Jan. 17, 1928. 1,656,699

G. W. ELMWALL

LOCK

Original Filed Feb. 19, 1924

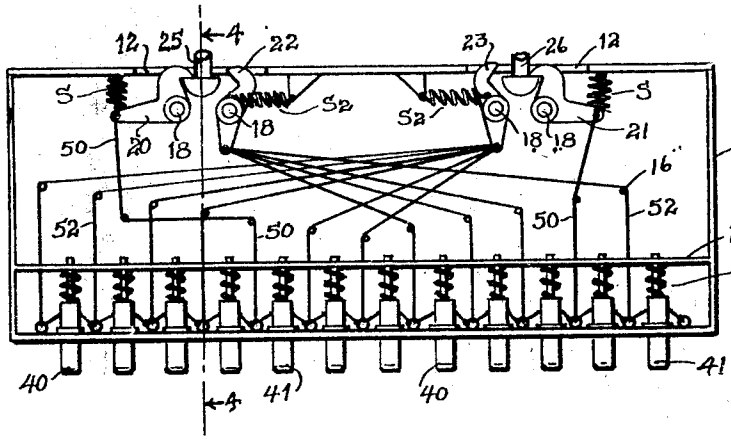


Fig 1

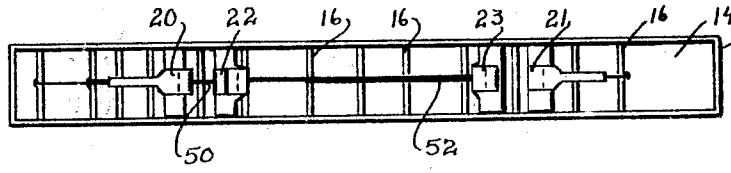


Fig 2

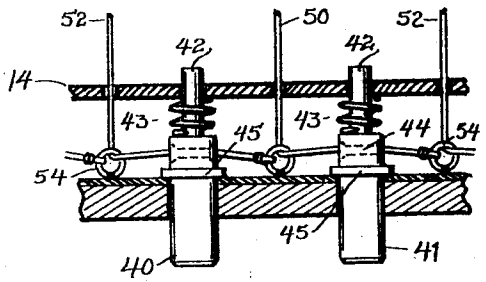


Fig 3

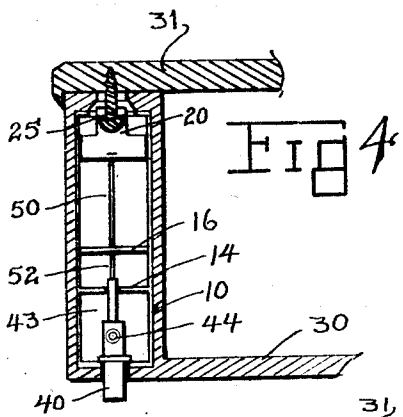


Fig 4

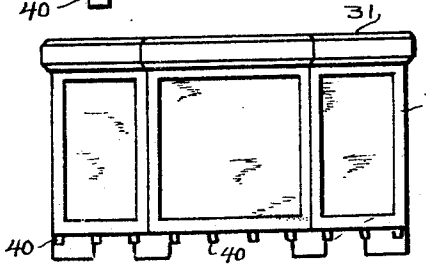


Fig 5

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UNITED STATES PATENT OFFICE.

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LOCK.

Original application filed February 19, 1924, Serial No. 693,786. Divided and this application filed May 1, 1926. Serial No. 105,974.

This invention relates to locks and more especially to locks of the keyless or permutation type.

This application constitutes a division of my copending application Serial Number 693,786 filed February 19, 1924, and entitled "Bedroom safes".

It is a purpose of this invention to provide a lock of the type set forth in an embodiment particularly suited for use in the locking of furniture and with the employment of only such parts and arrangement of parts that its manufacture, installation, and repair will be accomplished with the ordinary tools employed, and by the exercise of only that skill had by the ordinary shop mechanic as contrasted with the professional skill of the lock artificer.

It is also an object of this invention to provide a combination or keyless lock capable of being operated with wet or greasy fingers and hence especially adapted for use in the boudoir and as an appendage for articles of furniture employed for toilet purposes.

Combination locking devices have in general presented rather complicated mechanisms involving close mechanical fits, accurate adjustments, careful installation, and delicate manipulation for useful service. Such former devices though perfectly suited for the locking of bank vaults and the like have been far too costly and intricate for use in the boudoir, so that key locks have been usually the only available protection for toilet articles, jewels and the like often of considerable value and often left entirely unprotected because of mislaid or lost keys while, even though available when needed, the manipulation of such keys became difficult or impossible with damp or slippery fingers. It is the purpose of this invention to provide a combination lock sufficiently cheap and simple to be adapted for the purposes described and so easily operated by the possessor of the combination as to avoid inconvenience while the absence of any key and its self locking character effectually removes the danger of leaving the casket or chest unlocked.

Fig. 1 is an elevation of the locking mechanism, the front of the casing or frame being removed to show the parts.

Fig. 2 is a plan view of the mechanism the top of the casing being removed for purposes of illustration.

Fig. 3 serves to show to enlarged scale a portion of the mechanism.

Fig. 4 shows in cross section the locking mechanism as installed in a casket such as that shown in Fig. 5, and referring to line 4—4.

Fig. 5 illustrates in front elevation a casket or chest having the locking mechanism in place therein.

The casing 10 is provided with top openings or ports 12 with a horizontal partition 14, with cross pins or cord guides 16, and with journal pins 18 upon which swing locking latches 20 and 21, and holding latches 22 and 23, which engage the lugs 25 and 26 when a cover 31 of a chest or casket 30 to which the lock is applied, has been closed and when the lock is in operation.

The bottom of casing 10 is provided with a series of openings for manipulating buttons 40 and 41 all exactly similar in appearance preferably of porcelain or other hard, wear resistant material and of sufficient length to extend through the shell of the casket 30 and to present the appearance of a part of the casket decoration as indicated in Fig. 5 so that to anyone not familiar with the casket no suggestion of a lock is presented on the casket exterior. At their upper ends buttons 40 and 41 are provided with guide stems 42 engaging and sliding in partion 14 which also serves as a seat for springs 43 pressing the buttons toward their outward or extended position. Buttons 40 and 41 are also provided with bores 44 as indicated by the dotted lines in Fig. 3 and with collars or enlargements 45 limiting their outward movement.

Latches 20 and 21 are normally held forward to engage lugs 25 and 26 by springs S while springs S^2 normally hold holding latches 22 and 23 disengaged as shown. The latches are moved from these normal positions by cords 50 and 52 which are secured to one of their arms and extend over the guide pins 16 through guide holes in partition 14 to rings 54 passing through one of these then to and through the bore 44 in a button 40 or 41 and end by being secured to a second ring 54 upon the opposite side of each button.

For purposes of illustration but twelve

buttons have been shown and those operating locking latches 20 and 21 through cords 50 have been numbered 41 but it will be understood that any total number of buttons may be employed and that any part of such total may be joined to either locking or holding latches as the needs of a desired combination may indicate.

The lock is operated by pressing upward on buttons set for the given combination, in the illustrated instance on buttons 41, which draws downward upon cords 50 pulling latches 20 and 21 out of engagement with lugs 25 and 26 and releasing the lid. Thus the pressure upon correct buttons unlocks the chest without delay. If however the wrong button or buttons (indicated as 40 herein) be pressed cords 52 will be pulled and latches 22 and 23 or one of these, will be interposed in the withdrawal path of the lugs and the chest will remain locked even though the correct buttons have been manipulated as well. It will be clear that almost any combination may be set up upon a comparatively small number of buttons and that the accidental discovery of such combination without actual knowledge thereof is well nigh impossible, certainly impractical, in the limited time usually available to the thief.

It will be manifest that many changes and modifications in the arrangement of the various elements, in the whole structure, and in the uses and installation of the same, may be made without departing from the scope of my invention or the spirit of the appended claims.

What I claim is:

1. In a lock, a casing having lug entrance openings in its top, mechanism guides and journals supported by its sides together with a horizontal internal partition, lug catches swinging on said journals and moved from their normal positions by mechanism mounted in said guides, a plurality of control members guided by said casing and the internal partition therein said control members projecting from the exterior of said casing for manipulation, and springs returning said latches and control members to their normal positions after operation.

2. In a safety box lock, a rectangular frame having a multiplicity of lug ports, a plurality of button openings, button guide means, lock operating buttons engaging said guide means and projecting from said openings, locking latches pivoted opposite said ports, holding latches pivoted opposite said locking latches, cord means connecting said frame and latches when passed through said buttons and transposing cord guides therein and therebetween, and means pressing said buttons and latches to predetermined normal positions, the whole providing a button operated lock wherein the connection between control buttons and latches cannot be traced from the exterior.

3. In a safety box lock, latch lugs having extending terminal projections, a plurality of pivoted locking latches engageable with said projections, spring means retaining said locking latches normally engaged with said lugs, a plurality of holding latches also engageable with said lugs, spring means normally holding said holding latches disengaged, a series of identically formed buttons projecting from the bottom of said lock, cord means internal to said lock and connecting certain of said buttons with said locking latches and certain other buttons to said holding latches so that pressure upon the first said buttons will release said locking latches and disturbance of the remaining buttons will engage said holding latches so that the latch lugs will be entirely released only upon performance of a predetermined combination button pressure.

Signed this 3rd day of April, 1926, at New York, N. Y.

GUSTAVE WALFRID ELMWALL.