May 26, 1942. H. P. BEHRMAN ET AL 2,284,507

SELF-ATTACHED SPRING FOR KEY HOLDING HOOKS

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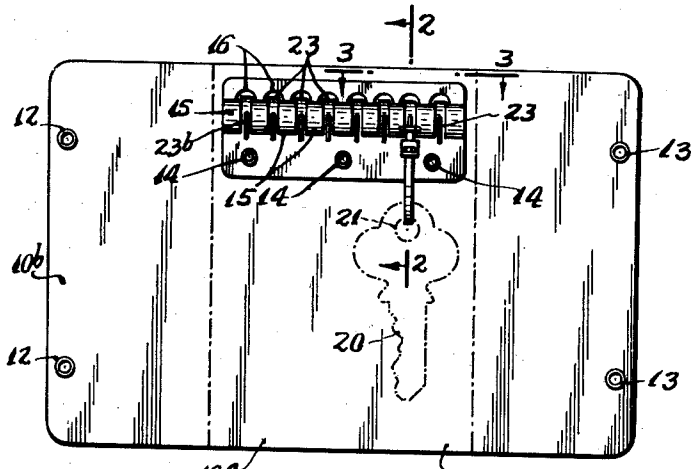


Fig. 1.

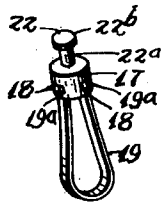


Fig. 4.

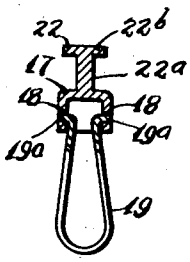


Fig. 5.

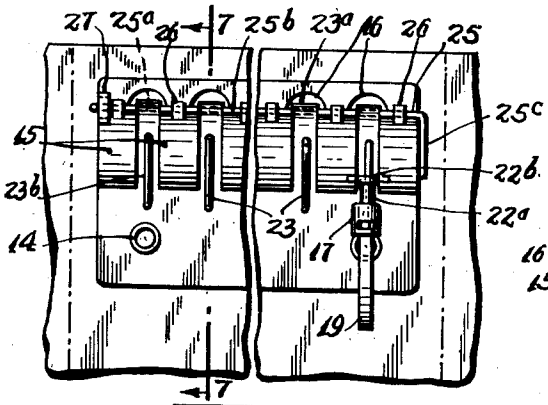


Fig. 6.

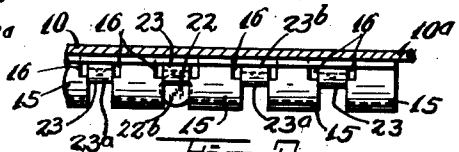


Fig. 3.

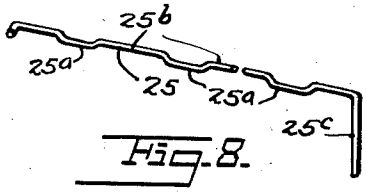


Fig. 8.

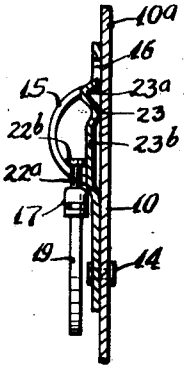


Fig. 2.

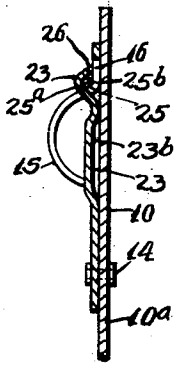


Fig. 7.

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SELF-ATTACHED SPRING FOR KEY HOLDING HOOKS

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Application January 29, 1941, Serial No. 376,414

8 Claims. (Cl. 70—456)

This invention relates to new and useful improvements in a self-attached spring for key holding hooks.

Still further the invention proposes the construction of a key retainer including a case constructed of flexible material and having a plate attached upon a portion thereof and provided with a plurality of vertically extending and horizontally spaced semi-circular loop portions between adjacent pairs of key holding hooks which are adapted to be positioned in a manner to releasably hold a plurality of keys in position within the retainer.

Still further it is proposed to provide each key holding hook with a headed stud adapted to have its shank projecting from between the adjacent loops and its head engaged therebehind, in a manner to freely support the key holding hook upon the plate to assume various positions with respect thereto.

As a further object, this invention proposes small cutouts arranged on the sides of the top portions of said semicircular loop portions through which said heads are adapted to be passed in a manner to engage said hooks with said plate and for removing the same therefrom when desired.

Still further it is proposed to provide a plate with upwardly extending finger portions in the form of leaf springs arranged between adjacent loop portions and having their tops projecting forwards and into said cutouts in a manner to obstruct the free passage of the head portions of said headed studs through said cutouts to prevent accidental disengagement of said key holding hooks from said plate.

Still further the invention proposes the construction of a novel means for locking the finger portions in their operative positions to prevent the removal of said key hooks except when said means is released.

A further object of this invention is the construction of a device as described which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is an elevational view of a key retainer in its open position and having a self attached spring for key holding hooks in accordance with this invention.

Fig. 2 is an enlarged partial vertical sectional view on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged partial horizontal sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of one of the key holding hooks per se.

Fig. 5 is an enlarged elevational view of the key holding hook shown in Fig. 4 with the top portion thereof sectioned to reveal the construction thereof.

Fig. 6 is an enlarged detailed view similar to a portion of Fig. 1 but illustrating a modification of the invention.

Fig. 7 is a vertical sectional view taken on the line 7—7 of Fig. 6.

Fig. 8 is a perspective view of the locking rod used in connection with the form of the invention shown in Fig. 6.

The self-attached spring for key holding hooks according to this invention is adapted to be used in connection with a key retainer in the form of a cover 10 formed of flexible material preferably leather, embossed leather, cloth or other similar materials. This cover comprises a back section 10^a which continues at its sides into front cover sections 10^b. Fold lines 11 are formed between the back section 10^a and front cover 10^b for permitting the front covers 10^b to be folded upon the back section 10^a. In this folded condition of the cover, the adjacent edges of the front covers 10^b are adapted to overlap each other. One of these overlapping portions is provided with snap fastening elements 12 which are adapted to engage complementary snap fastening elements 13 on the adjacent face of the other of these covers for holding the same in the closed position.

The self-attached spring comprises a plate which is adapted to be attached to the back 10^a of the cover 10. This plate is adapted to have its bottom edge securely attached to the cover 10 by means of a plurality of rivets or eyelets 14 extended therethrough. The upper edge of this plate is free of any connection with the cover 10. The plate is further provided between its point of connection and its free top edge with a plurality of vertically disposed and horizontally spaced semi-circular loop portions 15 which are provided with small cutouts 16 arranged at the sides and at the top portions thereof.

A key holding hook is provided for each of the spaces between adjacent pairs of semi-circular loop portions 15. Each of these key holding hooks is identical in construction and com-

prises an inverted cup-shaped member 17 having oppositely disposed cutouts 18 extended through the side walls thereof. A U-shaped hook portion 19 is provided for each of the cup-shaped members 17 and has its top ends 19a bent outwards and directly away from each other in a manner to be engaged into the openings 18 when the top edge of these arms are extended into the interior of the cup-shaped member 17. In Fig. 1 the key 20 is shown in dot and dash lines and it will be noted that the top thereof is formed with the conventional opening 21 through which the U-shaped hook 19 has been passed before being engaged into the inverted cup-shaped member 17 for securely attaching the key thereto.

Each of the inverted cup-shaped members 17 is provided with a headed stud 22 consisting of a shank 22a and a head 22b. The head 22b is adapted to be passed through the small cutout 16 formed at the top of an adjacent pair of semi-circular loop portions 15 so as to cause the shank 22a to project from between the adjacent edges of these semi-circular loop portions. The head 22b of the headed stud 22 will then ride behind the adjacent edges of the adjacent pair of semi-circular loop portions for providing a movable connection between these elements to permit the key holding hook to assume various positions with relation thereto for permitting the key 20 to be freely manipulated to be easily engaged into the key hole opening of its respective lock.

A means is further provided for preventing the free passage of the head 22b of the headed stud through the cutouts 16. This means comprises upwardly extending finger portions in the form of leaf springs 23 between the adjacent pairs of semi-circular loop portions 15. These finger portions have their top ends 23a projected forwards to extend into the portion of the cutouts contained within the top of the semi-circular portions 15 preventing the free passage of the heads 22b therethrough. The arrangement is such that when it is desired to remove one of the key holding hooks from its connection with the plate, it is merely necessary to raise the same to a position in which its head will bear against the top end 23a of its adjacent finger portion 23 and into a position substantially aligned with the small cutout 16. When pressure is then applied to the key holding hook, the head 22b thereof will bear against and bend the finger portion 23 to an inoperative position to permit the head 22b to be passed through the small cutouts. Each of the finger portions 23 is provided with a vertically extending embossed rib 23b for increasing the stiffness thereof to more securely maintain the finger portions in their operative position.

Fig. 1 shows one key holding hook applied to the plate of the key retainer but it is to be understood that in actual practice one key holding hook is to be provided for each of the spaces between the adjacent semi-circular loop portions 15 as shown in Fig. 1. If the key retainer were constructed similar thereto, there would be eight key holding hooks in view of the fact that there are eight spaces between the adjacent semi-circular loop portions 15.

The operation of this form of the invention is as follows:

For mounting a key upon one of the key holding hooks it is merely necessary to compress the arms of the U-shaped hook 19 to disengage the outwardly turned ends 19a from the openings 18 in the inverted cup-shaped member 17. One of the arms is then passed through the hole 21 formed in the top of the key 20 and the U-shaped hook 19 is reengaged with the cup-shaped member 17 by compressing the arms thereof to permit the ends 19a of the arms of the U-shaped hook to be reengaged into the openings 18. The key holding hook may then be engaged with the plate of the key retainer by aligning the head 22b thereof of the cutouts 16 and then pressing downwards thereon to move the finger portion 23a adjacent thereto to an inoperative position to permit the head to be engaged behind the adjacent pair of semi-circular loop portions 15. To disengage the key holding hook from its connected position with the plate it is merely necessary to reverse the above procedure.

According to a modification of the invention shown in Figs. 6 to 8 the construction of a self-attached spring for key holding hooks is similar to that previously described except for the provision of a means for securely holding the finger portions in their operative positions to prevent the removal or the disengagement of the key holding hooks. This means comprises a locking rod 25 which is extended along the width of the plate adjacent the top ends of the finger portions 23 and behind the forwardly projecting portions thereof. The locking rod 25 in aligned position of the finger 23 is provided with forwardly bent portions 25a which are adapted to bear against the back face of the forwardly projecting portions at the top ends 23a of the finger portions 23 as shown in Fig. 7 to prevent them from bending to their inoperative position.

The portions 25b of the lock rod 25 located between the portions 25a are adapted to be passed through forwardly stamped portions 26 of the plate to hold the lock rod in position and provide a bearing about which the rod may be turned. One end of the rod 25 is bent at right angles thereto and projects downwards parallel to the plate when the portions 25a thereof engages the top ends 23a of the finger portions 25, which is the operative position of the lock rod. This bent end 25c forms a handle by which the rod 25 is adapted to be used for turning the lock rod 25 to disengage the portions 25a thereof from the forwardly projected portions 23a to free these top ends and permit the finger portions to flex when it is desired to remove one of the key holding hooks. The other end of the lock rod 25 passes through a friction block 27, having a rubber lining, mounted upon the opposite side of the plate for holding the lock rod 25 against turning freely except when manual pressure is applied thereto to cause the turning. This end is also bent at right angles to the body thereof to prevent axial movement of the rod with relation to the plate.

While we have illustrated and described the preferred embodiments of our invention, it is to be understood that we do not limit ourselves to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent is:

1. A self-attached spring for key holding hooks comprising a plate adapted to be attached upon a foldable cover and having a plurality of ver-

tical and horizontally spaced semi-circular loop portions with small cutouts at the sides, at the top portions thereof, and also having finger portions extending between said loop portions with the tops thereof obstructing said small cutouts, and a key holding hook with a headed stud extended between an adjacent pair of said loop portions and the sides of its head riding behind the edges of said pair of loop portions, whereby said key holding hook may freely depend from said pair of loop portions or may be moved upwards to any portion or moved to the top of the loops and flex one of said finger portions rearwards and then be movable out from said cutouts, and means for locking said finger portions in their operative obstructive positions.

2. A self-attached spring for key holding hooks comprising a plate adapted to be attached upon a foldable cover and having a plurality of vertical and horizontally spaced semi-circular loop portions with small cutouts at the sides, at the top portions thereof, and also having finger portions extending between said loop portions with the tops thereof obstructing said small cutouts, and a key holding hook with a headed stud extended between an adjacent pair of said loop portions and the sides of its head riding behind the edges of said pair of loop portions, whereby said key holding hook may freely depend from said pair of loop portions or may be moved upwards to any portion or moved to the top of the loops and flex one of said finger portions rearwards and then be movable out from said cutouts, and means for locking said finger portions in their operative obstructive positions, said means comprising a locking rod extended along the width of said plate behind the top ends of said finger portions, said locking rods having portions thereof in aligned positions with said finger portions bent forwards to engage thereagainst and prevent the same from flexing out of said cutouts.

3. A self-attached spring for key holding hooks comprising a plate adapted to be attached upon a foldable cover and having a plurality of vertical and horizontally spaced semi-circular loop portions with small cutouts at the sides, at the top portions thereof, and also having finger portions extending between said loop portions with the tops thereof obstructing said small cutouts, and a key holding hook with a headed stud extended between an adjacent pair of said loop portions and the sides of its head riding behind the edges of said pair of loop portions, whereby said key holding hook may freely depend from said pair of loop portions or may be moved upwards to any portion or moved to the top of the loops and flex one of said finger portions rearwards and then be movable out from said cutouts, and means for locking said finger portions in their operative obstructive positions, said means comprising a locking rod extended along the width of said plate behind the top ends of said finger portions, said locking rods having portions thereof in aligned positions with said finger portions bent forwards to engage thereagainst and prevent the same from flexing out of said cutouts, and means for facilitating the turning of said locking rod to disengage said forwardly projecting portions from said finger portions.

4. A self-attached spring for key holding hooks comprising a plate adapted to be attached upon a foldable cover and having a plurality of vertical and horizontally spaced semi-circular loop portions with small cutouts at the sides, at the top portions thereof, and also having finger portions extending between said loop portions with the tops thereof obstructing said small cutouts, and a key holding hook with a headed stud extended between an adjacent pair of said loop portions and the sides of its head riding behind the edges of said pair of loop portions, whereby said key holding hook may freely depend from said pair of loop portions or may be moved upwards to any portion or moved to the top of the loops and flex one of said finger portions rearwards and then be movable out from said cutouts, and means for locking said finger portions in their operative obstructive positions, said means comprising a locking rod extended along the width of said plate behind the top ends of said finger portions, said locking rods having portions thereof in aligned positions with said finger portions bent forwards to engage thereagainst and prevent the same from flexing out of said cutouts, and means for facilitating the turning of said locking rod to disengage said forwardly projecting portions from said finger portions and means for limiting the turning of said locking rod except when manual pressure is applied thereto.

5. In a self-attached spring for a key hook, a plate having a pair of adjacent vertical horizontally spaced semi-circular loop portions with small cutouts at the sides at one end thereof, a key holding hook with a headed stud extended between said loop portions with the sides of its head riding behind the edges of said pair of hooks, whereby said hook may be moved to align its head with said cutouts to be passed therethrough to free said hook, a finger portion extending from the end of said loop portions opposed to the end having said cutouts and having its free end extended into the vicinity of said cutouts obstructing a passage therethrough preventing the accidental passage of said head through said cutouts, and a lock rod extending at right angles to said finger portion and having a forwardly bent portion engaging behind the free end of said finger holding the same in its operative obstructing position.

6. In a self-attached spring for a key hook, a plate having a pair of adjacent vertical horizontally spaced semi-circular loop portions with small cutouts at the sides at one end thereof, a key holding hook with a headed stud extended between said loop portions with the sides of its head riding behind the edges of said pair of hooks, whereby said hook may be moved to align its head with said cutouts to be passed therethrough to free said hook, a finger portion extending from the end of said loop portions opposed to the end having said cutouts and having its free end extended into the vicinity of said cutouts obstructing a passage therethrough preventing the accidental passage of said head through said cutouts, and a lock rod extending at right angles to said finger portion and having a forwardly bent portion engaging behind the free end of said finger holding the same in its operative obstructing position, and means for rotatively supporting said lock bar to be turned to disengage its forwardly bent portion from behind the free end of said finger portion freeing said free end to flex to an inoperative position when the head of said key hook is being forced through said cutouts.

7. In a self-attached spring for a key hook, a plate having a pair of adjacent vertical hori-

zontally spaced semi-circular loop portions with small cutouts at the sides at one end thereof, a key holding hook with a headed stud extended between said loop portions with the sides of its head riding behind the edges of said pair of hooks, whereby said hook may be moved to align its head with said cutouts to be passed therethrough to free said hook, a finger portion extending from the end of said loop portions opposed to the end having said cutouts and having its free end extended into the vicinity of said cutouts obstructing a passage therethrough preventing the accidental passage of said head through said cutouts, and a lock rod extending at right angles to said finger portion and having a forwardly bent portion engaging behind the free end of said finger holding the same in its operative obstructing position, and means for rotatively supporting said lock bar to be turned to disengage its forwardly bent portion from behind the free end of said finger portion freeing said free end to flex to an inoperative position when the head of said key hook is being forced through said cutouts, and a stationarily mounted block of rubber through which the free end of said lock bar frictionally extends for holding said lock bar against accidentally turning into an inoperative position.

8. In a key holder, a plate having a pair of vertically disposed horizontally spaced semi-circular loop portions formed from the material thereof for supporting a key hook between the adjacent edges of said loop portions, said loop portions being formed with a small cut-out at the adjacent side top portions thereof, said side top portions being spaced inwardly from the edge of said plate, a vertical finger portion integrally formed with said plate and disposed between said loop portions, said finger portion having a free flexible top end projected into the vicinity of said cut-out for releasably obstructing the passage through said cut-out, and a vertical stiffening rib formed on said finger adjacent its point of connection with said plate to stiffen the bottom of said finger to maintain the flexible top end of said finger in position with relation to said cut-out.

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