No. 891,887. PATENTED JUNE 30, 1908.

J. E. WALLACE.

LATCH FOR MOVABLE LIDS.

APPLICATION FILED MAY 23, 1907.

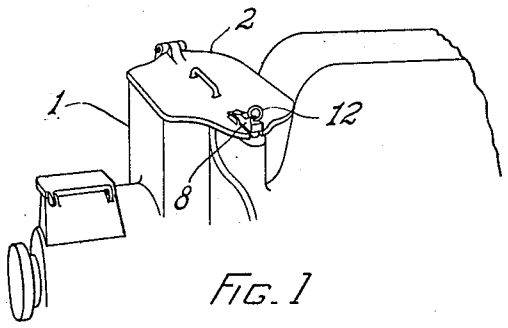


FIG. 1

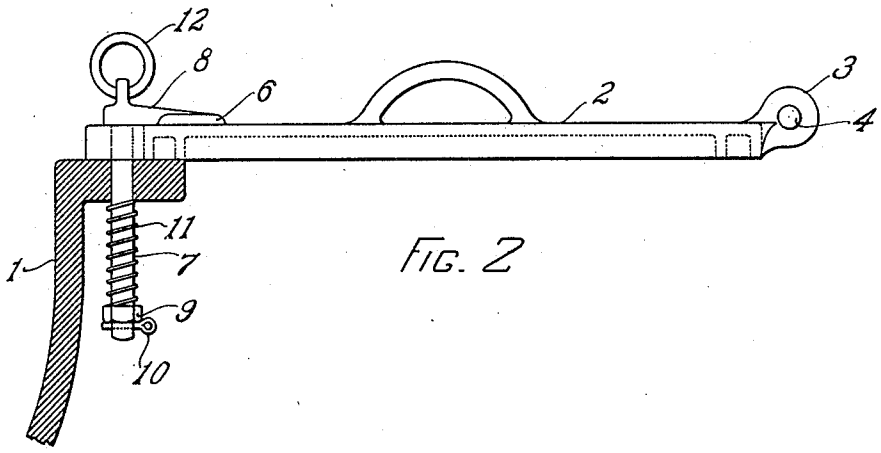


FIG. 2

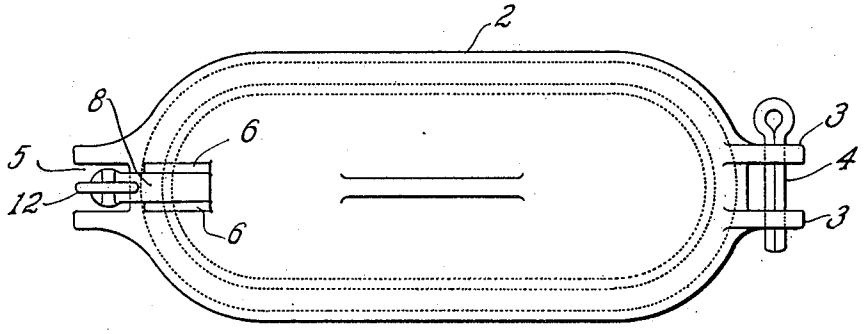


FIG. 3

WITNESSES

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LATCH FOR MOVABLE LIDS.

No. 891,887. Specification of Letters Patent. Patented June 30, 1908.

Application filed May 23, 1907. Serial No. 375,219.

To all whom it may concern:

Be it known that I, JOHN E. WALLACE, citizen of the United States, residing at Woburn, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Latches for Movable Lids; and I 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 an improved latch or clamp for holding a movable lid or cover in position. The latch is intended primarily for use in connection with the movable cover or lid of the casing of a railway electric motor, but is also capable of use in other relations.

A railway electric motor is provided with a casing which completely incloses the motor except for an opening above the commutator through which access may be had to the commutator and brushes. This opening is closed by means of a cover or lid hinged at one end, and secured at the other end by a clamping device. This clamping device as heretofore constructed has proved unsatisfactory and unreliable, the vibrations of the motor casing often causing the latch to be displaced so as to release the cover and permit the cover to be thrown upwardly so as to expose the commutator and brushes. The release of the cover by the latch not only leaves the commutator and brushes unprotected, but permits the cover to move in such a manner that it is often broken or torn from its hinges. The failure of the latch to properly hold the cover is particularly noticeable when the latch becomes worn by use.

The object of the present invention is to provide a latch or clamp which will securely hold the cover of the motor casing in position regardless of the amount of the vibration of the motor casing, and regardless of the amount of wear produced in use either of the latch or of the portion of the cover with which it engages.

With this object in view, the invention consists in the devices and combinations of devices hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art from the following description.

The present invention will be clearly understood from an inspection of the accompanying drawing, in which

Figure 1 is a perspective view of a portion of an electric railway motor with the preferred form of the present invention applied thereto; Fig. 2 is a detail view in side elevation of the cover or lid of the motor and the improved latch for holding the cover in position, a portion of the casing of the motor being shown in section; and Fig. 3 is a plan view of the cover and latch illustrated in Fig. 2.

1 indicates the casing of the motor, of well-known construction, and 2 the cover plate which closes the opening through which access is had to the commutator and brushes. The cover is provided at one end with the usual lugs 3 by which it is hinged to a projection on the motor casing by a pin 4. At its other end the cover is provided with a slot 5 through which the stem of the latch passes, and with projections 6 upon its upper surface which coöperate with the horizontal arm of the latch to hold the cover in position, as will be hereinafter explained.

The improved latch illustrated in the drawings consists of a cylindrical bolt or stem 7 provided at its upper end with a horizontally projecting arm 8. The stem 7 is mounted to rotate and slide longitudinally in a horizontal portion of the casing as illustrated in Fig. 2, which portion of the casing supports the free end of the cover 2 when the cover is in position over the opening in the casing. The stem 7 is arranged to pass through the slot 5 in the free end of the cover, and the arm 8 is arranged to engage the upper surface of the cover between the projections 6, which projections, when the cover and latch are in the position illustrated in the drawing, hold the latch against rotation. At its lower end the stem 7 is provided with a nut 9 which is locked in position by a pin 10 passing through the stem below the nut, and between the nut and the casing a spring 11 is coiled around the stem. The spring 11 acts to force the stem 7 downwardly, so that the arm 8 is pressed firmly against the upper surface of the cover and the cover is held securely in place, regardless of the vibrations of the motor casing. The spring also acts automatically to compensate for any wear either of the latch or of the cover. The cover can be readily released by raising the latch and rotating it through a half revolu-

tion, a ring 12 mounted in an upward projection from the arm 8 being provided for this purpose.

It will be understood that the latch illustrated in the drawing and above specifically described embodies the present invention in its preferred form, but that the invention may be otherwise embodied as defined in the claims. It will also be understood that while the invention has been illustrated and described as applied to the cover plate of the casing of a railway motor, it may also be used in other relations.

The invention having been thus described, what is claimed is:—

1. The combination with a cover plate provided with projections extending from its upper surface, of a latch consisting of a longitudinally movable and rotatable stem, and an arm projecting therefrom and arranged to engage the upper surface of the cover plate between said projections, and a spring acting on the stem to force the arm into engagement with the cover plate, substantially as described.

2. The combination with the casing of an electric railway motor, of a cover plate hinged at one end thereto and provided at its other end with a slot and with projections from its upper surface, a latch consisting of a longitudinally movable and rotatable stem arranged to pass through the slot in the cover, and an arm projecting from the stem arranged to engage the upper surface of the cover between said projections, and a spring acting on the stem to force the arm into engagement with the cover, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN E. WALLACE.

Witnesses:
A. Otis Smith,
Wm. B. Darling.