

E. R. SPRINGER.
LOCK.

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1,009,698.

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Fig. 1

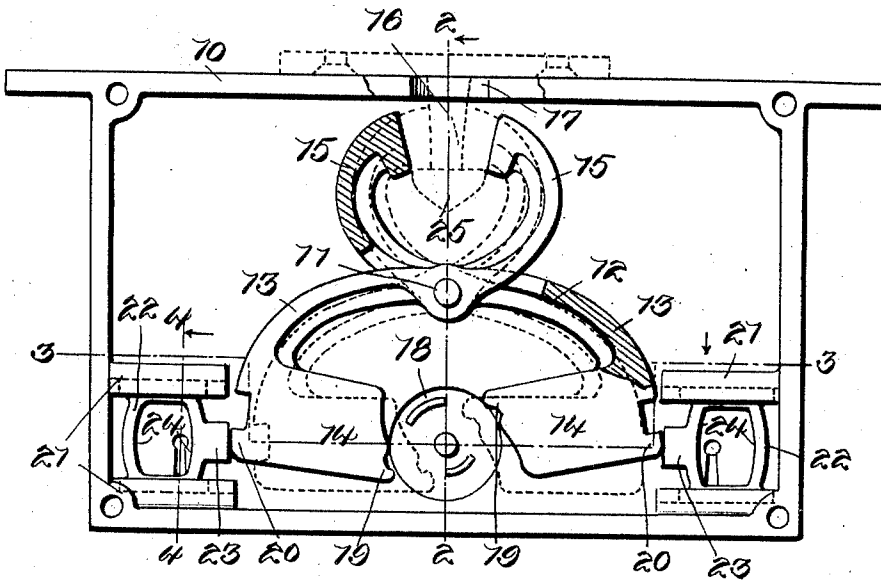


Fig. 3

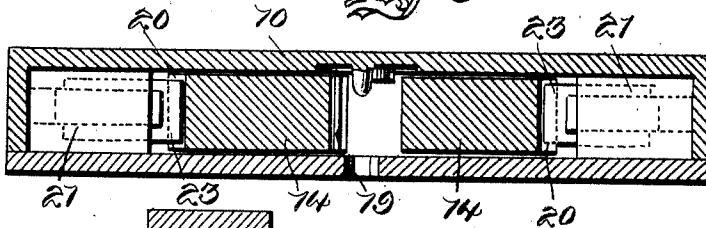


Fig. 2

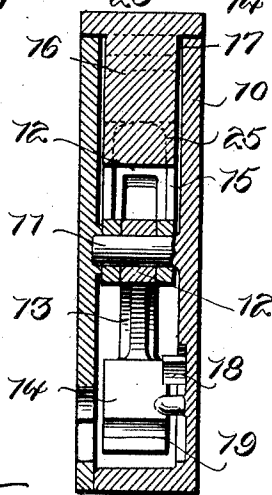
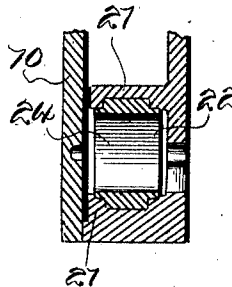


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

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LOCK.

1,009,698.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EMIL R. SPRINGER, a citizen of the United States, residing at Jasper, in the county of Newton and State of Arkansas, have invented new and useful Improvements in Locks, of which the following is a specification.

The invention relates to locks and latches and has for an object to provide a lock minus springs and operative gravitationally.

For the purpose mentioned, use is made of a locking element operable gravitationally in connection with a bolt, means for operating the said locking element to move the same into locking or unlocking position, and means for slidable engagement with the locking element for releasably retaining the same in locking position.

Reference is to be had to the accompanying drawings constituting a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a vertical section through my lock, showing the same in open position, the locking element being shown in locked position in dotted lines. Fig. 2 is a vertical section on the line 2—2 in Fig. 1, looking in the direction of the arrow, the lock being in locking position. Fig. 3 is a horizontal section taken on the line 3—3 in Fig. 1, the lock being shown in locking position. Fig. 4 is a vertical section taken on the line 4—4 in Fig. 1, looking in the direction of the arrow.

Referring more particularly to the views I provide a casing 10 having a transversely extending pin 11 and pivotally mounted on the pin 11 is a locking element 12 consisting of a plurality of similar gripping bars 13 having their lower ends formed into integral weights 14 and their upper ends hooked to constitute bolts 15, the said bolts being adapted for engagement with a strike 16, the strike being attached to a closure and the casing 10 being attached to the frame of a trunk or the like, the said strike having its lower end adapted to extend through an opening 17 in the casing 10. The gripping bars 13 are substantially of an S-shape and the lower portions constituting the weights 14 are spaced apart when the bolts 15 are in locking position, a guide 18 being secured to the casing between the

weights 14 and adapted to guide a key, which engaging lugs 19 on the weights 14 moves the weights outwardly in opposite directions, thus also moving the bolts 15 in an opposite direction from each other so that the said bolts will be disengaged from the strike 16 as will be readily understood by referring to Fig. 1, one of the lugs 19 being positioned at the lower end of one of the weights 14 and the other end of the other weight 14 so that the gripping bars 13 will be simultaneously operated when the key is rotated relatively to the guide 18, the said key being provided with projections for engagement with the lugs 19. Thus it will be seen that after the gripping bars 13 have been moved to unlocking position the key is disengaged from the lugs 19, the weights 14 will gravitationally tend to move downward, thus tending to move the bolts 15 into relocking position.

Integral lugs 20 are provided at the outer extremities of the weights 14 and secured to the casing 10 are guideways 21 having slidably mounted therein retaining members 22 provided with integral lugs 23, the said lugs 23 being adapted to engage the lugs 20 when the gripping bars 13 are in locked position to retain the gripping bars in rigid and locked position, the said retaining members being operable by keys inserted through the casing 10 and adapted to engage cam surfaces 24 formed on the retaining members 22.

Now assuming that the casing 10 is attached to a trunk and the strike 16 is attached to the cover of the trunk, when the cover is lowered into closing position, the strike 16 will extend through the opening 17 in the casing 10 and the lower end of the strike is provided with an inclined head having diverging sides so that when the strike engages the bolts 15 the weight of the cover will move the head 25 downwardly between the bolts, after which the bolts will tend to reengage owing to the weighted portions 14 thus securely locking the cover relatively to the trunk as will be readily understood by referring to Fig. 1. To more firmly lock the gripping bars in rigid position the retaining members 22 are operated by means of suitable keys so that the lugs 23 will engage the lugs 20, thus preventing the gripping bars from being unlocked without the

use of the keys for operating the retaining members 22. When it is desired to relatively unlock the gripping bars, the retaining members 22 are first moved to unlocking position and a key is then inserted in the casing so as to engage the guide 18. Now by operating the key, the same will engage the lugs 19 and move the bolts 15 into unlocking position or out of engagement with the strike 16 so that by pulling upwardly on the cover of the trunk the same can be opened relatively to the trunk.

From the foregoing description it will be seen that I have provided a lock devoid of springs and depending entirely upon a weighted locking element in its operation, and although I have described a preferred form of my lock as applied to a trunk, it will be understood that the lock can be employed in connection with various closures and casings and that the scope of the invention is defined in the appended claims.

Having thus fully described the invention, what I claim as new, is:—

1. A device of the class described comprising a casing, a locking element pivotally mounted in the said casing and consisting of a plurality of gripping bars having their lower ends terminating in weights and their upper ends terminating in integral bolts adapted for engagement with the strike, integral lugs formed on the inner ends of the said weights and adapted to be engaged by a key inserted in the said casing to operate the said gripping bars, a plurality of retaining members slidably mounted in the said casing and adapted to be operated by keys inserted in the said casing, guideways formed in the said casing, and on which the said retaining members are mounted to slide, lugs formed on the said retaining members and lugs formed on the outer ends of the said weights, the lugs on the outer ends of the said weights being adapted to be engaged by the lugs on the said retaining members

to rigidly retain the said gripping bars in locked position.

2. A device of the class described comprising a casing, a locking element pivotally mounted in the said casing and consisting of a plurality of relatively movable gripping bars having their lower ends terminating in weights and their upper ends terminating in bolts for engagement with a strike, lugs integrally formed on the inner ends of the said weights and disposed in relatively opposite relation, a guide secured to the said casing and a key for insertion in the said casing and adapted for engagement with the said guide, the said key being adapted to engage the lugs on the said weights to simultaneously operate the said gripping bars and move the said bolts into unlocking position, the said weights being adapted to gravitationally move the said bolts into locking position when the said key is disengaged from the lugs formed on the said weights.

3. A device of the class described comprising a casing, a locking element mounted in the said casing and consisting of a plurality of similar gripping bars pivotally mounted in the casing, the said bars having their lower ends terminating in weights and their upper ends formed into integral hook bolts, means for simultaneously operating the said gripping bars to move the said bolts into unlocking position, the weights on the said gripping bars being adapted to gravitationally move the said bolts into locking position and means slidably mounted in the said casing and adapted for engagement with the said gripping bars to retain the said gripping bars in rigid position.

In testimony whereof I affix my signature in presence of two witnesses.

EMIL R. SPRINGER.

Witnesses:

CURGUS YOUNG,
SAMUEL HUDSON.