July 25, 1933. A. E. JENKINS 1,920,080

ELECTROGRAVITY LOCK

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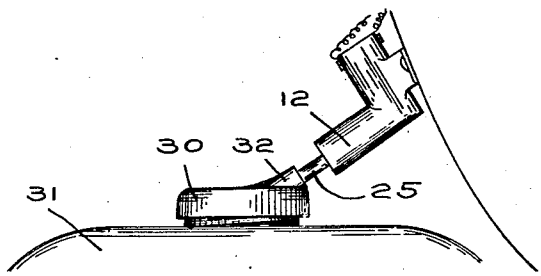


Fig. 1.

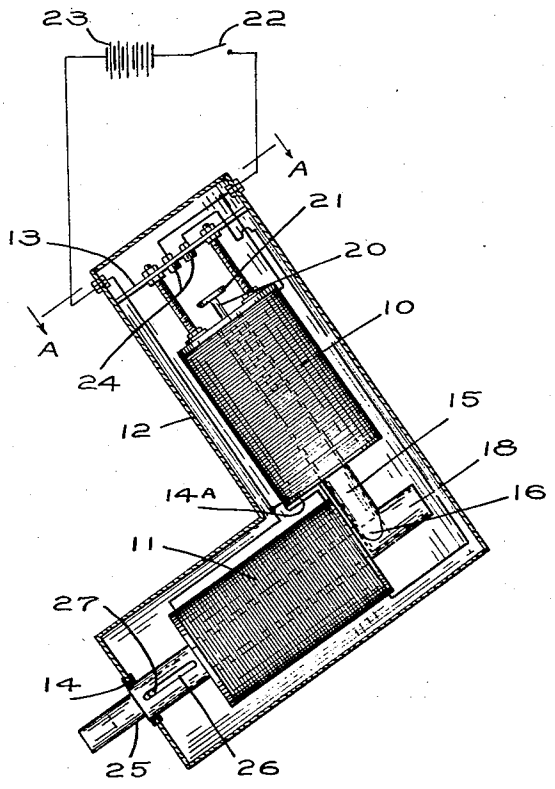


Fig. 2.

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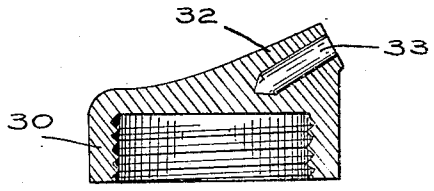


Fig. 3.

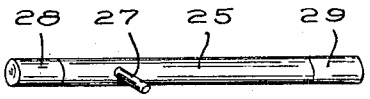


Fig. 4.

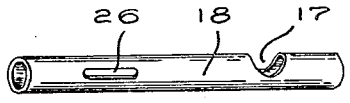


Fig. 5.

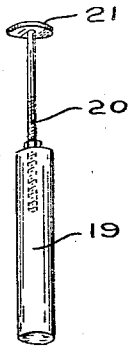


Fig. 6.

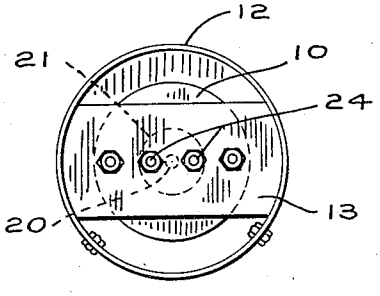


Fig. 8.

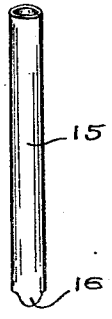


Fig. 7.

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UNITED STATES PATENT OFFICE

ARTHUR EDWARD JENKINS, OF TIMMINS, ONTARIO, CANADA

ELECTROGRAVITY LOCK

Application filed June 14, 1932. Serial No. 617,205.

This invention relates to improvements in an electro magnetic gravity lock. Its primary object being to provide means to lock the cap on a gasoline tank carried at the rear of an automobile.

A further object of the invention is to provide an electrically controlled lock for the gasoline tank cap and means to operate the same from the dash board of the car.

With these and other objects in view that may appear while the description proceeds, the invention consists in the novel construction and arrangement of parts as hereinafter more specifically set forth claimed and shown in the accompanying drawings forming a part of this present application and in which:

Fig. 1 is a general view of the lock and cap.

Fig. 2 is a partial sectional view through the lock.

Fig. 3 is a section through the cap.

Fig. 4 is a perspective view of the core of the secondary coil.

Fig. 5 is a perspective view of the secondary coil lining.

Fig. 6 is a perspective view of the core of the primary coil.

Fig. 7 is a perspective view of the primary coil lining.

Fig. 8 is a sectional plan on the line A—A of Fig. 2.

Referring more in detail to the drawings in which similar reference characters designate corresponding parts throughout the several views it will be seen that the invention comprises a primary circuit coil 10 and a secondary circuit coil 11. The said coils being disposed at right angles to each other and the axis of the secondary coil 11 being at an angle of 35° from the horizontal to provide the necessary gravity pull to be described hereafter. The coils are supported within a casing 12 by a member 13 of insulating material, and an insulating collar 14. An angle bracket 14a provides means for keeping the coils in juxtaposition with relation to each other.

The primary circuit coil has a lining 15 the lower end 16 being designed to engage an orifice 17 in the lining 18 of the secondary circuit coil 11. Slidably mounted within the said lining 15 is a core 19 having a member 20 threadably secured in the upper end of the same with an enlarged flat circular head 21 thereon. When the switch 22, which may be located in any convenient place, is closed the current from the battery 23 flows through the primary circuit coil causing the core 19 to move upwards until the member 21 bears against the terminal posts 24 this acts as a switch and closes the secondary circuit causing the electrical current to flow through the secondary circuit coil. This imparts a movement to the core 25 of the said coil whereby to withdraw the same into the lining. When the current is shut off the cores will drop back into their normal position due to their angular position and gravitation. A slot 26 is provided in the lining 18 and a pin 27 in the core 25 engages the same, this prevents the core 25 from falling out of the said lining. After the core 25 is fully extended the core 19 drops down behind the end of same forming a lock. The ends 28 and 29 of the said core 25 are made of brass while the central portion is soft iron. This is to prevent the magnetism of the core from coming into contact with the cap 30 of the gasoline tank 31 at the one end and with the core 19 at the other end.

The cap 30 of the gasoline tank 31 comprises a screw threaded cap having an enlargement 32 on the top thereof. The said enlargement having a hole 33 drilled therein at an angle of 35° from the horizontal to accommodate the end 28 of the core 25 when the cap is locked.

It will be seen that when the current is off, the core will engage the orifice in the cap and prevent the cap from being turned, when the current is turned on the core is withdrawn from the orifice and the cap may then be unscrewed from the tank.

It is believed that the construction and advantages of the structure shown may be apparent from the foregoing paragraphs taken in conjunction with the accompany-

ing drawings without further detailed description.

While the preferred embodiment of the invention has been disclosed it is understood that minor changes in the details of construction, combination and arrangement of co-operating parts may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

I claim:

1. In a lock of the class described, a casing, a primary magnetic coil mounted in said casing, a core slidably mounted within said coil, a secondary magnetic coil mounted within said casing at right angles to said primary coil, a core slidably mounted within said secondary coil having one end adapted to normally extend beyond said casing, the opposite end of the core having a recess adapted to be engaged by the end of the core of said primary coil to hold the core of the secondary coil in its extended position, a circuit for said primary coil, a circuit for said secondary coil, and means operable by the core of the primary coil to close the circuit of the secondary coil, when the core of the primary coil is retracted.

2. In a lock of the class described, a casing, a primary magnetic coil mounted in said casing, a core slidably mounted within said coil, a secondary magnetic coil mounted within said casing at right angles to said primary coil, a core slidably mounted within said secondary coil having one end adapted to normally extend beyond said casing, the opposite end of the core having a recess adapted to be engaged by the end of the core of said primary coil to hold the core of the secondary coil in its extended position, a circuit for said primary coil, a circuit for said secondary coil, and a circuit closer carried by the core of said primary coil adapted to close the circuit of said secondary coil, when the core of said primary coil is retracted.

3. In a lock of the class described a casing, a primary magnetic coil mounted in said casing, a core slidably mounted within said coil, a secondary magnetic coil mounted within said casing at right angles to said primary coil, a sleeve extending through said secondary magnetic coil, a core slidably mounted in said sleeve having one end adapted to normally extend beyond said casing, the opposite end of the core having a recess adapted to be engaged by the end of the core of said primary coil to hold the core of the secondary coil in its extended position, a pin extending from the core of said secondary coil through a slot in said sleeve to limit the movement of the core, a circuit for said primary coil, a circuit for said secondary coil and a circuit closer carried by the core of said primary coil adapted to close the circuit of said secondary coil, when the core of said primary coil is retracted.

ARTHUR EDWARD JENKINS.