Oct. 17, 1961 R. M. STARRETT 3,004,422

KEY HOLDER

Filed Dec. 4, 1959

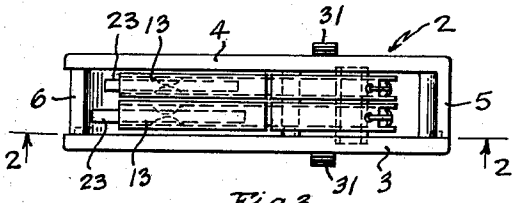


Fig. 3.

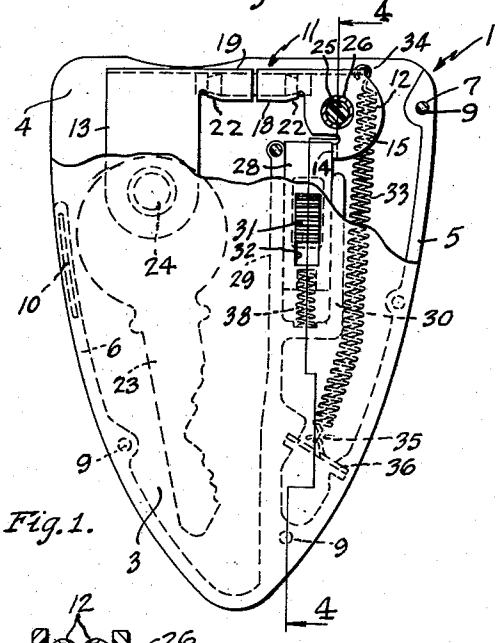


Fig. 1.

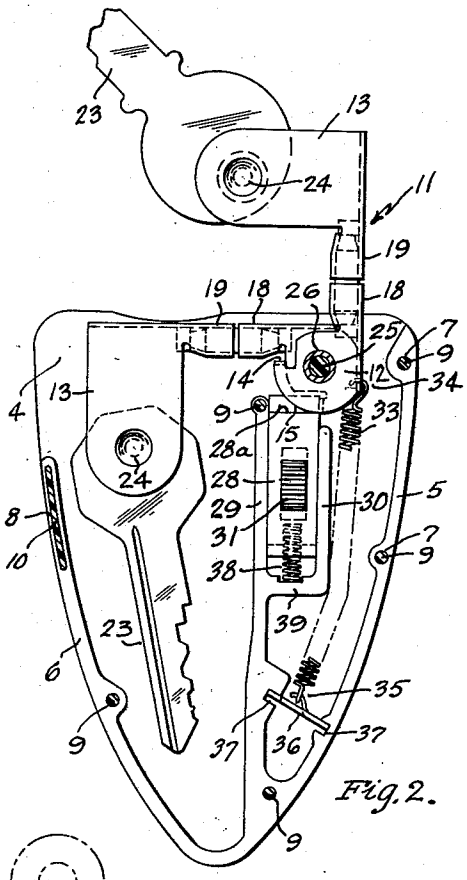


Fig. 2.

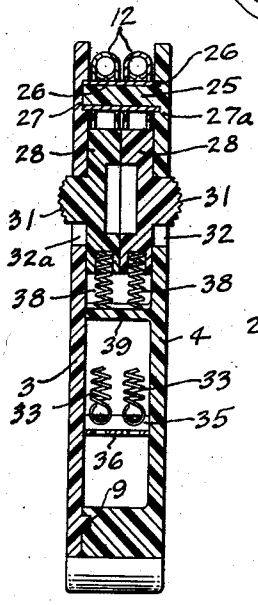


Fig. 4.

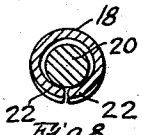


Fig. 8.

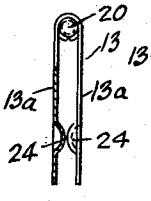


Fig. 6.

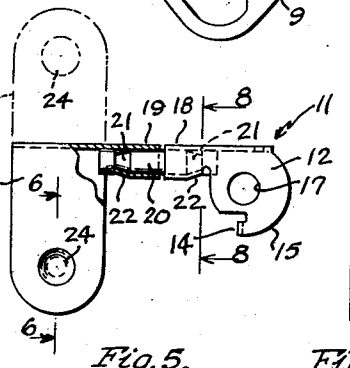


Fig. 5.

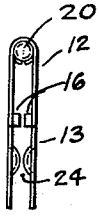


Fig. 7.

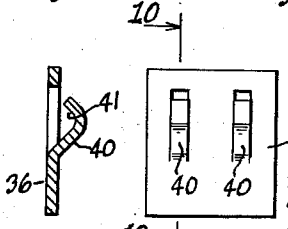


Fig. 10.

Fig. 9.

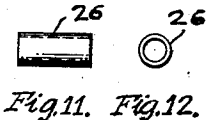


Fig. 11. Fig. 12.

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KEY HOLDER

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This invention relates to a key holder, and has for an object to provide a device for holding one or more keys in such a way that any individual key may be easily selected and shifted from an inoperative or retracted position within a housing or casing to a position for use, and then after use may be easily and quickly shifted back to its inoperative position in the casing.

Another object is to provide a device of this character in which the holder comprises a body or casing in which are pivotally mounted a plurality of key supports each individually shiftable from a retracted position within the casing to a position outside the casing by a spring, and which support is provided with means for pivotally mounting a key in the support, said support including a swivel member pivotally mounted in the casing, and an arm provided with means for pivotally supporting the key and swivelly connected to the swivel member to permit swinging of the key laterally to any desired position, and there is a manually operable releasable latch for each key support to maintain it normally locked within the casing, including means on the swivel member for retaining the latch in its retracted position when the key support is in its extended position to permit use of the key.

Another object is to provide an improved structure for a device of this character including a body member forming a casing or housing which may be molded from a suitable plastic material, including means for pivotally mounting the key supports and forming guideways for the releasable manually operable latch, together with means for mounting anchor means for the springs operating the key supports.

With the foregoing and other objects in view, I have devised the construction illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown, but may embody various changes and modifications within the scope of the invention.

In this drawing:

FIG. 1 is a side view of the device with a portion of the front wall broken away and showing the key supports in the retracted position within the casing or housing;

FIG. 2 is a front view of the device with the front wall removed showing one key in a retracted position and another in its released or extended position, the plane of the view being substantially on the line 2—2 of FIG. 3;

FIG. 3 is an end view of the holder with the key supports in the retracted position;

FIG. 4 is a longitudinal section substantially on line 4—4 of FIG. 1;

FIG. 5 is a side view of a key support removed from the casing with parts in section to more clearly show the construction;

FIG. 6 is an end view thereof looking from the left of FIG. 5 and with one side in section, taken substantially on line 6—6 of FIG. 5;

FIG. 7 is an end view looking from the right of FIG. 5;

FIG. 8 is a transverse section of a portion of the swivel connection between the members of the key support taken substantially on line 8—8 of FIG. 5 and on a larger scale;

FIG. 9 is a plan view of an anchor means for springs connected to the key supports;

FIG. 10 is a section thereof substantially on line 10—10 of FIG. 9;

FIG. 11 is a side view of a bearing sleeve or bushing for the key supports, and

FIG. 12 is an end view thereof.

The device shown comprises a body member in the form of a housing or casing 1 formed of two members 2 and 3 preferably molded of some suitable plastic material, the member 2 comprising a rear member including a rear wall 4 and convexly curved side or edge walls 5 and 6 extending at right angles thereto, and the member 3 in the form of a plate forming the front wall of the casing and closing the open side of the rear member 2. The front wall or plate 3 may be secured to the free edges of the side walls 5 and 6 by cementing or other suitable means, preferably by providing the edges of the walls 5 and 6 with blind openings or recesses 7 and a groove 8 to receive dowel pins 9 and a rib 10 molded as a part of the front plate 3, seating in these openings and groove and cemented therein to effectively secure the plate 3 to the rear member. These two members 2 and 3 provide a casing or housing which is closed on all sides except at its upper end which is open as shown in FIGS. 1, 2 and 4 to permit key supports and the keys carried thereby to be swung from the retracted or inoperative position within the casing to an extended position outside the casing to permit use of the keys carried by the supports.

In the device shown in the drawing there are two key supports 11 pivotally mounted side by side in the casing, but it will be understood that the device is not restricted to use with this number of keys, as it may be constructed to carry any desired number, either one or more. Each key support comprises a swivel member 12 and an arm member 13 swivelly connected to the member 12. The swivel member 12 is preferably made of sheet metal bent to substantially U shape, as shown in FIG. 7, including a stop shoulder 14 at one side with a curved edge 15 extending backwardly from this shoulder. The shoulder may be formed by lugs 16 bent inwardly from the edges of the side members. The side members are each provided with a pivot opening 17 for pivotally mounting the support within the casing 1. This swivel member is also provided with a tubular extension 18 and the arm member 13 is provided with a similar tubular extension 19 in alignment with the extension 18, and they are connected by a swivel pin 20 provided with tapered end portions 21 in the tubular extensions 18 and 19 with a portion of the tubular extensions crimped about the tapered end portions 21, as shown at 22, thus providing a swivel connection between the arm member 13 and the swivel member 12, which will permit the arm member 13 to be swung laterally about the swivel connection. The arm member 13 is also preferably made of metal bent to substantially U shape, as indicated in FIG. 6, between which a key 23 may be pivotally mounted to permt it to be swung to any desired position in use. Any suitable means may be provided for pivotally mounting the key between the sides of the arm member 13, but a satisfactory and effective simple means is to provide the side walls with inwardly pressed dome-shaped extensions or lugs 24 adapted to seat in the opening in the key handle from the opposite sides thereof. The resilient action of the side members 13a will permit them to separate or move apart sufficiently to permit a key to be inserted between these side members and then spring back to seat the lugs 24 in the opening in the key handle and provide a pivotal connection between them. For the same reasons a key may be readily removed for substitution of another key.

Any suitable means may be provided for pivotally mounting the key suport 11 within the casing, but a simple and effective means is to mold an inwardly extending lug or pin 25 on the inner side of the rear wall

4 of the housing and provide a bearing sleeve or bushing 26 to enclose this pin and provide a bearing for the swivel member 12 as it is passed through the opening 17 in this member. Its free end and the free end of the sleeve may be supported by being recessed in the the inner surface of the front face 3, as shown at 27 in FIG. 4, and the opposite end recessed in the wall 4 as shown at 27*a*.

A manually operable releasable latch is provided for retaining each key support 11 and the key carried thereby within the casing or housing, as shown in full and dotted lines in FIG. 1 and full lines in FIG. 2. This latch comprises a block 28 mounted to slide within the casing. It is in the form of a rectangular block guided between spaced parallel side walls 29 and 30 molded on the inner surface and integral with the rear wall 4. This block is provided with a serrated lug 31 projecting through a slot 32 in a side wall of the casing where it is accessible for operation by a thumb or finger of the user. In the device shown there are two key supports 11 mounted side by side on the pivot stud 25, and when in the retracted position within the casing the swivel connection between the swivel member 12 and the arm member 13 and the connecting portions between the side walls of these members, lie just within the free edges of the side walls of the casing at the open upper end thereof, as shown in FIGS. 1, 2, 3 and 4. The latch 28 is so arranged that when the key supports 11 are in this position the shoulder 14 on the key support engages one side of the latch 28, as shown in FIG. 1, to thus retain the key support 11 and the key carried thereby in the retracted or inoperative position within the casing. This retains the key support in this position against the action of a coil spring 33 connected at one end 34 to the swivel member 12 and at its other end 35 to an anchor plate 36 mounted within recesses 37 molded within the casing. This spring is stressed or biased so as to tend to swing the key support 11 and the key carried thereby from its retracted or inoperative position within the casing through the open end thereof to an extended or operative position, as shown at the top of FIG. 2. This action is permitted by shifting of the latch 28 downwardly from its position in front of the shoulder 14 on the latch member 12, as shown in full lines in FIG. 2. As the key support 11 is swung outwardly by the spring 33, after being released, the curved edge walls 15 of the swivel member 12 move into a position over the end wall 28*a* of the latch member 28, as shown in FIG. 2, and retain this latch in the released or retracted position while the key support 11 is swung outwardly to its extended or operative position. The latch 28 is held in this position by a coil spring 38 located between the opposite end of the latch 28 and the wall 39 connecting the walls 29 and 30.

The anchor plate 36 is preferably a rectangular sheet of metal, as shown in FIG. 9, and it is lanced to provide lugs 40 which are bent laterally from the plane of the plate providing an open hook 41 over which a loop 35 in the end of the spring 33 may be passed to connect the spring to this anchor plate. It will be seen from FIG. 4 that as there are two key supports 11 pivotally mounted side by side within the casing, and there is a spring 33 for each key support, there will be two of these lugs 40 on the plate 36, one for each spring. Also there will be a slidable latch 28 for each key support, and with two keys these two latches will be reversed so that the serrated lug 31 of one will project through the slot 32 in the rear wall 4 of the casing, while the serrated finger grip 31 of the other will project through a similar slot 32*a* in the front wall 3 of the casing. This will provide a simple way of permitting the user of the device to readily select whichever key he desires to be used, as the release latch for one key holder is on one side of the housing or casing and the operating means for the other latch is on the opposite side of the casing.

It will be seen from the above that this provides a very simple and effective means of mounting one or more keys in a casing or housing in such a way that they may be readily swung from an inoperative or retracted position enclosed within the casing or housing to an outer or operative position automatically upon mere release of the movable latch or catch 28; also that by means of the swivel connection 20 the key may be readily swung to any angular or lateral position after being swung out of the casing. After use the key and its support may be readily and easily shifted back from its extended or operative position into the casing where it is effectively enclosed, but always ready for instant use by mere release of the latch or catch 28; also that when the key support 11 is in its extended or operative position the spring biased latch 28 is automatically retained in its retracted or released position by means of the curved edge walls 15 of the swivel member 12, so that when the key support 11 is swung back to its enclosed position within the casing this latch is automatically shifted by the spring 38 into its holding position in front of the shoulder 14 on the swivel member 12. It is to be understood the housing or casing may be of any suitable shape. In the embodiment shown as there are only two keys side by side, an effective and satisfactory shape is that shown, which is substantially triangular, with convexly curved side edges 5 and 6, but it will be understood other shapes may be employed if desired. If it is desired to use a casing open at opposite ends with keys side by side to be swung outwardly from each end, the casing may be, for example, substantially rectangular and open at both ends.

Having thus set forth the nature of my invention, I claim:

1. A key holder comprising a casing including spaced side walls and an open end, a key support pivotally mounted in the casing and swingable about its pivot from a retracted position in the casing through the open end to a position outside the casing, said support including a swivel member pivotally mounted in the casing and an arm connected thereto by a swivel connection to swing in a plane at right angles to the plane of the swivel member, said arm including spaced side walls to receive a key between them and means to pivotally mount the key, a spring biased movable latch in the casing, said swivel member provided with a shoulder cooperating with the latch to retain the pivoted support in its retracted position in the casing and a surface extending away from the shoulder at one side thereof to retain the latch in its released position away from said shoulder against action of its spring, and a spring connected to the key support biased to swing the support from its retracted position in the casing to its operative position outside the casing when released by the latch.

2. A key holder comprising a casing including spaced side walls and an open end, a plurality of key supports pivotally mounted side by side in the casing and each swingable about its pivot through said open end independently of each of the other supports from a retracted position within the casing to a position extending outwardly therefrom, each support comprising spaced side walls and means for pivotally mounting a key between them, each support including a swivel member pivotally mounted in the casing provided with a stop shoulder and a curved surface leading backwardly from said shoulder, a movable latch adapted to engage said shoulder to retain the support in its retracted position in the casing, a spring biased to shift the latch to the retaining position in front of said shoulder, said curved surface of a shape and positioned to be engaged by the latch to retain the latch in the retracted released position against action of its spring while the support is swung out from the casing, manual means for shifting the latch to release the key support, and a spring biased to swing each key support from its retracted position in the casing through the open end to its operative position outside the casing.

3. A key holder comprising a casing including spaced side walls and an open end, a key support pivotally

mounted in the casing and swingable about its pivot from a retracted position in the casing through the open end to a position outside the casing, said support including a swivel member pivotally mounted in the casing and an arm connected thereto by a swivel connection, said swivel connection comprising a tubular extension on each of the swivel member and arm with a pin provided with tapered end portions in said extensions and portions of the tubular extensions crimped about the tapered end portions of the pin providing the swivel connection between the arm and the swivel member, said arm including spaced side walls to receive a key between them and means to pivotally mount the key, a spring biased to swing the support from its retracted position in the casing through the open end to an operative position outside the casing, and a manually operable latch for releasably retaining the support in its retracted position in the casing.

4. A key holder comprising a casing including spaced side walls and an open end, a key support pivotally mounted in the casing and swingable about its pivot from a retracted position in the casing through the open end to a position outside the casing, said support comprising a swivel member pivotally mounted in the casing and an arm member, one of said members provided with a tubular extension projecting from one edge thereof, a swivel pin projecting from one edge of the other member provided with a tapered end portion inserted in said tubular extension with a portion of said extension crimped about said tapered portion providing a swivel connection between the swivel member and the arm member permitting the arm member to swing in a plane at right angles to

the plane of the swivel member, and a manually operable releasable latch for retaining said support in a retracted position within the casing.

5. A key holder including a body member comprising a rear wall and integral side walls extending forwardly therefrom, a front wall member closing the open side of said body member providing a casing open at one end thereof, a key support pivotally mounted in the casing and swingable on its pivot from a retracted inoperative position in the casing through said open end to an extended key operable position outside the casing, a manually operable movable latch in the casing provided with laterally spaced side edges and adapted to releasably retain the key support in the retracted position within the casing, and laterally spaced forwardly extending guide walls on the inner side of the rear wall integral with said rear wall providing an open channel between them with these walls forming positioning supports and guide walls for the opposite side edges of the latch, the open side of the channel closed by the front wall member to retain the latch in the channel.

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