July 6, 1926.

1,591,192

J. W. SUPORTER

MOTOMETER LOCK

Filed March 3, 1921

Fig. 1.

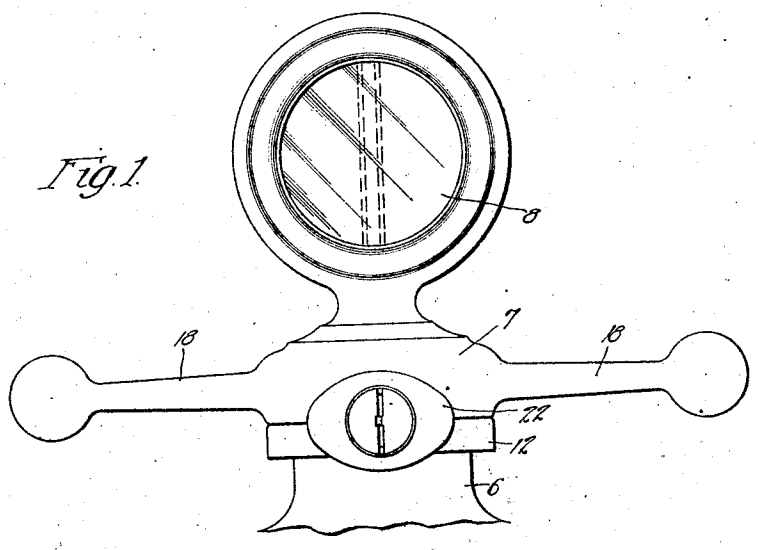


Fig. 2.

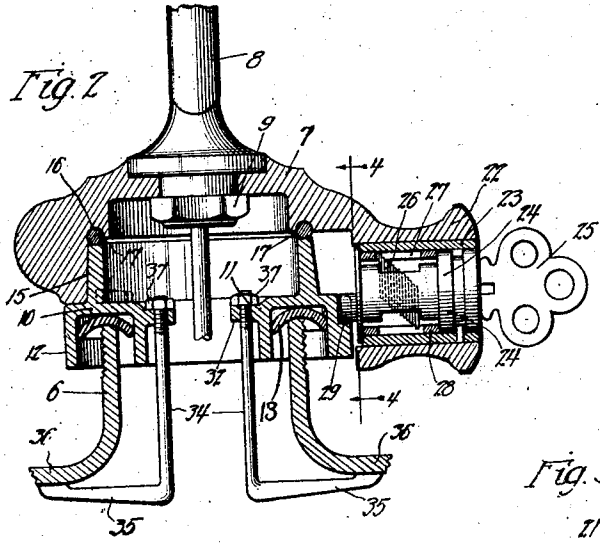


Fig. 3.

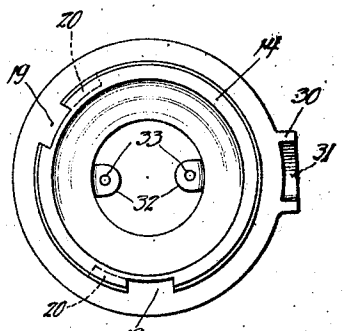


Fig. 5.

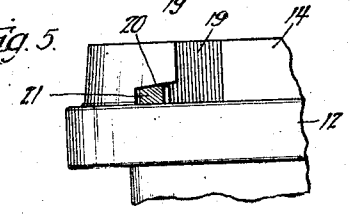
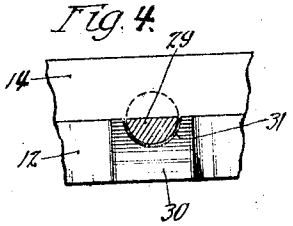


Fig. 4.



Inventor.
James W. Suporter
By: Gabel & Mueller
Attys.

Patented July 6, 1926. 1,591,192

UNITED STATES PATENT OFFICE.

JAMES W. SUPORTER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO MILLER & PARDEE, INC.

MOTOMETER LOCK.

Application filed March 3, 1921. Serial No. 449,460.

This invention relates to locks and more particularly to motometer locks.

It is a purpose of the invention to provide means for locking a cap on a radiator nipple, said cap being adapted to carry an indicating instrument, such as a motometer.

It is a further purpose of the invention to provide key operated means mounted in one of these members for this purpose that is adapted to engage in a recess in the other of said members and lock said members against relative turning movement.

It is another and further object of the invention to provide means for locking a radiator cap to a radiator nipple that comprises a member mounted for rotation in one of said members and adapted to enter a recess in a part rigid with the other of said members, so as to prevent rotation of said cap relative to said radiator nipple, said radiator cap and part rigid with the nipple being provided with cooperating formations that are adapted to be moved into and out of position to hold said cap on said nipple by rotation of said cap relative to said nipple.

It is also a purpose of the invention to provide means for securing a radiator cap to a radiator nipple member comprising a projection on one of said members adapted to enter a groove in the other of said members, and adapted to be secured therein by a turning of said cap relative to said nipple, said projection and said groove having cooperating wedging faces for drawing said cap down on said nipple and compressing a gasket between said cap and nipple member.

It is still a further purpose of the invention to provide means for securing a motometer to a radiator comprising a cap adapted to carry a motometer or other measuring instrument, and a member securely mounted on the radiator nipple, said last mentioned member being provided with a groove and said cap being provided with a projection adapted to enter said groove by moving said cap axially relative to said member and to be retained in said groove by turning said cap relative to said member through an arc of substantially 30°. It is also a purpose of the invention to provide means for locking said cap against rotation relative to said member comprising a key operated member rotatable in said cap on an axis at right angles to the axis of said cap, said member being provided with a rounded projection adapted to enter a rounded recess in said member on said nipple to lock said cap against rotation relative thereto.

It is also a purpose of the invention to provide means for preventing rotation of said key operated member when the key is withdrawn.

It is still another object of the invention to provide interengaging wedging faces on said cap and the member on said nipple so as to draw said cap toward said member and compress a resilient gasket between said cap and member so as to provide a water tight fit for said cap. The purpose of this is to assure a water tight fit and yet at the same time have the key receiving portion of the lock always in the same relative position to said radiator when said cap is in locked position, preferably facing the front.

Other objects and advantages of the invention will appear as the description of the accompanying drawings showing one form that my invention may take proceeds. However, I desire to have it distinctly understood that I do not intend to limit myself to the exact details shown or described but that I desire to include as part of my invention all such obvious changes and modifications as would occur to a person skilled in this art and as would fall within the scope of the claims.

In the drawings:—

Fig. 1 is a front elevation of a motometer locking cap in position on a radiator nipple with a motometer positioned in said cap;

Fig. 2 is a vertical section thereof partly broken away;

Fig. 3 is a plan view of the member carried by the nipple with which the cap is adapted to cooperate;

Fig. 4 is a section taken on the line 4—4. Fig. 2, and

Fig. 5 is a view in side elevation of a portion of the member carried by the nipple showing the holding lug in position therein in section.

The improved motometer lock is shown as being mounted on the radiator nipple 6. The lock is located in the cap 7 which is provided with suitable openings to receive

the motometer 8, the motometer being secured within the cap by means of a nut or other securing member 9. In order to secure the cap 7 on radiator nipple 6 of various sizes and styles an adapter 10 is provided, the adapter comprising an inner circular flange 11 and an outer circular flange 12, the flange 11 fitting within the radiator nipple 6 and the flange 12 fitting outside the same.

In order to provide a water tight connection between the nipple 10 and adapter 6 a gasket of resilient material, such as rubber, is provided at 13. The gasket 13 is preferably slightly oversize so that the same will fit in the space between the flanges 11 and 12 as shown in Fig. 2 of the drawings. The adapter is also provided with an upstanding flange 14 which is adapted to fit within the bore 15 in the cap 7, and the cap 7 is provided with a circular groove 16 which is adapted to receive the gasket 17 of resilient material, the groove 16 and gasket 17 being located substantially opposite the upper edge portion of the flange 14. The cap 7 is provided with suitable laterally extending arms 18 by means of which the cap 7 can be turned. The flange 14 is provided with a plurality of axially extending slots 19 which connect with circumferentially extending slots 20, which circumferentially extending slots are tapered as shown in Fig. 3 toward the closed end thereof so as to be narrower at the closed end than at the end that connects with the axially extending slots 19. Projecting inwardly from the portion 15 of the cap 7 are lugs 21 which are adapted to correspond to the taper of the slot 20 as shown in Fig. 3, but spaced a distance of substantially 120° around the circumference of the sleeve, there being two such slots used preferably as shown and a lug for each of said slots being provided in the cap.

It will be seen that the cap 7 is secured in holding position on the sleeve 14 by moving the cap downwardly on the sleeve so as to pass the lugs 21 downwardly in the slots 19 until they reach the bottom thereof, then by a slight rotation of the cap relative to the adapter in a clockwise direction looking down on the same, the lugs 21 will enter the slots 20 and the cooperating wedging surfaces of the slots and lugs will tighten the cap on the adapter and compress the gasket 17 between the cap and the flange 14, thus providing a water tight connection between the cap and adapter.

It will be seen that only a very slight circumferential movement of the cap relative to the adapter is necessary, the movement being substantially 30° in the device shown. By using a wedge structure such as shown and a resilient gasket the cap can always be turned to a position to provide a water tight connection with the boss 22 extending forwardly from the same, thus adding to the neatness of the appearance of the device. In the boss 22 is provided a sleeve 23 carrying the rotatable lock member 24 which is rotated by means of the key 25. The lock member 24 is provided with the tumblers 26 which are adapted to enter the grooves 27 in the member 28 rigid with the sleeve 23 so as to hold the lock from rotation when in locking position and when the key 25 is withdrawn, the lock being so constructed that the key 25 is only adapted to be withdrawn when the plungers are in the grooves 27. The rotatable lock member 24 has a lug 29 provided on the end thereof, the lug 29 being semi-cylindrical as shown in Fig. 4. The adapter 10 is provided with a boss 30 that has a substantially semi-cylindrical recess 31 therein within which the projection 29 is adapted to seat when the lock member 24 is turned to the proper position by means of the key 25, the position being such that when the lug 29 is seated in the recess 31, as shown in Fig. 4, the tumblers 26 will have entered the grooves 27 and the key will be adapted to be withdrawn from the lock.

In order to firmly secure the adapter 10 to the nipple 6 the adapter is provided with inwardly projecting ears 32 that are apertured at 33 to receive the bolts 34 which are provided with the right angular end portions 35 that are adapted to engage underneath the horizontal extending portions of the radiator 36 upon turning the same around to the position shown in Fig. 2, and which are adapted to clamp the adapter 10 to the nipple 6 by tightening the nuts 37 provided on the upper ends thereof and to thus compress the gaskets 13 between the nipple 6 and the adapter 10.

It will be seen from the above that a lock is provided for a radiator cap, adapted to carry a motometer or other indicating instrument, that can be operated by turning the key of the lock only half a turn, and that a cap is provided that is secured in holding position on the member on the radiator nipple by turning the same only through a very small arc and that the connection between the cap and the member on the nipple is so constructed that the gasket interposed between the cap and the member will be compressed so as to provide a water tight connection with the boss carrying the lock member always in a forwardly extending straight position, thus providing for neatness and ease of operation, and that means is provided for holding the adapter member on the radiator nipple in a secure and safe manner by means of a connection that is easy to operate and that is adapted to clamp the adapter on the radiator so as to compress the gasket between the adapter and nipple in such a manner as to provide a water tight connection.

Having thus described my invention what I claim and desire to secure by U. S. Letters Patent is:—

1. A device of the character described adapted for application to a radiator nipple, comprising a member designed to be rigidly mounted on such nipple, said member having a substantially U-shaped portion fitting over said nipple, a cap member, and means for securing said cap to the member on said nipple comprising a lug on one of said members adapted to enter a groove in the other of said members and be moved into and out of securing position by a turning movement of said cap relative to said member on said nipple and means adapted to prevent turning movement of said cap relative to said member.

2. A device of the character described having in combination a member designed to be rigidly mounted on an automobile radiator and having a substantially U-shaped portion permitting said member to be fitted to various types of radiators, a cap member adapted to be mounted on said first mentioned member and means for securing said cap member to said first mentioned member comprising a projection on one of said members adapted to enter a groove in the other of said members and to be moved into and out of securing position by a relative turning movement of said members and means adapted to hold said members in rigid position.

3. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator, said sleevelike member being provided with a groove extended part way only around said member, a cap adapted to be mounted on said sleevelike member, a projection on said cap adapted to enter said groove to secure said cap to said sleevelike member by turning said cap relative to said sleeve and key operated means for locking said cap on said sleeve member comprising a member mounted in said cap adapted to lock said cap against rotation relative to said sleeve, said member being positioned for rotation about an axis at right angles to the axis of rotation of said cap and having a portion adapted to enter a recess in the sleevelike member upon rotation thereof.

4. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator, said sleeve-like member being adapted to fit various sizes and types of automobile radiators, said sleevelike member being provided with a groove, a cap adapted to be mounted on said sleevelike member, a gasket between said cap and sleeve, and a projection on said cap adapted to enter said groove to secure said cap on said sleeve by a partial rotation of said cap on said sleeve, said cap and sleeve being provided with cooperating means for compressing said gasket between said cap and sleeve when said cap is rotated to securing position.

5. A device of the character described comprising a sleevelike member designed to be rigidly and adjustably mounted on an automobile radiator, said sleevelike member being provided with a groove, a cap adapted to be mounted on said sleevelike member, a gasket between said cap and sleeve, and a projection on said cap adapted to enter said groove to secure said cap on said sleeve by a partial rotation of said cap on said sleeve, said projection and said groove being provided with cooperating wedging surfaces whereby said gasket is compressed between said cap and sleeve when said cap is rotated to securing position.

6. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator and adapted to fit various sizes thereof, said sleevelike member being provided with a groove, a cap adapted to be mounted on said sleevelike member, said cap being provided with a circular groove, a resilient gasket seated in the groove in said cap, and a projection on said cap adapted to enter the groove in said sleevelike member to secure said cap on said sleevelike member by a partial rotation of said cap on said sleevelike member, said cap and sleeve being provided with cooperating means for compressing said gasket between said cap and sleeve when said cap is rotated to securing position.

7. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator and adapted to be adjustably mounted on various sizes thereof, said sleevelike member being provided with a groove, a cap adapted to be mounted on said sleevelike member, said cap being provided with a circular groove, a resilient gasket seated in the groove in said cap, and a projection on said cap adapted to enter the groove in said sleevelike member to secure said cap on said sleevelike member by a partial rotation of said cap on said sleevelike member, said projection and said groove being provided with cooperating wedging surfaces whereby said gasket is compressed between said cap and sleeve when said cap is rotated to securing position and locking means mounted in said cap adapted to hold said cap against turning movement relative to said sleeve member.

8. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator and adapted to be adjustably mounted on various sizes thereof, said sleevelike member being provided with a groove, a cap adapted to be mounted on said sleevelike member, a

gasket between said cap and sleeve, a projection on said cap adapted to enter said groove to secure said cap on said sleeve by a partial rotation of said cap on said sleeve, said projection and said groove being provided with cooperating wedging surfaces whereby said gasket is compressed between said cap and sleeve when said cap is rotated to securing position, and a key operated member for locking said cap against rotation relative to said sleeve.

9. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator and having a substantially U-shaped portion, said sleevelike member being provided with a grove, a cap adapted to be mounted on said sleevelike member, a gasket between said cap and said U-shaped portion of said sleeve, a projection on said cap adapted to enter said groove to secure said cap on said sleeve by a partial rotation of said cap on said sleeve, said projection and said groove being provided with cooperating wedging surfaces whereby said gasket is compressed between said cap and sleeve when said cap is rotated to securing position, and a key operated member having a substantially semi-cylindrical portion adapted to enter a substantially semi-cylindrical recess in said sleevelike portion to lock said cap against rotation on said sleeve.

10. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator, said sleevelike member being provided with a groove, a cap adapted to be mounted on said sleevelike member, a gasket between said cap and sleeve, a projection on said cap adapted to enter said groove to secure said cap on said sleeve by a partial rotation of said cap on said sleeve, said projection and said groove being provided with cooperating wedging surfaces whereby said gasket is compressed between said cap and sleeve when said cap is rotated to securing position, a member mounted in said cap for rotation about an axis at right angles to the axis of said cap, said member having a substantially semi-cylindrical portion adapted to be projected into a correspondingly shaped recess in said sleevelike portion upon a partial rotation thereof to lock said cap against rotation on said sleeve, and a key for rotating said member.

11. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator, said sleevelike member being provided with a groove, a cap adapted to be mounted on said sleevelike member, a gasket between said cap and sleeve, a projection on said cap adapted to enter said groove to secure said cap on said sleeve by a partial rotation of said cap on said sleeve, said projection and said groove being provided with cooperating wedging surfaces whereby said gasket is compressed between said cap and sleeve when said cap is rotated to securing position, a member mounted in said cap for rotation about an axis at right angles to the axis of said cap, said member having a substantially semi-cylindrical portion adapted to be projected into a correspondingly shaped recess in said sleevelike portion upon a partial rotation thereof to lock said cap against rotation on said sleeve, and a key for rotating said member, said member being locked against rotation when said key is removed from said lock.

12. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an automobile radiator, said sleevelike member being provided with a groove, a cap adapted to be mounted on said sleevelike member, a gasket between said cap and sleeve, a projection on said cap adapted to enter said groove to secure said cap on said sleeve by a partial rotation of said cap on said sleeve, said projection and said groove being provided with cooperating wedging surfaces whereby said gasket is compressed between said cap and sleeve when said cap is rotated to securing position, a member mounted in said cap for rotation about an axis at right angles to the axis of said cap, said member having a substantially semi-cylindrical portion adapted to be projected into a correspondingly shaped recess in said sleevelike portion upon a partial rotation thereof to lock said cap against rotation on said sleeve, and a key for rotating said member, said member being locked against rotation when said key is removed from said lock, said key being removable from said lock only when said semi-cylindrical portion is projected into said recess.

13. A device of the character described comprising a sleevelike member designed to be rigidly mounted on an autotmobile radiator, said sleevelike member having flanges adapted to extend circumferentially along the inner and outer faces of a nipple on said radiator said sleevelike member being provided with a plurality of grooves, a cap adapted to be mounted on said sleevelike member, a plurality of projections on said cap adapted to enter said grooves to secure said cap on said sleevelike member by a partial rotation on said sleeve, and a key operated member mounted in said cap and engaging said sleeve to lock said cap against rotation on said sleeve, said projections and said locking member being equi-distantly spaced about said cap.

In witness whereof, I hereunto subscribe my name this 26th day of January A. D. 1921.

JAMES W. SUPORTER.