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FILLING NOZZLE FOR FUEL TANKS

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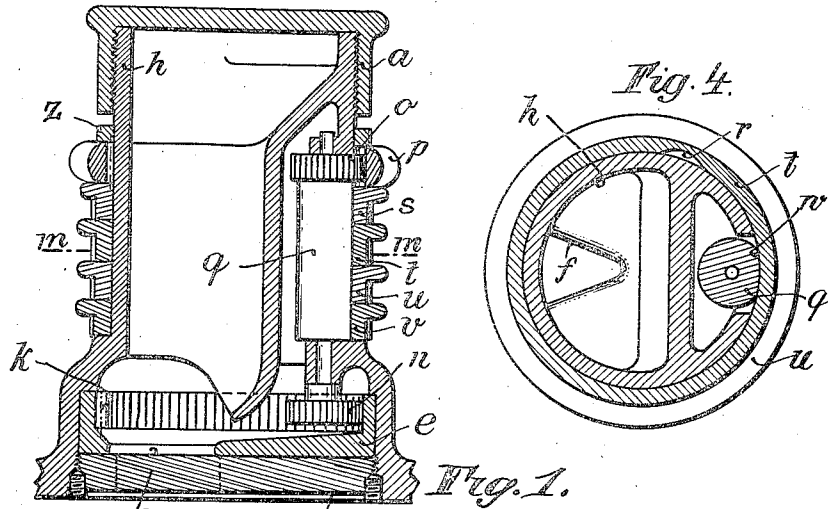


Fig. 1.

Fig. 2.

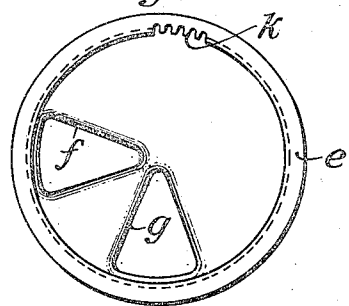


Fig. 3.

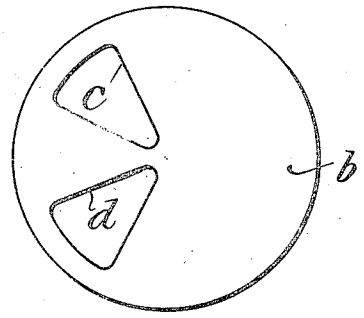
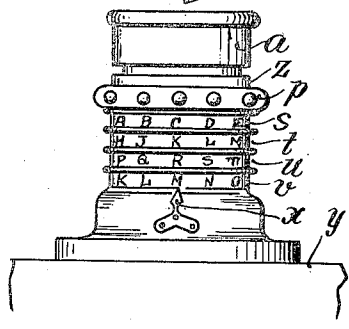


Fig. 4.

Fig. 5.



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FILLING NOZZLE FOR FUEL TANKS

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10 Claims. (Cl. 70—179)

This invention relates to a filling nozzle for the fuel tank of motor vehicles and the like.

In the accompanying drawing, Figs. 1 to 5, the invention is illustrated in one constructional form by way of example. Fig. 1 shows a longitudinal section through a filling nozzle of a kind according to the invention; Fig. 2 and Fig. 3 are details; Fig. 4 is a cross-section *m—m* according to Fig. 2; Fig. 5 shows the external view of a new filling nozzle.

The invention consists essentially in this, that within the filling nozzle a gate valve is so arranged that it can only be opened, when a number of selective discs or rings are set in a quite definite manner known only to authorised persons. An unauthorised person cannot therefore replenish the fuel in the usual way through the filling nozzle and is forced to abandon the immovable vehicle or to incriminate himself by visible destructions at the filling nozzle.

The new filling nozzle *h* (Fig. 1) which is covered in the usual way by means of a screw-on cap *a* (Figs. 1, 5) is provided at the outflow to the fuel tank with a cover plate *b* (Figs. 1, 3) with outflow slots *c, d* (Fig. 3) which can be uncovered and covered by the rotatable valve plate *e* (Figs. 1, 2) having the counter-slots *f, g* (Fig. 2). The valve plate *e* is provided with internal teeth *k* (Fig. 1), with which a pinion *n* meshes. The pinion *n* is mounted on the same shaft as a second pinion *o* which itself engages through a slot in the wall of the filling nozzle *h* with a driving ring *p* provided with internal teeth, which concentrically embraces the outer wall of the filling nozzle *h*. Owing to this arrangement it is possible, in the absence of any other resistances, by turning the driving ring *p* to turn the valve plate *e* (through the intermediary of the two pinions *o* and *n*) and thus either to bring the counter-slots *f, g* into open register with the outflow slots in the cover plate *b* or to cover the latter outflow slots *c, d*, so as to close the outflow.

On the same shaft with the pinions *o, n*, however, a locking drum *q* (Figs. 1, 4) is arranged, which is positively combined with the pinions, so that the pinions *o, n* can only be moved, when the locking drum can turn freely. This is, however, only possible, when the internal recesses *r* (Fig. 4) of all the selective rings *s, t, u, v* come into position exactly in front of the locking edge *w* of the locking drum *q*. The selective rings *s, t, u, v* are themselves each provided (Fig. 5) with externally visible signs (for instance capital letters) which are so arranged that with a definite sequence of the selective signs (for instance

CKRM), which can be read off above the pointer *x*, the recesses *r* of all the selective rings *s, t, u, v* are in register and positioned in front of the locking edges *w* of the locking drum *q*. With the selective rings *s, t, u, v* in this position it is then possible to turn the pinions *o, n* by actuating the driving ring *p* and more particularly to impart the opening motion to the valve plate *e*.

As every unauthorised person remains in ignorance of the correct sequence of the signs above the pointer *x*, at which the locking drum *q* is liberated, an opening motion of the valve plate *e* and consequently a filling of the fuel tank *y* (Fig. 5) is also impossible for every unauthorised person.

What I claim is:

1. A filling nozzle for fuel tanks, comprising a movable gate valve disposed at the outflow to the fuel tank, a rotatable drum having locking edges, and positively connected to the said gate valve, a plurality of selective rings on the said filling nozzle through which the fuel passes on its way to the outflow and means on the said selective rings for releasing the locking edges of the drum only when the selective rings are in a definite position.

2. A locking device including in combination a nozzle, valve means disposed within said nozzle, and locking means surrounding said nozzle and operably connected with the said valve means to control the passage of a fluid through the nozzle.

3. A device of the character described including in combination a nozzle through which fluid is adapted to pass, valve means within the nozzle, actuating means disposed partly within the nozzle for the valve means, and locking means surrounding the nozzle and operably connected with a part of the actuating means.

4. A device as claimed in claim 3, in which the actuating means includes a shaft within the nozzle and operably connected to the valve means, and a driving ring surrounding the nozzle and operably connected to the shaft.

5. A device as claimed in claim 3, in which the actuating means includes a rotatable shaft and in which the locking means includes a locking member rigid with the shaft, and a series of selective rings surrounding the nozzle for cooperating with the locking member.

6. A locking device including in combination a nozzle through which fluid is adapted to pass, valve means disposed within said nozzle, a permutation lock surrounding the nozzle, and an operable connection disposed within the nozzle

and arranged between the valve means and the permutation lock.

5 7. A device as claimed in claim 6, in which a closure cap is mounted on the outer end of the nozzle.

10 8. A locking device including in combination a nozzle through which fluid is adapted to pass, a rotatable apertured valve plate disposed within said nozzle, actuating means surrounding the nozzle and including an element within the nozzle operably connected to the valve plate, and a permutation lock surrounding the nozzle for controlling the actuating means to effect rotation of the valve plate.

15 9. A device as claimed in claim 8, in which the valve means includes an apertured plate, an internal ring gear on said plate and in which the

actuating means includes an actuating ring surrounding the nozzle and provided with internal teeth, a shaft disposed within the nozzle, and pinions on the ends of the shaft meshing respectively with the ring gear and teeth on the actuating ring. 5

10 10. A locking device including in combination a nozzle, a rotatable apertured valve plate within said nozzle, valve actuating means including a driving ring surrounding the nozzle, mechanism within the nozzle and operably connected with the valve means, and a series of selective rings surrounding the nozzle and operably connected to the said mechanism to releasably control the rotation of the valve plate. 15

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