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J. KRUSE.

KEYLESS LOCK FOR TRAVELING BAGS, &c.

APPLICATION FILED JULY 5, 1907.

Fig. 1.

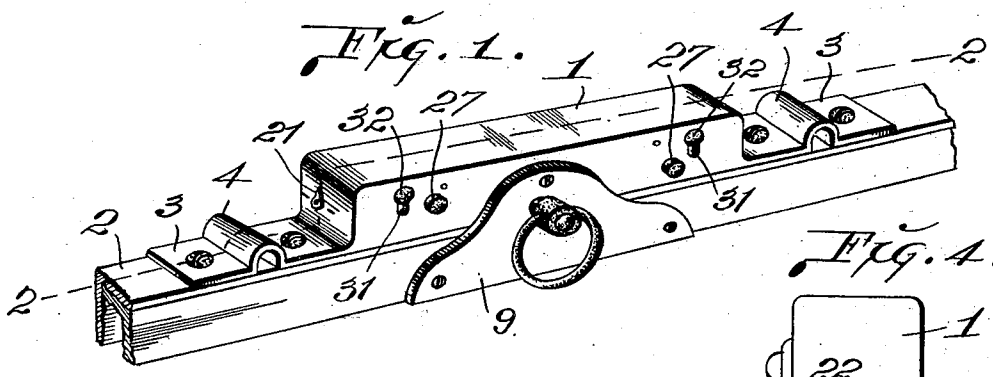


Fig. 4.

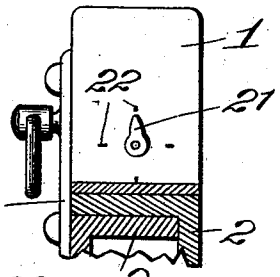


Fig. 2.

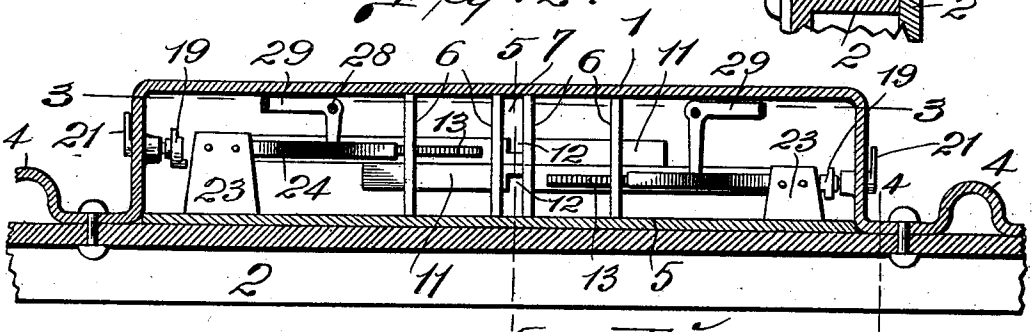


Fig. 3.

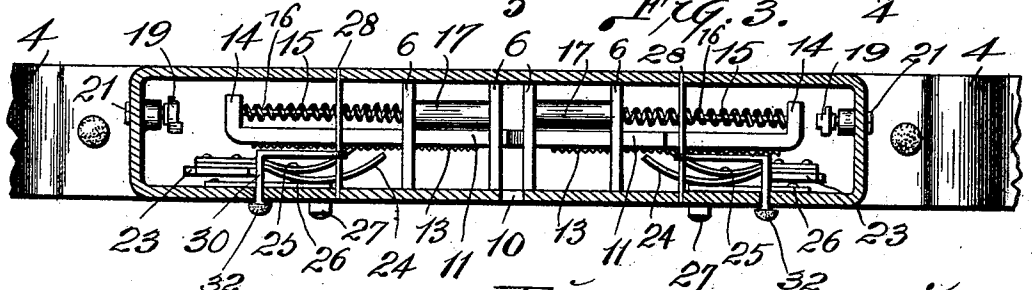


Fig. 5.

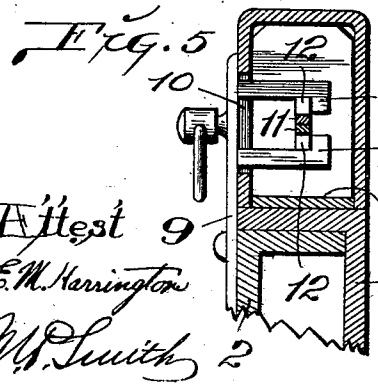


Fig. 6

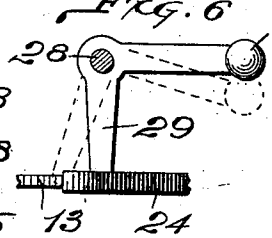
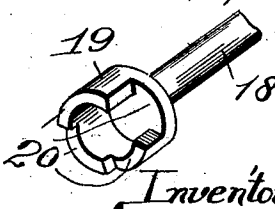


Fig. 7.



Attest

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KEYLESS LOCK FOR TRAVELING-BAGS, &c.

No. 886,136. Specification of Letters Patent. Patented April 28, 1908.

Application filed July 5, 1907. Serial No. 382,341.

To all whom it may concern:

Be it known that I, JOHN KRUSE, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Keyless Locks for Traveling-Bags and the Like, of which the following is a specification, containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to keyless locks for traveling bags, and the like, the object of my invention being to construct a simple, inexpensive lock for traveling bags, valises, hand satchels, and the like, and which lock is provided with mechanism operated from the exterior of the lock housing for setting and releasing the locking bolts on the interior of the housing.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of a lock of my improved construction arranged on the frame of a valise or traveling bag; Fig. 2 is an enlarged vertical section taken on the line 2—2 of Fig. 1; Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2; Fig. 4 is a transverse section taken on the line 4—4 of Fig. 2; Fig. 5 is a transverse section taken on the line 5—5 of Fig. 2; Fig. 6 is a detail elevation of a releasing lever I make use of in carrying out my invention; Fig. 7 is a perspective view of an adjustable stop I make use of for changing the combination of the lock.

Referring by numerals to the accompanying drawings:—1 designates the lock housing, which is preferably of rectangular form, and of such width as to readily fit upon top of the upper one of the frames 2 of the satchel or traveling bag. Formed integral with the ends of the housing 1 are plates 3, which are rigidly fixed in any suitable manner to the upper frame 2, and in the centers of which plates are formed transverse loops 4, to which are adapted to be secured rings carried by the ends of the handle of the bag or valise. Detachably arranged in the bottom of the housing, and lying immediately on top of the upper one of the frames 2, is a plate 5, which carries the greater portion of the operating mechanism of the lock, and formed on or fixed to said plate and extending upward therefrom to the top of the housing 1, is a series of plates 6, between the inner two of which is formed a narrow opening 7, which receives the hooks 8 carried by a plate 9, and which latter is carried by the lower one of the frames 2 of the bag or valise. An opening 10 is formed in the front side of the housing 1, directly opposite the opening 7, thus permitting the hooks 8 to pass into and out of said housing.

A pair of locking bars 11 are arranged to move lengthwise through suitably formed openings in the plates 6, one of said bars being arranged immediately on top of the other; and formed in the top of the upper bar is a notch 12, and a corresponding notch 12 is formed in the under side of the lower bar. Formed on the front faces of both bars is a series of teeth 13, and the outer ends of said bars are bent rearwardly, as designated by 14, and which rearwardly bent ends carry horizontally disposed pins 15, on which are arranged expansive coiled springs 16, the inner ends of which are located in tubular housings 17, fixed between the pairs of plates 6.

Arranged for rotation in the end walls of the housing 1, directly opposite the rearwardly bent ends 14 of the bars 11, are short pins 18, on the inner ends of which are heads 19, each of which is provided with a series of offset faces 20, against which the rearwardly bent ends 14 are adapted to engage when the bars 11 are moved outward to their limit of movement by the expansive action of the coiled springs 16. Fixed on the outer ends of the pins 18 are fingers 21, which are adapted to register with indicating marks 22, formed on the ends of the housing 1, thus forming guides to show which one of the faces 20 is directly opposite the rearwardly bent end 14 of the corresponding bar 11.

Fixed to the plate 5, adjacent the front edge and ends thereof, are the upright brackets 23, and secured to the upper end of each of said brackets is a pair of springs 24 and 25, and the free ends of which latter pair are in constant engagement with the teeth 13 formed on the locking bars 11, thus acting as pawls to normally hold said locking bars against reverse movement. The free ends of the springs 24 normally lie just in front of the teeth 13, and are adapted to be moved into engagement with said teeth by the free ends of said plates 26, which are fixed to the

front wall of the housing 1; and said free ends carry the buttons 27, which project through suitable openings formed through the front wall of said housing.

Pins 28 have their ends seated in the front and rear walls of the housing 1, and journaled on said pin are bell crank levers 29, the lower ends of the horizontal arms of which normally occupy positions immediately to the rear of the free ends of the springs 25, and formed integral with the outer ends of the horizontal arms of said levers are forwardly projecting arms 30, which extend through vertically disposed slots 31 formed through the front wall of the housing 1; and located on said forwardly projecting arms, outside the housing, are buttons 32.

When a traveling bag or valise equipped with my improved lock is to be closed and locked, the hooks 8, carried by the plate 9, pass through the opening 10 in the front of the housing, and the rear ends of said hooks pass through the notches 12 in the lock bars 11, which notches have been brought into vertical alinement with one another; and said lock bars are now released by engaging the buttons 32 and moving the same downward, thus actuating the bell crank levers 29 and moving the free ends of the springs 25 away from the teeth 13. The expansive action of the coiled spring 15 moves the lock bars 11 outward to their limit of movement, thus moving the notches 12 out of vertical alinement, and bringing the wider portions of the locking bars against the inwardly bent ends of the hooks 8.

Assuming that the combination necessary to release the lock is "10" and "6," the owner of the bag, or valise, or proper person having knowledge of the combination, places the thumb or finger on the right hand one of the buttons 27, and presses upon the same ten times in succession; and with each inward movement of the button, the free end of the corresponding spring plate 26 bears upon the corresponding spring 24, forcing the free end thereof into engagement between the teeth of the lower one of the locking bars 11; and, as a result, said locking bar is moved the distance of one tooth toward the left hand; and, after having been moved this distance, the free end of the spring 25 catches between the teeth 13 on said bar and prevents its reverse movement. At the completion of the tenth movement upon the right hand button 27, the notch 12 in the lower locking bar 11 is brought into position within the opening 7, and directly in front of the lower one of the hooks 8; and, to complete the combination, the operator now presses the left hand button 27 six times in succession; and, as a result, the upper one of the locking bars 11 is moved toward the right hand, and the notch 12 in said upper bar is brought into vertical alinement with the corresponding notch in the lower bar. Both notches now coincide with the inwardly bent end of the hooks 8, and the lower member 2 of the frame which carries the plate 9 and hooks 8 is now free to be swung open.

When the bag or valise is closed and it is desired to lock the same, the operator engages the buttons 32, moving the same downward, which action swings the bell crank levers 29 upon the pins 28, and the lower ends of the vertical arms of said bell cranks engage the free ends of the springs 25, throwing them out of engagement with the teeth 13 on the locking bars, thus permitting the coiled springs 16 to act and throw said locking bars outward to their limit of movement, or until the rearwardly bent ends 14 engage against the lowermost faces 20 on the heads 19.

To change the combination, or to confuse the attempts of unauthorized persons to open the lock, the heads 19 can be rotated so as to bring each of the higher faces 20 into position directly opposite the rearwardly bent ends 14 of the locking bars 11, and thus the original combination is destroyed, owing to the fact that the locking bars are prevented by the higher faces from moving to their outer limit of movement; and thus the succeeding time said locking bars are moved toward one another to bring the notches 12 into vertical alinement, it will not be necessary to press the buttons 27 the same number of times that is required when the heads 19 are correctly positioned.

The owner of the bag or valise, or authorized person, shifts the fingers 21 in either direction to bring a pair of the higher faces 20 opposite the rearwardly bent ends 14 prior to the time the buttons 32 are engaged to release the locking bars, and thus said locking bars do not move outward to their limit of movement; so that even if an unauthorized person have knowledge of the combination, the lock would not open when said combination was carried out, as the locking bars 11 would be moved to such distances as that the notches 12 would be carried past one another; and the combination cannot be successfully worked unless the heads 19 are turned to such positions as to allow the rearwardly bent ends 14 of the locking bars to bear against the lowermost pair of faces on the heads 19.

A lock of my improved construction is simple, strong, and durable, easily manipulated, and while particularly adapted for traveling bags, hand satchels, and the like, can be advantageously used for various other purposes where a combination or keyless lock is desired.

I claim:—

1. A lock of the class described, comprising a housing, a plurality of locking bars arranged to slide therein, in which locking bars

are formed notches, means actuated from the exterior of the housing for shifting the sliding locking bars, and adjustable means for limiting the outward movement of the locking bars.

2. A lock of the class described, comprising a housing, a plurality of locking bars arranged to slide therein, in which locking bars are formed notches, means actuated from the exterior of the housing for shifting the sliding locking bars, means whereby said locking bars are released after having been shifted to bring the notches into alinement, and adjustable means for limiting the outward movement of the locking bars.

3. A lock of the class described, comprising a housing, a plurality of locking bars arranged to slide therein, in which locking bars are formed notches, means actuated from the exterior of the housing for shifting the sliding locking bars, means whereby said locking bars are released after having been shifted to bring the notches into alinement, means whereby said locking bars are returned to their normal positions, and adjustable means for limiting the outward movement of the locking bars.

4. In a lock of the class described, a housing, a plurality of spring actuated locking bars arranged to slide in the housing, in which locking bars are formed notches, means arranged on the interior of the housing and actuated from the exterior thereof for shifting the sliding bars to bring the notches into alinement, means actuated from the exterior of the housing for releasing the locking bars, and adjustable means for limiting the outward movement of the locking bars.

5. In a lock of the class described, a housing, a plurality of spring actuated locking bars arranged to slide in the housing, in which locking bars are formed notches, means arranged on the interior of the housing and actuated from the exterior thereof for shifting the sliding bars to bring the notches into alinement, and adjustable means for limiting the movement of the locking bars in one direction.

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

JOHN KRUSE.

Witnesses:
M. P. SMITH,
E. L. WALLACE.