J. F. KOCH.

LOCK.

APPLICATION FILED APR. 16, 1914.

1,112,706. Patented Oct. 6, 1914.

FIG. 1.

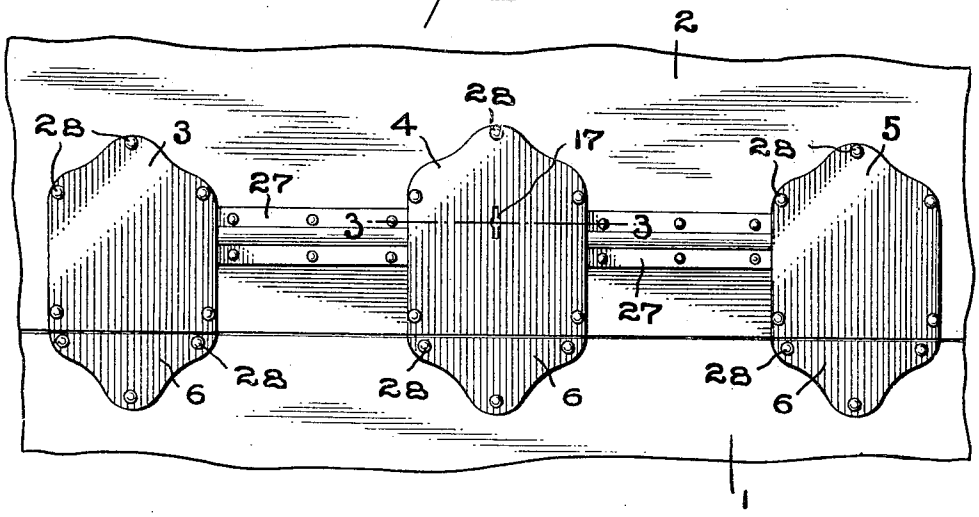


FIG. 2.

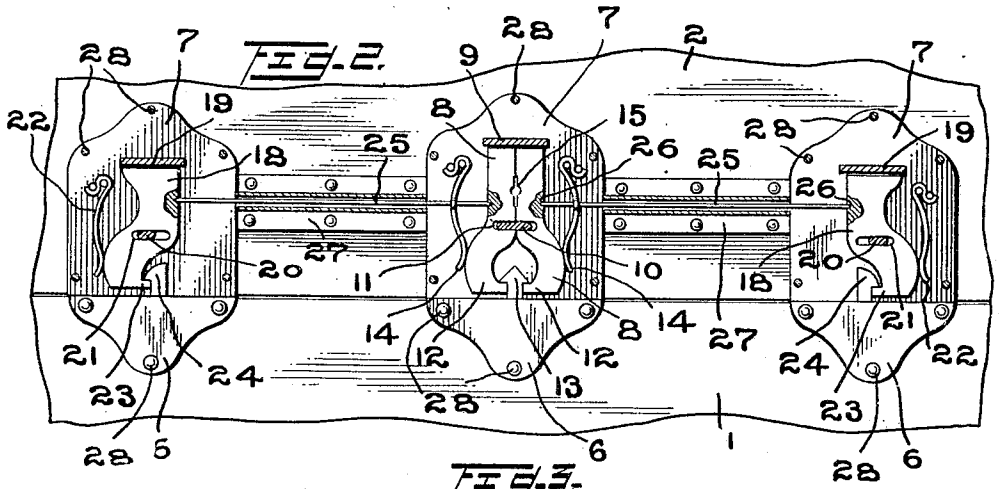


FIG. 3.

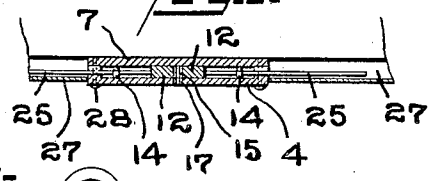
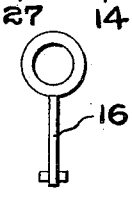


FIG. 4.



Witnesses

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LOCK.

1,112,706. Specification of Letters Patent. Patented Oct. 6, 1914.

Application filed April 16, 1914. Serial No. 832,249.

To all whom it may concern:

Be it known that I, JOHN F. KOCH, a citizen of the United States, residing at Wescosville, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to improvements in locks, and more particularly to an improved lock designed for use in connection with trunks, chests, suit cases, and other similar devices in which a plurality of locks are compelled to operate in unison and controlled by a single key located in one of the locks.

It is customary in trunks, suit cases and like devices to provide at a central point, a main lock, and at other points adjacent the ends of the suit case, provide other locking means, all of said locking means being operated independently.

It is the purpose of my invention to provide a plurality of such locking devices of an improved construction in which the tumblers of all of the locks are compelled to operate simultaneously, so that they may be simultaneously moved to unlocking position when the proper key is inserted in one of the locks and given a partial rotary movement.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1 is a view in elevation illustrating my improvements. Fig. 2 is a view in longitudinal section with the lock casings removed. Fig. 3 is a fragmentary view in longitudinal section on the line 3—3 of Fig. 1, and Fig. 4 is a view of the key.

While my invention is adapted for use on any two part device in which it is desired to lock the parts together, we will assume for purposes of illustration that the lock is used in connection with a trunk, in which 1 is the body of the trunk and 2 the cover.

To the cover 2, I secure three lock casings 3, 4, and 5 respectively with their lower edges adjacent the lower edge of the cover, and preferably having their side edges registering with the side edges of plates 6 which are secured to the body 1. In other words, the lock casings and the plates are designed to carry out a neat and attractive configuration, so that when the parts are together, they will have the appearance of complete single devices rather than two separate parts.

The base plate 7 of the center lock supports two tumblers 8, the latter guided in their movement toward and away from each other by transverse bars 9 and 10 respectively. The bar 9 is in position to be engaged by the outer ends of the tumblers, while the bar 10 is located in registering recesses 11 in the inner faces of the tumblers, so that the bars 9 and 10 together constitute parallel guides to hold the tumblers against pivotal movement, yet allow them to move toward and away from each other.

The lower ends of the tumblers are of general hook shape as indicated at 12, so that they engage opposite sides of a keeper 13, the latter being preferably of the shape of an arrow head, so that when the parts are moved together, it will press the tumblers apart and permit the latter to be moved into locking position by means of springs 14. These springs 14 are connected at one end to the base plate 7, and at their free ends bear against the outer faces of the tumblers so that the latter are normally held in locking position.

The tumblers 8 are provided in their upper portions in their adjacent faces with key receiving recesses 15 to receive a key 16 projected through a keyhole 17 in the casing 4. The key 16 has wings at opposite sides, so that when turned in either direction, will force the tumblers apart.

In the casings 3 and 5, single tumblers 18 are provided and are guided in their movement by bars 19 and 20. The bars 19 are engaged by the upper ends of the tumblers 18, and the bars 20 project through slots 21 in the tumblers 18, so that the bars 19 and 20 hold the tumblers against pivotal movement, but permit them to move laterally.

The springs 22 normally hold the tumblers 18 in locking position, so that their hooked lower ends 23 engage keepers 24 on the plates 6. To compel the tumblers 8 and 18 to move simultaneously, I provide rods 25 which are positioned in recesses 26 in the tumblers and operate to connect the tumblers. In other words, the rod 25 at one side connects one tumbler 8 with the right hand

tumbler 18, and the rod 25 at the other side connects the left hand tumbler with the left hand tumbler 18.

The rods 25 are inclosed by longitudinal casings 27, and while my invention is not limited to any particular manner of securing any of the parts to the trunk, I have illustrated securing devices 28 for the purpose which we may assume to be either pins, screws, rivets, or other devices which would securely hold the parts to the trunk and render fraudulent manipulation of the locks as difficult as possible.

In operation, when the cover 2 is moved down upon the body 1, the keepers 13 and 24 will force the tumblers to one side, and then the latter will spring into locked engagement, so that the cover is securely locked at different points throughout its length.

To release the cover it is simply necessary to insert the key 16 in the keyhole 17, and give the key a turn in either direction. This will force the tumblers 8 apart and also move the tumblers 18 so that all of the tumblers will be out of locked position. When the key is removed or released, the springs will return the tumblers to their former locked position.

While I have not attempted to illustrate any particular type of key, it is of course to be understood that I may make the tumblers of such a shape as to require particular keys so that one key will unlock only the tumblers with which it is especially adapted, giving the owner of each trunk a particular key for his particular lock.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with three lock casings adaped to be secured to one part, and three keepers adapted to be secured to a second part and to be projected in the lock casings when the two parts are together, of transverse parallel guide bars in all of the lock casings, two tumblers in the intermediate lock casing, said tumblers having their upper ends movable against one of the bars and having recesses in their inner faces receiving the other of said bars, said tumblers in the end casings having their upper ends engaging one of the guide bars and having slots intermediate their ends receiving the other of said guide bars, all of said tumblers having hook shaped lower ends, springs in the casings normally holding the tumblers with their hook shaped ends in locked engagement with the keepers, and means compelling all of said tumblers to move together, substantially as described.

2. The combination with three lock casings adapted to be secured to one part, and three keepers adapted to be secured to a second part and to be projected in the lock casings when the two parts are together, of transverse parallel guide bars in all of the lock casings, two tumblers in the intermediate lock casing, said tumblers having their upper ends movable against one of the bars and having recesses in their inner faces receiving the other of said bars, said tumblers in the end casings having their upper ends engaging one of the guide bars and having slots intermediate their ends receiving the other of said guide bars, all of said tumblers having hook shaped lower ends, springs in the casings normally holding the tumblers with their hook shaped ends in locked engagement with the keepers, rods positioned between the tumblers in the end casings and the tumblers in the intermediate casing whereby the movement of the last-mentioned tumblers compels the movement of the tumblers in the end casings, longitudinal casings covering the rods between the lock casings, and said tumblers in the intermediate casing having key receiving recesses in their adjacent faces, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN F. KOCH.

Witnesses:
V. Z. KOHLER,
J. G. KOCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."