April 14, 1959 L. G. CALLEGARI 2,881,611

DOOR CHAIN LOCK ASSEMBLY

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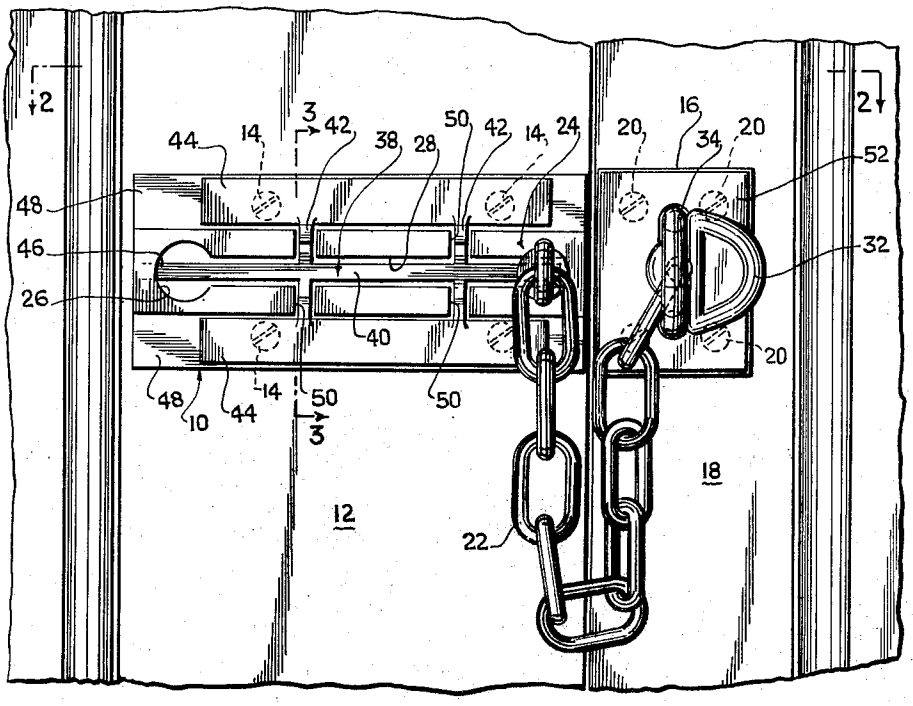


Fig. 1.

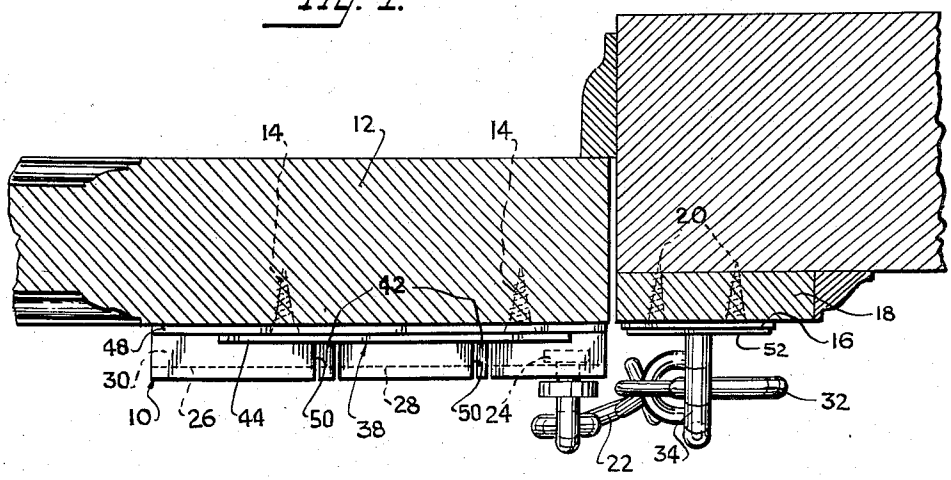


Fig. 2.

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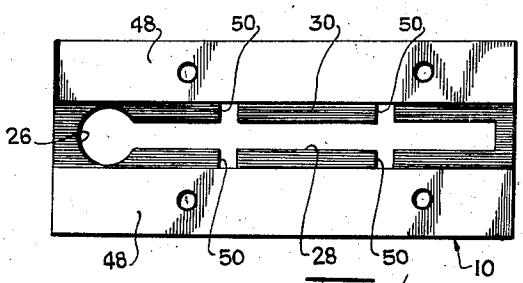


Fig. 4.

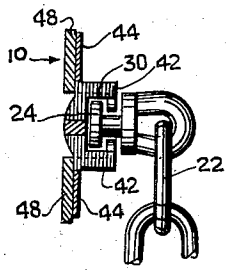


Fig. 3.

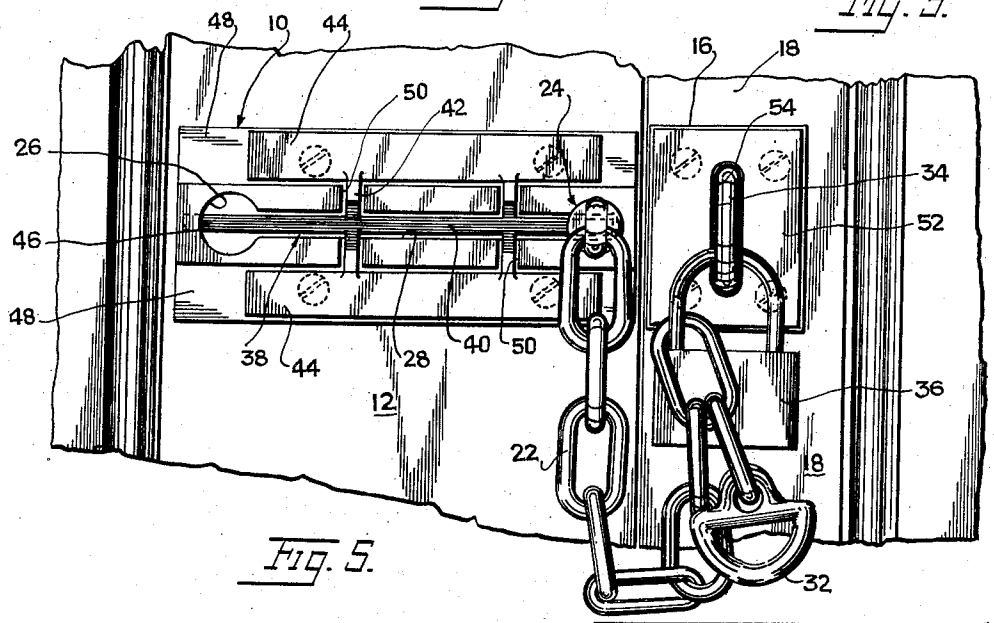


Fig. 5.

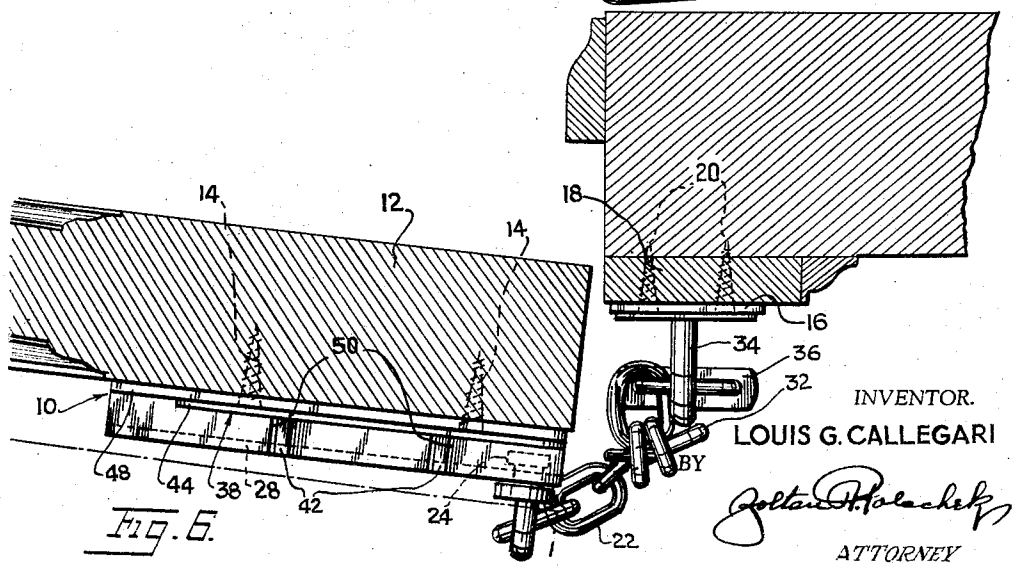


Fig. 6.

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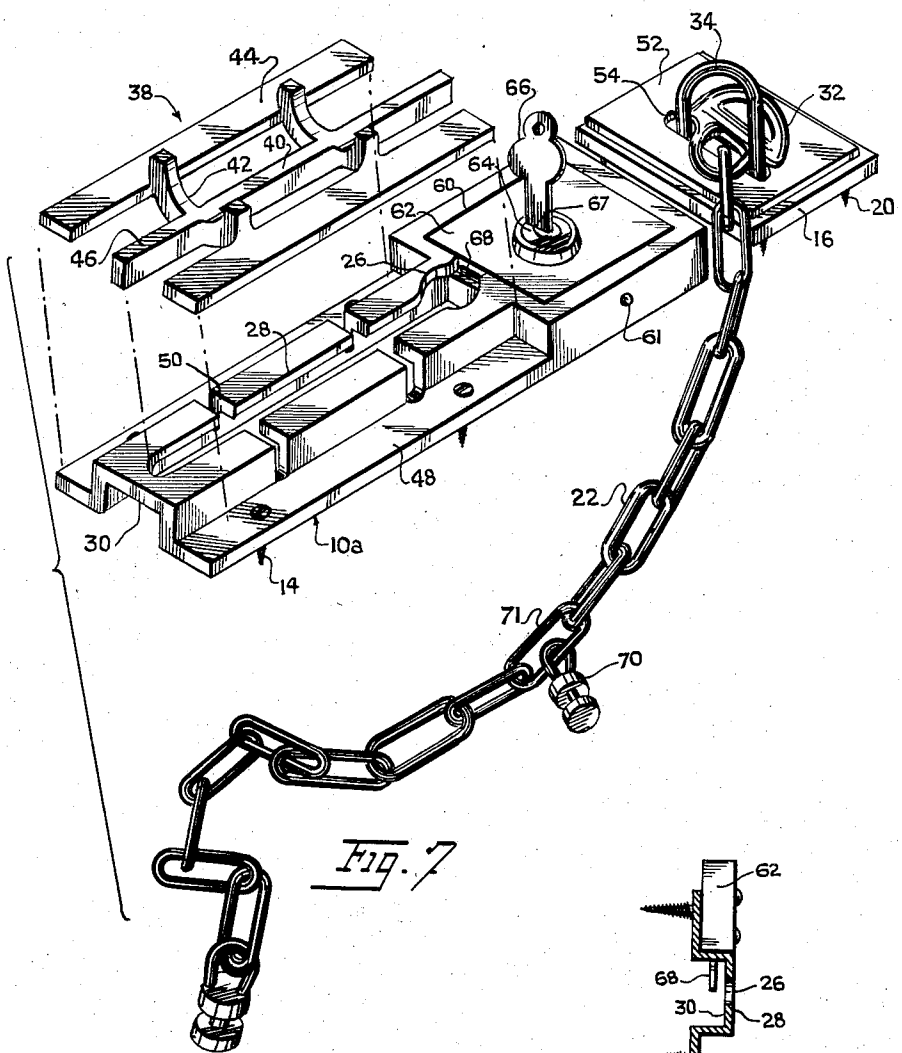


Fig. 7

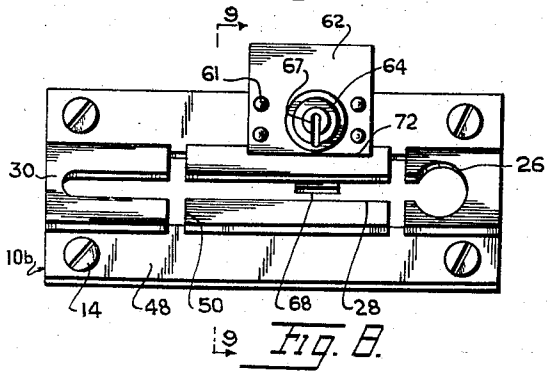


Fig. 8

Fig. 9

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2,881,611

DOOR CHAIN LOCK ASSEMBLY

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Application February 3, 1958, Serial No. 712,838

7 Claims. (Cl. 70—93)

This invention relates to improvements in door-chain assemblies of the character which have for some time been used on the inside of a door to permit partial opening of the door without making it possible for a person to pass through the doorway.

An important object of this invention is the provision of such a door-chain assembly which can be applied to the inside of the door by a person standing at the inside or outside of the door and which may be unfastened by a person standing inside or outside the door and having a suitable key adapted for such unfastening purpose.

Another important object of this invention is the provision of such a door-chain assembly in which one or both of door and door-jamb portions of the assembly are provided with covers held in place by the chain itself and operating as shields for preventing an interloper who may have broken a panel of the door from removing said door or door-jamb portions by removing therefrom screws or other means by which they are secured to the door and door-jamb.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a front or elevational view of a door-chain assembly according to the invention, the assembly being shown in its fastened condition upon a door.

Fig. 2 is a top view of the structure illustrated in Fig. 1, as seen from the line 2—2 of Fig. 1, a related door and door-jamb being shown in section.

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

Fig. 4 is an elevational view of the back of a door member of the assembly, omitting all other parts of the device.

Fig. 5 is an elevational view somewhat similar in character to Fig. 1 but showing the chain assembly as employed with a padlock.

Fig. 6 is a view of the arrangement illustrated in Fig. 5 as viewed from the top and with the door partly open.

Fig. 7 is a perspective exploded view of portions of another form of door chain assembly embodying the invention.

Fig. 8 is a top plan view of a channeled plate and lock embodying another form of the invention.

Fig. 9 is a sectional view taken on lines 9—9 of Fig. 8.

The door-chain assembly illustrated in Figs. 1–6 comprises a door-member in the form of a channeled plate 10 adapted to be fastened to a door 12 by screws 14, a hasp-eye member 16 adapted to be fastened to a door-jamb 18 by screws 20, and a chain 22, one end of which is provided with a head 24 of such size that it can be introduced into an enlarged end or bay 26 of a slot 28 extending longitudinally of and in the bottom of a channel 30 in the plate 10. At the other end of the

chain, the latter includes an enlarged link 32 which is sufficiently large that it cannot pass through the eye 34 of the member 16.

The invention as thus far described is capable of improved functioning irrespective of certain shielding means hereinafter described. Thus, if the chain is to be applied and fastened from the inside of the door, the small end of the chain, having thereon the head 24, is threaded leftwardly (as viewed in Fig. 1) through the eye 34 until the enlarged link 32 comes up against the eye whereby the chain is positively associated with the member 16. Then, the head 24 of the chain is inserted in the bay 26 and then slid from the bay into the narrow part of slot 28, thereby causing the chain to be held firmly in said slot. In the just described condition, the door cannot be completely opened from the outside thereof, for, as the door starts to open, the chain, due to its limited length, causes its head 24 to slide rightwardly in the slot 28 with increasing opening movement of the door.

The assembly, however, may be applied to the door from the outside, as may be desired when the occupant of an apartment or room which may be entered through the door under discussion wishes to leave the apartment through said door yet have the chain function as a locking device which may be opened only by himself or someone else having a key suitable for opening purposes. In utilizing the door-chain assembly in this fashion, the user first slides the chain 22 rightwardly to completely disassociate it from the hasp-eye member 16. Then, he inserts the head 24 of the chain into the slot 28, through the bay 26, and moves said head to the right end of said slot. Then, he passes out through the door and draws the door to an almost closed condition, as indicated, for example, by the dot-and-dash lines in Fig. 6. This almost closed condition should leave sufficient space between the door and the jamb to enable the user to reach through said open space and grasp the chain and apply a U-bolt portion of padlock 36 through one link of the chain and through the eye 34. After having applied the padlock in the manner just described, and closed the U-bolt into the body of the lock, the door may be closed and the chain assembly will serve to keep out intruders.

The user, upon wishing to return through the door, merely opens the door to the extent permitted by the chain, passes his hand through the door with the key to the padlock, opens the padlock and thereby frees the chain, whereupon he can enter the apartment through the door.

In utilizing the device in the manner just described, the user will apply the padlock to that link of the chain which is available for the application of the padlock thereto and which, of all links accessible for application of the padlock, is nearest to the end of the chain which is engaged within the slot 28. Thus, depending upon the length of the chain, the padlock might engage an intermediate link which is quite close to the enlarged link 32, or, the user might be able to engage the padlock with a link which may be three or more links removed from said enlarged link.

Obviously, one first using such a chain, with the padlock associated therewith, may find it somewhat awkward to manipulate but it has been found that one who has manipulated such a chain a few times soon becomes quite expert in using it and has little difficulty in manipulating the padlock through the partly opened door, either for the purpose of applying the padlock or removing it; and such manipulation can be accomplished with reference to a link in the chain which is near enough to the head 24 that the door cannot be completely opened from either side without removing the padlock.

It may be seen from the foregoing that an important

characteristic of the present invention resides in the fact that the chain **24** may be utilized as shown in Fig. 1 but may be completely disassociated from the hasp-eye member **16** before applying it to its use as illustrated in Fig. 5.

Somewhat ancillary to the characteristics hereinbefore set forth in detail, the disclosed door-chain assembly includes means for shielding the screws **14** and **20** from access by an intruder who may have broken a nearby panel of the door with the expectation of reaching through the breach in the panel to remove said screws whereby to open the door. Such shielding means for the screws **14** for door-member **10**, as disclosed in the drawings, include a shield grid **38** having a centrally and longitudinally extending rib or tongue **40** from opposite sides of which extend webs **42** and to the outer extremities of which webs are formed screw-covering strips **44**.

At a time when the chain **24** is completely disassociated from the door-member **10**, a long-end portion **46** of the tongue **40** may be inserted obliquely into the slot **28** to an extent wherein the free end of the long-end portion **46** underlies the bottom wall of the channel **30** at a point leftwardly, or beyond the bay **26**. With the grid **38** inserted in the slot to that extent, the grid may then be moved angularly relatively to the door-member **10** to bring the strips **44** into intimate face-to-face relationship with marginal portions **48** of the door-member **10**, which are the portions of the latter through which the screws **14** extend. It is possible to so move the grid into its just-described intimate association with the door-member **10** because of the fact that the channel **30** of said door-member is formed with transverse slots **50** adapted to accommodate therewithin the webs **42**.

In the just-described intimate relationship of the grid **38** with the door member **10**, there is sufficient space between the tongue **46** and the bottom or front wall of the channel **30** of the door-member to accommodate the head **24** of the chain. Thus, when the grid **38** is in its described intimate association with the door-member **10**, the introduction of the head **24** of the chain into the slot **28** causes the head **24** to function as an abutment upon the front face of the tongue **46** to maintain the grid **38** in its said intimate association with the door-member **10** so that, while the chain is in place in the slot **28**, one cannot gain access to the screws **14** to remove them.

The mentioned shielding means for covering the screws **20** of the hasp-eye member **16** comprises a flat shield plate **52**, formed with a longitudinal slot **54** therein. The plate **52** is of sufficient area to cover completely the heads of all screws **20** and the slot **54** is only slightly oversized with respect to the eye **34**, thereby enabling the plate **52** to be applied upon the hasp-eye member **16** with the latter's eye **34** extending through the slot **54**. When the chain **24** extends through the eye **34**, as in Fig. 1, it is obvious that the shield plate **52** cannot be removed; hence, one cannot gain access to the screws **20** to remove them. Also, when the chain is coupled to eye **34** by means of a padlock, as in Fig. 5, it is likewise impossible to remove the plate **52**, to gain access to the screws **20**.

In the form of the invention shown in Fig. 7, the shielding grid **38** has the same structure as previously described. Plate **10a** has a rectangular recess **60** formed near the end adjacent hasp eye member **16**. Secured in this recess by rivets **61** or the like is a rectangular lock **62** provided with a rotatable cylinder **64**. The cylinder is turnable by a removable key **66** insertable in a slot **67** in the cylinder. The lock is so disposed that upon turning of the key, a rectangular bolt **68** is extended from the lock into channel **30**. If head **24** is engaged in slot **28**, the extended bolt **68** will prevent removal of the head plate **24**. If grid **38** is inserted in slots **28**, **50** and the head **24** is engaged in slot **28**, the turning of the key will extend bolt **68** to prevent removal of both the grid and head.

Chain **22** is sufficiently long so that the lock **62** can be locked and unlocked by a person standing outside the door provided he has the necessary key.

Another head **70** is provided at an intermediate link **71** of the chain. This head may be engaged in slot **28** when it is desired to limit the amount the door is to be opened. The lock **62** cannot be operated by a person standing outside the door when head **70** is engaged in plate **10a**, but the lock can easily be locked and unlocked by a person standing at the inner side of the door. The use of the lock with an intermediate length of chain **22** engaged by plate **10a** and with grid **38** also engaged in the plate, provides a greater measure of security than has hitherto been afforded by conventional door-chain assemblies. An intruder who might be able to reach into a partially open door held by an intermediate length of door chain would be unable to disengage head **70** or unscrew any of screws **14** without unlocking lock **62** to withdraw the bolt **68**. Also as long as any portion of chain **22** extended through the eye **34** of the hasp member, the intruder could not dislodge plate **52** to unscrew screws **20**.

With this chain and double lock arrangement, a person can have the door locked and yet the chain enables the door to be opened sufficiently for good ventilation and for receiving reasonable sized packages. However, it will not permit unauthorized persons to force the door open or to slip through the opening of the door when a housewife receives said package.

In Figs. 8 and 9 lock **62** is shown disposed at an intermediate portion of plate **10b**. The lock is secured to the plate by rivets **61**. An aperture **72** is provided in the side of channel portion **30** through which the bolt **68** of the lock may be extended into the channel. By positioning the lock in this intermediate position, the extent of travel of heads **24** or **70** from the left end of slot **28** can be limited if bolt **68** extends transversely wholly or partially into the channel **30**.

If it is not desired to employ grid **38**, then slots **50** in the channel portion **30** may be omitted. However, in order to obtain the full benefit of the invention wherein access to screws **14** is effectively blocked, the grid **38** should be used. An intermediate portion of one strip **44** of the shield grid **38** may be removed to provide space for positioning of the grid on the plate **10b** without interfering with lock **62**.

This application is a continuation-in-part of my co-pending application Ser. No. 660,102 filed May 20, 1957, now abandoned.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A door-chain assembly comprising a door-member adapted for affixation to a door and having a channel portion with an elongated slot therein, a chain having at one end a head adapted for entry into and retention within said slot, a hasp member adapted for affixation to a door-jamb adjacent said door, said chain being separable from the slot and having its other end engaged by said hasp member, said door-member having a lock mounted thereon, said lock being provided with a bolt extendable into said channel portion to prevent removal of said head from said slot, said door-member being further formed with marginal portions adjacent said channel portion with screw holes in the marginal portions, said channel portion being further formed with transverse slots extending from said marginal portions to

said elongated slot, and a unitary shield grid having a central, longitudinal rib adapted to seat in said channel portion, transverse webs adapted to seat in said transverse slots and screw-covering lateral strips adapted to overlie said screw holes, said head of the chain being insertable into said slot over said rib whereby to hold the shield grid against disassociation from the door member.

2. A door-chain assembly comprising a door-member adapted for affixation to a door and having a channel portion with an elongated slot therein, a chain having at one end a head adapted for entry into and retention within said slot, a hasp member adapted for affixation to a door jamb adjacent said door, said chain being separable from the slot and having its other end engaged by said hasp member, said door-member having a lock mounted thereon, said lock being provided with a bolt extendable into said channel portion to prevent removal of said head from said slot, said door member being further formed with marginal positions adjacent said channel portion with screw holes in the marginal portions, said channel portion being further formed with transverse slots extending from said marginal portions to said elongated slot, and a unitary shield grid having a central, longitudinal rib adapted to seat in said channel portion, transverse webs adapted to seat within said transverse slots and screw-covering lateral strips adapted to overlie said screw holes, said head of the chain being insertable into said slot over said rib whereby to hold the shield grid against disassociation from the door member, and another head secured to an intermediate link of the chain.

3. A door-chain assembly comprising a door-member adapted for affixation to a door and having an elongated slot therein, a chain having, at one end, a head adapted for entry into and retention within said slot, a hasp-eye member adapted for affixation to a door-jamb adjacent said door, said chain being separable from the slot and having an enlarged link at its other end incapable of passing through an eye of said hasp-eye member and the remainder of said chain being freely slidable through said eye member, a slotted plate removably mounted on said hasp-eye member, a padlock having a portion removably engageable in the eye of the hasp-eye member to prevent removal of said plate from said member, said portion of the padlock being a U-bolt, said chain being adapted, in one manner of use, for extension through said eye with its enlarged link opposing removal of the chain from said eye and being adapted in another manner of use, for being coupled to said eye with all parts of the chain disposed exteriorly of said eye and with a link of the chain engaged by said U-bolt.

4. A door-chain assembly comprising a door-member adapted for affixation to a door and having an elongated slot therein, a chain having, at one end, a head adapted for entry into and retention within said slot, a hasp-eye member adapted for affixation to a door-jamb adjacent said door, said chain being separable from the slot and having an enlarged link at its other end incapable of passing through an eye of said hasp-eye member and the remainder of said chain being freely slidable through said eye, said door-member being formed with a longitudinal channel along the bottom of which said elongated slot extends and having marginal portions at opposite sides of said channel with screw holes therein, said door-member, further, being formed with transverse slots extending from said marginal portions to said elongated slot, and the assembly, further, including a unitary shield grid having a central, longitudinal tongue adapted to seat within said channel, transverse webs adapted to seat within said transverse slots, and screw-covering strips adapted to overlie said screw holes, said head of the chain being insertable into said slot, over said tongue, whereby to hold the shield grid against disassociation from the door-member.

5. A door-chain assembly comprising a door-member adapted for affixation to a door and having an elongated slot therein, a chain having, at one end, a head adapted for entry into and retention within said slot, a hasp-eye member adapted for affixation to a door-jamb adjacent said door, said chain being separable from the slot and having an enlarged link at its other end incapable of passing through an eye of said hasp-eye member and the remainder of said chain being freely slidable through said eye, said hasp-eye member having marginal portions with screw holes therein, and the assembly, further, including a shield plate formed with a slot therein and applicable to the hasp-eye member with an eye portion of the latter extending through the slot in the shield plate and with the shield plate intimately overlying the screw holes in the hasp-eye member; portions of said chain, when connected to said eye, being adapted to retain said shield in its said association with the hasp-eye member.

6. A door-chain assembly according to claim 4, said hasp-eye member having marginal portions with screw holes therein, and the assembly, further, including a shield plate formed with a slot therein and applicable to the hasp-eye member with an eye portion of the latter extending through the slot in the shield plate and with the shield plate intimately overlying said screw holes, portions of said chain, when connected to said eye portion, being adapted to retain said shield plate in its said association with the hasp-eye member.

7. A door-chain assembly comprising a door-member adapted for affixation to a door and having a channel portion with an elongated slot therein, a chain having at one end a head adapted for entry into and retention within said slot, said chain being separable from the slot, said member having a lock mounted thereon, said lock being provided with a bolt extendible into said channel portion to prevent removal of said head from said slot, and means adapted to seat in said channel portion beneath said head, said member having marginal portions with screw holes therein, said means being adapted to cover said screw holes.

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