7. The combination, with a safe consisting of two sections, of adjustable rotating standards for said sections, the said standards being secured, respectively, to the sections, and being provided each with a center adapted to adjustably unite with a carriage, substantially as set forth. 50

8. A safe the shell of which is composed, essentially, of outer and inner contiguously or edge-locked rings, the inner series of rings being arranged to break the joints between the outer series, substantially as set forth. 55

9. The combination, with a safe consisting of two sections, of rotating standards rigidly secured to said sections, and carriages for the respective standards, the standards being constructed to rotate with the sections independently of the carriages, and the latter being arranged to run on the same trackway, and to be thereby held against rotation, substantially as set forth. 60

10. The combination, with a safe consisting of two sections and rotating standards secured thereto and provided with a center, of a carriage for each standard, having devices for adjusting the relative position of the standard thereto, substantially as set forth. 65

11. The combination, with a safe consisting of two sections, and the described adjustable hinge for uniting said sections, of a rotating standard and a carriage for each section, whereby they are separated after being unlocked, and then rotated to present their open ends to the front, substantially as set forth. 70

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 80

THOMAS M. BRINTNALL.

Witnesses:

GEORGE COOK,  
GEORGE F. DOWNING.