

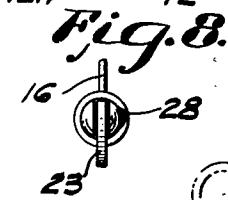
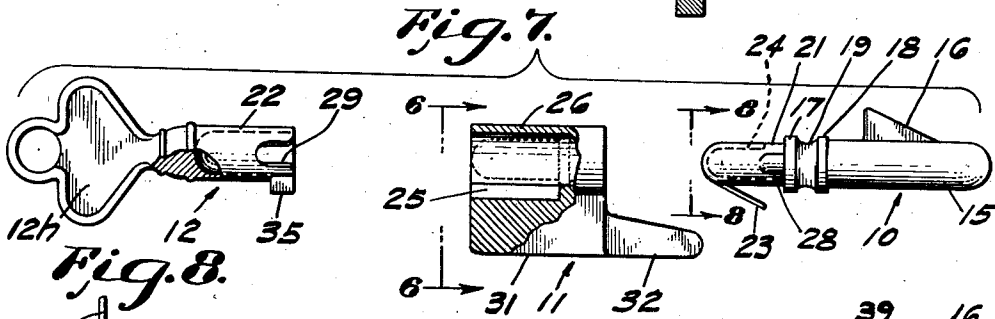
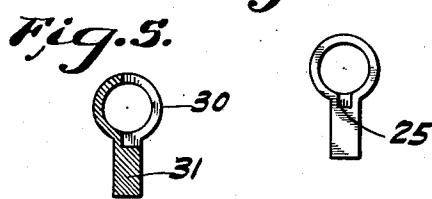
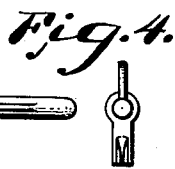
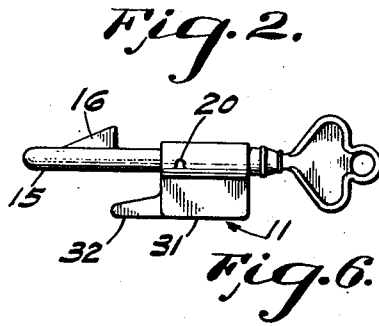
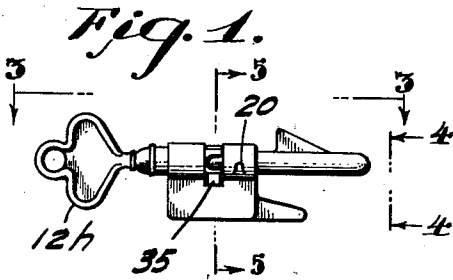
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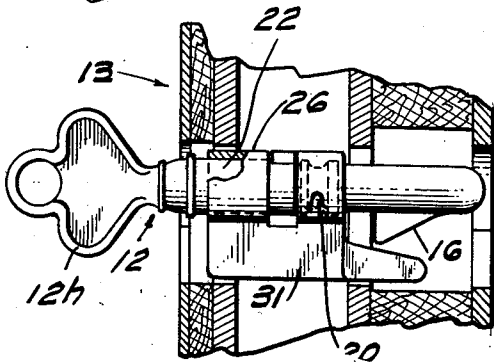
2,561,029

LOCK GUARDING PLUG FOR KEYHOLES

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*Fig. 10.*



*Fig. 9.*

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## LOCK-GUARDING PLUG FOR KEYHOLES

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4 Claims. (Cl. 70-428)

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This invention relates to a lock-guarding plug for keyholes.

More specifically speaking, the invention pertains to a means for plugging the keyholes of locked doors in such a manner as to prevent such doors from being opened by inserting into the lock master or duplicate keys, said plugging means being so constructed that it may be locked within the keyhole, thus preventing its removal except by persons having an extra key which is operable both to lock the device within and to remove it from the keyhole.

Although it is not broadly new to provide a keyhole plugging device, yet there remains room for making important improvements in devices of this kind.

Accordingly it is an object of this invention to provide a simpler device of the above stated kind and one which can be manufactured at a lower cost.

A more specific object is to provide a keyhole plugging device which cannot readily be tampered with and yet one which dispenses with the tumblers heretofore deemed necessary to safeguard against its removal by unauthorized persons.

Other objects, advantages and features of invention will hereinafter appear.

Referring to the accompanying drawing, which illustrates a preferred embodiment of the invention,

Fig. 1 is a side elevation of the keyhole plug provided by this invention, the key for inserting and removing said plug being shown applied thereto.

Fig. 2 is an elevation viewing the structure of Fig. 1 from the opposite side. Both in Fig. 1 and in Fig. 2 the plug is shown in the keyhole-plugging position.

Fig. 3 is a plan view of the structure shown in Fig. 1 looking thereat from the plane indicated by line 3-3 on the latter view.

Fig. 4 is an end elevation of the structure shown in Fig. 1, looking thereat from the plane indicated by line 4-4 on the latter view.

The remaining views are on a larger scale, Fig. 5 being an enlarged cross section of the plug carrier, per se, the plane of section being indicated by line 5-5 on Fig. 1.

Fig. 6 is an elevation looking at the outer end of the keyhole plug, separately shown, from the plane indicated by line 6-6 on Fig. 7.

Fig. 7 is a side elevational and partly sectional view showing the three parts of the device in an exploded relation.

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Fig. 8 is an end elevation of the inner member of the locking plug looking thereat from the plane of line 8-8 of Fig. 7.

Fig. 9 is a view showing in full lines in vertical section a fragment of a lock casing within the keyhole of which the device is positioned, as shown in side elevation, together with the key by which it is operated, said device being shown in the locked-in position, preparatory to withdrawing the key to the dotted line position of this view.

Fig. 10 is a reproduction of the full line portion of Fig. 9, except that the device is shown turned to its unlocked position, preparatory to being withdrawn from the keyhole by means of its key portion. Also, in this view, a fragment of the barrel portion of the device is broken away in order more clearly to show said key portion.

Referring in detail to the drawing, the device, as well shown in Fig. 7, comprises three main parts, a keyhole plug proper 10, plug carrier 11 and key member 12, the latter having a handhold portion 12 $\alpha$  and being utilizable to lock the other two members of the device within and to remove them from the keyhole of the conventional lock structure 13, shown in a fragmentary manner in Figs. 9 and 10.

Said plug proper 10, separately shown in the right hand portion of Fig. 7, comprises a cylindrical stem 15 carrying, preferably integral with it, a locking tongue 16 which is shaped as an elongated right angular triangle the base of which longitudinally abuts one side of said stem, the inclined side of the triangle sloping down to the stem adjacent to the outer end of the latter.

Around the stem 15 extends a flat-faced bead 17 which is located about half way between the aforesaid tongue 16 and the outer or key-engaged end of said stem, and spaced slightly away from said bead toward said tongue is a second bead 18 of the same diameter as said bead 17, said beads being provided so as to afford between them a circumferential channel 19 along which travels an internal retaining lug 20 of the aforesaid carrier 11, so that a relative turning movement is permitted between the members 10 and 11 without it being possible to separate them.

Beyond its aforesaid beaded portion the stem 10 has a diametrically reduced end portion 21 over which is fittable the barrel portion 22 of the aforementioned key 12. Said portion 21 is longitudinally grooved around its end and along diametrically opposite sides to receive a wire spring 23, one end of which at times tends to spring out of the groove 24 provided therefor

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into the position shown in Fig. 7 to engage a longitudinal groove 25 within the carrier member 11, thus preventing the relative rotation of said members 10 and 11 except when the insertion of the key 12 within the barrel 26 causes the free end portion of said spring to seat in the groove provided therefor.

The plug proper carries a radial rise 28 adjacent to its bead 17, said rise being sufficiently small to permit the barrel 22 of the key 12 to be telescoped over the plug portion 21, but being sufficiently prominent to cause the rotation of said key to rotate also the plug 10 when a notch 29 in the end of the barrel 22 of the applied key is fitted around said rise. The lateral extent and circumferential location of said rise will be varied in different keys made by the manufacturer, so that no one key can be used to put into place and remove the different designs of the device.

The barrel 26 of the carrier 11 has its mid-length portion semi-circularly cut away at 30 and from said barrel extends radially and longitudinally a downwardly directed wing 31, which supports the device when within the lock structure 13. From one end of the outer side of said wing extends a tapered projection 32. The aforementioned groove 25 of the carrier member 11 occupies the greater part of the length of the inner side portion of said wing 31.

The key 12 is shown provided, at the open end of its barrel portion, with an external lug 35 which is insertable into the aforesaid carrier groove 25 with a working fit.

In Figs. 9 and 10 the conventional lock casing structure 13 is shown having a face portion 27 provided with a keyhole 38, and with an interior vertical partition 39 having through it a slot 40 the length of which extends vertically.

In manufacturing the device, after the plug proper 10 and its carrier 11 have been made the former will be fully inserted into the latter and then, preferably by the use of a mechanically operated punch, the barrel 26 of the carrier will be indented at the proper point to produce internally thereof the aforesaid lug 29 which cooperates with the channel 19 around the plug to keep the latter in a rotatable but non-withdrawable relation to the keeper member 11.

In operating the device the user thereof will first rotationally adjust the assembled plug 10 and its carrier 11 to the position shown in Figs. 1 and 2 wherein the tongue 16 and wing 31 occupy diametrically opposite positions. After this has been done, he will fully insert the key 12, which would otherwise be impossible, for the rotational position of the key during insertion is determined by the necessity of its lug 35 registering with the groove 25 of the carrier 11, and the rise 28 on the plug proper must be so positioned as to enter the key notch 29 or else the key cannot be fully inserted. As the key nears its fully inserted position it swings the free end portion of the wire spring 23 out of the groove 25, thus freeing the plug 10 for rotation in relation to its carrier 11, and at the same time causing the key notch 29 to embrace the rise 28 on the plug. Thereupon, after giving the key 12 a half turn, thus bringing the tongue 16 to the same downwardly directed position as the wing 31, using said key as a handle, he will insert the device into the keyhole from the inside of the room to be guarded against intruders, and after the device has been inserted to the position shown in Fig. 10 he will give the key a reverse half turn thus bringing the tongue 16 of the plug to the upwardly directed position

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shown in Fig. 9, in which position said tongue will cooperate with the part of the lock casing partition 39 above the slot 40 to prevent an intruder, stationed outside the door from displacing the device from the keyhole. The key 12 may or may not be left within the device until it is desired to remove the latter, which can be done after the key is semi-rotated back to its original position; but if the key is removed the wire spring 23 will spring out into the groove 25 of the carrier 11 and will positively prevent any intruder from rotating the plug proper 10 to a position which will turn its tongue to the unlocked position. When the tongue 16 is directed toward the same side of the wing extension 32 said tongue is in a guarded condition, which makes the device more compact and a better article to carry in the pocket.

I claim:

1. A key operable key hole guard comprising a plug proper of a generally cylindrical shape having a radially projecting locking tongue adjacent to one of its ends, said plug being diametrically reduced throughout its opposite end portion and between said two end portions having a channel around it, said plug also having a radial rise on one side of its said diametrically reduced portion, a carrier for said plug, said carrier surrounding in an outwardly spaced manner said diametrically reduced portion of said plug and fitting around said channeled part thereof, said carrier having an internal projection which enters said channel thus preventing separation of the plug and carrier while permitting them to turn in relation to each other, said carrier having a radial longitudinally extending wing, a portion of which is positionable diametrically opposite to the aforesaid locking tongue when the device is locked within a keyhole, and a key having a handhold at one end and an open barrel at its opposite end fitting with a rotational fit within said carrier and around said diametrically reduced portion of said plug, said key having an external lug adjacent to the open end of its barrel and said carrier having an internal longitudinal groove to admit said lug and a cut-out portion for said lug to unobstruct turning of the inserted key, the plug proper carrying a wire spring with an end portion biased toward said groove, whereby the end portion will enter said groove and thus lock the plug and carrier against relative rotation when the key is withdrawn, the insertion of said key forcing said spring end out of said groove, the barrel portion of said key having a notch in its open end which, when the key is fully inserted, engages the aforesaid radial rise on the plug proper and renders the key usable to turn the plug proper to a locking position while the latter is within a keyhole.

2. The subject matter of claim 1, and the aforesaid diametrically reduced end portion of the plug proper having a groove extending across its end and longitudinally along its adjacent diametrically opposite sides, said groove seating the aforesaid wire spring.

3. The subject matter of claim 1 wherein the cut-out portion for said lug in the carrier extends through an angle of one hundred and eighty degrees to permit a half turn of the fully inserted key when the latter is turned to bring the locking tongue of the plug to a position diametrically opposite to the wing of the carrier.

4. A key operable key hole guard comprising an elongated plug having a longitudinal groove in a side thereof and a radial locking tongue, a

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wire spring normally in part contained in said groove, a part of said spring tending to spring out from said groove, a carrier having a barrel surrounding the part of said plug carrying said groove and spring, said barrel having a longitudinal internal groove into which said spring may spring out into, at times to lock said carrier and plug against relative rotation, and a key carrying at one end an open barrel telescoping over the part of said plug furnished with said spring holding the latter retracted to render said plug rotatable within the barrel of said carrier, said key having an external lug which travels along said groove of said carrier during the insertion of the key, said plug having a rise on one side and said key having in its end a notch fitting around said rise to lock said key rotationally to said plug preparatory to using said key to turn

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said plug in carrier, and said carrier having an open side wall to allow a clearance for said lug when the key is rotated, said key being locked to said carrier except when said lug registers with said groove of the carrier.

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#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

| Number    | Name         | Date           |
|-----------|--------------|----------------|
| 87,714    | Shepardson   | Mar. 9, 1869   |
| 1,292,696 | Brickley     | Jan. 28, 1919  |
| 1,534,745 | Stapleton    | Apr. 21, 1925  |
| 1,728,065 | Komarcsevits | Sept. 10, 1929 |