Nov. 29, 1927.

1,650,598

G. W. BROOKS

SERVICE DOOR LOCKER

Filed July 13, 1926

3 Sheets-Sheet 1

Fig. 1.

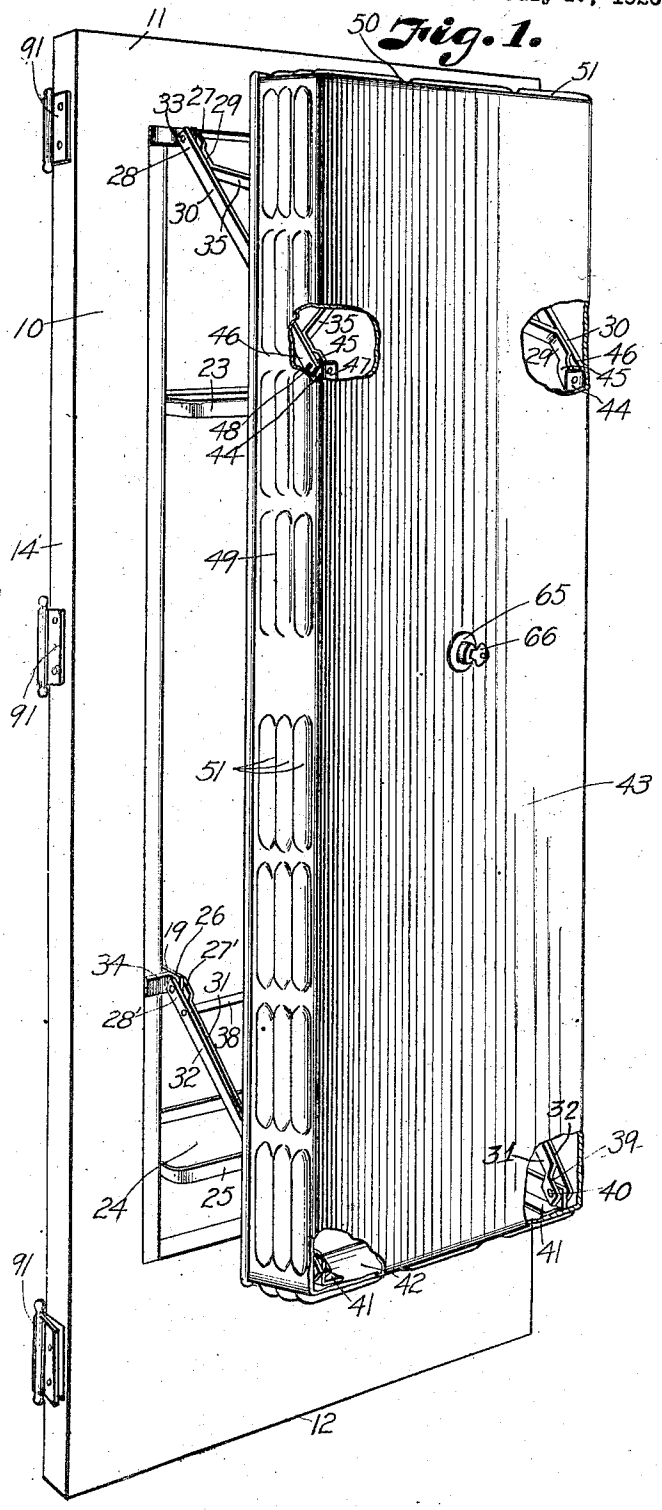


Fig. 5.

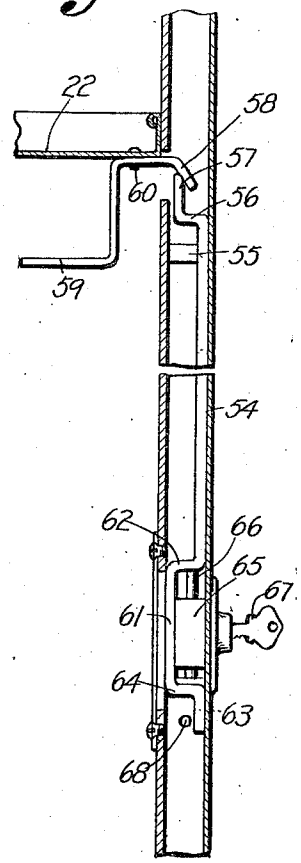
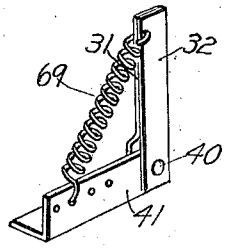


Fig. 6.



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Fig. 2.

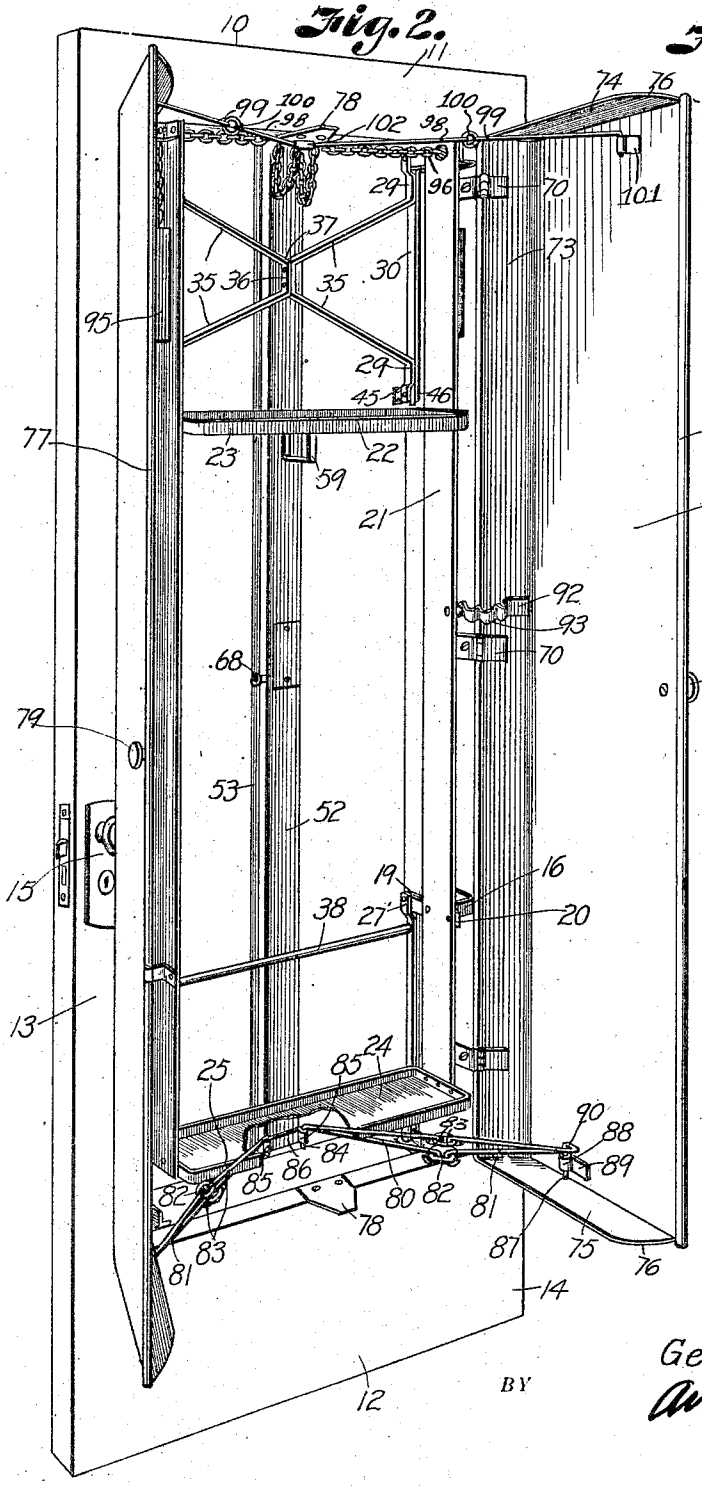
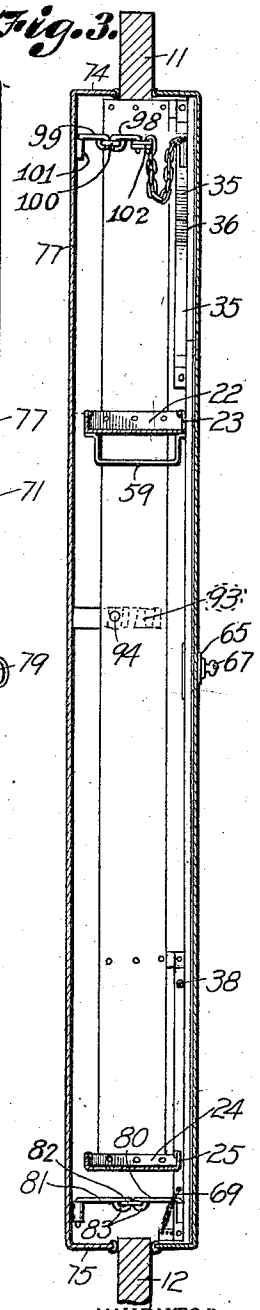


Fig. 3.



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Fig. 4.

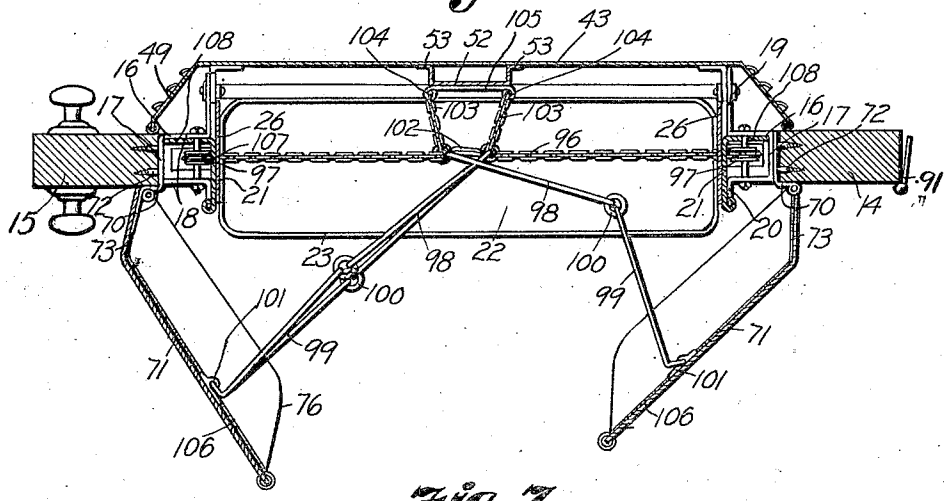


Fig. 7.

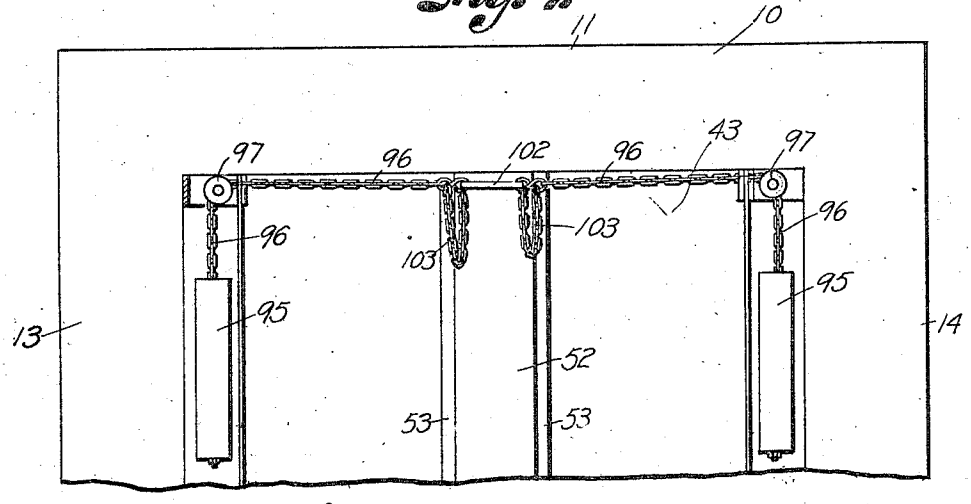
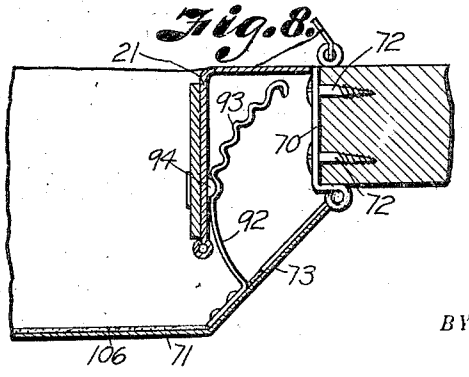


Fig. 8.



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Patented Nov. 29, 1927. 1,650,598

UNITED STATES PATENT OFFICE.

GEORGE W. BROOKS, OF TOPEKA, KANSAS.

SERVICE DOOR LOCKER.

Application filed July 13, 1926. Serial No. 122,188.

My invention relates to service door lockers and more particularly to a door provided with a locker that is provided with closure members on opposite sides thereof, so interrelated that the closure members on both sides of the door cannot be in open position at the same time.

It is a purpose of my invention to provide a door with a locker of the above mentioned type, the locker elements being so constructed and mounted as to be capable of being applied to door frames now in use by omitting or removing the door panels and intermediate stiles and attaching said device to the rectangular frame remaining.

It is a further purpose of my invention to provide a device of the above mentioned character comprising a frame member, a closure member engaging one side of the frame member so as to close an opening through the frame member, said closure member being movable toward and away from the frame member, into positions substantially in parallelism to the frame member, and furthermore to provide the opposite sides of the frame member with closure means which preferably comprise a pair of hinged members hinged on opposite sides of the frame member so that a split is provided in the closure member centrally thereof, extending in a vertical direction.

It is a further purpose of my invention to provide a device of the above mentioned character in which the closure member that is on the outer side, which is the closure member that moves into positions parallel to the frame, is securely locked at all times, when closed or not in use, and which may be locked or unlocked independently of the closure means on the opposite side of the door and yet provide a door in which the closure means on at least one side of the opening therein is always closed. This is preferably accomplished by providing a connection between the closure means on opposite sides of the frame member so that when the one closure is opened or moved toward open position, the other closure will be closed or moved toward closed position.

It is another purpose of my invention to provide locking means for the outer closure member or the closure member having the movement into positions parallel to the frame member, comprising a reciprocatory member and means fixed on the frame extending transversely thereof, and, preferably, a shelf member having means thereon engaging the reciprocatory member to hold the closure member in locked position. The outer closure member or member having the parallel motion is so mounted that it is limited in its outward movement or opening movement so as to block entrance between said closure member and the frame, of the body of a person to thus prevent unauthorized persons from entering the room to which the locker carrying door is applied. The arrangement is such, however, that sufficient space between the frame and the outer door is provided to permit placing of articles into the space within the door frame provided for the purpose of serving as a locker. Such access to the door can be had on either side of the outer closure member.

It is a further purpose of the invention to provide a door of the above mentioned character with a closure member that is provided with flanges extending toward the frame member in which air vents are provided, these being preferably in the form of louvers stamped out of said flanges.

It is a further object of the invention to provide a closure member that is mounted on a system of arms that are similar to lazy tongs in action so as to obtain a parallel movement of the closure member relative to the frame. The arms or links of this mounting preferably comprise units which are in the nature of swinging frames pivotally connected with the frame and the closure member on opposite sides thereof, thus providing a strong mounting which will control the movement and operation of the closure member for all positions thereof to hold the same in parallel relation to the frame. In order to facilitate the opening of the closure member, means is preferably provided counterbalancing the weight of the closure member, tending to move the same toward open position.

The mounting of the inner and outer closure members is such that neither projects any great distance from the door when opened and as a result, a much smaller amount of space is occupied by the locker carrying door than would otherwise be the case. Furthermore the hinged closure members on the inner side of the door are preferably hinged on the sides of the frame in such a manner as to act as barriers between the

opening in the frame and the lock on the door frame, and between the opening in said frame and the hinges connecting the movable frame of the door with the fixed frame of the door so that the lock cannot be tampered with by reaching through the locker nor can the hinge pins be removed in this manner. The arrangement is, in fact, such that when the hinged closure members are in their wide open position they overlie or cover said lock and hinge members. As the keyhole in the door will also be covered in this manner, it will be impossible to look into the room through the same when the inner closure members are swung open. It will also be noted that the inner or hinged closure members can be adjusted to any desired angular position to control the ventilation through the door and preferably suitable yielding means is provided for holding said closure members in such adjusted position.

It is another purpose of my invention to provide means for operating the closure elements in case of fire so that the same will be automatically closed. Said means may be used to operate all of the closure elements, or, if desired, only the inner ones. The inner closure members are preferably made imperforate in order to accomplish this purpose, and are further preferably provided with a fire-resisting lining made of fire resistant material such as asbestos.

Other objects and advantages of the invention will appear as the description of the accompanying drawings proceeds. However, I desire to have it distinctly understood that I do not intend to limit myself to the exact details shown or described, but that I intend to include as part of my invention all such obvious changes and modifications of parts as would occur to a person skilled in this art and as would fall within the scope of the claims.

In the drawings:

Fig. 1 is a perspective view of my improved locker carrying door as viewed from the outside thereof, partly broken away, showing the outer closure member in open position.

Fig. 2 is a similar view of the device viewed from the inside thereof.

Fig. 3 is a vertical sectional view through the device.

Fig. 4 is a horizontal sectional view therethrough.

Fig. 5 is a fragmentary sectional view of the locking mechanism.

Fig. 6 is a fragmentary perspective view of a portion of the outer closure operating means, showing the counterbalancing means for the weight of said closure member.

Fig. 7 is a fragmentary inside elevation of the device, the inner closure members being removed, and

Fig. 8 is a fragmentary section taken on the line 8—8 of Fig. 2.

Referring in detail to the drawings:

My improved locker carrying door preferably comprises a rectangular frame member 10 which may be the usual frame portion of an ordinary door from which the central portions have been removed to provide an opening therethrough or may be a frame made particularly for the device constituting the present invention. The door frame comprises the upper transversely extending member 11, the lower transversely extending member 12 and the vertically extending members 13 and 14. The member 13 is ordinarily referred to as the locking stile and the member 14 as the hanging stile. That is, the hinges are ordinarily applied to the stile 14 and the lock 15 is ordinarily applied to the stile 13. The relative position of the lock and hinges, of course, are dependent upon the location of the door.

Secured to the vertically extending members 13 and 14 of the frame are the bracket members 16 which are provided with the intermediate portions 17 which are secured to the inner edges of the members 13 and 14 by any suitable fastening members. Said brackets 16 are further provided with substantially parallel, inwardly extending portions 18 and with laterally directed wings 19 and 20, the wing 19 being longer than the wing 20. Said wings 19 and 20 lie substantially in alignment, and the vertically extending plates 21 are secured thereto in any desired manner. The plates 21 are thus mounted in fixed position on the frame member 10 and together with the brackets 16 serve as the main supports for the locker structure mounted in the opening in the frame 10. The brackets 16, it will be noted, are provided adjacent the upper ends of the members 21 and at points spaced a short distance from the lower ends of said members, thus providing supporting means for said vertically extending members 20 at both the top and bottom thereof. Extending between the members 21 and spaced from the upper ends thereof is a shelf member 22 which may be secured thereto in any desired manner, and which is provided preferably with an upturned edge 23. A similar shelf member 24 is provided at the extreme lower ends of the members 21, being secured thereto in any desired manner and having the upturned peripheral edge portion 25.

The longer arms 19 of the brackets 16 have the ears 26 on the members 21 secured thereto. Secured to the projecting ends of the members 26 and 19 and embracing said members are the pivot ears 27 and 28 provided on the members 29 and 30 of an upper frame and the corresponding pivot ears 27′ and 28′ provided on the members 31 and 32 of a lower frame, said frames being

swingable on the pivots 33 and 34 respectively provided on the upper and lower brackets. The upper swinging frame member comprises the side members 30 and the members 29 secured thereto which have the obliquely inwardly extending portions 35 and the portions 36 extending parallel to the members 30 which are secured together face to face by any suitable fastening means 37. A rigid swinging frame is thus provided pivoted on the upper brackets and thus being swingingly mounted relative to the framework 10 of the door. The lower brackets carry swinging frame members which are made in a slightly different manner than the swinging frame members referred to above, a lower swinging frame member comprising the members 31 and 32 previously described, the two lower swinging frame members extending in substantial parallelism at opposite sides of the frame and being connected by means of the cross bar 38 adjacent the end thereof secured to the lower bracket members. The opposite ends of the members 31 and 32 which are firmly secured together in face to face relation, are spaced to provide paired pivot ears, this being accomplished by providing the offset portion 39 on each of the links 31, the corresponding end portions of the links 32 being provided with openings aligning with pivot openings in the offset ends 39 through which the pivot pins 40 are extended, said pivot pins 40 also extending through aligning openings in the angular bracket members 41 which are secured to the bottom flange 42 of the outer closure member 43. Said outer closure member is further provided with angular bracket members 44 which are secured to the inner face of the outer wall portion of said closure member 43 to which are pivoted the ends of the members 29 and 30 that lie opposite the ends secured to the bracket members on the frame, the ends of the members 29 being offset to provide the spaced pivot ears 45 and 46 on the members 29 and 30 respectively, embracing the inwardly extending flanges 47 on the members 44 and pivoted thereto by means of the pivot pins 48. It will be seen from the above that the outer closure member 43 is thus mounted for movement toward and away from the frame 10 into positions substantially parallel to the frame, the swinging frame members at the upper and lower ends of said closure member connecting the same with the frame, providing a strong linkage which will always assure the closure member being in proper alignment with the opening in the frame and providing for an outward and upward movement of the closure member as the same moves into open position.

The closure member 43 is preferably provided with the side flanges 49 which extend at an oblique angle from the outer wall portion of the member 43 toward the frame member 10, thus providing beveled side portions for the closure member. The bottom flange 42, the side flange 49 and the top flange 50 of said closure member are preferably all provided with closely spaced outstruck louvers 51 to provide for closely spaced air vents throughout said flanges. Mounted on the inner face of the member 43 and extending vertically thereof is a channel member 52 which is provided with the laterally extending flanges 53 secured to the inner face of said closure member 43, the web portion thereof being spaced from the inner face of the closure member 43 to provide a passage extending lengthwise of the closure member, thus strengthening the closure member at the central portion thereof and providing a passageway for the locking mechanism for the door.

Said locking mechanism preferably comprises a vertically extending locking bar 54 which is mounted within the channel 52 and which is provided with any suitable guide means 55 so that said member 54 is guided for vertical movement within the channel. The upper end of the bar 54 is offset as at 56 and provided with a locking finger 57 which cooperates with a downwardly inclined catch member 58. The catch member 58 is preferably formed as a part of a bracket 59 which has the offset ends 60 connected to the under side of the shelf 22, although said catch member may, of course, be mounted on the shelf 22 in any desired manner. The lower end of the locking bar 54 is provided with an offset portion 61 which is connected with the main portion of the bar 54 by means of the right angularly extending portion 62, the extreme end portion 63 of the bar 54 being substantially aligned with the main body portion thereof and being connected with the offset portion 61 by means of the right angularly extending portion 64. Mounted within the channel 52 and mounted in a suitable opening in the closure member 43 is the lock 65 which is provided with a projectable bolt member 66 which is projected by rotating the key 67, said member 66 engaging with the portion 62 of the member 54 to raise said member into such a position that the locking portion 57 thereof will engage with the catch 58. A screw or other projecting member 68 is provided in the channel 52 with which the portion 64 of the member 54 is adapted to engage to limit the downward movement thereof at such a point that the key 67 cannot be rotated to such a position that the same can be removed from the lock except when the bolt 66 is projected to lock the closure member in closed position as shown in Fig. 5.

The closure member is provided with suitable means that cause said closure member

to have a normal tendency to move toward open position, said means being made in any desired manner so that the same will overcome the weight of the door in its upward movement, and being shown as comprising springs 69 secured to the brackets 41 and the members 31 and 32 as illustrated in Fig. 6. The springs 69 will be put under tension as the angularity between the links 31 and 32 and the bracket 41 increases, this occurring as the closure member 43 is moved toward the frame 10. Said springs 69 are accordingly under tension when the closure member is in position against the frame 10 and accordingly, as soon as the catch 57 is unlatched from the catch 58, the closure member will swing open under the action of the springs 69 to the position shown in Fig. 1.

Mounted on the vertically extending members 13 and 14 of the frame member 10 are the hinges 70 which support the inner closure members 71, said hinges being secured to the vertically extending members 13 and 14 in any desired manner as by means of the securing elements 72. The inner closure members 71 are preferably each provided with obliquely extending flanges 73 on one side thereof adjacent the hinges 70 to which said hinges are secured, and are provided with top flanges 74 and bottom flanges 75 which are cut away as at 76 to enable the members 71 to be moved to closed position with the rolled free edges 77 thereof in adjacency to close the opening in the frame 10 from the inner side of said frame. In order to completely close the opening the outwardly extending brackets 78 are provided which align substantially with the cut away portions at 76 to close the opening that would otherwise exist at this point. The closure members 71 may be provided with any suitable handles thereon such as the knobs 79. Said closure members 71 are not provided with any lock whatsoever, and may be swung into either open or closed position when the closure member 43 is in closed position without in any way affecting the closure member 43, thus making it immaterial as to what the position of the member 71 may be to permit operation of the lock 65. However, the closure members 43 and 71 are connected so that the members 71 will be drawn to closed position when the member 43 is moved to open position, but permitting the two doors to be closed at the same time. Said means preferably comprises the links 80 and 81 which are hingedly secured together in any suitable manner, as by means of the links 82 extending through the eyes 83 provided on the adjoining ends of the links 81 and 82, said links 80 having the downwardly extending, right angular end portions 84 which extend through hinge eyes 85 in the bracket 86 provided on the lower end of the channel 52, and the links 81 being provided with downwardly extending, right angular end portions 87 extending through the hinge eyes 88 in the brackets 89 mounted on the closure members 71. Thus at maximum extension of the toggle-like element, one door is fully open and the other closed; and the folding of the element permits closing of both doors.

In order to avoid the passing of the link 82 past center which would interfere with the closing movement of the members 71 should the same be opened too wide, the offsets 90 are provided in the links 81, which will engage with the inner faces of the members 71 to limit the opening movement of said members and of the links 80 and 81 so as to prevent the movement of the links 82 past center. It will be obvious that the closure members 71 will be swung toward the frame 10 as the member 43 is moved away from the same due to this connection. It will also be noted that the closure members 71 when in open position, will overlie the lock 18 and the hinges 91, thus preventing tampering with the hinges by reaching through the partially open member 43 and also preventing a person from seeing through the keyhole in the lock 15. Furthermore it will be noted that the members 71 will prevent entrance to the room and access to said lock and hinges, as when the member 43 is wide open the members 71 will be completely closed.

Preferably means is provided for holding the closure members 71 in any desired angular position for ventilation purposes, said means comprising the yieldable bracket members 92 which are corrugated as at 93, to provide a series of recesses into which the projection 94 which may be in the form of a lug on the member 21, may be projected to hold said closure members yieldably in any desired position, the members 92 being sufficiently yieldable to permit operation of the closure members 71 by means of the links 80 and 81 when the closure member 43 is moved to open position.

Preferably suitable automatic means is provided for closing all of the closure members in case of fire, said means preferably comprising the weights 95 having the chains 96 secured thereto which extend over the pulleys 97, said pulleys being mounted between the arms 18 of the brackets 16 in any desired manner. The chains 96 are preferably secured to the links 98 which are pivotally connected with the links 99 by means of the links 100, said links 99 being pivoted to the brackets 101 on the closure members 71. The end links of the chains 96 are preferably secured together by means of a fusible link 102 and the chains 103 extend from the chains 96 at said fusible link to the eyes 104 provided on the bracket 105 on the closure member 43. Ordinarily the weights 95 are in such a position that the same have no

effect on any of the closure members, the links 98 and 99 being movable to any desired position to move the closure members 71 to any desired position and the chains 103 being slack to permit the operation of the closure member 43. However, in case of fire, the increase in temperature above normal will melt the fusible link 102, causing the chains 96 to be separated, which will draw the chains 103 tight, closing the member 43 and also moving the links 98 and 99 to such a position as to close the members 71 as the weights 95 drop. The closure members 71 are preferably provided with a fire resistant and heat insulating lining 106 which is preferably made of asbestos or similar material. In order to close the spaces between the inner edges of the members 13 and 14 and the members 21 the angular sheet metal members 107 are provided, said members being held between the arms 20 of the members 16 and the member 21 and having the flanges 108 extending toward the frame members 13 and 14.

What I claim and desire to secure by Letters Patent is:

1. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, and hinged closure members associated with said bodily movable member and mounted to move into adjoining position to close said opening on the other side of said frame.

2. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same into positions substantially in parallelism to said frame and hinged closure members associated with said first mentioned closure member and mounted to move into adjoining position to close said opening on the other side of said frame.

3. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, and closure members associated with said first mentioned closure member and being hinged at opposite sides on said frame so as to move into adjoining position to close said opening on the other side of said frame.

4. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, locking means for said closure member, and hinged closure members associated with said first mentioned closure member and being mounted to move into adjoining position to close said opening on the other side of said frame.

5. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, locking means for said closure member, and hinged closure members associated with said first mentioned closure mounted to move into adjoining position to close said opening on the other side of said frame, said last mentioned closure members being always unlocked.

6. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, and hinged closure members mounted to move into adjoining position to close said opening on the other side of said frame, said closure members being provided with wall portions offset from said frame to provide a storage space in said frame between said closure members.

7. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, a shelf mounted in fixed position in said opening in said frame, a catch thereon, locking means for said closure member comprising a member engaging said catch, and hinged closure members associated with said first mentioned closure member mounted to move into adjoining position to close said opening on the other side of said frame.

8. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, a shelf mounted in fixed position in said opening in said frame, a catch thereon and locking means for said closure member comprising a member engaging said catch.

9. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, a transversely extending member mounted in fixed position in the opening in said frame, a catch thereon and locking means on said closure member comprising a member engaging said catch.

10. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, a transversely extending member mounted in fixed position in the opening in said frame, a catch thereon and locking means on said closure member comprising a reciprocable member engaging said catch.

11. In a device of the character described, a frame having an opening therethrough, a

closure member for said opening mounted on one side of said frame so as to be movable toward and away from said frame bodily into positions substantially in parallelism thereto, closure means mounted on the other side of said frame and a connection between said member and said means whereby said means is moved into closing position upon movement of said member to open position, said means comprising a pair of closure members hinged to said door on opposite sides thereof.

12. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, said closure member having air vents therein, and hinged closure members associated with the first mentioned closure member mounted to move into adjoining position to close said opening on the other side of said frame.

13. In a device of the character described, a frame having an opening therethrough, a closure member mounted on one side of said frame to move bodily toward and away from the same, locking means for said closure member, and hinged closure members associated with said first mentioned closure member mounted to move into adjoining position to close said opening on the other side of said frame, said locking means independent of said hinged closure members.

14. In a device of the character described, a frame having an opening therethrough, a closure member mounted upon one side of said frame to move bodily toward and away from the same, and hinged closure members mounted upon said frame member to move into adjoining position to close said opening on the other side of said frame, said first mentioned closure member being associated with said second mentioned closure member and being provided with means for counterbalancing the weight of the same as it moves toward open position.

15. In a device of the character described, a frame having an opening therein, a pair of vertically extending members providing a supplemental frame fixed in position at opposite sides of said opening, a closure member for said opening and means connected to the supplemental frame for supporting said closure member for movement bodily toward and away from said opening comprising swinging frame members each having means for pivotally connecting the same at one end thereof to said vertically extending supplemental frame members and at the other end thereof with said closure member, said closure member being provided with means for counterbalancing the weight of the same as it moves toward open position.

16. In a device of the character described, a frame having an opening therein, a closure member mounted on one side thereof having vents therein, imperforate closure means mounted on the other side thereof, said means and member being connected for alternate opening, and means controlled by an abnormal rise in temperature for moving said closure means to closing position.

17. In a device of the character described, a frame having an opening therein, a closure member mounted on one side thereof having vents therein, imperforate closure means mounted on the other side thereof, said means and member being connected for alternate opening, and means for moving said closure means to closing position, said last-mentioned means comprising a fusible element.

18. In a device of the character described, a frame having an opening therein, a closure member mounted on one side thereof having vents therein, imperforate closure means mounted on the other side thereof said means and member being connected for alternate opening, and means for moving said closure means to closing position, said last-mentioned means comprising weights for moving said closure means to closing position, and means for normally holding said weights in inoperative position comprising a fusible element.

19. In a device of the character described, a frame having an opening therein, co-operatively connected closure members for said opening mounted on opposite sides of said frame, and means released upon an abnormal rise in temperature for moving a plurality of said closure members to closing position.

20. In a device of the character described, a frame having an opening therein, a closure member mounted on one side thereof having vents therein, imperforate closure means mounted on the other side thereof, and means controlled by an abnormal rise in temperature for moving said closure means and closure member to closing position.

21. In a device of the character described, a frame having an opening therein, a closure member mounted on one side thereof having vents therein, imperforate closure means mounted on the other side thereof, and means for moving said closure means and closure member to closing position, said last-mentioned means comprising weights and means for holding said weights in inoperative position comprising a fusible element.

In testimony whereof I affix my signature.

GEORGE W. BROOKS.