Feb. 16, 1926. 1,573,194

B. ROE

DOOR

Filed April 25, 1924 3 Sheets-Sheet 1

Fig. 1.

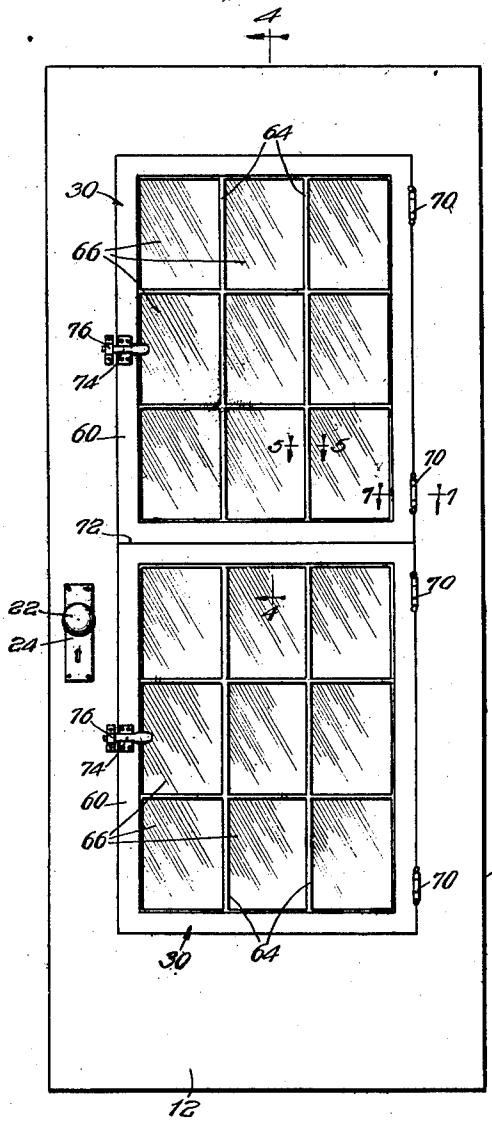
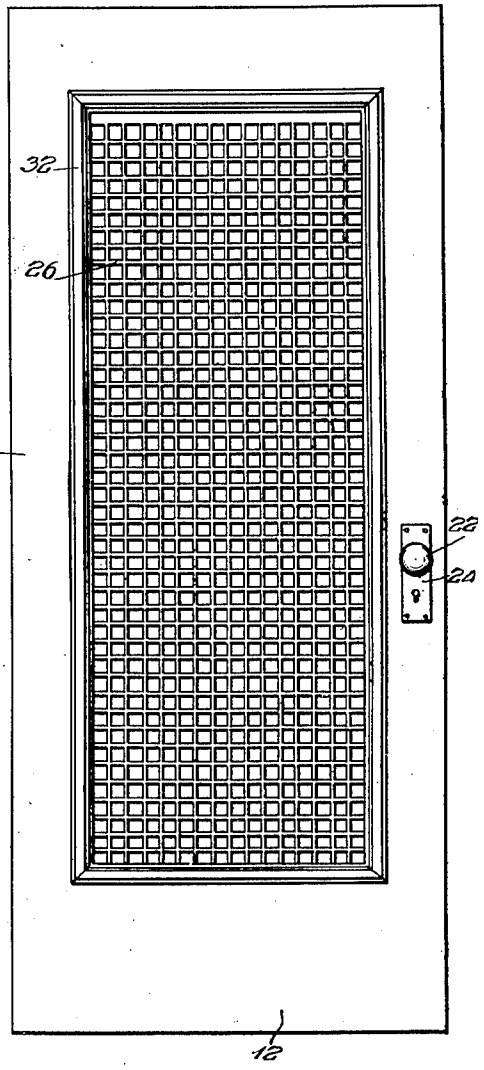


Fig. 2.



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Fig. 4.

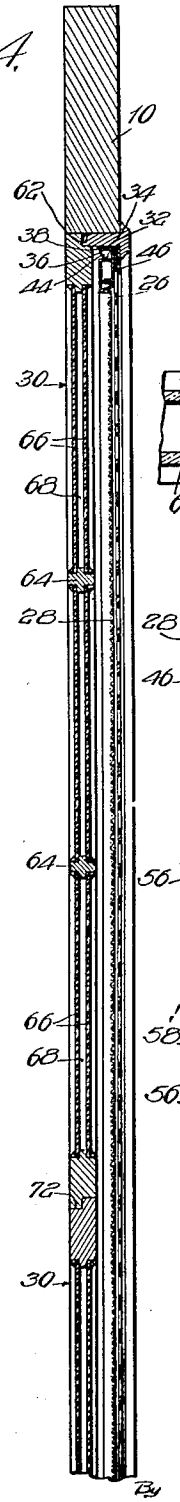


Fig. 3.

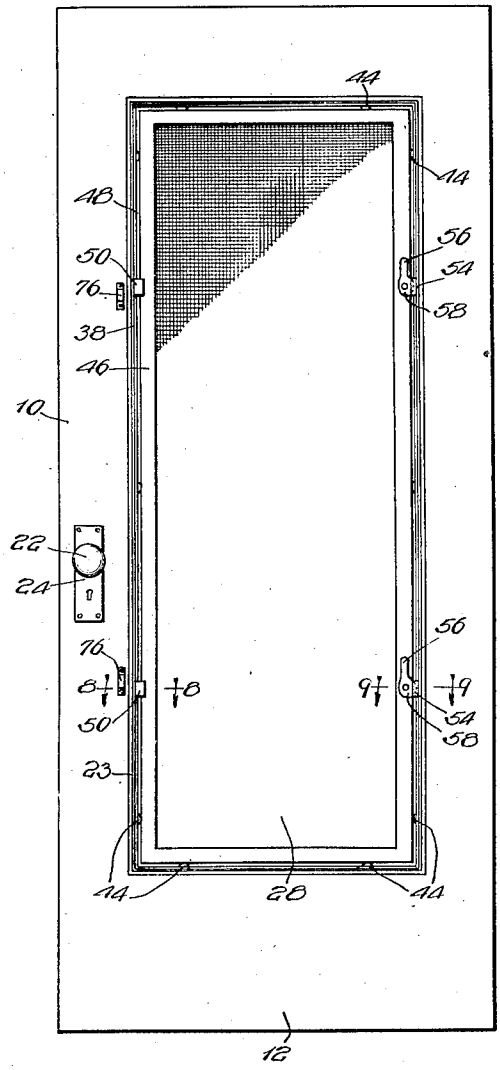


Fig. 5.

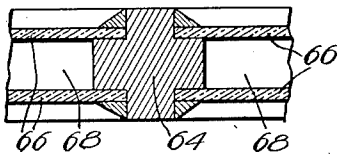
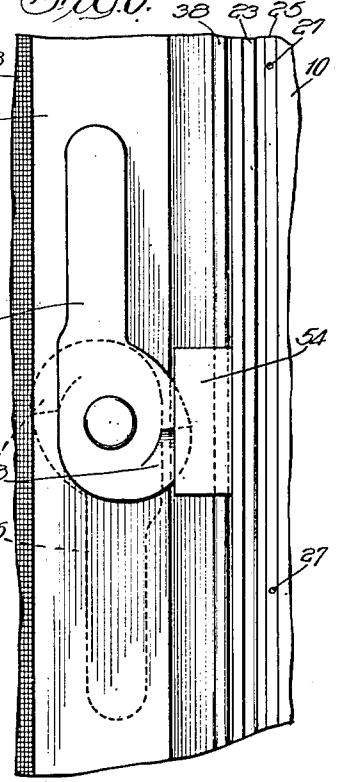


Fig. 6.



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DOOR

Filed April 25, 1924 3 Sheets-Sheet 3

Fig. 7.

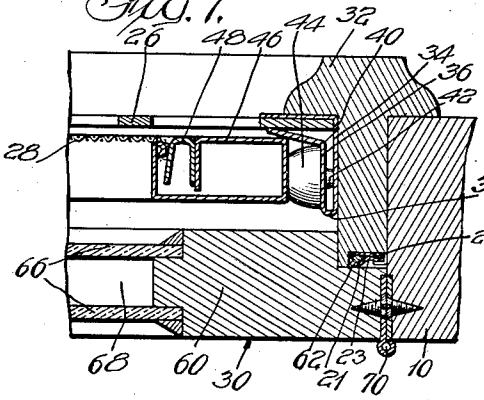


Fig. 8.

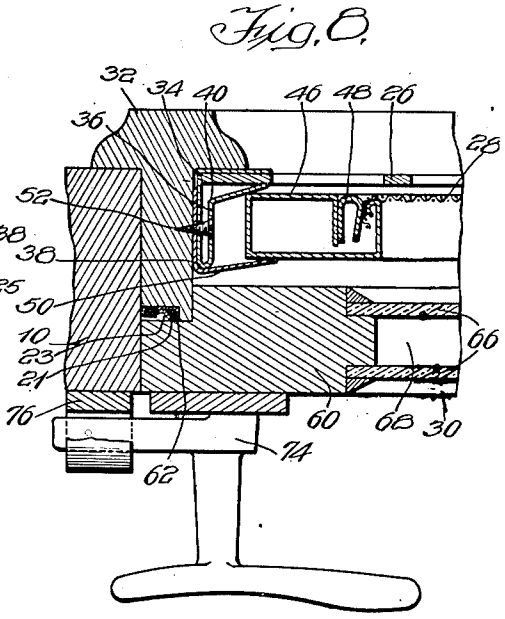


Fig. 9

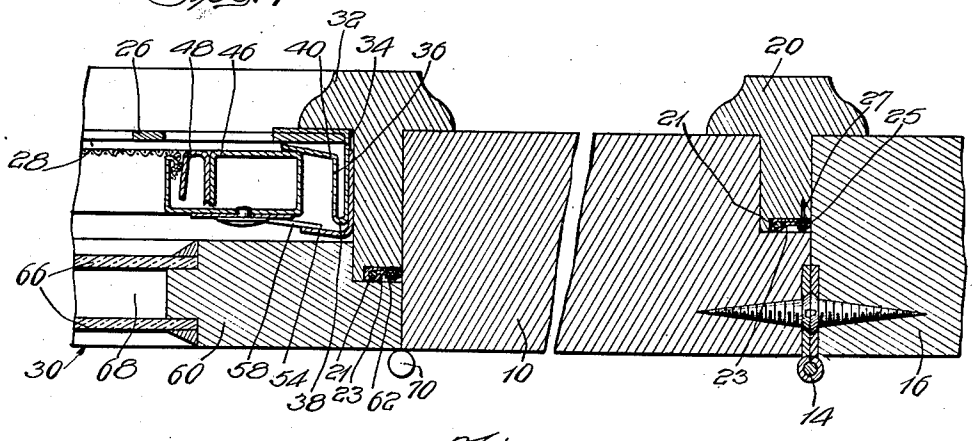
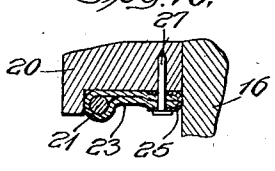


Fig. 10.



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UNITED STATES PATENT OFFICE.

BRADLEY ROE, OF CHICAGO, ILLINOIS, ASSIGNOR TO ROE DOOR AND WINDOW COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DOOR.

Application filed April 25, 1924. Serial No. 708,851.

To all whom it may concern:

Be it known that I, BRADLEY ROE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Doors, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to building structures, and more specifically to improved equipment for the doorways. While the features of novelty of the invention are most useful in connection with the front, rear or other entrance doors of residences or apartments, it will be obvious that many of them are not thus limited.

The front or outside door of an ordinary residence, as commonly constructed at the present time, is one of the least efficient and serviceable portions of the dwelling. Ventilation is obtainable at this point, only by leaving the door ajar, with no practicable means for controlling the amount of opening. Unless entrance is protected by an additional screen door or its equivalent, any such attempt at ventilation opens the house to rodents, cats and unscrupulous individuals. Furthermore, a vertical opening from top to bottom of a doorway is not the best means of ventilation in small amounts.

When a person comes to the door from the outside, the only way for the person inside to deal with them is by opening the door. Much embarrassment arises on this account, especially when a woman is alone in the house, or when the person outside is a house-to-house salesman and the person inside does not wish to continue the conversation, or both. Snap chains are in use for purely protective purposes, but these require the conversation to be carried on in an awkward position, and do not at all prevent the person outside from obstructing the closing of the door in an attempt to continue the conversation. Furthermore, these prior art devices are not only inconvenient in dealing with salesmen, etc., but sadly inadequate for protection against actual criminals.

Most doors are opaque, and frequently open into a hallway that is very dark and uninviting on this account.

Most doors afford inadequate protection in severe weather, and must be supplemented by an additional or storm door. The clearance necessary for the use of two doors is difficult to provide; the additional door and the small shed or housing frequently accompanying the same presents a very unsightly appearance; and entrance to the house through such a shed is both distasteful and doubly inconvenient.

With the foregoing consideration in mind, I have devised the hereinafter described equipment. Its advantages both with respect to the foregoing and other inconveniences, as well as from a manufacturing point of view, will become apparent in detail as the description proceeds.

In the accompanying drawings:

Fig. 1 is an inside and Fig. 2 an outside elevation of one embodiment of the invention;

Fig. 3 is an inside elevation with the inside panels removed;

Fig. 4 is a partial section on line 4—4 of Fig. 1;

Fig. 5 is a detail section on line 5—5 of Fig. 1;

Fig. 6 is an enlarged detail of the locking means for the screen;

Fig. 7 is an enlarged detail section on line 7—7 of Fig. 1;

Fig. 8 is a similar section on line 8—8 of Fig. 3 with the inner panel included;

Fig. 9 is a section on line 9—9 of Fig. 3; and

Fig. 10 is a detail of the weather strip.

In the embodiment of the invention selected for illustration, the door comprises the usual main frame made up of stiles 10 and rails 12 and hinged at 14 to the supporting casing 16. If desired, the hinge edge of the hinge stile may be rabbeted at 18 to provide a weather tight joint with a T-shaped strip 20. The inner edge of the T-

shaped strip may be rabbeted to form a groove receiving a cord 21, encircled by a felt strip 23. The edges of strip 23 are clamped by a metal strip 25 which is fastened in place by tacks 27. The lock stile carries the usual knob 22 and lock 24. It will be observed that the structure so far described, or its equivalent, may be provided without departing from the construction heretofore customary. In place of the paneling heretofore provided, I employ three different barriers; a protecting panel 26, an insect screen 28, and an air barrier 30.

The periphery of the opening defined by the main frame is encircled by a T-shaped strip 32 similar to strip 20. Lattice 26 is received into the inner angle or rabbet of said strips, and held there by suitable clamping means. I have provided an outer angle 34 and an inner angle 36 both formed integrally of one piece of metal with their edges integrally joined at 38. Angle 36 is bent at 40 to less than a right angle, so that as fastening screw 42 is driven home, its free edge will pinch against the edge of the lattice, and clamp the same firmly in place. The head of screw 42 is preferably provided with a rubber bumper or spacer 44 for a purpose which will become apparent later.

The next barrier is screen 28 made up in any suitable way, as by a sheet metal frame 46 rabbeted to receive clamping strip 48 for holding the screen proper in place. Referring more particularly to Figs. 3, 8 and 9, it will be noted that on one side, a pair of clips 50 are provided, having one arm lying under angle 34 and penetrated by wood screw 52 to hold the same securely in place, and the other arm projecting out parallel to lattice 26 to define a slot for receiving frame 46. On the other side of the door similar clips 54 project a slightly shorter distance. The clearances are such, that the side of the screen can be slipped under clip 50, and the other side will clear clip 54. After the screen is moved into position, locking cams 56 may be moved from the dotted line position of Fig. 6 to the full line position, the eccentricity of the cam bringing its edge under clip 54 to lock the screen in place. The portion riding under the retaining clip is struck up at 58 to form a leaf spring pressing against clip 54. This effectively prevents any looseness or rattling of the screen.

The inner barrier 30 completes the closure against air currents, and also provides a thermal barrier of sufficient effectiveness to render a storm door unnecessary in any ordinary climate. This barrier is formed in two portions occupying substantially the upper and lower halves of the total area. The peripheral frame members 60 are peripherally rabbeted at 62 and the shank of strip 32 extends into said rabbet to form a weather seal. Both the frame members 60, and the strips 64 supporting the individual panes of glass 66 are rabbeted on both faces, to support double glass panes, spaced to enclose an air space 68. Suitable hinges are provided at 70, and the upper edge of the lower half of the barrier is rabbeted at 72 both for securing a weather joint, and to require opening of the upper half first. Each half is provided with a suitable latch 74 engaging retainer 76 on the main frame.

It will be apparent that either one or both of the halves of the inner barrier may be thrown wide open for ventilation purposes, securing a much more effective control of ventilation, entirely without opening the house to any undesired access. Similarly, when someone is outside the door, the upper half may be thrown open to converse with the person outside with much less appearance of distrust, and much greater effective protection from annoyance than would be possible with an ordinary door and a lock chain.

Without further elaboration, the foregoing will so fully explain the gist of my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service, without eliminating certain features which may properly be said to constitute the essential items of novelty involved, which items are intended to be defined and secured to me by the following claims.

I claim:

1. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air but not light, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, said second barrier being removable, and said first barrier being in two sections, each pivoted to the same side of the main frame to open and close, the upper section overlapping the lower section where they abut to permit it to be opened with the lower section closed.

2. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, said second barrier being removable, and said first barrier being in two sections, each pivoted to the same side of the main frame to open and close, the upper section overlapping the lower section where they abut to permit it to be opened with the lower section closed.

3. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air but not light, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, said second barrier being removable, and said first barrier being in two sections, each pivoted to the same side of the main frame to open and close.

4. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air but not light, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, said second barrier being removable, and said first barrier being pivoted to the main frame to open and close.

5. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air but not light, a second barrier foraminated but of mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, and said first barrier being in two sections, each pivoted to the same side of the main frame to open and close, the upper section overlapping the lower section where they abut to permit it to be opened with the lower section closed.

6. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air but not light, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, and said first barrier being pivoted to the main frame to open and close.

7. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, said second barrier being removable, and said first barrier being in two sections, each pivoted to the same side of the main frame to open and close, the upper section overlapping the lower section where they abut to permit it to be opened with the lower section closed.

8. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, said second barrier being removable, and said first barrier being in two sections, each pivoted to the same side of the main frame to open and close.

9. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, said second barrier being removable, and said first barrier being pivcted to the main frame to open and close.

10. A door comprising, in combination, a main frame bounding a panel portion, and three barriers in said panel portion, one barrier interrupting air, a second barrier foraminated but of a mesh to exclude insects, and a third barrier having apertures larger but too small for passage of a human hand, said third barrier being fastened permanently in place, and said first barrier being pivoted to the main frame to open and close.

11. A door having, in combination, a main frame, a metal lattice in said frame, clamps receiving and holding the edges of said lattice, said clamps each comprising two angles, one receiving the lattice edge and the other fitted into the first to clamp said edge, said inner angle being resilient and in undistorted form too flat to fit fully into the outer angle, fastening means passing through both angles into said frame, to draw the inner angle in and clamp the whole tightly together, both angles being formed of a single sheet of metal with the legs extending normal to the lattice plane integrally joined at their remote edges, an insect screen, holding clips of angle formation each having one leg laid under said angles and held by said fastening means and the other leg extending back parallel to said lattice and spaced therefrom to define a slot receiving said screen, said clips on one side being spaced from the opposite side by less, and on the other side by more, than the width of said screen, and movable locking means carried by said screen to project across and overlap said shorter clips, the portion of said locking means engaging the clips being resilient and lying at an angle to resiliently wedge the parts tight by the locking movement.

12. A door having, in combination, a main frame, a metal lattice in said frame, clamps receiving and holding the edges of said lattice, said clamps each comprising two angles,

one receiving the lattice edge and the other fitted into the first to clamp said edge, said inner angle being resilient and in undistorted form too flat to fit fully into the outer angle, and fastening means passing through both angles into said frame, to draw the inner angle in and clamp the whole tightly together, both angles being formed of a single sheet of metal with the legs extending normal to the lattice plane integrally joined at their remote edges, an insect screen, holding clips of angle formation each having one leg laid under said angles and held by said fastening means and the other leg extending back parallel to said lattice and spaced therefrom to define a slot receiving said screen, said clips on one side being spaced from the opposite side by less, and on the other side by more, than the width of said screen, and movable locking means carried by said screen to project across and overlap said shorter clips.

13. A door having, in combination, a main frame, a metal lattice in said frame, clamps receiving and holding the edge of said lattice, said clamps each comprising two angles, one receiving the lattice edge and the other fitted into the first to clamp said edge, said inner angle being resilient and in undistorted form too flat to fit fully into the outer angle, fastening means passing through both angles into said frame, to draw the inner angle in and clamp the whole tightly together, both angles being formed of a single sheet of metal with the legs extending normal to the lattice plane integrally joined at their remote edges, an insect screen, and holding clips of angle formation each having one leg laid under said angles and held by said fastening means, and the other leg extending back parallel to said lattice and spaced therefrom to define a slot receiving said screen.

14. A door having, in combination, a main frame, a lattice in said frame, clamps receiving and holding said lattice, said clamps each comprising two angles, one receiving the lattice edge and the other fitted into the first to clamp said edge, said inner angle being resilient and in undistorted form too flat to fit fully into the outer angle, and fastening means passing through both angles into said frame, to draw the inner angle in and clamp the whole tightly together, both angles being formed of a single sheet of metal with the legs extending normal to the lattice plane integrally joined at their remote edges.

15. A door having, in combination, a main frame, a lattice in said frame, clamps receiving and holding said lattice, said clamps each comprising two angles, one receiving the lattice edge and the other fitted into the first to clamp said edge, fastening means passing through both angles into said frame, to draw the inner angle in and clamp the whole tightly together, an insect screen, holding clips of angle formation each having one leg under said angles and held by said fastening means and the other leg extending back parallel to said lattice and spaced therefrom to define a slot receiving said screen, said clips on one side being spaced from the opposite side by less, and on the other side by more, than the width of said screen, and movable locking means carried by said screen to project across and overlap said shorter clips, the portion of said locking means engaging the clips being resilient and lying at an angle to resiliently wedge the parts tight by the locking movement.

16. A door having, in combination, a main frame, a lattice in said frame, clamps receiving and holding said lattice, said clamps each comprising two angles, one receiving the lattice edge and the other fitted into the first to clamp said edge, fastening means passing through both angles into said frame, to draw the inner angle in and clamp the whole tightly together, an insect screen, holding clips of angle formation each having one leg laid under said angles and held by said fastening means and the other leg extending back parallel to said lattice and spaced therefrom to define a slot receiving said screen, said clips on one side being spaced from the opposite side by less, and on the other side by more, than the width of said screen, and movable locking means carried by said screen to project across and overlap said shorter clips.

17. A door having, in combination, a main frame, a lattice in said frame, clamps receiving and holding said lattice, said clamps each comprising two angles, one receiving the lattice edge and the other fitted into the first to clamp said edge, fastening means passing through both angles into said frame, to draw the inner angle in and clamp the whole tightly together, an insect screen, and holding clips of angle formation each having one leg laid under said angles and held by said fastening means, and the other leg extending back parallel to said lattice and spaced therefrom to define a slot receiving said screen.

18. A door having, in combination, a main frame, a lattice in said frame, clamps receiving and holding said lattice, said clamps each comprising two angles, one receiving the lattice edge and the other fitted into the first to clamp said edge, said inner angle being resilient and in undistorted form too flat to fit fully into the outer angle, and fastening means passing through the legs of both angles into said frame, to draw the inner angle in and clamp the whole tightly together.

19. A door having, in combination, a main frame, a lattice in said frame, clamps receiving and holding said lattice, said clamps each comprising two angles, one receiving the lat-

tice edge and the other fitted into the first to clamp said edge, both angles being formed of a single sheet of metal with the legs extending normal to the lattice plane integrally joined at their remote edges, an insect screen, and holding clips of angle formation each having one leg laid under said angles and held by said fastening means, and the other leg extending back parallel to said lattice and spaced therefrom to define a slot receiving said screen.

In witness whereof, I hereunto subscribe my name this 22 day of April, 1924.

BRADLEY ROE.