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1,533,343

S. SEGAL

LOCK

Original Filed Aug. 10, 1921

Fig. 1.

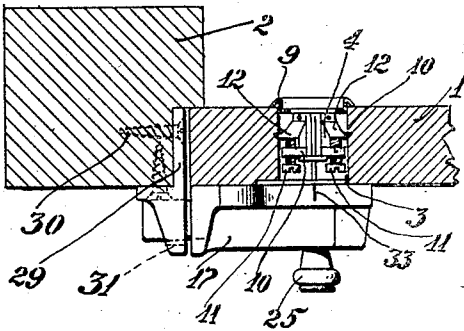


Fig. 2.

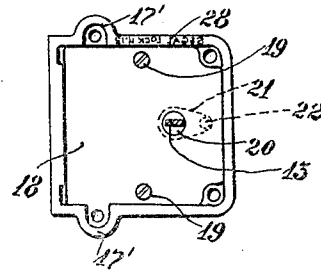


Fig. 3.

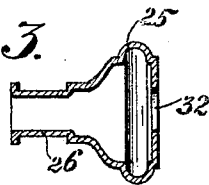


Fig. 4.

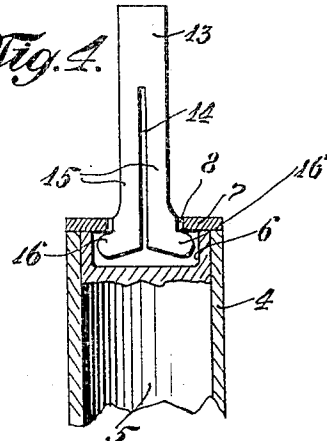


Fig. 9.

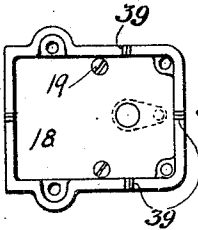


Fig. 5.

Fig. 6.

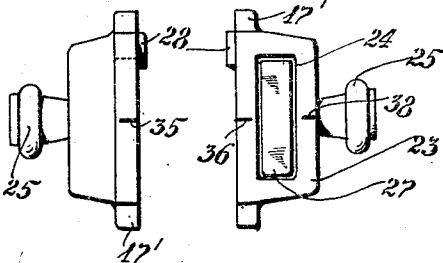


Fig. 7.

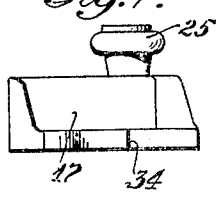
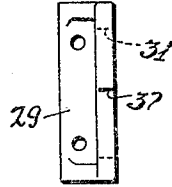


Fig. 8.



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 By his Attorneys
Townsend & Becker

UNITED STATES PATENT OFFICE.

SAMUEL SEGAL, OF NEW YORK, N. Y., ASSIGNOR TO SEGAL METAL PRODUCTS COMPANY, INC., OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

LOCK.

Original application filed August 10, 1921, Serial No. 491,100. Divided and this application filed May 10, 1922. Serial No. 559,712.

To all whom it may concern:

Be it known that I, SAMUEL SEGAL, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to locks and more particularly to that class of locks known as "rim" locks operable preferably by a pin tumbler mechanism, and it has for one of its objects the production of a lock casing having novel means whereby the proper place on the door or other closure to which the lock is applied may be easily determined and marked for forming or boring a hole for reception of the cylinder or pin tumbler mechanism.

A further object of the invention is the production of a lock, the casing of which shall be supplied with raised and preferably sharpened letters or words forming insignia which will be impressed on or will bite into the wood of the door or closure to which the lock is applied, which insignia shall serve as a permanent advertisement cut into the door when the lock casing is applied to the door, to assist in preventing movement or displacement of said casing.

A still further object of the invention is the production of a detachable and novel operating spindle adapted to connect together the key plug of the lock and the locking mechanism within the casing whereby installation of the lock is facilitated irrespective of the thickness of the door.

Still other and further objects and advantages of the invention will appear from the accompanying description, the invention consisting in the novel parts and combinations thereof hereinafter more particularly described and then specified in the claims.

In the drawing:

Fig. 1 is a plan view of the lock as applied to a door.

Fig. 2 is a rear elevation of the lock casing.

Fig. 3 is a section taken through the operating knob.

Fig. 4 is a front elevation of the connecting spindle.

Fig. 5 is an end view of one end of the lock casing.

Fig. 6 is an end view of the other end of the lock casing.

Fig. 7 is a bottom plan view of the lock casing.

Fig. 8 is an end view of the keeper.

Fig. 9 is a view similar to Fig. 2 but of a modification.

Referring to the several figures of the drawing:

1 indicates a door, preferably of the swinging type, and 2 the door frame. 3 indicates an annular opening extending through the door for receiving a conventional form of pin tumbler lock cylinder 4 carrying therein a key plug 5 which is provided, as ordinarily, with a slot or opening 6 in the rear end thereof (see Fig. 4). 7 indicates an end plate which is fastened to said key plug by suitable screws (not shown) and which is also provided with a slot 8 therein communicating with said opening 6. The said plate 7 engages the end or edge of the cylinder 4 and prevents forward withdrawal of said key plug through said cylinder. 9 indicates the usual escutcheon carried on the forward end of the cylinder 4 and engaging the face of the door while 10 indicates perforated ears which are preferably integral with said cylinder and which are provided with suitable screws 11 adapted to be threaded there-through. The said cylinder has spreading prong members 12 hinged thereto which are adapted to be spread outwardly by operation of the screws 11 and to bite into the wall of the opening 3 to lock the cylinder from withdrawal from said opening and in proper position therein.

13 indicates my novel connecting spindle which operatively connects the key plug and the locking mechanism within the lock casing to actuate said locking mechanism when a key is inserted in the plug from without the door and the key is rotated to rotate said plug and effect a consequent rotation of said spindle. As is manifest, the length of the spindle used varies depending upon the thickness of door to which the lock is applied as well as on other conditions. In most cases it is now necessary to provide a spindle of long length which must be cut off to the proper length which is objectionable. In other cases at the present time sev-

eral spindles of varying lengths are supplied with the lock which spindles are provided with headed ends. To fasten or attach a spindle of this character to the key plug, after the spindle of the proper length has been chosen, it has been necessary to remove the end plate 7 and insert the spindle through the slot 8 so that the head thereof will be received within the opening 6 and may not be drawn through the slot 8.

By means of my invention it is unnecessary to remove the end plate to connect the spindle to the key plug or to disconnect the same therefrom and the spindle may be detachably snapped into operative position with little or no effort. The spindle 13 is provided with a slot 14 forming spring arms 15 having rounded or cam ends or heads 16. Several spindles of varying lengths are supplied with the lock and the one of proper length chosen depending on the thickness of the door to which the lock is applied. The said spindle may then be detachably connected to the key plug with expedition and facility by insertion of one of the heads 16 through the slot 8 and into the opening 6 and the pressing of the cam surface of the other head against the end wall of said slot to force the spring arms 15 together, thereby permitting said other head to be forced with a snap action through said slot 8 and into the opening 6 as indicated in Fig. 4. The spindle is thus operatively and detachably connected to said key plug and may be removed therefrom only by lateral pressure applied thereagainst to again force the spring arms 15 towards each other and permit one head 16 to first be withdrawn from the slot 8 and then the other head thereof.

The lock casing containing the locking mechanism is indicated at 17 and is mounted on the door by means of suitable screws (not shown) extending therethrough and through perforated lugs 17' with which said casing is provided. When so mounted the end of the casing is preferably flush with the door edge as shown in Fig. 1. Said lock casing is provided with a rear cover plate 18, detachably secured thereto to hide and protect the locking mechanism by suitable screws 19. Said cover plate is provided with an annular opening in which a slotted rotatable plate 20 is non-detachably mounted, the slot of which is adapted to have extend therethrough the end of the operating spindle 13 (see Fig. 2), whereby rotation of said spindle will rotate said plate 20. The inner side of said plate 20 has an actuating finger 21 secured thereto and rotatable therewith and it is provided with a transverse pin 22 fastened to the end thereof and adapted to actuate the lock mechanism. The end wall 23 of the casing 17 is provided with a slot 24 therein.

Mounted in the front wall of the casing

on the inside of the door is a hollow operating knob 25 the hollow shank of which is indicated at 26 and which is rotatably supported within the casing in any desirable manner forming no part of my present invention. The said shank is operatively connected with the interior mechanism whereby rotation of the knob 25 will project a bolt 27 out of the slot 24 of the casing or retract the same within the casing depending on the direction of rotation of the handle. Likewise the bolt may be actuated by means of the proper key inserted within the plug 5 from without the door, the pin 22 being operatively connected with the interior mechanism as previously described.

I have indicated at 28 raised and preferably sharpened letters or other insignia formed on the edge of the lock casing which, when the casing is screwed to the face of the door, are adapted to bite into the wood of the door and more effectively hold the casing against movement or displacement. These letters leave an impression in the wood of the door which may in some cases form an advertisement for the lock maker which is discernible if the casing is removed for any reason.

29 indicates the base of the keeper forming an angle piece which is fastened to the edge of the door frame by suitable screws 30. The body of said keeper which is preferably integral with said base is provided with an opening 31 adapted to receive the bolt 27 to lock the door against opening.

When the position that the lock casing is to be screwed or otherwise fastened on the door has been chosen, it is necessary that the annular opening 3 in the door for receiving the lock cylinder be bored or made at the proper relative location as respects the lock casing so that the spindle 13 will be in direct alignment with the slot in the plate 20. The proper location of the opening may be accurately determined by supplying the hollow knob 25 centrally thereof with an opening 32 (see Fig. 3) in alignment with the slot of the plate 20. The lock casing is then held on the door in the desired position and a sharp pointed instrument inserted into the opening 32, through the hollow knob 25, through the shank 26 thereof and through the slot of the plate 20 and an impression marked on or dented in the door by said tool which impression will be the center of the annular opening for the cylinder. By this means the annular opening for the cylinder mechanism may be accurately made in the door at the proper location irrespective of the chosen position of the lock casing and the parts of the lock, when it is mounted, will have the proper relative position without the necessity of making many measurements which it is usually customary to make to attain the same results.

I may also, consistently with my invention, secure the results just described by other novel means. Referring to Figs. 1, 5, 6 and 7, the upper wall adjacent the rear side of the casing is provided with a mark 33 in vertical alignment with the slot in the rotatable plate 20 and the lower wall of the casing adjacent the rear side is also provided with a mark 34 adjacent the rear side. Also the casing adjacent the rear side has one end thereof provided with a mark 35 and the other end with a mark 36, both in horizontal alignment with the slot in said plate 20. The casing is held on the door in the position elected and marks are made on the door immediately adjacent and in alignment with the marks 33 to 36 inclusive just described. The vertical marks on the door are connected together by a pencil line as are the horizontal marks and the intersection of the two lines determines the center of the annular opening to be bored or made for reception of the cylinder mechanism.

For properly mounting the keeper on the door frame in proper position and in alignment with the lock casing, I have provided the edge of the body of the keeper with a mark 37 centrally located. The end of the lock casing adjacent the keeper is provided with a mark 38 centrally thereof and adjacent the outer wall. When the lock casing has been mounted on the door, the keeper is held on the edge of the door with the mark 37 thereof in horizontal alignment with the mark 38 on the lock casing and is then screwed or fastened to the door frame thereby insuring its proper relative position as respects the lock casing on said door frame.

In the modification illustrated in Fig. 9, instead of employing marks on the casing similar to the marks 33 to 36 inclusive previously described, I prefer to provide the rear edge of the casing with four sharp prongs 39 similarly located as the marks hereinbefore described which will leave an impression in the wood of the door when the casing is pressed thereagainst. These impressions may then be employed to determine the center of the annular opening for the cylinder mechanism in an obvious manner.

This application constitutes a division of my prior application for patent for lock, filed Aug. 10, 1921, Ser. No. 491,100.

What I claim as my invention is:—

1. In a lock, a key plug, and an operating spindle adapted to be detachably connected to said key plug by a spring action.
2. In a lock, a key plug provided with an opening therein, and an operating spindle adapted to be inserted in said opening by a spring action to detachably connect said spindle to said plug.
3. In a lock, a key plug, an operating

spindle having a slot therein, and a head on said spindle adapted to be detachably connected to said key plug.

4. In a lock, a key plug, an operating spindle having a slot therein forming arms, and heads on said arms adapted to be detachably connected to said key plug.

5. In a lock, a key plug, an operating spindle having a slot therein forming spring arms, and heads on said arms having cam edges, said heads being adapted to be detachably connected to said key plug.

6. In a lock, a cylinder, a key plug having an opening therein, a slotted end plate engaging said cylinder and fastened to said key plug, and an operating spindle adapted to be inserted through the slot of said end plate without removal thereof to detachably connect said spindle to said key plug.

7. In a lock, a cylinder, a key plug having an opening therein, a slotted end plate engaging said cylinder and fastened to said key plug and enclosing said opening, and an operating spindle provided with a slot therein forming spring arms and adapted to be inserted through the slot of the end plate without removal thereof to detachably connect said spindle to said key plug.

8. In a lock, a lock casing containing the locking mechanism, means for actuating said locking mechanism, marking means on the upper and lower walls of said lock casing in vertical alignment, and additional marking means on the end walls of said casing in horizontal alignment, whereby the location for mounting said actuating means in the proper relative position as respects said lock casing is determined by the intersecting point of a line drawn from the marking means on said upper and lower walls and a line drawn from the marking means on the end walls.

9. In a lock, a lock casing containing the locking mechanism and provided with an opening therein, means adapted to extend through said opening for actuating said locking mechanism, and pairs of marking means on opposite sides of said lock casing in horizontal and vertical alignment with said opening whereby the marking of the location for mounting said actuating means in the proper relative position as respects said opening in said lock casing may be effected.

10. In a lock, a key plug, an operating spindle connected thereto, a lock casing containing the locking mechanism and provided with an opening in a wall thereof adapted to receive said operating spindle, and pairs of marking means on opposite sides of said lock casing in both vertical and horizontal alignment with said opening whereby the location for mounting said key plug in the proper relative position as respects said opening may be determined.

11. In a lock, a lock casing containing the locking mechanism and provided with an

opening therein, and a hollow operating knob for actuating said locking mechanism and provided with an opening registering with said first-named opening and accessible from
5 without the casing.

12. In a lock, a lock casing containing the locking mechanism and provided with an opening therein, means adapted to extend through said opening for actuating said
10 locking mechanism, and a hollow knob mounted on said casing for also actuating said locking mechanism and provided with an opening therein in alignment with said first-named opening and accessible from
15 without the casing.

13. In a lock, a lock casing containing the locking mechanism and provided with position-determining means, and a keeper provided with means adapted to register with said position-determining means whereby
20 the proper relative position of said keeper as respects said casing may be determined.

Signed at New York in the county of New York and State of New York this 9th day of May A. D. 1922.

SAMUEL SEGAL.

Witnesses:

F. B. TOWNSEND,
GEORGE E. BROWN.