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3,349,589

KEY CONSTRUCTION

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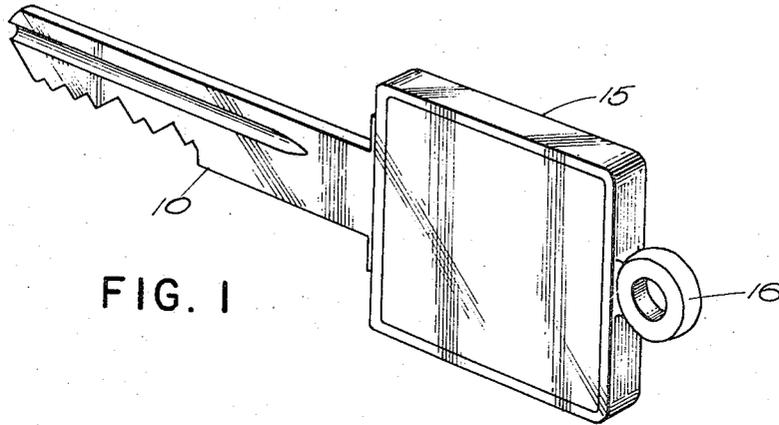


FIG. 1

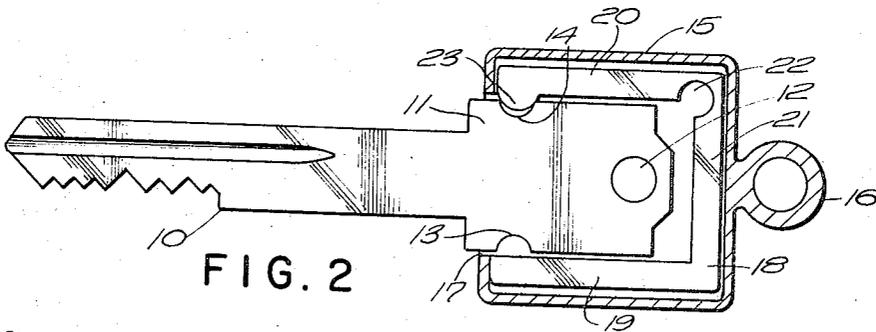


FIG. 2

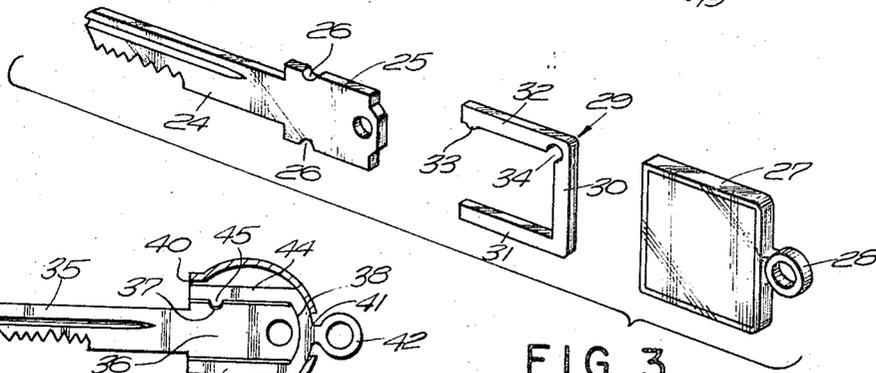


FIG. 3

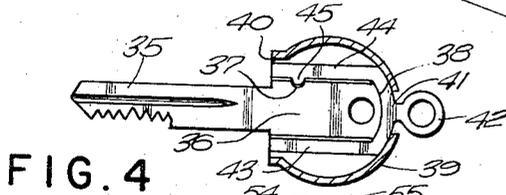


FIG. 4

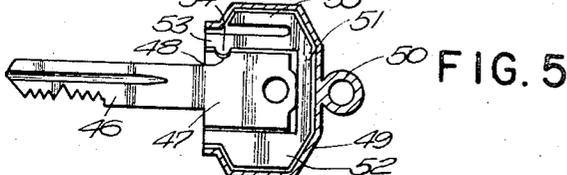


FIG. 5

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KEY CONSTRUCTION

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ABSTRACT OF THE DISCLOSURE

A separable two-section key. One section comprises the key bit with an enlarged rear portion having a small cut-out. The other section comprises a flat housing having a spring locked therein, the spring having spaced arms. One arm of the spring has a detent. The rear of the bit can be releasably retained in the housing by sliding it inwardly between the arms of the spring, the detent entering the cut-out to hold the bit in place.

My present invention relates to key constructions and more particularly to a novel separable key construction.

The principal object of the present invention is to provide a key construction which permits a separation of the key parts.

Another object of the present invention is to provide a key construction which permits the key to be removed from a key case or ring without disturbing the case or ring.

A further object of the present invention is to provide a key construction in which the key bit can readily be removed from its manually operable housing.

Another object of the present invention is to provide a separable key construction which lends itself to different ornamental key designs.

A further object of the present invention is to provide a separable key construction which is simple in basic construction and easy and economical to manufacture and assemble.

With the above and other objects and advantageous features in view, my invention consists of a novel arrangement of parts, more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more particularly defined in the appended claims.

In the drawings,

FIG. 1 is an enlarged perspective view of a key embodying my present invention.

FIG. 2 is a side elevation of the same with the manually engageable housing portion in vertical section.

FIG. 3 is an exploded perspective view of a modified form of my invention.

FIGS. 4 and 5 are sectional views similar to FIG. 2 showing additional modifications of my invention.

It has become customary to provide ornamental keys for automobiles and house keys which are provided with enlarged elaborately ornamented manually engageable ends and gold plated key bits. The large ornamental ends may be provided with initials or any type of insignia. There is also a problem created by the multiple use of the same key by different individuals. For example, parking lots are now prevalent everywhere and it is necessary for the key to be left in the car so that the attendant can move the car around. However, with the key on a key case or a key ring, it is necessary to manipulate the key ring or key case and remove the key for the benefit of the parking lot attendant. Similarly if a house key is to be passed to another individual it is necessary to remove it from its case or ring.

Applicant has therefore combined the large manually engageable ornamental rings now being provided with a novel key construction which solves the ring removal prob-

lem. In accordance with the present invention applicant has provided a flat manually engageable key portion which forms a housing and which is the portion which is actually attached to the key case or key ring. The key bit is releasably locked in this housing in such manner that it can readily be pulled from the housing and used independently thereof. This permits the key to be left in the automobile while the rest of the keys and its attached ring or case is removed and permits the passing of the key bit to another individual whether for an automobile or home without removing the manually engageable portion from the ring or case. It is contemplated that the parts be locked together with a spring tension so that a pulling force is all that is needed to provide a separation of the parts. Conversely when the key bit is inserted in its housing it will pass in with a snap action and be gripped by the spring therein.

Referring more in detail to the drawings, FIGS. 1 and 2 illustrate a basic form of the present invention. I provide a somewhat elongated form of key bit 10 having a slightly enlarged rectangular head 11 replacing the manually engageable portion. The portion 11 may be provided with a key ring opening 12 although this is optional and really unnecessary. Extending inwardly from each side edge of the head 11 is a rounded cut-out portion 13 and 14.

Replacing the manually engageable portion of the ring is the ornamental rectangular housing 15 in the form of a comparatively flat housing having an integral loop portion 16 for attaching a chain or for mounting in a key case or ring. The bottom edge or wall of the housing 15 is provided with a slot 17 just large enough to receive the head 11 of a key bit 10. Mounted within the housing 15 is a U-shaped spring member 18 having spaced parallel side arms 19 and 20 extending integrally from each end of the transverse rear arm 21. At one corner, for example between the side arm 20 and the rear arm 21 is an annular cut-out portion 22 which allows a more resilient movement of the arm 20. It is preferred that the U-shaped spring 18 be stamped from flat stock so that the arms 19 and 20 are comparatively rigid and provide a very tight spring action. Toward the front end, the arms 19 and 20 are provided with annular bumps or extensions 23 extending towards each other to form restricted slot portions.

Operation of the key is now apparent. The key bit 10 is cut out for its intended purpose and then pushed into the slot 17. It bears against the inwardly extending rounded portions 23 so that it spreads the arms 19 and 20 with a spring action while it is pushed inwardly until it reaches the position shown in FIG. 2. In this position the inwardly extending members 23 will snap into the cut-out portions 13 and 14 to resiliently lock the bit in the housing 15. Note that it makes no difference which face of the key extends forwardly or rearwardly or up or down. As long as the enlarged head 11 is pushed into the housing the parts will snap together with a spring action. The key is now ready for use and grasping the housing 11 will permit turning movement of the key as desired. If the key is to remain in the automobile or if the key bit is to be given to someone, it is a simple matter to grasp the key bit in one hand and the housing in the other and to pull it apart with sufficient force to overcome the action of the spring arms 19 and 20. The key bit will then slide out of housing and it will not be necessary to disturb the case, ring or any chain attached to the member 16.

In the construction illustrated in FIG. 3, the key bit 24 is identical to the key bit 10 illustrated in FIG. 2. It is provided with an enlarged head 25 and annular cut-out portions 26 at each side edge. Similarly the manually engageable housing 27 is also identical to the housing 15 and is provided with the integral attaching loop 28. However, the U-shape spring member 21 is provided with a transverse rear arm 30 and side arms 31 and 32 as in the

previous form. However, in this form the arm 31 is straight whereas the arm 32 is provided with its bump 33. Since the arm 32 is the arm provided with the cut-out portion 34 to provide the spring action only this arm is provided with the bump 33. Now when the key bit is inserted into the housing 27, the arm 32 will move resiliently until the bump 33 enters the cut-out portion 26. Again, it makes no difference on which side the key is inserted since there is a cut-out portion 26 on both sides. In each of these forms the parts are so made that the width of the key heads 11 and 25 are just slightly narrower than the spacing between the arms 19 and 20 and 31 and 32 so that there is a minimum of play. The two forms are therefore fairly identical except that the form shown in FIG. 3 requires a little less effort in assembling and pulling the parts apart.

FIGS. 4 and 5 are modifications designed to take care of different ornamental housing portions. For example in FIG. 4 the key bit 35 is provided with a slightly enlarged head 36 having a single cut-out portion 37 and an arcuate rear edge 38. This bit is designed to enter a circular housing 39 through the slot 40 at one edge. The spring comprises an arcuate portion 41 having an integral loop 42 extending through a small slot in the rear of the circular housing. Spaced parallel spring arms 43 and 44 extend from the ends of the portion 41, the arm 44 being provided with the bump 45 which enters the cut-out portion 37 of the key bit. As can readily be seen in FIG. 4, the action is similar to that in the previous forms. If desired the key bit may be provided with double cut-out portions 37 and the arm 43 may also be provided with a bump.

In the form shown in FIG. 5 the housing is provided with a flattened or elongated polygonal construction. Here the key bit 46 is provided with the enlarged rectangular head 47 and the cut-out portion 48 which may be duplicated on the opposite edge if desired. The housing 49 is of an elongated polygonal design having an integral loop 50 for attachment to a key case. To keep the spring properly centered, the spring now comprises a transverse rear bar 51 one enlarged side bar 52 which fills the polygonal portion at the bottom in FIG. 5, a spring arm 53 carrying the bump 54 which enters the cut-out portion 48 and a spaced parallel arm 55 for filling the space in the upper polygonal portion in FIG. 5 so that there will be no vertical or sideways movement of the spring and that it will keep its centered position ready to receive the key bit 46.

The present invention thus provides a separable key in which the key bit can be readily separated from its manually engageable enlarged end to allow the key bit to be left in a car or to be handed out to another person for opening a house door. The basic construction provides a spring action for releasably locking the key bit in the manually engageable portion. The forms illustrated in FIGS. 1, 2 and 3 are simple rectangular constructions and the forms illustrated in FIGS. 4 and 5 indicate how the basic invention can readily be applied to changes in the design. Other advantages of the present invention will be readily apparent to a person skilled in the art.

I claim:

1. A separable key construction comprising a key bit having a rear portion for applying a turning force thereto, a manually engageable flat housing having inner wall

portions and a slot in the edge for receiving said rear portion, and spring means in said housing for releasably retaining said rear portion in said housing, whereby turning of said housing will cause turning of said key bit, portions of said spring means about the inner wall portions of said housing on each side of said slot and opposite portions of said spring means about the inner wall portions opposite said slot wherein said spring means are held between said inner wall portions to lock said spring means in said housing, said spring means comprising a flat U-shaped spring member having spaced parallel arms, said rear portion of said key bit sliding into said housing between said arms, one of said spring arms having a detent on the inner edge thereof adjacent its free end, said rear portion of said key bit having receiving means on at least one side edge thereof, said receiving means engaging with said detent of said spring means to releasably retain said rear portion in said housing.

2. A separable key construction as in claim 1, wherein said rear portion comprises an enlarged rectangular portion slidable between said parallel arms.

3. A separable key construction as in claim 2, wherein said receiving means comprise an annular cut out on one side edge of said rear portion, said detent entering said cut out to retain said key bit in said housing.

4. A separable key construction as in claim 1, wherein said flat housing is rectangular, said spring retaining means having a straight transverse bar with said parallel spring arms extending from each end of said transverse bar, one end of said bar being cut out to impart resiliency to the adjacent spring arm.

5. A separable key construction as in claim 1, wherein said flat housing is annular, said spring retaining means having an arcuate transverse bar with said parallel spring arms extending from each end of said transverse bar, one end of said bar being cut out to impart resiliency to the adjacent spring arm.

6. A separable key construction as in claim 1, wherein said flat housing is polygonal, said spring retaining means having a transverse bar, a wide arm extending at right angles from one end of said bar, said wide arm contacting one side of said housing, and said spaced parallel arms extending at right angles from the other end of said bar, the outer of said parallel arms contacting said housing and the inner of said parallel arms forming a resilient spring to contact said rear portion of said key bit.

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