Jan. 26, 1960 E. HITZELBERGER 2,922,297

SNAP LOCK

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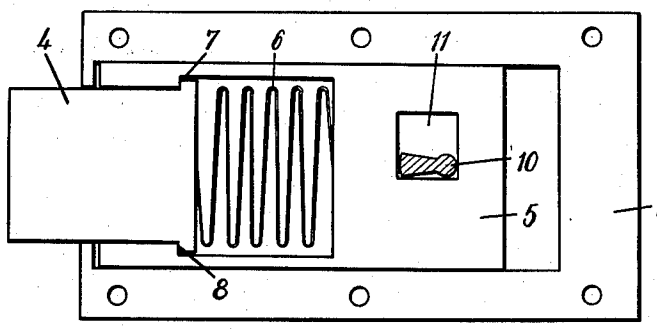

Fig. 1

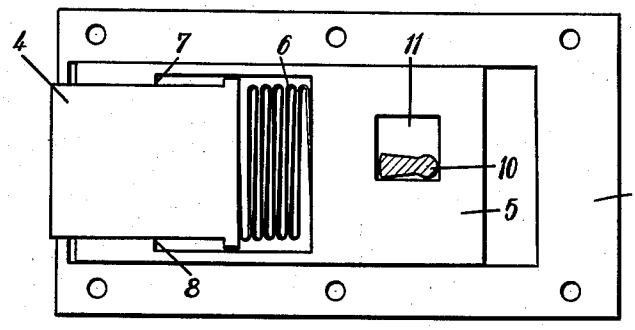

Fig. 2

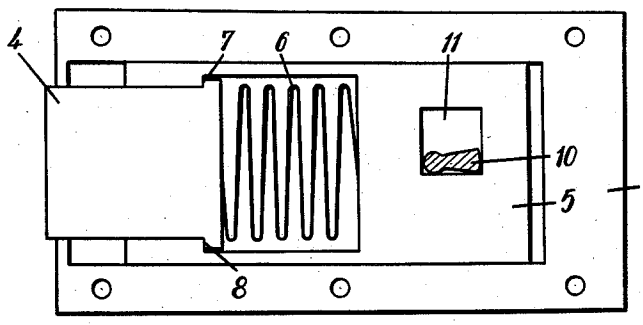

Fig. 3

INVENTOR

ERWIN HITZELBERGER

BY Dicke and Craig.

ATTORNEYS.

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SNAP LOCK

Erwin Hitzelberger, Stuttgart-Rohr, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany

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1 Claim. (Cl. 70—144)

The present invention relates to a snap lock for doors, trunk lids and the like, particularly for automobiles.

The spring or snap locks of the customary type as applied to doors, trunk lids, flaps, covers, and the like have the considerable disadvantage that, when opening the lock by means of a key or handle, the force of the locking or tumbler spring should be of a strength sufficient to withstand all requirements of operation, such as vibrations, shocks, or the like. This spring force will then be so strong that it will be difficult to overcome the same by a key, and it therefore requires a handle of sufficient length in place of such key.

The present invention has for its principal object the design and construction of a snap lock, which may be easily opened by a key inasmuch as the operation of such key does not affect the tension of the locking spring.

It is another object of the present invention to provide a snap lock with a spring-loaded bolt, the locking spring of which acts against another moveable part which may be shifted by means of a key intermediate the two end positions, while the extent of the locking movement of the bolt is limited by a stop on the other moveable part of the lock.

Further objects, features, and advantages of the present invention will be apparent from the following detailed description thereof as well as from the accompanying drawings, in which

Fig. 1 shows the new lock in the normal locking position;

Fig. 2 shows the lock with the bolt about to snap into the locking position; while

Fig. 3 shows the lock in the open position.

Referring to the drawings, the bolt **4** which, as is customary in every snap lock, is inclined on one side so as to facilitate its engagement with the cooperating catch and is slidably guided within another moveable part **5**. The locking spring **6** acts with one end upon the moveable part **5** and with its other end upon the bolt **4** and normally tends to maintain bolt **4** in its locking position as shown in Fig. 1. The extent of the locking movement of bolt **4** is limited by stops **7** and **8** on the moveable part **5**. The latter part is slidably mounted on the lock plate **9** by suitable guiding means (not shown) so as to be moveable in the same direction as the bolt **4**. Such shifting movement of part **5** may be effected by turning the key bit **10** in the keyhole **11** provided in the moveable part **5**. The two vertical edges of keyhole **11** also act as end stops for limiting the movement of part **5** in one or the other direction by engaging with the opposite rounded ends of the key bit, as illustrated in Figs. 2 and 3, in which Fig. 2 shows the movable part **5** in locking position, and the bolt **4** pushed back in the process of locking the trunk lid or whatever cover the lock may be secured to, and about to snap back into the locking position, while Fig. 3 shows the entire assembly, that is, the movable part **5**, the bolt **4**, and the spring **6** withdrawn toward the right side by movement of the key bit **10** about an angle of 180° relative to the

position shown in Figs. 1 and 2. Such turning movement by the key bit **10** does not in any way affect the tension of spring **6** and may thus be carried out without any effort.

The lock as above described obviously requires the entire key, or at least the key bit **10** thereof, to remain therein at all times. If the key is to be withdrawn, the lock may be easily modified by making the key bit **10** of a hollow shape, opening toward one side and rotatably mounting such sleeve or socket on the lock plate or plates **9**, and by inserting a key of correspondingly smaller size into such socket. Obviously, if the key is to be removed, some sort of latching mechanism as common in the art should be provided to maintain the movable part **5** in its respective end position. Such a socket part may also be replaced by a special cylinder lock, the locking cam of which would replace the key bit **10** as shown in the drawings, and which may then be opened by a separate safety key.

From the above description it should be clear that the lock as described merely constitutes an example of a variety of embodiments. Thus, the coil or zigzag spring **6** as shown in the drawings may also be replaced by a leaf spring, and the parts **4** and **5** instead of sliding along a straight track may also be modified to move along a curved path or radially about a central axis.

Although my invention has been illustrated and described with reference to the preferred embodiments thereof I wish to have it understood that it is in no way limited to the details of such embodiments or to the specific examples described, but is capable of numerous modifications within the scope of the appended claim.

Having thus fully disclosed my invention, what I claim is:

A snap lock for doors, lids and the like comprising a movable element of essentially rectangular cross section, means for freely slidably guiding said movable element for movement in opposite directions between an operative position and an inoperative position, a bolt member of essentially rectangular cross section slidably mounted on said movable element and adapted to extend with one end thereof a predetermined distance beyond said movable element, stop means provided on said movable element and said bolt member for mutually engaging each other and for limiting the movement of said bolt member to said predetermined distance beyond said movable element, a spring of a flat cross section having a zig-zag shape as viewed in elevation interposed between said movable element and said bolt member and acting upon said bolt member so as to normally urge the two stop means into engagement and position said bolt member in the predetermined extended position relative to said movable element, said movable element having an aperture including two essentially parallel straight wall portions, a cam member rotatably mounted within said aperture and when rotated in one direction adapted to act upon one of said wall portions of said aperture to shift said movable element, said bolt member and said spring as a unit from said inoperative position to said operative position, said bolt member being operative to act independently as a snap bolt, and said cam member when rotated in the other direction being operative to act upon the other of said wall portions of said aperture to withdraw said movable element, bolt member and spring as a unit from said operative position to said inoperative position, whereby said spring is merely effective to maintain said bolt member in said predetermined extended position relative to said movable element but has no effect on the essentially free rotation of said cam member and the accompanying shifting movement of said movable element, said bolt member and said spring as

a unit from one to the other of said two first-mentioned positions.

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