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E. ROETHLISBERGER

MULTIPLE PLUG KEY

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Fig. 1.

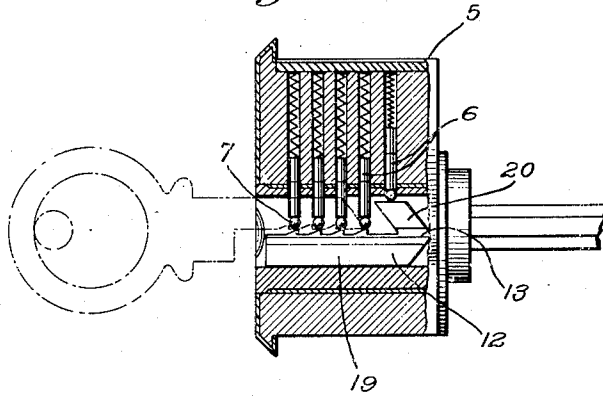


Fig. 2.

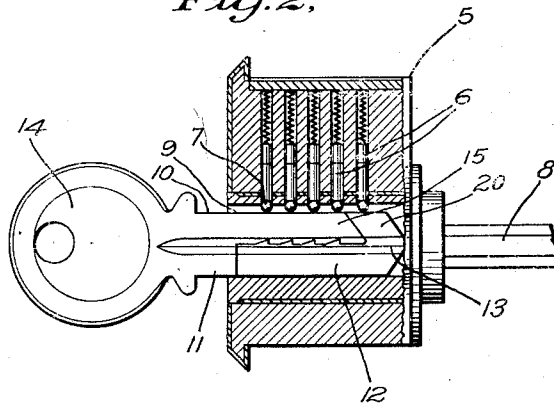
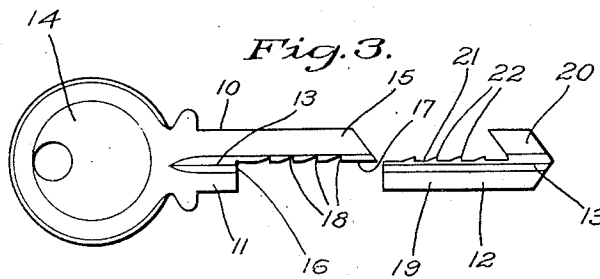


Fig. 3.



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MULTIPLE-PLUG KEY.

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This invention relates to locks of various kinds and classes and particularly to tumbler locks and to the provision of means in the form of a key for rendering said locks operative at will, and the object of the invention is to provide a plug key composed of separate cooperative parts, one of said parts constituting the plug proper and being adapted to be inserted into a lock, and the other of which parts facilitates the removal of the plug part from the lock at will; and with these and other objects in view, the invention consists in a plug key construction of the class specified which is simple in construction, and efficient in use and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Fig. 1 is a sectional view through a tumbler lock illustrating a plug key mounted therein.

Fig. 2 is a view similar to Fig. 1 and illustrating the method of removing the plug key or a part thereof; and,

Fig. 3 is a detail view of my improved key construction with the separate parts thereof detached.

In Figs. 1 and 2 of the drawing, I have shown at 5 the cylinder construction of what is known as a tumbler lock for the purpose of illustrating one use of my invention, and 6 represents a number of tumblers in the cylinder of the lock, the ends of said tumblers cooperating with balls 7 in the usual manner, and in the drawing, 8 represents the lock spindle which controls the latch and lock bolts of the lock, and 9 represents the key aperture into which the usual key for the lock is inserted for actuating the tumblers and for rotating the spindle 8.

In Fig. 3 of the drawing, I have indicated at 10 my improved plug key, said key being composed of two parts 11 and 12 and the parts 11 and 12 when fitted together form a substantial key blank, which is curved as shown at 13 or otherwise fashioned to conform with the contour of the aperture 9 of the lock. The part 11 of the key 10 is provided with the usual finger pieces 14 and the shank 15 thereof is cut away as shown at 16, and the face 17 of the shank is pro-

vided with a plurality of notches or recesses 18 forming corresponding projecting members. The part 12 of the key 10 is substantially L-shaped in form, the shank 19 thereof being adapted to fill the cut away portion of the shank 15, while the extension 20 cooperates with the end of the shank 15. The face 21 of the part 12 or the shank 19 thereof is provided with a plurality of projecting members 22, which correspond with the recesses 18 in the part 11, and these projecting members and recesses constitute the key structure between the separate parts 11 and 12 of the plug key. That is to say, the part 11 must have on the face 17 a formation in the way of grooves or projections which will correspond with grooves or projections on the face 21 of the part 12 in order that these parts may cooperate to produce the desired result.

My improved plug key is designed to be used by a predetermined party or parties and to be inserted into the aperture 9 of a lock of the class specified to render such lock useless and to prevent the insertion of the usual key or a skeleton key into the lock to actuate the same, and in accomplishing this result the part 12 is simply passed into the aperture 19 and forced inwardly into the lock or the cylinder 5 thereof, in which operation the tumblers 6 are first raised and a predetermined number thereof will then drop in front of the projection 20 on the part 12 and thus prevent the removal of said part from the lock, and with the part 12 within the aperture 9, it will be impossible to insert the usual key for manipulating said lock. An authorized party or a party holding the part 11, which is a mate to the part 12 may remove the part 12 or plug part by inserting the part 11 into the aperture 9, in which operation the shank 15 passes over the shank 19 and over the projecting members 22, and when in its innermost position, will drop into the position shown in Fig. 2 and the part 11 will then interlock with the part 12 as clearly shown, and will permit of the withdrawal or removal of said part from the cylinder 5 of the lock or the key aperture 9 thereof. It will be noted that when the parts of the key 10 are in the position shown in Fig. 2, the upper edge of said key or the upper edges of the separate parts 11 and 12 thereof are in a common plane, thus facilitating the removal of said parts.

It will be understood that the key 10 is not provided with the usual grooves, projecting members and the like to facilitate the manipulation of the lock, but is in the form of a blank key of a contour capable of insertion into the key aperture 9 but which will not operate to manipulate the lock.

It will be understood that the faces 17 and 21 of the separate parts 11 and 12 may be varied in many ways to constitute different key combinations, whereby it is necessary to have the proper part 11 to cooperate with a given plug part 12, and unless these parts are mates, the part 12 cannot be removed. With a plug key construction of the class under consideration, the lock of a door leading to a room, compartment, home or the like may be securely plugged against picking or against opening by skeleton keys or other keys, until the plug within the lock is removed by a proper mate to said plug key, and while I have shown and described one method of carrying my invention into effect, it will be understood that I am not necessarily limited in this respect, and various changes in and modifications of the construction herein shown and described may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

It will also be apparent that my improved key construction may be used in connection with door lock, padlocks, motor vehicle locks of any kind or class, such for example as ignition locks, transmission locks and the like, and said key may be used in connection with any other kind or class of locks or the different uses of such locks.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A plug key for tumbler locks, said key being composed of two interlocking and cooperative parts, both of which when placed one upon another and edge to edge cooperatively are of a cross section corresponding with the key aperture of a predetermined lock.

2. A plug key for tumbler locks employing longitudinally spaced tumblers transversing the key aperture of the lock, said

key comprising a part adapted to be inserted into the key aperture and engage said tumblers to prevent the displacement of said part, another part adapted to be inserted into the key aperture and to cooperate with said tumblers and said first named part to permit the withdrawal thereof, both of said parts being provided with interlocking members, the cross sectional form of said parts cooperatively corresponding with the contour of said key aperture, and said last named part being provided with a finger piece.

3. In combination, a key hole plug and a plug key for locks, the key hole of which has tumblers spaced longitudinally thereof, said plug and key being adapted to fit each other in edge to edge relation and having interlocking engagement when together, said plug and key each having tapering inner ends constituting cams to elevate the tumblers when inserted into the key hole of the lock.

4. A plug key for cylinder locks employing a rotary key plug and longitudinally spaced tumblers transversing the key aperture of the lock, said key being composed of two interlocking and cooperative parts, one of said parts being adapted to be inserted into said key aperture and having a projection at its inner end cooperating with said tumblers to prevent the withdrawal or removal of said part.

5. A plug key for cylinder locks employing a rotary key plug and longitudinally spaced tumblers transversing the key aperture of the lock, said key being composed of two interlocking and cooperative parts, one of said parts being adapted to be inserted into said key aperture and having a projection at its inner end cooperating with said tumblers to prevent the withdrawal or removal of said part, and the other of said parts being adapted to be inserted into the key aperture to move said tumblers into inoperative position and to cooperate with the first named part to permit of the withdrawal thereof.

In testimony that I claim the foregoing as my invention I have signed my name this 18th day of April, 1923.

EMIL ROETHLISBERGER.