

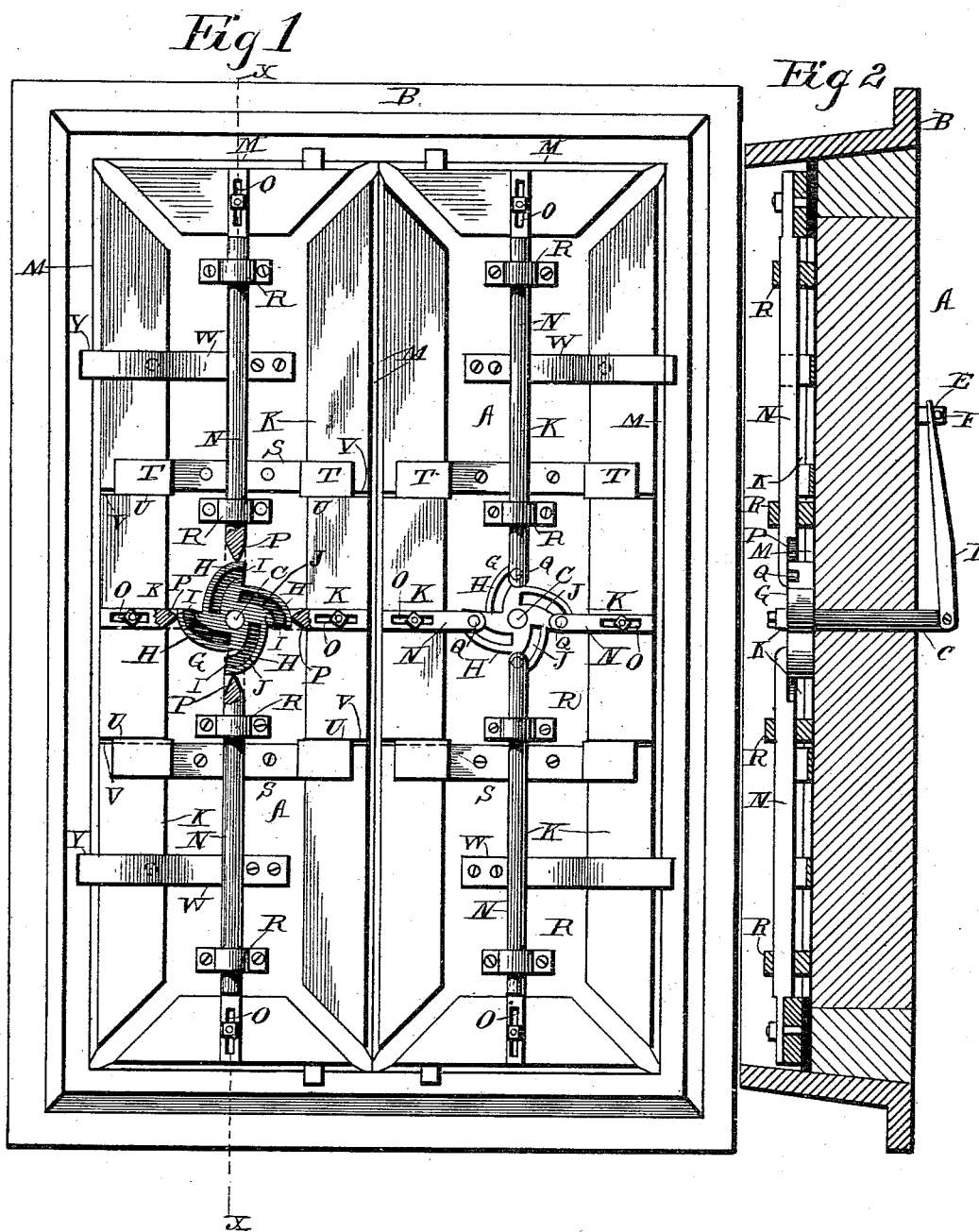
(No Model.)

2 Sheets—Sheet 1.

G. KENNEDY.  
AIR TIGHT DOOR.

No. 458,465.

Patented Aug. 25, 1891.



WITNESSES,  
*C. C. Burdine*  
*Geo. L. Wheelock*

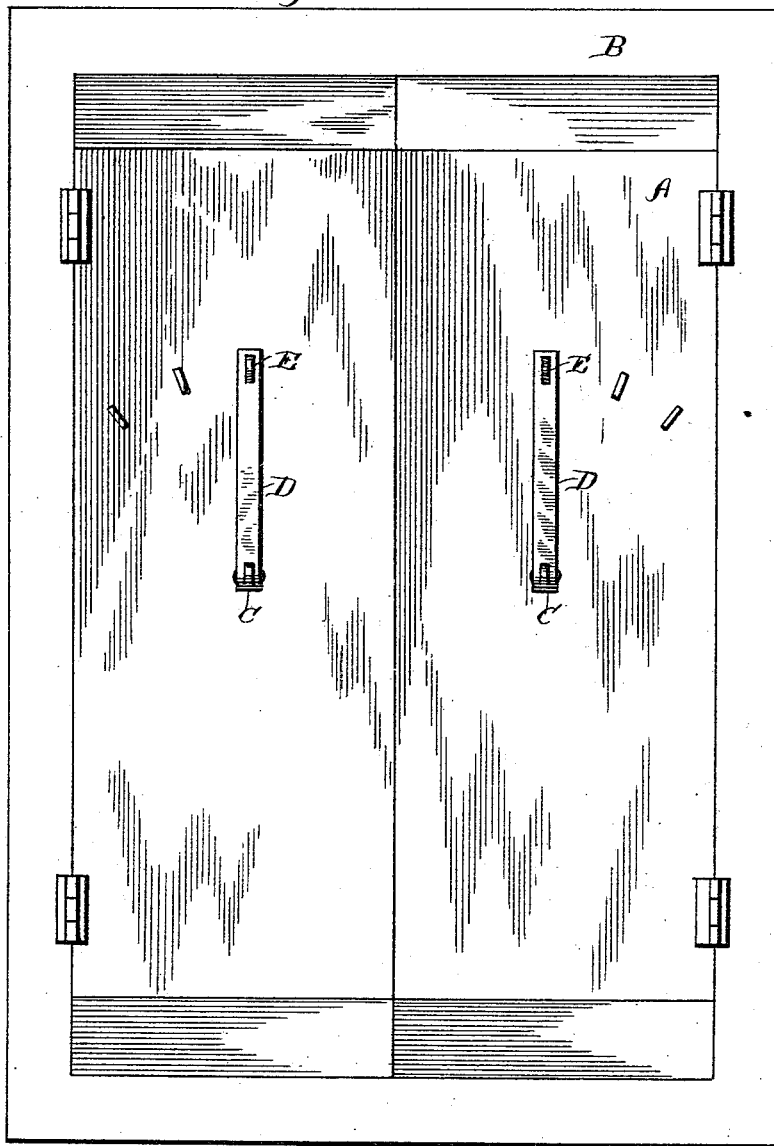
INVENTOR,  
*Guy Kennedy*  
BY  
*R. H. T. Jones*  
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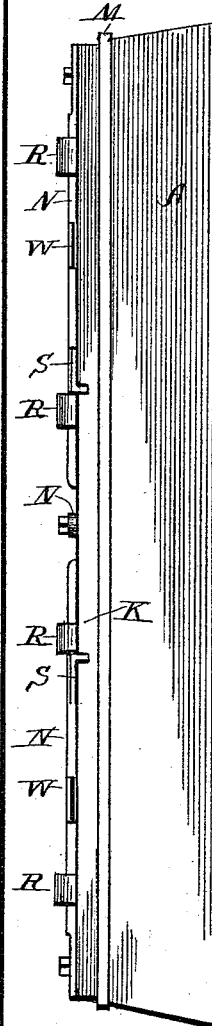
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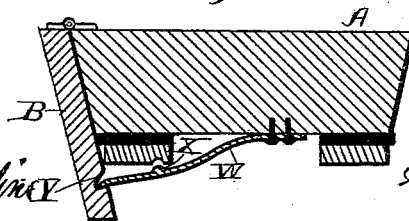
*Fig 4*



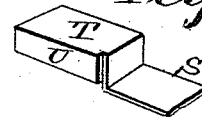
*Fig 3*



*Fig 6*



*Fig 5*



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# UNITED STATES PATENT OFFICE.

GUY KENNEDY, OF OSAGE, IOWA.

## AIR-TIGHT DOOR.

SPECIFICATION forming part of Letters Patent No. 458,465, dated August 25, 1891.

Application filed October 25, 1890. Serial No. 369,276. (No model.)

*To all whom it may concern:*

Be it known that I, GUY KENNEDY, a citizen of the United States, residing at Osage, in the county of Mitchell and State of Iowa, have  
5 invented certain new and useful Improvements in Air-Tight Doors; 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  
10 it appertains to make and use the same.

My invention relates to an improvement in attachments for doors, and is especially intended to render the same air-tight, at the same time acting as a lock to securely fasten  
15 a door in closed position.

The object sought to be accomplished is to produce more effective means for accomplishing this purpose than have heretofore been known.

20 With these ends in view my invention may be said to consist in the peculiarities of construction and combination of parts, more fully described hereinafter, and pointed out in the claims.

25 Referring to the accompanying drawings, making part of the specification, Figure 1 represents an inside view of the door provided with my improved attachment and shown in locked adjustment; Fig. 2, a vertical section through line *xx* of Fig. 1; Fig. 3, an end  
30 view of the door; Fig. 4, a front view, and Figs. 5 and 6 detail views

My arrangement is specially adapted for refrigerator-doors, and the like, which must  
35 be rendered perfectly air-tight in order to insure the proper preservation of the contents of the refrigerator.

In the drawings, the reference-letter A indicates the door, and B the casing to which it is hinged, and through the center of said  
40 door extends a rock-shaft C, which is provided with a suitable hinged handle D, having in its free end a slot E, which is adapted to fit over and removably contain a staple F, fixed in the  
45 door. A number of these staples are provided, as seen in Fig. 4, and each is arranged to receive the handle, and also a padlock or similar device for locking the latter in place.

On the inside of the door and contiguous  
50 thereto a disk G is rigidly secured on the shaft C and is of peculiar shape, consisting of a central portion, from which extend radi-

ally a series—four in number—of similarly-formed curving wings or spiral arms H, which terminate abruptly in plane faces I, and in  
5 the front surfaces of said wings are formed curved grooves J, which extend from the central portion of the disk out of the respective end faces I

Around the edges of the door are arranged 60 a number of metallic bars K, which are four in number—two for the top and bottom and two for the sides—and said bars are made with beveled ends L, thus fitting snugly together when contracted and closely to the  
65 corners of casing when extended. Rubber facings M are secured to the inside surfaces of these bars and project slightly beyond them, whereby they will be caused to jamb against the casing, and thus greatly aid in effecting an air-tight closure. 70

The sliding bars are connected to the central rotary disk by rods N, which are bolted at their outer ends to the centers of the  
75 respective bars, through slots O, whereby said bars can be adjusted to different-sized doors. The inner ends of these rods are cut away underneath, converging shoulders P being formed, and the reduced portions extend over the disk G, and are each provided with projecting guide-pins Q, which fit in the radial  
80 grooves J, respectively, while the inclined shoulders P engage the outside curved surfaces of the spiral wings and assist in guiding the rods. 85

Suitable cleats R are secured to the inside of the door, and they form guides, through which the long vertical rods extend to the top and bottom bars K.

The side bars are guided in their movements by means of brackets S, which are secured to the door and have outwardly-bent ends T, which extend over the outside surfaces of the bars and have inwardly-turned edges U, which engage cross slots or recesses  
95 V in the bars, and thus guide the latter in their movements in and out.

I provide against movement of the parts when the door is open, as follows: A pair of flat springs W are secured to the inside of the  
100 door, and project over and beyond the bar next to the side of the casing, being provided on their under sides with projecting pins X, which engage corresponding depressions in

said bar when the springs are in their normal position, pressing against the latter, and thus act to prevent movement of the locking parts; but when the door is swung to these 5 springs strike against the sloping sides of suitable recesses Y in the casing, and are thus thrown back, so that their projections are brought from the depressions in the bar, and thus the latter is released. The sliding bars 10 may be provided with projections Z, which form bolts for locking the door in closed position, and such bolts are arranged to enter recesses in the casing provided for them.

From the foregoing description, taken in 15 connection with the accompanying drawings, the operation of my device will be apparent and might be briefly stated as follows: With the parts in their contracted positions it will be seen that by turning the handle D on 20 the outside of the door the rock-shaft will be revolved and the disk turned, whereby the several bars will be thrown out against the sides of the door-casing by reason of the inner ends of the rods N being connected to the 25 radial wings of the disk in the manner described, and guided by the grooves in the latter. By a reverse movement of the handle D it will be evident that the bars will all be withdrawn from the sides of the casing, and when 30 the door is opened and the springs U released from the recesses Y the projection on said springs will engage the depression in the bar and lock the parts, as previously explained. Thus it will be seen that the door when closed 35 is absolutely air-tight, the corners of the casing being filled by the rubber facings on the bars, and hence the arrangement possesses great advantages when used on refrigerators or the like.

40 It is evident that many slight changes which might suggest themselves to a skilled mechanic could be resorted to without departing from the spirit and scope of my invention, and hence I do not wish to confine myself to the precise construction herein shown 45 and described.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a door, of a number of sliding bars having beveled adjacent 50 ends and rubber facings fixed to them, a rock-shaft extending through the center of the door and being provided with a suitable handle, a disk rigid on said rock-shaft and provided with a series of radially-extending arms 55 or wings provided with grooves, and rods connecting the sliding bars and said disk and being provided with shoulders engaging the outside curving surfaces of the radial arms, and 60 lugs or pins fitting the grooves in the latter, whereby the turning of the rock-shaft acts to throw said bars in and out, as described.

2. The combination, with a door, of a series of sliding bars arranged around the edges of 65 the same, a rock-shaft extending through the center of the door and being provided with a suitable handle, a disk rigid on said shaft, rods connecting the sliding bars and said disk, whereby the turning of the rock-shaft acts 70 to throw said bars in and out, and guides for the latter, consisting of brackets secured to the doors and extending over said bars, having inwardly-turned edges engaging cross-slots in the latter, substantially as described. 75

3. The combination, with sliding bars arranged on a door and adapted to be thrown out against the door-casing, of springs secured to the door and extending out over and beyond one of said bars, said springs being 80 provided with lugs engaging corresponding depressions in said bar, and their ends being arranged to come in contact with inclined surfaces in the casing, whereby said springs will be thrown out clear of the sliding bar 85 when the door is closed, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GUY KENNEDY.

Witnesses:

C. F. HAMBRECHT,  
J. F. CLYDE.