Aug. 21, 1934. E. E. BENSON 1,970,836

DOOR SHIELD

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Fig. 1.

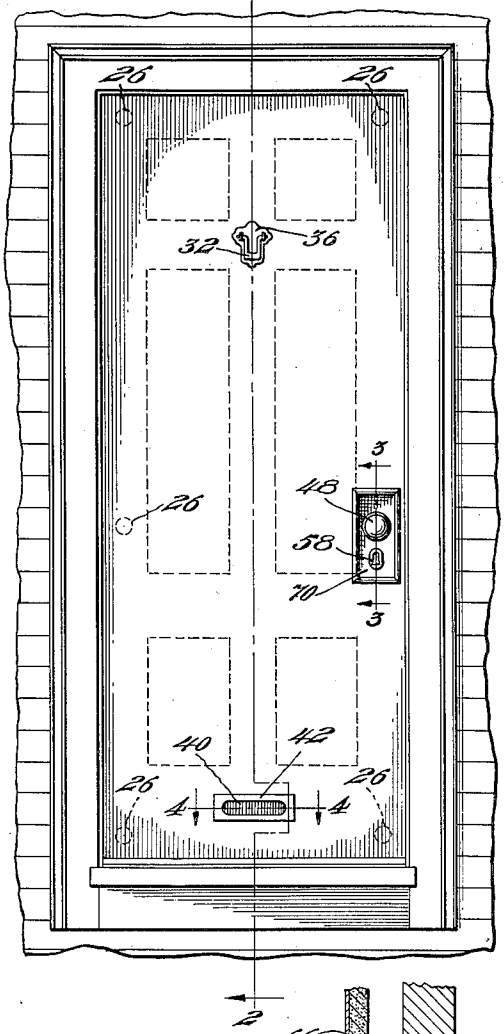


Fig. 2.

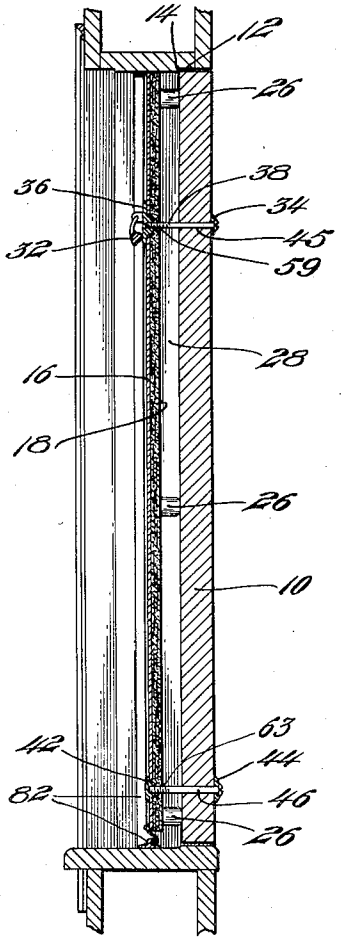


Fig. 3.

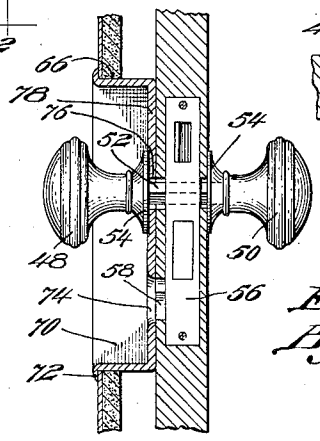
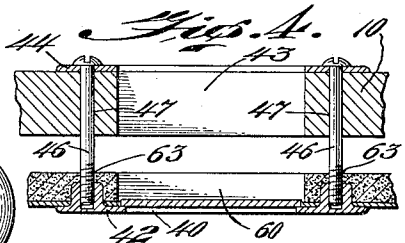


Fig. 4.



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Fig. 5.

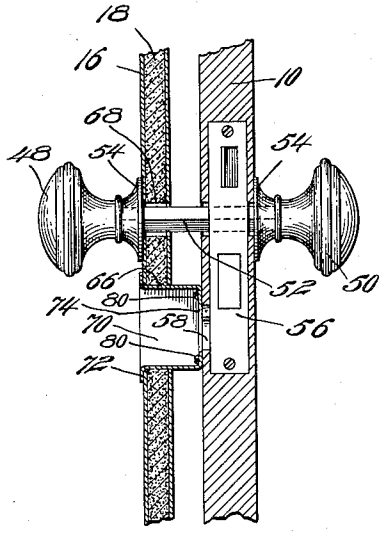


Fig. 6.

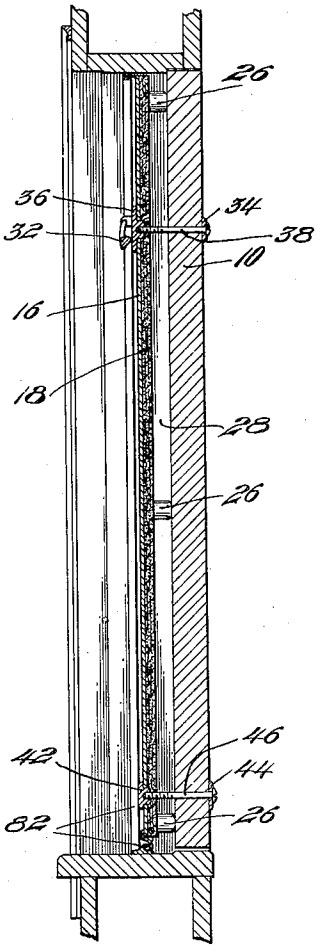
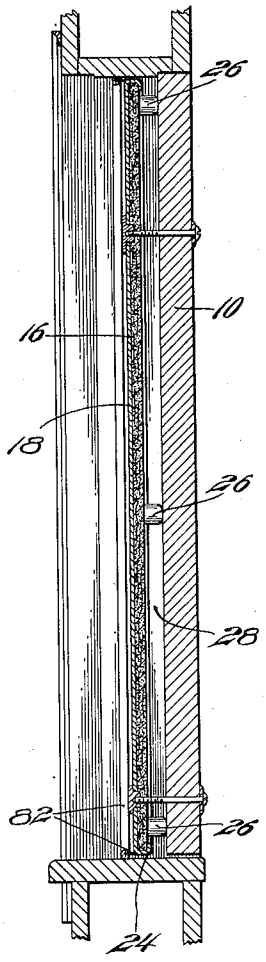


Fig. 7.



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UNITED STATES PATENT OFFICE

1,970,836

DOOR SHIELD

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23 Claims. (Cl. 20—36)

My invention relates to improvements in insulated shields, particularly adapted for weather protection for exterior doors. While I am aware that many houses are today provided with entirely separate storm doors, so far as I am aware, I believe I am the first to provide a detachable storm door or shield, which may be readily attached to, and to pivot with the usual permanent door and which when no longer needed, such as for instance, in summer may be completely removed. I preferably provide a storm shield of substantially the size of the closed permanent door, that is the portion thereof interior of the rabbet when closed and secured to said permanent door so that it may pivot therewith. I also preferably space it from the usual permanent door so as to form an air space insulating portion therein, and I may also provide if desired strips of weather stripping which may be detachably secured at a spaced distance from the permanent door to act as a weather strip or supplemental rabbet for my improved detachable storm shield.

A further feature of my invention relates to the novel method I employ for detachably securing the shield to the permanent door by the means of slight additions to or modifications of the usual hardware trim for a standard door and to provide a door shield which will not interfere with the functioning of the present hardware on the permanent door.

A further feature of my invention relates to the fact that my improved shield may be insulated in any desired manner either with heat or cold resisting or with fire resisting material. It is also apparent that while my invention is primarily adapted for use with the exterior front doors, it may be applied to any door inside or out, for cold, heat, fire, sound or any type of insulating purpose.

These and such other objects of my invention as may hereinafter appear will be best understood from a description of the embodiments thereof as shown in the accompanying drawings.

In the drawings, Fig. 1 is a front elevation of a permanent outside door of a house having my improved storm door shield attached thereto.

Fig. 2 is a vertical sectional view along the line 2—2 of Fig. 1.

Fig. 3 is a vertical sectional view along the line 3—3 of Fig. 1.

Fig. 4 is a transverse sectional view along the line 4—4 of Fig 1.

Fig. 5 is a vertical sectional view similar to Fig. 3 of a modified form of my invention.

Fig. 6 is a vertical sectional view similar to Fig. 2 of an embodiment of my invention employing fire resisting insulation.

Fig. 7 is a vertical sectional view similar to Fig. 2 illustrating a different embodiment of my invention showing an inwardly flanged metal shield having heat insulation held within the marginal flanges thereof.

In the drawings, wherein like characters of reference indicate like parts throughout, 10 generally indicates a permanent door which is hingedly mounted as usual on the frame 12 provided with the usual rabbets or shoulders 14 to limit the outward movement of the door.

16 generally indicates my improved detachable shield. The shield 16 preferably has a layer of insulating material 18 secured thereto. While the insulating layer 18 may be secured to the door in any fashion, as shown in Figs. 1–6, my storm shield may have a layer of insulating material 18 secured thereto by glue or other suitable means built right in the door. The body of said door may thus be constructed of wood or as shown in Fig. 7 may consist particularly for fire insulation purposes of a metal shield 16 and in the embodiment shown in Fig. 7 I have provided said door with the flange 24 projecting inwardly from the ends thereof adapted to overlap and retain the insulating layer 18 shown therein. The shield 16 is provided with the permanent door abutting air space forming projections 26 projecting inwardly therefrom adapted to abut the permanent door and to form the air space 28 between my improved shield and permanent door.

While any suitable means may be provided for detachably securing my improved storm shield 16 to the permanent door 10 so it may pivot therewith, I preferably as shown in my preferred embodiment modify the usual door trim hardware in a manner such that my improved shield may be detachably secured to the door and make it appear as if it were actually part of the door itself and I suitably modify the usual door trim hardware for this purpose. As shown in Fig. 2 the permanent door is provided with the usual letter box slot and knocker. In a door the standard knocker 32 includes the inner and outer knocker plates 34 and 36 respectively and the knocker bolts 38. The letter box slot 40 is usually detachably secured to the door in a similar manner by a front plate 42 and back plate 44 which are secured together by the usual letter box bolts 46 inserted through suitable holes in the door. A standard door includes the outer and inner door knobs 48 and 50 respectively secured on each end of the spindle 52 on opposite sides of the door and each

being provided with the door plates or roses or flanges 54 adapted to abut the door. The door may also be provided with the usual lock set 56 and the usual key-hole. Thus to attach my improved shield 16 to a standard type of door 10, I remove the front knocker plate 34, the front letter box plate 42 and front door knob 48. I preferably provide my improved shield 16 with cooperating knocker bolt holes 59 adapted when my improved shield is attached to the door to be in line with the knocker bolt holes 45 in said door. I also provide in my improved shield 16, the usual letter box hole 60 in line with the letter box hole 43 on the permanent door 10 and with the letter box bolt holes 63 in line with the usual letter box bolt holes 47 on the permanent door. In the embodiment of my invention shown in Figs. 1–4, I also provide my improved shield 16 with a cut-out 66 large enough to receive a hand within so that the hand may grasp the usual front door knob 48 or insert a key within the usual key-hole slot 58. If desired, however, the cut-out 66 may only be, as shown in Fig. 5 of a size to reach the usual key hole 58 and a supplemental door knob spindle hole 68 for an extended spindle may be provided in the shield 16. Thus in attaching my improved shield, it is merely necessary to bring the shield in front of the usual door, place the knocker front plate 36 in front of the door and insert the usual knocker plate bolts 38 which are elongated for this purpose through the front and back knocker plates 36 and 34 and the cooperating holes 59 and 45 in said shield 16 and door 10 respectively. The only modification therefore of the usual hardware trim is the provision of specially elongated bolts 38 for this purpose. Similarly the letter box slot 60 in the shield will come opposite the letter box slot 43 in the main door 10 and the letter box front plate 42 will be inserted in front of the shield 16 at the proper point and the elongated bolts 46 similarly attached through suitable holes 60 and 43 in the front and back letter box plates 42 and 44 respectively and the holes 63 and 47 in the shield 16 and door 10 respectively. The only modification necessary here therefore is also the elongation of the usual letter box bolts 46.

It is thus apparent that I have detachably secured my improved shield 16 to the door 10 by the use of the slightly modified hardware trim at an upper point through the knocker 32 and at a lower point through the usual letter box slot 40. If desired, however, I may alternatively or supplementally secure the shield 16 to the door 10 in the following manner around the usual door knob and key-hole. I may provide a rectangular open box-like member 70 having the flange 72 flaring outwardly from the upper edge thereof and having a key-hole 74 and a door knob spindle hole 76 in the bottom wall 78 thereof. I then insert the rectangular box-like member within the cut-out 66 so that the door spindle 52 projects through the hole 76 and so that the key hole slot 74 will become opposite the key-hole 58 in the door. It is then apparent that the outwardly flaring flange 72 will abut the outer edge of the shield 16. I then secure the front door knob in its usual position and it is obvious that the usual rose 54 thereof will overlap the bottom wall 78 of said box-like member to detachably firmly secure the box-like member to the door by means of the usual door knob rose 54. It is apparent that the only extra member I have provided here for this supplemental attachment is the box-like member 70. Alternatively as shown in Fig. 5, the box-like member may be made only of a size to hold the key in which case it is provided only with the key-hole 74 in the lower wall 78 thereof and may be detachably secured to the door by means of the screws 80. In this instance, if desired, the door knob spindle 52 may be elongated, as shown in Fig. 5 and thus the usual rose 54 of the front door knob 48 will abut the outer wall of the shield 16, thereby holding the shield 16 to the door 10, not only by the rose 54, but also by means of the flange 72 of the box-like member 70.

I also if desired may provide a detachable rabbet for the storm door, which preferably comprises a weather strip 82 detachably secured to the usual door frame at a spaced distance from said permanent door 10 to form storm rabbets for said storm shield.

It is thus obvious that I have provided as a new article of manufacture a detachable door shield adapted to be secured to a door to pivot therewith for any type of heat or cold insulating purpose, such as fire insulation, or weather insulation, which may be readily detachably secured to the usual door in any desired manner and preferably employing the usual standard door trim hardware and in such a manner that it looks substantially the same as the main door itself and one which may be readily attached or removed by a simple carpentry operation well within the skill of the average house-holder.

It is understood that my invention is not limited to the specific embodiments shown and that various deviations may be made therefrom without departing from the spirit and scope of the appended claims.

What I claim is:

1. In a building construction, in combination, a permanently paneled door hingedly mounted on a rabbeted frame and having door trim hardware, a detachable insulating shield of substantially the size of said permanent door inside said rabbets having permanent door abutting air space forming projections projecting inwardly therefrom, means including said door trim hardware modified to detachably secure said shield to said permanent door and weather strips detachably secured to said door frame at a distance from said permanent door rabbets to form rabbets for said shield.

2. In a building construction, in combination, a permanently paneled door hingedly mounted on a rabbeted frame, a detachable insulating shield of substantially the size of said permanent door inside said rabbet and means for detachably securing said shield to the outside of said permanent door at a spaced distance therefrom.

3. In a building construction, in combination, a permanently paneled door hingedly mounted on a rabbeted frame and having door trim hardware, a detachable insulating shield of substantially the size of said permanent door inside said rabbet and means including said door trim hardware modified to detachably secure said shield to said permanent door.

4. In a building construction, in combination, a permanently paneled door hingedly mounted on a rabbeted frame, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having permanent door abutting air space forming projections projecting inwardly therefrom and means for detachably securing said shield to said permanent door.

5. In a building construction, in combination,

a permanently paneled door hingedly mounted on a rabbeted frame, a detachable insulating shield of substantially the size of said permanent door inside said rabbet, means for detachably securing said shield to said permanent door and weather strips detachably secured to said door frame at a distance from said permanent door rabbets to form rabbets for said shield.

6. In a building construction, in combination, a permanently paneled door hingedly mounted on a rabbeted frame, a detachable insulating shield of substantially the size of said permanent door inside said rabbet, means for detachably securing said shield to the outside of said permanent door at a spaced distance therefrom and a supplemental rabbet for said shield.

7. In a building construction, in combination, a permanently paneled door hingedly mounted on a rabbeted frame and having door trim hardware, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having permanent door abutting air space forming projections projecting inwardly therefrom, means including door trim hardware modified to detachably secure said shield to said permanent door and a supplemental rabbet for said shield.

8. In a building construction, a permanently paneled door hingedly mounted on a rabbeted frame and having inside and outside knocker and letter box plates and bolt holes, lock, door knobs and spindles therein, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having a letter box, cut-out and bolt holes, knocker plate bolt holes and a cut-out therein opposite the permanent door lock and door knob and permanent door abutting air space forming projections projecting inwardly therefrom, a rectangular box having an open top and a flange flaring outwardly from the top edge of the side walls thereof, said box having a key-hole and door knob spindle hole in the bottom wall thereof and elongated letter box and knocker bolts extending through the aligned holes in said permanent door and shield and binding the front letter box and knocker plates against said shield to hold said shield against said door and the outer door knob rose abutting the front surface of the bottom wall of said box exterior of said spindle hole to bind said box to said permanent door with the outwardly flaring flange thereof holding said shield against said door.

9. In a building construction, a permanently paneled door hingedly mounted on a rabbeted frame and having inside and outside knocker and letter box plates and bolt holes, door knobs and spindle therein, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having a letter box cut-out and bolt holes, knocker plate bolt holes and a cut-out therein opposite the permanent door knob and permanent door abutting air space forming projections projecting inwardly therefrom, a rectangular box having the open top and a flange flaring outwardly from the top edge of the side walls thereof, said box having a door knob spindle hole in the bottom wall thereof and elongated letter box and knocker bolts extending through the aligned holes in said permanent door and shield and binding the front letter box and knocker plates against said shield to hold said storm shield against said door and the outer door knob rose abutting the front surface of the bottom wall of said box exterior of said spindle hole to bind said box to said permanent door with the outwardly flaring flange thereof holding said shield against said door.

10. In a building construction, a permanently paneled door hingedly mounted on a rabbeted frame and having a lock, door knobs and spindle therein, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having a cut-out therein opposite the permanent door lock and door knob and permanent door abutting air space forming projections projecting inwardly therefrom, a rectangular box having an open top and a flange flaring outwardly from the top edge of the side walls thereof, said box having a key-hole and door knob spindle hole in the bottom wall thereof and the outer door knob rose abutting the front surface of the bottom wall of said box exterior of said spindle hole to bind said box to said permanent door with the outwardly flaring flange thereof holding said shield against said door.

11. In a building construction, a permanently paneled door hingedly mounted on a rabbeted frame and having door knobs and spindle therein, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having a cut-out therein opposite the permanent door knob and permanent door abutting air space forming projections projecting inwardly therefrom, a rectangular box having an open top and a flange flaring outwardly from the top edge of the side walls thereof, said box having a door knob spindle hole in the bottom wall thereof and the outer door knob rose abutting the front surface of the bottom wall of said box exterior of said spindle hole to bind said box to said permanent door with the outwardly flaring flange thereof holding said shield against said door.

12. In a building construction, a permanently paneled door hingedly mounted on a rabbeted frame and having inside and outside knocker and letter box plates and bolt holes, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having a letter box cut-out and bolt holes, knocker plate bolt holes and permanent door abutting air space forming projections projecting inwardly therefrom, and elongated letter box and knocker bolts extending through the aligned holes in said permanent door and shield and binding the front letter box and knocker plates against said shield to hold said shield against said door.

13. In a building construction, a permanently paneled door hingedly mounted on a rabbeted frame and having inside and outside knocker plates and bolt holes, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having knocker plate bolt holes and permanent door abutting air space forming projections projecting inwardly therefrom, and elongated knocker bolts extending through the aligned holes in said permanent door and shield and binding the front knocker plate against said shield to hold said shield against said door.

14. In a building construction, a permanently paneled door hingedly mounted on a rabbeted frame and having inside and outside letter box plates and bolt holes, a detachable insulating shield of substantially the size of said permanent door inside said rabbet having a letter box cut-out and bolt holes and permanent door abutting air space forming projections projecting inwardly

therefrom, and elongated letter box bolts extending through the aligned holes in said permanent door and shield and binding the front letter box plate against said shield to hold said shield against said door.

15. A detachable insulating shield of substantially the size of a permanently paneled door having means thereon for detachable securement thereof to the outside of said permanent door at such a spaced distance as to form an insulating air space therebetween.

16. A detachable insulated shield of substantially the size of a permanently paneled door having a letter box cut-out and bolt holes, knocker plate bolt holes and a cut-out therein opposite the door knob of the permanent door and permanent door abutting air space forming projections projecting inwardly thereof.

17. A detachable insulating shield of substantially the size of a permanently paneled door having a letter box cut-out and bolt hole, knocker plate bolt holes and a cut-out therein opposite the door knob of the permanent door and means thereon for detachable securement thereof to the outside of said permanent door at such a spaced distance therefrom as to form an insulating air space therebetween.

18. A detachable insulating shield of substantially the size of a permanently paneled door having a letter box cut-out and bolt holes, knocker plate bolt holes and permanent door abutting air space forming projections projecting inwardly thereof, and means thereon for detachable securement thereof to the outside of said permanent door.

19. A detachable insulating shield of substantially the size of a permanently paneled door having knocker plate bolt holes and permanent door abutting air space forming projections projecting inwardly thereof and means thereon for detachable securement thereof to the outside of said permanent door.

20. A detachable insulating shield of substantially the size of a permanently paneled door having a letter box cut-out and bolt holes and permanent door abutting air space forming projections projecting inwardly thereof and means thereon for detachable securement thereof to the outside of said permanent door.

21. A detachable insulating shield of substantially the size of a permanently paneled door having a cut-out therein opposite the door knob of the permanent door and permanent door abutting air space forming projections projecting inwardly thereof and means thereon for detachable securement thereof to the outside of said permanent door.

22. A member for use in attaching shields to permanent doors comprising a rectangular box having an open top and a flange flaring outwardly from the top edge of the side walls thereof and having a key-hole and door knob spindle hole in the bottom wall thereof.

23. A member for use in attaching shields to permanent doors, comprising a rectangular box having an open top and a flange flaring outwardly from the top edge of the side walls thereof and having a door knob spindle hole in the bottom wall thereof.

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