

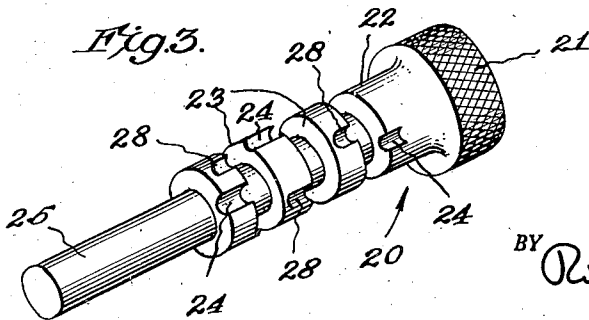
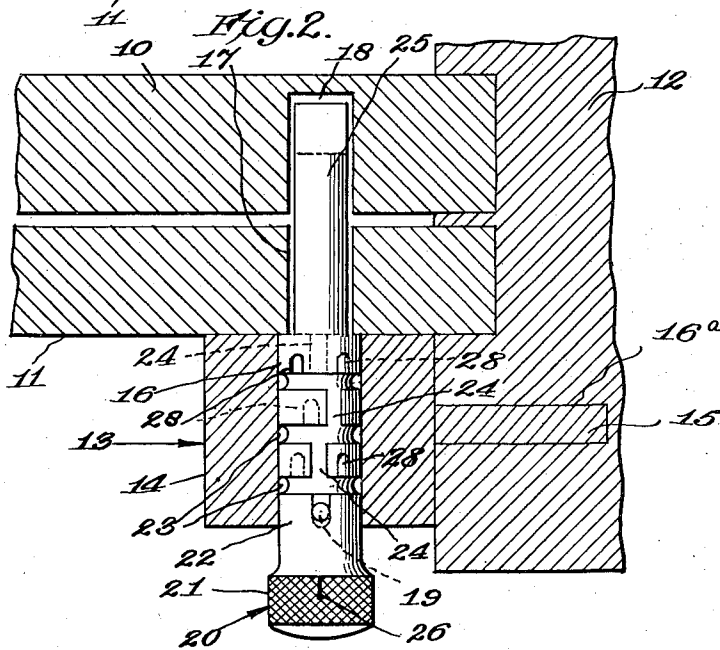
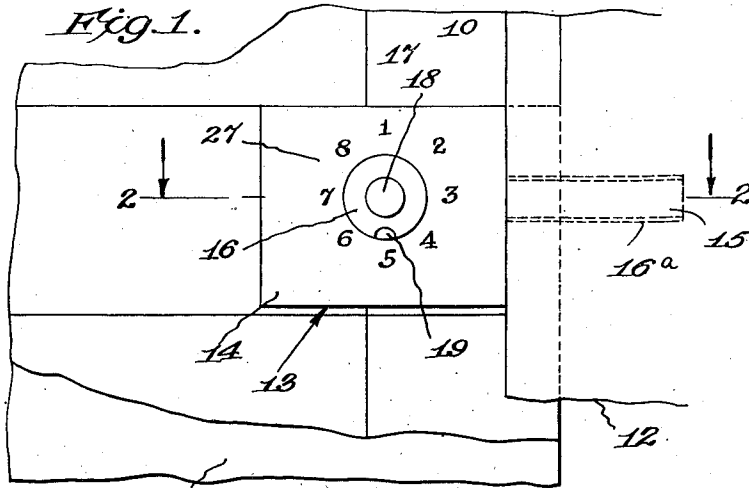
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LOCKING DEVICE

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LOCKING DEVICE

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4 Claims. (Cl. 70-14)

1

This invention relates to locking devices and, more particularly, to the type of locks known as combination locks.

One object of the invention is to provide a lock of this nature which is adapted for use in locking, windows, cupboard doors and many other articles of this nature, wherein it is desired that the article locked cannot be readily opened by anyone without knowing the locking combination.

Another object of the invention is the provision of a lock of this nature which cannot be forced and one which is highly jimmy-proof.

Another object is to produce a device of this nature in which the maximum simplicity of construction and operation is secured.

Other objects and advantages will appear as the nature of the improvements is better understood, the invention consisting substantially in the novel arrangement and co-relation of parts herein fully described, and illustrated in the accompanying drawings, wherein similar reference characters are used to describe corresponding parts throughout the several views, and then finally pointed out and specifically defined and indicated in the appended claims.

The disclosure made the basis of exemplifying the present inventive concept suggests a practical embodiment thereof, but the invention is not to be restricted to the exact details of this disclosure, and the latter, therefore, is to be understood from an illustrative, rather than a restrictive standpoint.

In carrying out the present inventive concept it has been found advantageous to provide a block or keeper having an extending bar or pin by which it may be securely positioned adjacent the parts to be locked. The keeper is further provided with a hole or opening having a knob or projection which is adapted to be progressively engaged by annular and longitudinal slots or grooves in a locking pin or bolt, the said grooves being so arranged that it is necessary to turn the locking pin from one position to another in order that the said pin may finally enter aligned holes in the parts to be locked.

It was further found advantageous to provide the locking pin or key with blind grooves in withdrawing direction, which when engaged by the projection in the keeper will prevent withdrawal of the key and the consequent unlocking of the parts.

In the accompanying drawings:

Figure 1 is a front elevational view of a portion of two sliding halves of a window, showing the

2

keeper in place with the locking pin removed therefrom;

Figure 2 is a sectional view taken on line 2-2 Figure 1, with the locking pin in locked position; and

Figure 3 is a perspective view of the locking pin or key.

Referring now to the drawings in detail, 10 indicates the upper sash of a window, 11 the lower sash and 12 the window frame in which the sashes are adapted to slide up and down. A lock 13 is provided for locking the two window sashes against unwarranted opening by means of a block or keeper 14 which has at one side thereof a projecting bar, rod, or pin 15, which may be either rectangular, triangular or square in cross section and which may be securely driven into a hole or opening 16a in the window frame 12.

The keeper block 14 has a hole 16 extending the entire thickness thereof, the said hole being in alinement with a pair of aligned holes 17 and 18 in the lower and upper window sashes 11 and 10, respectively. Located in the keeper block hole 16 and near the front face of the said keeper block is a knob or projection 19. The circumference of the hole 16 may be divided into any suitable number of divisions, as, for instance, eight as illustrated in Figure 1. The said divisions are numbered from 1 to 8 in clockwise direction.

The window sashes may be locked together by means of a key or locking pin 20 comprising a head 21, a shank 22 having a plurality of annular grooves 23 and longitudinal grooves or slots 24. The slots 24 are out of alinement with each other, the innerly disposed ones open into and connect the transverse or annular slots 23.

To lock the window sashes against sliding movement the key is inserted into the hole 16 with the foremost groove 24 in engagement with the projection 19, the key is slid inwardly until the projection 19 engages the first annular groove 23, the key is then rotated and simultaneously pressed inwardly until the projection 19 enters the second longitudinal slot 24. This operation is repeated until the last slot 24 engages the projection 19, at which time the reduced pin portion 25 is fully seated in the window sash openings 17 and 18, and the window is locked.

In the present instance the locking and opening combination is 1, 4, 5, 1. To obtain this combination the key is rotated clockwise or counter-clockwise until the index line 26 on the head 21 progressively coincides with the numerals 1, 4, 5, and 1 on the indicia dial 27.

3

In order to further prevent or hinder the unwarranted opening of the window blind grooves or notches 28 are provided. The said grooves open into the annular grooves 24 only in unlocking direction, so that when one not acquainted with the combination tries to withdraw the key these blind openings of which there may be several in each key section will invariably engage the projection 19 and stop further outward or unlocking movement of the key.

Although the combination is herein shown to be 1, 4, 5, 1, a great many different combinations may be had with the numbers indicated and with the number of longitudinal slots employed.

It will be understood that the number of dial divisions as well as the number of key divisions and longitudinal grooves may be increased or otherwise varied so that the permutation may be very great.

It will further be understood that the lock may be used in a great many different ways and for locking objects other than windows and the like.

It is apparent that the illustration shown above has been given by way of illustration and not by way of limitation and that the above example is subject to wide variations and modifications, without departing from the scope or intent of the present invention. All of such variations and modifications are to be included within the scope of the present invention.

What is claimed is:

1. In a lock, a keeper having a hole therein, means on said keeper for securing engagement with a support, a projection in said hole, a key, said key comprising a cylindrical shank adapted to freely fit said hole and having annular spaced apart grooves connected by staggered inter-connecting grooves for engagement with the projection in the keeper hole, and an extension on the said shank of lesser diameter than the shank adapted to enter the parts to be locked, the said shank being further provided with blind grooves as and for the purpose specified.

2. A combination lock for locking two window sashes against sliding movement relatively to each other, said sashes being provided with a pair of alined openings, said lock comprising a keeper having an opening therein, a projection in the said opening, means for fixing said keeper to a support, an indicia bearing dial on said keeper, a key, said key comprising a cylindrical shank adapted to freely fit the keeper opening, said shank having annular spaced apart grooves

4

connected by staggered axial grooves, said grooves being adapted to engage the projection in the keeper opening when the key is operated for locking and unlocking movement, the shank being further provided with blind grooves adapted to be engaged by the keeper projection when the key is operated in unlocking direction to hinder the unlocking operation for those unfamiliar with the lock combination, means on the key adapted to be brought into registry with the dial for freely operating the key in locking and unlocking direction, and a projection on the shank to engage the alined sash openings and lock the window.

3. In a lock, a keeper having a hole therein, a projection in said hole, a key therefor, said key comprising a shank adapted to rotatably fit said hole and having annular spaced apart grooves, and staggered inter-connecting grooves for engagement with the projection, the shank being further provided with blind grooves for engagement with the keeper projection to hinder withdrawal of the key, an indicia dial on the keeper, means on the key adapted when brought into registry with the proper dial markings to freely operate the key in locking and unlocking direction, and a projection on the shank adapted to enter the parts to be locked.

4. In a lock, a keeper having a hole therein, means on said keeper for securing engagement with a support, a projection in said hole, a key, said key comprising a cylindrical shank adapted to freely fit said hole and having annular spaced apart grooves connected by staggered inter-connecting grooves for engagement with the projection in the keeper hole, means for indicating the proper position of the key grooves with respect to the projection for the free inward and outward passage of the key through the keeper, and an extension on the said shank of lesser diameter than the shank adapted to enter the parts to be locked, the said shank being further provided with blind grooves as and for the purpose specified.

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