S. P. HULL AND E. A. EVERETT.

SCREW PADLOCK.

APPLICATION FILED NOV. 15, 1919.

1,363,599. Patented Dec. 28, 1920.

Fig. 1.

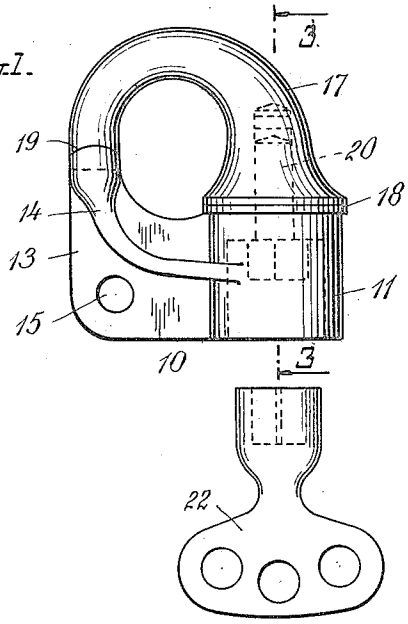


Fig. 2.

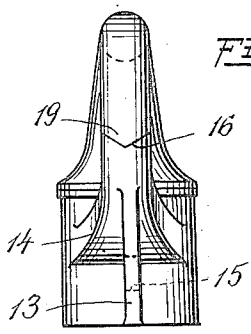


Fig. 3.

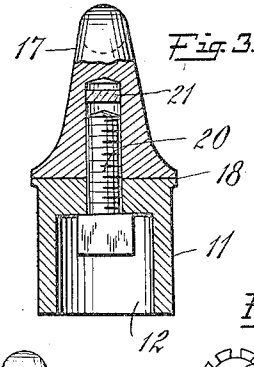


Fig. 4.

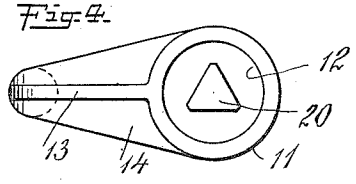


Fig. 5.

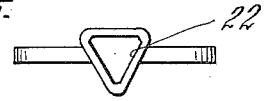


Fig. 6.

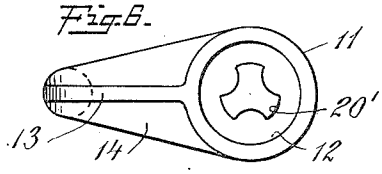


Fig. 7.

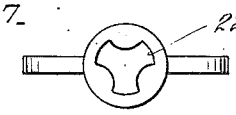


Fig. 8.

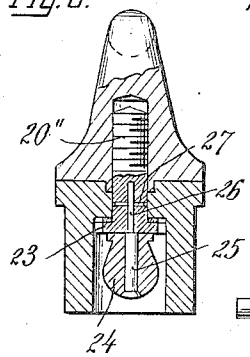


Fig. 9.

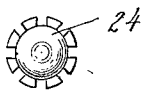
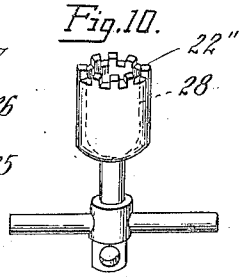


Fig. 10.



Samuel P. Hull
Edward A. Everett
Inventors.

By their Attorneys

Pennie, Davis, Marvin & Edmonds

UNITED STATES PATENT OFFICE.

SAMUEL P. HULL, OF YONKERS, AND EDWARD A. EVERETT, OF NEW YORK, N. Y.

SCREW-PADLOCK.

1,363,599. Specification of Letters Patent. Patented Dec. 28, 1920.

Application filed November 15, 1919. Serial No. 338,315.

To all whom it may concern:

Be it known that we, SAMUEL P. HULL, a citizen of the United States, residing at Yonkers, in the county of Westchester, State of New York; and EDWARD A. EVERETT, a citizen of the United States, residing at New York city, in the county of New York, State of New York, have invented certain new and useful Improvements in Screw-Padlocks; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to screw padlocks and particularly to a lock of this type especially adapted for use out-of-doors, as for instance, in railway service on switch stands, signal boxes and similar pieces of apparatus.

It is an object of the invention to produce a padlock of simple construction and reliable operation which shall possess among others the following features of advantage. The screw is concealed within a cavity in the body of the lock so that it cannot be reached and turned except by means of a key inserted in the socket. The weight is so distributed that when in use the lock hangs in such position that water will run off and not collect in the cavity where the screw is placed. The lock is also adapted to be conveniently hung upon a staple or other support when it is not being used. The construction of the two engaging portions of the device is such as to permit a quick release of the lock by a minimum amount of turning of the screw, and the outer coöperating faces are further adapted to engage each other before the main faces come together so that any tendency of the movable member of the lock to become loosened is effectively prevented. A further feature of the device is the provision of a lubricating pad which prevents the screw from becoming rusted in the lock, as is likely to happen if the lock is not opened for a considerable period of time.

The screws of the locks may be provided with heads of various shapes adapted to be engaged by correspondingly shaped keys. but certain combinations of shapes may be arranged so that one key may serve as a master key to open locks having forms of heads differing from the particular form of head corresponding to the shape of the key, but the keys of such other locks will not fit the heads of any screws other than those for which they are intended.

In order to render it more difficult or even impossible to open the lock by turning the screw by means of a tool or other device inserted into the socket, the invention provides a screw having a head composed of a rotatable outer portion and an inner portion which can only be engaged by a special form of key. If any attempt be made to turn the screw by means of a tool, such as a pair of pliers, the tool will engage the rotatable part of the screw head which will turn freely without imparting any movement to the main part of the screw.

Further advantageous features of construction will appear more clearly from a detailed description of a preferred embodiment of the invention as shown in the accompanying drawings, in which Figure 1 represents a side elevation of the lock and its key; Fig. 2 is an end elevation viewed from the left of Fig. 1; Fig. 3 is a sectional view along the line 3—3 of Fig. 1; Fig. 4 is a bottom plan view; Fig. 5 is an end view of the key of Fig. 1; Fig. 6 is a bottom plan view of a lock in which the screw has a different form of head; Fig. 7 is an end view of the key for the screw of Fig. 6, which is also adapted for use with the screw of Fig. 4 and thus may be used as a master key for both locks; Fig. 8 is a sectional view of a lock provided with a screw having an outer rotatable member attached to its head; Fig. 9 is an end view of the head of the screw of Fig. 8; and Fig. 10 is a side view of the key for this screw.

The lock comprises a body member 10 having a cylindrical portion 11 containing a socket 12 which extends through the cylindrical portion for a considerable distance. Projecting from the side of the cylindrical portion and preferably formed integrally therewith is an extension 13 which has upon either side a rib 14 and may be provided with a hole 15 for the attachment of a chain or other retaining device. The outer end of the extension 13 is formed with a V-shaped depression 16 cut longitudinally of the extension.

The coöperating staple member 17 of the device is provided with a flat face 18 of the same diameter as the corresponding face at the top of the socket portion 12 of the other member of the lock. The member 17 is

formed with a bent-over tapering portion which at its end is beveled as at 19 to fit within the V-shaped cut at the end of the extension 13. For retaining the members of the lock in engagement with each other a screw 20 is provided. This screw passes freely through the upper end of the cylindrical portion 12 of the device and is threaded into the member 17. The screw hole in the last named member is extended beyond the length required by the screw to provide space for a lubricating pad 21. The head of the screw may be of any desired contour and is adapted to be engaged by a correspondingly shaped socket in the end of a key 22. By having the head of the screw at the inner end of the socket, it cannot be easily turned except by the proper key. While in the embodiment here shown the head of the screw is of triangular form, any other form may be used, and in Fig. 6 there is shown a screw 20′ having a head of different shape and Fig. 7 shows a key 22′ for turning this screw. This key is also adapted to turn the screw of Fig. 4, but the triangular key of the latter figure cannot be used for turning the screw of Fig. 6. There is thus provided a master key which may be in the possession of certain employees, such as railway inspectors and signal men, while other employees are provided with keys of the type shown in Fig. 5 and cannot obtain access to apparatus which may be locked by the device of Fig. 6.

In the form of the device shown in Fig. 8 the screw 20″ has a relatively thin head 23 having a serrated edge. The screw may be turned by a key 22″ having a number of lugs at its end adapted to fit the recesses at the edge of the screw head. Associated with the screw is a rotatable member 24, mounted on a spindle 25 which may be fastened to the screw by a shank 26 and pin 27, or in any other suitable manner. The key is provided with a socket 28 of sufficient depth and diameter to receive the rotatable member when the lugs engage the head of the screw. With such an arrangement any attempt to open the lock by pliers or other tools will result in rotation of the member 24, and it will be difficult or even impossible to reach the head of the screw and turn it without using the particular form of key provided for this form of screw.

The weight of the whole device should be so distributed that when it is in place it will hang with the open end of the socket down so that there will be little or no tendency for water to run into the socket. The ribs 14 will also shed water from the device and the shoulders formed at the points where the two members engage each other will also aid in shedding such water as may run down over the member 17. By cutting the V-shaped groove longitudinally of the extension, the lock cannot be opened by twisting the two members with respect to each other. To still further prevent any tendency for the members to work loose, the member 17 should be so constructed that its outer end engages the end of the extension before its face 18 comes in contact with the corresponding face of the other member, the screw being depended upon to draw the coöperating faces in engagement with each other. There will thus be produced a spring action of the member 17 which will increase the security of the lock. The screw should preferably be of such a pitch that one turn or less will be sufficient to release the member 17 enough to permit it to be disengaged. The screw should extend within the member 17 sufficiently so that even when the device is unlocked the two members will not fall apart. When the device is unlocked, it may be hung on any support by means of the hooked portion 17, and thus it possesses the advantage that it may be hung in a convenient locality after being removed, which is not true of other locks in general use at the present time which must be laid upon the ground or upon some part of the switch stand or signal box when they are not in use.

Provision of the pad 21 enables the screw threads to be kept lubricated so that if the device is not unlocked for a considerable period of time, there will be no danger that the screw has become rusted in place.

While in the embodiment here shown the coöperating locking faces are of V-shaped contour, it will be understood that any other desired shape may be used provided it is such as to prevent the members of the lock from being twisted apart when they are in engaging position. It will also be understood that various other changes in the details of construction of the device may be made without departing from the principle of the invention.

We claim:

1. In a lock, the combination of a body member provided with a socket and an extension projecting from one side, a coöperating locking member having a face adapted to engage the face of the body member above the socket therein and being provided with a tapering bent-over portion, the outer end of which engages the outer end of the extension, said engaging ends being formed with coöperating faces to prevent lateral displacement of the ends when the members are locked together, and means within the socket for locking the members together and about which the locking member may be swung when the members are not in locked relation.

2. In a lock, the combination of a member provided with a socket and an extension at one side, said extension being provided with a depression at the outer end thereof, a

locking member adapted to engage the upper end of said first named member above the socket and having a bent over portion formed at its outer end to fit into the said depression to prevent lateral displacement of the free ends of the extension and the locking member, and means adapted to lock the two members together and having a portion lying within the socket and adapted to be turned by a key inserted within the socket, said locking means serving also as a pivot about which the locking member may be swung when the members are not in locked relation.

3. In a lock, the combination of a member provided with a socket and an extension at one side, said extension being provided with ribs on each side and having at its outer end a V-shaped depression extending longitudinally of said extension, a locking member adapted to engage the upper end of the first named member above the socket portion thereof and having a bent-over tapering portion shaped at its outer end to fit within the said depression, and a screw adapted to lock the two members together and serving also as a pivot about which the locking member may be swung when the members are not in locked relation and having its head lying within the socket where it may be engaged and turned by a key inserted within the socket.

4. In a lock, the combination of a body member provided with an extension at one side thereof, a locking member adapted to engage the first named member, the end of said locking member and the outer end of the extension being formed with coöperating faces adapted to prevent displacement of the members when the same are in locked position and means passing through the first named member and screwed into the second member for holding the members in locked position and which also serves as a pivot about which the locking member may be swung when the members are not in locked relation.

5. In a lock, the combination of a body member provided with an extension at one side thereof, a locking member adapted to engage the first named member, the end of said locking member and the outer end of the extension being formed with coöperating faces adapted to prevent displacement of the members when the same are in locked position, a screw passing through the first named member and into the second member for holding the members in locked position, and means within the locking member for lubricating the screw.

6. In a pad-lock, the combination of a body member, a locking member and a screw for connecting the members together in locked relation and which also serves as a pivot to permit relative displacement of the members when the same are not in locked relation and a key for turning said screw.

7. In a pad-lock, the combination of a body member, a locking member and a screw for connecting the members together in locked relation and which also serves as a pivot to permit relative displacement of the members when the same are not in locked relation, the head of said screw being exposed to receive a key, said body member being provided with a socket within which the head of the locking screw is placed and said body member and locking member being so formed and proportioned that when the lock is in use the open end of the socket will be directed downwardly to prevent accumulation of foreign matter therein.

8. In a pad-lock, the combination of a body member, a locking member, a screw for connecting the members together in locked relation and which also serves as a pivot about which the locking member may be swung when the members are not in locked relation, said screw being provided with a head adapted to fit within a correspondingly shaped socket of a key whereby the screw may be manipulated by a particular key, said screw being also adapted to be manipulated by a master key having a socket of different shape but which is adapted to engage the head of the screw to permit the latter to be turned.

9. In a pad-lock, the combination of a body member, a locking member, a screw for connecting the members together in locked relation, a member rotatably mounted upon the head of the screw, and a key adapted to be brought into engagement with the head of the screw for turning the same, said key being formed to pass over the rotatable member.

10. In a pad-lock, the combination of a body member, a locking member, a screw for connecting the members together in locked relation and having a head provided with a serrated edge, a member rotatably mounted upon the head of the screw, a key provided with lugs adapted to fit the recesses in the head of the screw and a socket to receive the rotatable member when the key is in operative relation to the screw.

In testimony whereof we affix our signatures.

SAMUEL P. HULL.
EDWARD A. EVERETT.