

[54] KEY CONNECTOR

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[51] Int. Cl. ....A47g 29/10

[58] Field of Search.....70/456 R, 456 B, 457, 458, 70/459; 24/3 K, 3 M

[56] References Cited

UNITED STATES PATENTS

2,892,537 6/1959 Schwartz .....206/38  
3,600,917 8/1971 Krock.....70/459

2,694,244 11/1954 Nolan .....70/459 X  
2,464,328 3/1949 Modrey .....24/241

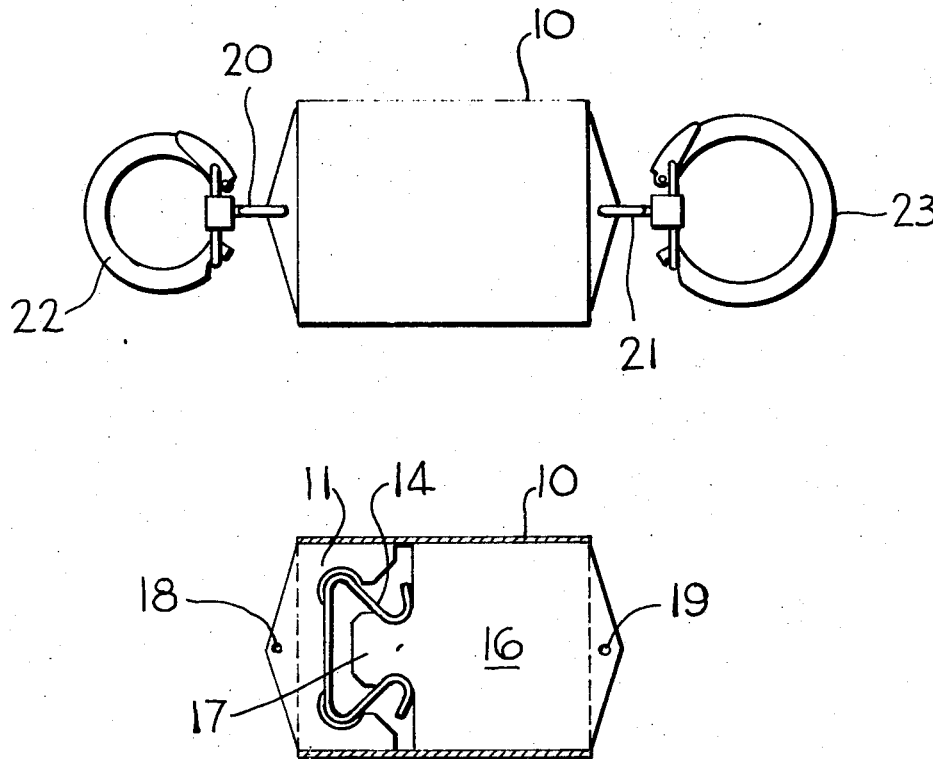
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[57] ABSTRACT

A detachable key connector has a socket element and a detachably connectible part which slides into the socket member. The socket member consists of a relatively flat tube having a plate fixed in one end thereof, with the inner edge of the plate formed to provide an undercut recess. A U-shaped spring has its base portion disposed in the undercut recess and includes converging leg portions. The detachably connectible part comprises a flat plate having a bulbous nose portion which snaps releasably between the convergent leg portions of the spring member.

7 Claims, 6 Drawing Figures



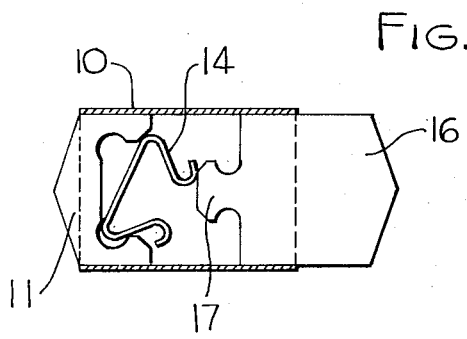
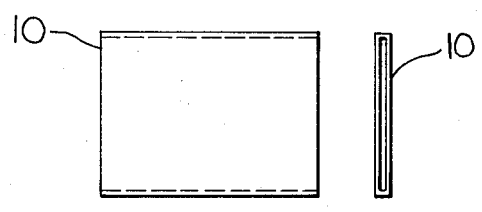
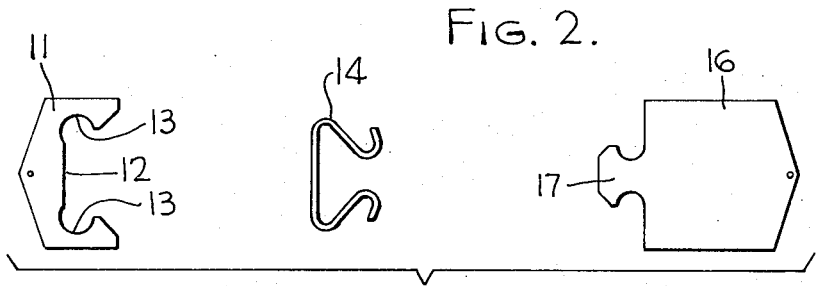
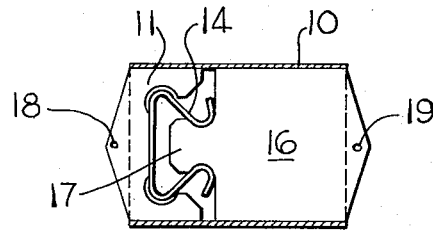
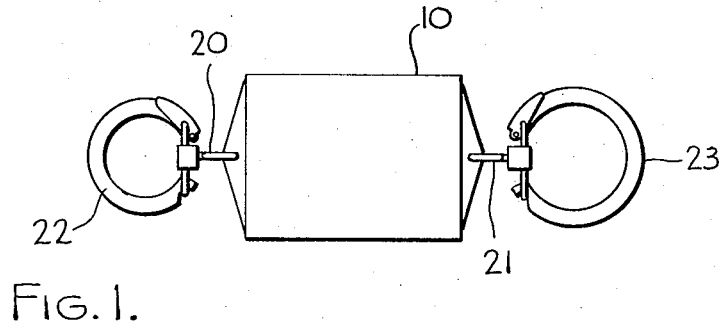


FIG. 5

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## KEY CONNECTOR

## BACKGROUND OF THE INVENTION

This invention relates to key connectors and more particularly to a coupling device for convenient separation of a key or one group of keys from another key or group of keys.

Various devices have been proposed for this general purpose as, for instance, those shown in Nolan U.S. Pat. No. 2,694,244, dated Nov. 16, 1954 and Anderson U.S. Pat. No. 3,299,679, dated Jan. 24, 1967. These devices comprise generally a pair of telescoping members, each adapted to connect with a key or a key ring or chain. The telescoping members are normally held in connected relation by a spring detent but are separable when the key or keys of the two members are desired to be separated.

## SUMMARY OF THE INVENTION

In the key connector of the present invention a socket member is formed by a plain flat tubular member having a plate fixed therein to close one end. A second plate is slidable into the socket member and has releasable connection with the first plate by means of an intervening spring connector. The second plate is separated from the socket member by merely pulling these members apart and without the necessity for releasing the members by operating a trigger or latch mechanism or otherwise unlocking the members for separation.

The design of the present connector is such as to require a minimum number of parts, which parts are extremely simple to fabricate and to assemble. The only part of the device which might in some instances become bent or fatigued is a simple wire spring element which is readily assembled into the socket member and also readily removed therefrom when replacement is desired.

## BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a general elevational view of one form of the key connector device of the present invention;

FIG. 2 is a similar view with the casing element shown in cross section for additional illustration;

FIG. 3 is a disassembled elevational view of the internal parts shown in FIG. 2;

FIG. 4 is an elevational view of the casing element;

FIG. 5 is an end view thereof; and

FIG. 6 is an elevational view showing the device in the process of assembling the spring member therein.

## DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

The casing or housing element of the embodiment illustrated in the drawing is designated 10 and, as shown in FIGS. 4 and 5, comprises a flat rectangular tube. A plate element 11 is fixed in one end of casing 10 as by spotwelding, brazing or otherwise, and is provided with a recess 12 having reentrant notches 13 for receiving a spring element 14. The latter is of generally U-shape with converging legs having outwardly bent terminal portions as clearly shown in FIG. 3.

The assembled position of spring 14 in recess 12 of plate 11 is clearly shown in FIG. 2, the spring being retained in this position by the engagement of its base

portion in the reentrant notches 13. The casing 10 together with plate 11 and spring 14 make up the female member of the connector. The male member comprises a plate 16 proportioned to slide smoothly into the open end of casing 10 and having a nose formation 17 for resilient engagement between the convergent leg portions of spring 14 as shown in FIG. 2.

The plate elements 11 and 16 have portions extending from casing 10 in assembled position which are perforated as at 18 and 19, respectively, for receiving link portions 20 and 21, respectively, of key rings 22 and 23. Instead of the key rings 22 and 23, or either of them, key chains or other devices such as identification tags may be attached to either of the plate elements 11 and 16.

In assembling spring element 14 in casing 10 and, ultimately, in recess 12 of plate 11 as illustrated in FIG. 2, it is merely necessary to drop the same into casing 10 with the open end of casing 10 uppermost and with the base or bight portion of the spring lowermost. Spring element 14 will then assume approximately the position shown in FIG. 6 since one or the other of the ends of the base portion of the spring will inevitably drop into recess 12. It is then merely necessary to insert plate 16 in casing 10 and push the same so that the nose formation 17 thereof bears against one of the outwardly bent terminal portions of spring 14. Continued pushing disposes the spring in the position illustrated in FIG. 2, where it remains until it is deliberately disassembled. When this is desired it is merely necessary to engage a hook shaped implement beneath one of the terminal portions of the spring and pull outwardly to unseat the spring from recess 12.

It will be noted that the casing 10 comprises merely a flattened tube with no other fabrication or formation and the plates 11 and 16 are simple flat metal blanks. The spring member 14 is likewise of simple form and adapted to be produced inexpensively. Assembly of the parts is likewise very simple as will be recognized from the foregoing description of a representative embodiment.

A preferred embodiment of the present invention has been described and illustrated herein to illustrate the principles of the invention but it is to be understood that numerous modifications may be made without departing from the broad spirit and scope of the invention.

We claim:

1. In a detachable key connector, a socket member defining a generally flat open-ended chamber, said chamber having a bottom wall including defining an internal recess having undercut portions at opposite sides thereof, a generally U-shaped spring member having convergent legs with the junctures of the legs with the base of the spring member retained in the undercut portions of said recess, and a companion member slidable into said socket member and having a nose portion resiliently engageable between the convergent legs of said spring member, said nose portion being laterally undercut to receive said convergent legs to be releasably retained thereby.

2. A connector according to claim 1 wherein said socket member comprises a flat tubular member having a plate element secured in one end thereof to close said end, said plate element having its internal edge formed with said recess and said undercut portions.

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3. A connector according to claim 1 wherein said socket member and said companion member have means for attachment with keys or other devices to be detachably connected.

4. A connector according to claim 2 wherein said socket member plate element and said companion member have oppositely projecting portions provided with means for attachment with keys or other devices to be detachably connected.

5. A connector according to claim 1 wherein the convergent legs of the spring member have outwardly extending terminal portions.

6. A connector according to claim 1 wherein said companion member nose portion is of bulbous shape to provide undercut recesses for receiving the terminal portions of said legs in resiliently detachable engagement.

7. A connector according to claim 5 wherein said companion member nose portion is of bulbous shape to provide undercut recesses for receiving the terminal portions of said legs in resiliently detachable engagement.

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