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KEY SAFE

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This application is a continuation of my copending application Serial No. 847,172, filed October 19, 1959. The invention herein presented relates to key safes and refers more particularly to a key retainer or receptacle which may be used in cooperation with a lock mechanism to secure a key within the receptacle whereby access to the key by unauthorized persons is prevented.

During construction of a building, it is desirable to permit access thereto only by authorized persons after construction has reached a stage where the building may be locked up at night. The same also holds true of finished buildings which are being offered for sale or resale. This, however, presented a problem which was especially acute in our modern economy due to the fact that it was necessary in such instances that a comparatively large number of persons have access to a building for construction and/or repair purposes, or in connection with a possible transfer of ownership.

While all authorized persons could be supplied with keys, that solution is undesirable because of the expense involved in procuring the quantity and variety of keys that would necessarily have to be purchased for short time use, to say nothing of the annoyance of accounting for such keys.

It is also possible, of course, for contractors or real estate firms to place the keys to buildings under construction or to be sold in the custody of a certain responsible person. That procedure, however, can result in many lost hours in locating the custodian, procuring the desired keys, and then later returning them, unless the person having possession of the keys stays at or close by the buildings involved. Obviously, it is economically infeasible to have such a custodian stationed at each of several buildings at remote locations, and as a result, the keys had to be kept, in many instances, far from many of the properties involved.

Moreover, even if the keys were to be kept at or near the places of intended use, it would still be desirable to have the keys deposited in a specific place rather than being carried about by one individual. This is particularly true of master keys for hotels or the like.

Consequently, there was a definite need for a device which would permit a key to be kept at the place of its intended use, but still inaccessible to unauthorized persons. Experience has shown that this need has never been adequately met. Various devices have heretofore been proposed to allow deposit of a key within a receptacle and the receptacle somehow thereafter locked to a building and also against entry to its interior. All of these devices, however, have proved to be expensive and excessively bulky in construction, and therefore unsuitable for use to any great extent in the manner for which they were intended.

While it might appear that the cost factor could be solved by merely threading the head of a key onto the shackle of a padlock and securing the lock to a hasp on the side of a building or the like, such a solution would be highly undesirable from at least two standpoints. First, an ordinary or conventional key does not usually have a hole therein large enough to receive the shackle of a lock, thus necessitating modification of each key used. Second, and more important, it would leave the shank of the key exposed so that its notched edge could

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easily be gauged by anyone desiring to duplicate the key.

From the foregoing, it is evident that a need clearly existed for a key safe which would be simple and economical to produce, easy to use, require no modification of the key to be retained therein, and which would effectively shield the notched edge of the key shank to prevent gauging thereof by persons attempting to duplicate the key.

It is therefore an object of this invention to provide a simple and inexpensive device which effectively precludes access to a key by unauthorized persons.

More particularly, it is an object of this invention to provide a key safe with a key receptacle having three protective walls which cooperate with retaining means connected with certain of said walls to secure a key wholly within the receptacle.

Still more particularly, it is an object of this invention to provide a key receptacle having a pair of spaced parallel walls between which a conventional key may be flatwise inserted, and a substantially narrow connecting wall portion spanning the space between them and co-operable with a pair of locking rods projecting through the parallel walls to hold a conventional key in the receptacle.

It is still another object of this invention to provide a key receptacle which may be used with a conventional lock, preferably of the combination type so as to obviate the need for key actuation thereof, to secure a key within the receptacle.

Another object of this invention is to provide a key receptacle capable of being stamped from a small piece of sheet metal and having superimposed walls spaced to receive a key flatwise therebetween with one edge portion of its head arranged to be contiguous to a retaining wall joining said superimposed walls and an opposite portion of its head disposed partially between the legs of a lock shackle passing through said superimposed walls, to prevent withdrawal of the key from the receptacle.

It is yet another object of this invention to provide a key receptacle of the character described with means by which the receptacle may be easily and permanently secured to the body of a padlock in a position at which the lock shackle coacts with the receptacle wall to releasably secure a key in the receptacle.

Further, it is another object of this invention to provide a key receptacle of the character described wherein the lower one of the superimposed walls between which a key is receivable is provided with means to discourage sawing therethrough in an effort to free a key from the receptacle.

With these and other objects in view which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the here-indisclosed invention may be made as come within the scope of the claims.

The accompanying drawings illustrate two complete examples of the physical embodiments of the invention constructed according to the best modes so far devised for the practical application of the principles thereof, in which:

FIGURE 1 is a perspective view of the key safe of this invention showing the same in its locked condition;

FIGURE 2 is a similar perspective view but showing the key safe in its unlocked, key inserting and removing condition;

FIGURE 3 is an end elevational view of the device shown in FIGURE 1;

FIGURE 4 is a sectional view taken along the line 4-4 in FIGURE 3;

FIGURE 5 is a perspective view of the key receptacle per se, in a slightly modified form; and

FIGURE 6 is a perspective view of a key safe of this invention provided with another modified form receptacle.

Referring now more particularly to the accompanying drawings, in which like reference characters have been applied to like parts throughout the several views, the key safe of this invention comprises a receptacle 8, and a lock mechanism 9 which is used in conjunction with the receptacle to secure a conventional key 10 therewithin.

The lock mechanism is shown as a conventional padlock having a body 11 with flat and parallel front and rear faces, and a flat top 12 from which the shackle 13 of the lock projects. As is customary, the shackle is an inverted U-shaped member that is bodily movable up and down relative to the lock body between locking and unlocking positions. One leg 14 thereof is pivotally mounted in the body to provide for swinging of the other leg 15 away from the top of the body when the shackle is in its unlocked or uppermost position at which the leg 15 is withdrawn from the body.

The padlock illustrated also has opposite convexly curved sides 16, and a dial 17 which is rotatably mounted on the lock body and accessible at its front face to provide for actuation of the tumblers of the lock mechanism. It will, of course, be readily appreciated that the key securing device of this invention may be secured to a hasp or the like on a building by merely slipping the swinging leg 15 of the shackle therethrough.

As shown by the drawings, the receptacle 8 is mounted on the top of the lock body and comprises a simple, elongated and narrow channel shaped metal stamping having a web 19 that provides an upright back wall, and flanges that project forwardly from the web and provide parallel superimposed top and bottom walls 20 and 21 respectively. The back wall 19 is substantially narrow and holds the top and bottom walls spaced apart a distance sufficient only to readily allow one or two modern house keys to be received flatwise therebetween. The bottom wall projects from the web 19 a distance somewhat greater than the diameter of the head 22 of the key and the length of the receptacle is also somewhat greater than that of a key received therein.

Thus, with the receptacle of a size and shape as described, a key 10 may be received between the superimposed walls of the receptacle to rest flatwise upon the lower wall 21 with the inner edge portion of the head 22 of the key contiguous to the back wall 19 and the opposite or outer edge portion of the head facing the open side of the channel but spaced inwardly from the forward edge of the lower wall. This condition is shown in FIGURE 4, where it will be noted that the blade or shank 23 of the key extends toward one end 24 of the receptacle, and has its notched edge facing the back wall 19.

The bottom wall 21 of the receptacle is seated flatwise upon the top 12 of the lock body and extends lengthwise thereacross, namely from side to side of the body. A pair of ears 25 struck downwardly from the bottom wall 21 of the receptacle embrace the opposite sides of the lock body at its upper portion to provide for securement of the receptacle to the body. This may be readily effected as by pins 26 driven into suitable registering holes in the ears and the sides of the lock body to permanently secure the receptacle thereto.

The legs of the shackle 13, of course, pass through the bottom wall of the receptacle, and when the top wall is extended to be substantially coextensive in width from front to back with the bottom wall, as shown in the drawings, then the legs must likewise pass through the top wall of the receptacle. Hence, the bottom wall 21 has a pair of spaced apertures or openings 27 and 28 therein, aligning with one another lengthwise of the receptacle, but spaced a distance from the back wall 19

a distance depending upon the diameter of the head 22 of the key to be inserted into the receptacle. These openings may be those formed by striking the ears 25 from the bottom wall 21. The pivot leg 14 of the shackle passes vertically through the aperture 28 and also through an aperture 29 in the top wall 20 of the receptacle, while the swinging leg 15 of the shackle passes through the aperture 27. As shown in the drawings, a corner portion of the top wall is cut away or notched as at 30 to enable the leg 15 of the shackle to swing freely forwardly whenever the shackle is in its uppermost or unlocking position at which its leg 15 is completely withdrawn from the lock body and the aperture 27 in the lower wall of the receptacle.

Considered in another light, the bottom wall of the receptacle may be said to be extended lengthwise of and toward one end of the receptacle, beyond the top wall, it being understood that the extension of the bottom wall has the hole 27 therein. In either event, however, the receptacle is preferably provided with a forwardly facing abutment 31 thereon which may be engaged by the leg 15 of the shackle to limit rearward swinging motion thereof at a position aligning with the hole 27 in the bottom wall extension and with the registering hole in the lock body into which the leg 15 must be depressed to lock the shackle closed. The abutment 31, as shown, may comprise one edge of the notch 30, or it may be considered as being provided by a flange portion 32 extending forwardly from the back wall 19.

Although the shackle legs are primarily held in fixed predetermined relation to the back wall 19 of the receptacle by the securement of the ears to the opposite sides of the lock body, the apertures 27, 28, and 29 themselves may also serve to prevent the shackle legs from being moved a distance from the back wall 19 of the receptacle sufficient to allow the head of a key to slide flatwise therebetween in the event the pins 26 were sheared in an effort to gain access to the receptacle.

To discourage sawing through the front edge of the lower wall 21 in an effort to enlarge aperture 27, which of course would then permit the receptacle to be pivoted about shackle leg 14 and allow the head of a key therein to clear the shackle leg 15, the lower wall is preferably extended a substantial distance forwardly, as at 33, beyond the front edge of the top wall. As shown best in FIGURES 1 and 2, an intermediate portion 34 of this extension may, if desired, be bent downwardly to lie against the front face of the lock body. In the embodiment of the invention shown in FIGURE 5 the downwardly projecting lip 34 is omitted.

The spacing of the shackle legs 14 and 15 both with respect to one another and with respect to the back wall 19 must be so related to the outline of the head 22 of a key in place within the receptacle that the two legs of the shackle cooperate with the portion of the back wall 19 opposite them to define a pocket in which the head of the key is loosely confined whenever the shackle is locked closed. This condition is illustrated in FIGURE 4, where it will be seen that an inner edge portion of the key head is contiguous to the back wall 19 while an outer edge portion of the head projects into the space between the shackle legs.

When the head of the key is so confined, the shank 23 of the key is wholly received between the upper and lower walls of the receptacle, and displacement of the key from the receptacle is positively precluded.

In addition, it will be noted that the pivot leg 14 of the shackle is so positioned that it prevents the shank 23 of the key from being turned from a normal position at which its notched edge 35 faces the back wall 19, to a position at which the notches might be accessible for gauging by a person attempting to duplicate the key. In assembly, the shackle legs are threaded through the aligned apertures in the upper and lower walls of the

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receptacle with the pivoted leg 14 of the shackle projecting through their holes 28 and 29, while the movable or swinging leg 15 of the shackle projects downwardly through the notch 30 in the upper wall and through the aperture 27 in the lower wall. The shackle legs thus in effect provide rods which, along with the back wall 19 of the receptacle, coact to hold the key head 22 confined in the pocket conjointly formed by the walls of the receptacle and the rods.

When the lock 9 is opened, as shown in FIGURE 2, the shackle is moved bodily upwardly a distance such that its swinging leg 15 is completely withdrawn from the aperture 27 and clears the top surface of the lower wall 21 of the receptacle, so as to be free to swing forwardly to an inoperative position at which the key 10 may be removed from the notched end of the receptacle.

The purposes of this invention are best achieved when the lock is a padlock equipped with a combination locking mechanism that is actuable by a manually rotatable dial 17 on the front face of the body. Some locks of this type are especially suitable inasmuch as they give the further advantage of enabling the combination of the lock to be readily changed if the need for such change arises.

It is understood, of course, that while a combination type padlock is preferable, there may be instances where a padlock of a type requiring operation by a suitable key would suffice, especially where a number of such padlocks were operable by a single key.

While the key receptacle of this invention is primarily designed for securement to and coaction with a padlock as shown in FIGURE 1, it is not essential that the receptacle be permanently attached to the body of the padlock. The receptacle shown in FIGURE 6, for example, need not be fixed to the body of the lock. As therein shown, the receptacle may have resilient upper and lower walls 20' and 21', respectively, which are spring biased apart, away from parallelism. The apertures 27', 28' and 29' in these walls, however, though formed to freely slidably receive the shackle legs when the walls are flexed into parallel relation with one another, have edge portions which bite into and seize upon at least the pivot leg 14 of the shackle in the normal or nonparallel condition of the superimposed walls to releasably secure the receptacle to the lock mechanism. Thus, when the top and bottom walls of the receptacle are pinched toward parallelism, the shackle legs are released and can be moved lengthwise through the apertures in the receptacle walls.

In this form of the invention, the operator may advantageously effect release of the shackle from the bite of the edges of the holes in the top and bottom walls of the receptacle by simultaneously pressing down on the top wall 20 with his fingers and upwardly against the underside of the lock body with his thumb. This allows the lock shackle to spring upwardly relative to the receptacle when the lock is unlocked and access to a key within the receptacle by an authorized person desired.

It will be understood, of course, that in the embodiment of the invention shown in FIGURE 6, the edges of the holes 27', 28' and 29' provide the sole means for properly positioning the shackle legs with respect to the back wall 19 of the receptacle.

In view of the foregoing, it should be readily apparent to those skilled in the art that this invention provides a simple and economical key safe that is admirably suited for retention of a conventional key wholly within the receptacle and thereby protected against unauthorized use of the key, or gauging of its notched edge in an attempt to duplicate the key.

What is claimed as my invention is:

1. In a safe for a substantially flat conventional key having a blade and an enlarged head at one end of the blade: a lock having a body and having a pair of sub-

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stantially parallel locking members projecting upwardly from the top of the body and spaced apart in one direction with respect to the body, one of said locking members being movable upwardly out of the body in the unlocked condition of the lock; means defining a narrow substantially channel shaped elongated key receiving receptacle having a length at least equal to the overall length of a key, the web of the channel shaped receptacle providing an upright back wall and the flanges of the channel providing superimposed top and bottom walls extending forwardly from the back wall and spaced apart a distance slightly greater than the thickness of a conventional key, said superimposed walls being apertured to receive said locking members; and cooperating means on the receptacle and the lock holding the receptacle in a predetermined position relative to said locking members, with its back wall extending lengthwise in said direction and spaced rearwardly from both of said locking members a distance such that a key resting flatwise upon the bottom wall in a position with its head contiguous to the back wall and its blade passing between the back wall and one of said locking members can have the front edge portion of its head straddled by said locking members so that the key will be held against displacement out of the receptacle as long as the lock is in locked condition but is freed for removal from the receptacle upon upward motion of said movable locking member to a position clearing the head of the key when the lock is unlocked.

2. The key safe of claim 1, further characterized by the fact that the locking members are provided by the legs of an inverted U-shaped shackle, and wherein the receptacle is positioned between the bight of the shackle and the lock body.

3. The key safe of claim 2 further characterized by the fact that one leg of said shackle is carried by the lock body for rotation and for limited axial movement while the other leg is constrained to movement with the pivoted leg, and still further characterized by the fact that said top wall has a notch opening to its front edge and in which said other leg of the shackle is received to permit said other leg to be swung outwardly away from said upright wall portion in the unlocked condition of the lock.

4. The key safe of claim 2, further characterized by the fact that said cooperating means comprises ears on the bottom wall of the receptacle embracing the lock body and pinned thereto.

5. The key safe of claim 1 wherein said superimposed walls are spring biased apart and wherein said cooperating means comprises apertures in the top and bottom walls of the receptacle having edges that bite into the shackle legs under the influence of the biasing force on the top and bottom walls to releasably retain the receptacle in place on the shackle.

6. In a safe for a substantially flat conventional key having a blade and an enlarged head at one end of the blade, the combination of: a lock having a body and a shackle projecting from the top of the body and comprising connected vertically extending legs which are movable bodily upwardly in the open position of the lock to free one of said legs for forward swinging motion about the axis of the other of said legs; and a key receiving receptacle on the top of the lock body comprising a member having top and bottom substantially horizontal walls joined together along their rear edges by a back wall and spaced apart a distance slightly greater than the thickness of a conventional key to enable the same to be inserted therebetween with the key resting flatwise on the bottom wall and with the enlarged head of such a key and its blade edgewise adjacent to said back wall, said top and bottom walls being apertured to receive the shackle legs; and means mounting the receptacle on the lock with the back wall so spaced from the shackle legs that a key in place in the receptacle will be held by said back wall with a front edge portion of

its head loosely straddled by the shackle legs and its blade loosely edgewise confined between said back wall and the other of the shackle legs to thereby prevent removal of the key from the receptacle, the aperture in the top wall through which said one leg of the shackle projects opening to the front of the receptacle so that when the lock is opened, the shackle may be lifted upwardly to disengage said one leg thereof from the aperture in the bottom wall and free it for forward swinging motion to a key releasing position clear of the head of a key in the receptacle.

7. In a safe for a substantially flat conventional key having a blade and an enlarged head at one end of the blade, the combination of: a lock having a body and a shackle projecting from the top of the body and comprising connected vertically extending legs which are movable bodily up and down between locked and open positions in the latter of which one of said legs is free to swing forwardly about the axis of the other of said legs; and a key receiving receptacle on the top of the lock body comprising an elongated substantially narrow channel shaped member, the web of which provides an upright horizontally extending back wall and the flanges of which provide forwardly extending superimposed horizontal top and bottom walls spaced apart a distance slightly greater than the thickness of a conventional key, the bottom wall being extended beyond the top wall lengthwise of and at one end of the receptacle, and having a hole in said extension to receive the swinging leg of the shackle, and the superimposed portions of said top and bottom walls having registering holes therein spaced from said first designated hole lengthwise of the receptacle and in which the pivoted leg of the shackle is received, and each of said holes being spaced apart substantially the same distance from the back wall of the receptacle; and cooperating means on the receptacle and the lock holding the receptacle in a predetermined position with its back wall spaced a distance from the shackle legs such that a key, resting flatwise upon the bottom wall in a position with its head contiguous to the back wall and its blade passing between the back wall and one leg of the shackle, can have the front edge portion of its head straddled by said shackle legs so that the key will be held against displacement out of the receptacle as long as the shackle is in its locked position but will be removable from the receptacle in the unlocked position of the shackle at which its swinging leg is withdrawn from the hole in the bottom wall extension and free to swing forwardly to a position clearing the head of the key.

8. The key safe set forth in claim 7 further characterized by the provision of forwardly facing abutment means on the receptacle engageable by the swinging leg of the shackle to limit rearward motion thereof beyond a position at which the shackle may be depressed to its locked position.

9. The key safe set forth in claim 8 wherein said forwardly facing abutment means comprises a portion of the top wall of the receptacle extending forwardly from the back wall thereof over said bottom wall extension.

10. In a safe for a substantially flat conventional key having a blade and an enlarged head at one end of the blade: a lock having a body and having a pair of spaced substantially parallel locking members projecting upwardly from the top of the body, one of said locking members being movable upwardly out of the body in the unlocked condition of the lock; a substantially horizontal bottom wall adjacent to and above the top of the lock body, said bottom wall having a pair of apertures receiving said locking members, said bottom wall also having a back edge substantially uniformly spaced from said locking members and an upper surface upon which a key may be flatwise supported; a back wall connected to the bottom wall along the back edge thereof and adapted to extend upwardly adjacent to the rear edges of the head and blade

of a key in position on the upper surface of the bottom wall; means connected to the back wall providing a substantially horizontal top wall adapted to cover a key in position on the bottom wall; and cooperating means on the bottom wall and the lock holding the locking members in predetermined spaced relation with respect to the back wall so that the head of a key in position on the bottom wall may have the front portion of its head disposed in the space between said locking members and its blade behind one of them so that the key will be held in said position as long as the lock is in locked condition but is freed for removal from said position upon upward unlocking motion of said movable locking member a distance sufficient to clear the head of the key.

11. As an article of manufacture, a key receptacle comprising: an elongated substantially narrow channel-shaped member the web of which provides a narrow horizontally extending back wall and the flanges of which provide superimposed substantially horizontal top and bottom walls extending forwardly from the back wall and spaced apart a distance slightly greater than the thickness of a conventional key, the top wall being notched at one front corner and the bottom wall having an aperture therein beneath said notched portion of the top wall but spaced from the back wall, and the superimposed portions of the top and bottom walls having vertically aligning holes therein spaced from the back wall substantially the same distance as said aperture, said holes and aperture being adapted to receive the legs of a lock shackle; and means on the receptacle for attaching the same to a lock with the legs of the lock shackle passing through said holes and aperture, so as to enable a conventional key within the receptacle, resting flatwise upon said bottom wall thereof with its blade between one of the holes and the back wall, to be locked in the receptacle by confinement of the head of the key between the back wall of the receptacle and reception of a portion of the key head between the shackle legs in said holes and apertures.

12. The structure of claim 11 further characterized by the fact that one said opening in the top wall is substantially coextensive in area with the bottom wall except for a notch in one front corner portion of the top wall to enable the receptacle to be used with an ordinary padlock having a shackle with one pivoted leg and one swingable leg.

13. The structure of claim 11 further characterized by the fact that said lower wall is extended outwardly beyond the upper wall along the edge remote from said back wall to discourage forceful entry into the receptacle by sawing away a portion of the bottom wall.

14. As an article of manufacture, a key receptacle for a substantially flat conventional key having a blade and an enlarged head at one end of the blade, comprising: a substantially horizontal bottom wall upon which a key may be flatwise supported; a back wall connected to the bottom wall and adapted to extend upwardly adjacent to the rear edges of the head and blade of a key in position on the bottom wall; said bottom wall having a pair of holes therein spaced forwardly of the back wall and from one another a distance such that the head of a key in position on the bottom wall may have the front portion of its head disposed in the space between said holes and its blade behind one of them, so that attachment of the receptacle to a lock having a shackle whose legs pass through said holes serves to preclude edgewise as well as lengthwise displacement of the key in position on the bottom wall; and means on the receptacle providing a top wall adapted to cover a key in position on the receptacle for securing the same to a lock, with the legs of the lock shackle passing through said holes.

15. In a safe for a substantially flat conventional key having a blade and an enlarged head at one end of the blade: a lock having a body and having a pair of substantially parallel locking members projecting upwardly from the top of the body and spaced apart in one direc-

tion with respect to the body, one of said locking members being movable upwardly away from the top of the body in the unlocked condition of the lock; key retaining means connected with the lock body defining a substantially upright wall extending lengthwise in said direction along and above the top of the lock body, and spaced from both of said locking members a distance such that a key disposed flatwise at the top of the lock body in a position with one edge portion of its head contiguous to said upright wall and its blade passing between said upright wall and one of said locking members can have the opposite edge portion of its head straddled by said locking members and held conjointly by said locking members and said upright wall against edgewise displacement in all directions; and ledge means on said upright wall to overlie a portion of a key disposed in said position to prevent flatwise tilting of the key in a direction to disengage its head from said locking members, so that the key will be held against displacement as long as the lock is in locked condition but is freed for removal upon upward motion of said movable locking member to a position clearing the head of the key when the lock is unlocked.

16. In a safe for a substantially flat conventional key having a blade and an enlarged head at one end of the blade, the combination of: a lock having a body and an inverted U-shaped shackle defining spaced legs which project from the top of the body, one of said legs being movable upwardly away from the top of the body in the unlocked condition of the lock; and a key retaining device on the body having key engaging means thereon cooperable with said shackle legs to retain a key in a substantially flat position at the top of the body with one side edge portion of its head projected into the space between the shackle legs so that the key is held against displacement from said position except when said one shackle leg is moved to a position clearing the head of the key.

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