

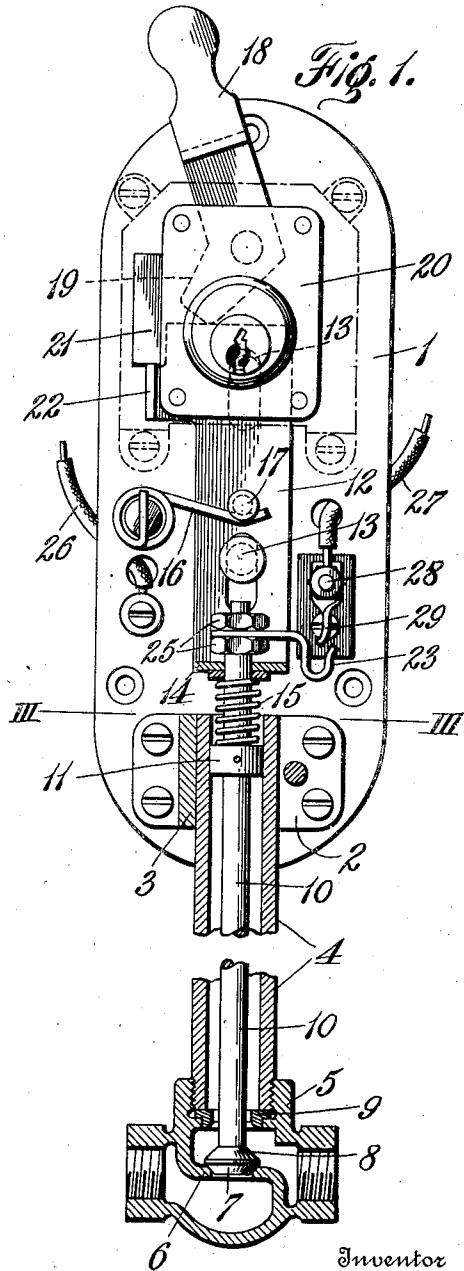
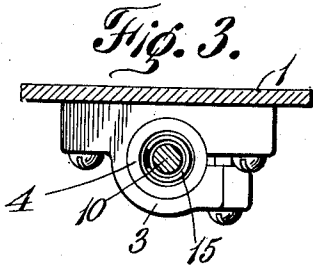
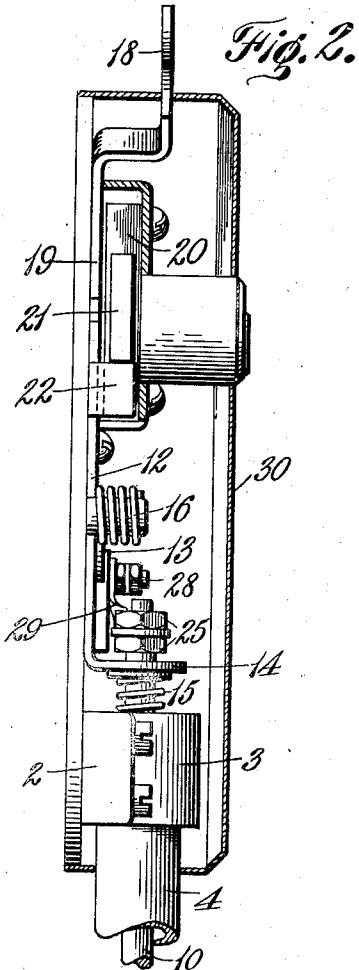
G. E. CLEVELAND.

SAFETY LOCK.

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1,040,509.

Patented Oct. 8, 1912.



Inventor
Grover E. Cleveland,

Witnesses
Chas. W. Stauffer
Anna M. Dore

By

[Signature]

Attorneys

UNITED STATES PATENT OFFICE.

GROVER E. CLEVELAND, OF DETROIT, MICHIGAN, ASSIGNOR TO CAPITOL AUTO LOCK COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

SAFETY-LOCK.

1,040,509.

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To all whom it may concern:

Be it known that I, GROVER E. CLEVELAND, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Safety-Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a safety lock for automobiles, power boats or the like and more especially to means for positively shutting off the fuel supply from the engine and at the same time holding the ignition circuit open so that the motor to which the device is applied cannot be operated except by the holder of a key for the lock proper. The device is also applicable to electrically propelled vehicles for holding the motor circuit open.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view, partially in front elevation and partially in section, with the outer casing removed, of a device that embodies features of the invention; Fig. 2 is a view, partially in side elevation and partially in section, of a device with the fuel valve omitted; and Fig. 3 is a view in section on line 111-111 of Fig. 1.

As herein shown in preferred form, a base plate 1 of suitable material and design, forms a support at its lower end for a bracket plate 2 having a split lug 3 or the like for gripping and holding a tubular extension 4. The lower end of the latter is screwthreaded or otherwise secured in a casing 5 of a valve adapted to be introduced into the supply pipe of a fuel system for a motor to which the device is applied.

In preferred form the valve has an annular seat 6 on which a closure 7 may rest, the upper face 8 of the closure being adapted to seal an aperture through a diaphragm 9 clamped in the upper part of the casing by the inserted tube 4 when the closure is raised from the seat 6. A stem 10 of the closure extends freely through the diaphragm opening and the tube and has a guide collar 11 on the upper portion thereof, the latter being reciprocable in the tube.

A latch bar 12 is longitudinally movable on the base 1 in substantially longitudinal alinement with the stem 10, preferably on

guide studs 13 passing through longitudinal slots in the bar. The end portion of the bar adjacent the bracket plate 2 is upturned to form a lug 14 through which the upper portion of the stem 10 passes. A spring 15 that encircles the stem in compression between the collar 11 and the lug 14 yieldingly moves the stem as the latch bar 12 is oscillated. Or the stem is otherwise suitably connected to the latch bar to be yieldingly moved thereby. A spring finger or other like means indicated at 16 engages a pin 17 on the bar to normally hold the latter in initial position with the valve closure 7 away from its seat. The plate 12 may be manually moved to close the valve 5 by a finger lever 18 of appropriate design pivoted on the base and provided with a bell crank arm 19 bearing against the upper end of the bar 12 to force the latter into closed position when the finger is moved in one direction and to clear the bar when the finger is swung in the opposite way.

A lock 20 of appropriate design is secured against the face of the base 1 over the upper portion of the bar 12 with the latch bar 21 of the lock adapted to be normally projected laterally therefrom into the path of motion of an outturned ear 22 of the bar 12. The latter is so disposed that when the latch bar is retracted by the spring 16 the ear lies in the path of outward movement of the lock latch 21 while when the plate is projected by proper manipulation of the lever 18, as in Fig. 1, the latch of the lock, which is preferably spring projected, snaps past the ear 22 and prevents its return.

The upper end portion of the stem 10 carries an electric contact finger 23 which in this instance is shown as a spring arm clamped between nuts 25 on the stem. This terminal may be grounded, as herein indicated, to the base and consequently in series with a conductor 26 of the ignition circuit of the motor or it may be insulated with direct connection to said limb. The other terminal portion 27 of the circuit limb is secured by a binding post 28 or the like, and is connected to a spring finger 29 arranged to contact with the spring arm 23 when the parts are so disposed as to leave the fuel valve open. The casing 30 incloses the entire mechanism, being removably secured on the base plate 1.

In operation the manipulation of the fin-

ger lever depresses the latch bar to close the valve, the latch of the lock snapping past the lug on the latch bar and holding the latter in projected position. The spring connection between the valve stem proper and the latch bar yieldingly forces the valve closure to properly seat so that there is no leakage. By inserting the key and manipulating the lock the latch bar is released and at once retracted by its spring finger. At the same time the circuit which has been broken by the outward movement of the latch bar is again closed.

As a result of this construction a device is obtained which effectively holds the fuel supply of the motor to which it is applied, cut off if desired and which also breaks the ignition circuit of the motor. With the parts disposed and arranged as shown it is impossible to tamper with the mechanism to allow the opening of the valve or the closing of the circuit. The device is applicable to electrically propelled vehicles by omitting the fuel valve, and placing the electric cut-out devices in the motor circuit of the car.

Obviously, changes in the details of construction may be made without departing from the spirit of the invention, and I do not care to limit myself to any particular form or arrangement of parts.

What I claim is:

1. A device for the purposes specified comprising a fuel controlling valve, a reciprocable member connected to the valve to yieldingly close the latter, manually operable means for moving the reciprocable member and valve into closed position, an electric circuit breaker adapted to be held open by the reciprocable member when the valve is closed, and means automatically returning the reciprocable member and valve to open position when released by the lock.

2. A device for the purposes specified comprising a base, a valve casing secured to the base, a closure cooperating with a seat in the casing to seal the latter when moved in one direction, a stem for operating the closure, a reciprocable member adapted to yieldingly operate the stem to close the valve, a manually operable lever for moving the reciprocable member to close the valve, and an electric circuit breaker controlled by the reciprocal member and held open thereby when the valve is closed, a lock adapted to automatically engage and hold the reciprocable member and valve in closed position.

3. A device for the purposes specified comprising a base, a valve casing secured to the base, a closure cooperating with a seat in the casing to seal the latter when moved in one direction, a stem for operating the closure, a reciprocable member adapted to yieldingly operate the stem to close the valve, a manually operable lever for mov-

ing the reciprocable member to close the valve, a lock adapted to automatically engage and hold the reciprocable member and valve in closed position, and an electric circuit breaker controlled by the reciprocable member and held open thereby when the valve is closed.

4. A device for the purposes specified comprising a valve casing, an annular valve seat therein, a guide aperture in the casing, a tubular extension from the casing in alignment with the aperture and seat, a stem reciprocable through the tube and aperture, a closure on the stem adapted to seal the seat when moved in one direction and to close the guide opening when thrown in the other direction, a reciprocable member in longitudinal alinement with the stem, means for yieldingly connecting the stem and member for operating the stem, a lever for moving the reciprocable member, stem and closure into closed position, a lock engaging the reciprocable member when the latter is in closed position, and a circuit breaker operated by the reciprocable member and held open by the latter when the valve is closed.

5. A device for the purposes specified comprising a base, a member longitudinally reciprocable thereon, a lever oscillatory on the base for moving the member in one direction, a lock adapted to automatically engage and hold the member when moved in that direction by the lever, means for automatically returning the member to initial position when released by the lock, a tubular extension in substantial alinement longitudinally with the member, a valve stem reciprocable through the tube adapted to be yieldingly projected by the member when the latter is projected, a valve casing on the tubular extension having a guide aperture loosely engaged by the stem, a valve seat in the casing, a closure for the seat and guide aperture mounted on the stem, and a housing for the mechanism.

6. A device for the purposes specified comprising a base, a tubular extension secured to one end portion thereof, a valve secured on the tubular extension, a valve operating stem reciprocable through the tubular extension, a latch bar reciprocable longitudinally on the base in alinement with the stem loosely interlocked with the stem, a spring yieldingly projecting the stem outwardly from the latch bar, a lever oscillatory on the base adapted to project the latch bar in one direction, a lock on the base adapted to engage the latch bar when the latter is fully projected, and a spring member adapted to return the latch bar to initial position when released by the lock.

7. A device for the purposes specified comprising a base, a tubular extension secured to one end portion thereof, a valve secured on the tubular extension, a valve

operating stem reciprocable through the tubular extension, a latch bar reciprocable longitudinally on the base in alinement with the stem loosely interlocked with the stem, 5 a spring yieldingly projecting the stem outwardly from the latch bar, a lever oscillatory on the base adapted to project the latch bar in one direction, a lock on the base adapted to engage the latch bar when the latter is fully projected, circuit breaking 10 means operated by the latch bar and adapted to be held open thereby when the valve is closed, and a spring member adapted to return the latch bar to initial position when 15 released by the lock.

8. A device for the purposes specified comprising a base plate, a latch bar longitudinally reciprocable thereon having a lug near one end, a tubular extension on the 20 plate in longitudinal alinement substantially with the latch bar, a valve stem reciprocable in the tubular extension extending through an opening in the lug of the latch bar, a guide collar for the stem playing in the tube, 25 a spring in compression between the collar and the latch bar lug, a lever oscillatory on the base adapted when moved in one direction to force the latch bar and stem outwardly, a valve secured on the tubular extension and operated by the valve stem to 30 close when the latch bar is projected outwardly, a spring lock on the casing adapted to automatically engage and hold the latch bar in projected position, and a casing detachably secured on the base over the mechanism. 35

9. A device for the purposes specified comprising a base plate, a latch bar longitudinally reciprocable thereon having a lug 40 near one end, a tubular extension on the plate in longitudinal alinement substantially with the latch bar, a valve stem reciprocable in the tubular extension extending through an opening in the lug of the latch bar, a 45 guide collar for the stem playing in the tube, a spring in compression between the collar and the latch bar lug, a lever oscillatory on the base adapted when moved in one direction to force the latch bar and stem 50 outwardly, a valve secured on the tubular extension and operated by the valve stem to

close when the latch bar is projected outwardly, a spring lock on the casing adapted to automatically engage and hold the latch bar in projected position, a fixed electric 55 terminal on the base and a movable electric terminal operated by the latch bar to form electrical contact with the fixed terminal when the bar is retracted and to be separated from the fixed terminal when the bar 60 is projected, and a casing detachably secured on the base over the mechanism.

10. A device for the purposes specified comprising a base plate, a latch bar longitudinally reciprocable on the base plate, 65 an outturned lug near one end of the latch bar, a spring lock on the base having a latch bar adapted to move across the path of motion of the lug, a lever oscillatory on the base adapted to move the latch bar in 70 one direction, a lug near the other end of the latch bar, a bracket plate on the casing, a tubular extension clamped in the bracket plate in substantial alinement longitudinally with the latch bar, a valve casing secured 75 on the outer portion of the tubular extension and provided with an apertured valve seat in axial alinement therewith, a diaphragm secured in the casing by the tubular extension and provided with a guide opening substantially in alinement with the valve seat 80 aperture, a stem reciprocable through the extension and guide opening and through a lug on the adjacent portion of the latch bar, a closure on the stem adapted to seal the valve 85 seat when moved in one direction and the guide aperture when shifted in the other direction, a guide collar on the stem playing in the tubular extension, a spring encircling the stem in compression between the collar 90 and adjacent latch bar lug, circuit breaking means operated by the latch bar and adapted to open when the movement of the bar shifts the closure to its seat, and a spring member adapted to return the latch bar to 95 initial position when released by the lock.

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

GROVER E. CLEVELAND.

Witnesses:

ANNA M. DORR,

CHAS. W. STAUFFIGER.