No. 875,294. PATENTED DEC. 31, 1907.

A. SIABLOFF.

STEAM ENGINE.

APPLICATION FILED MAR. 9, 1907.

Fig.1.

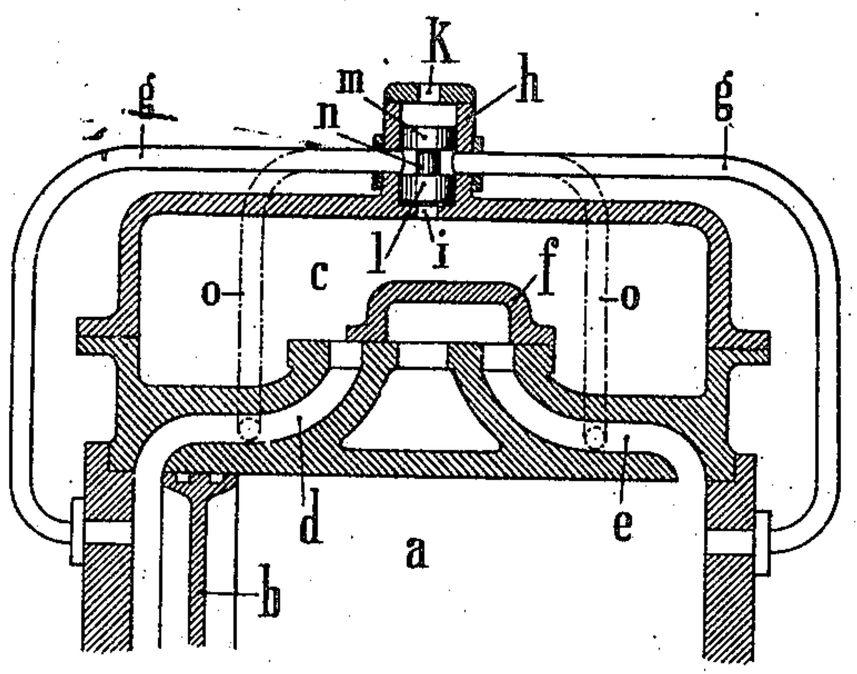


Fig.2.

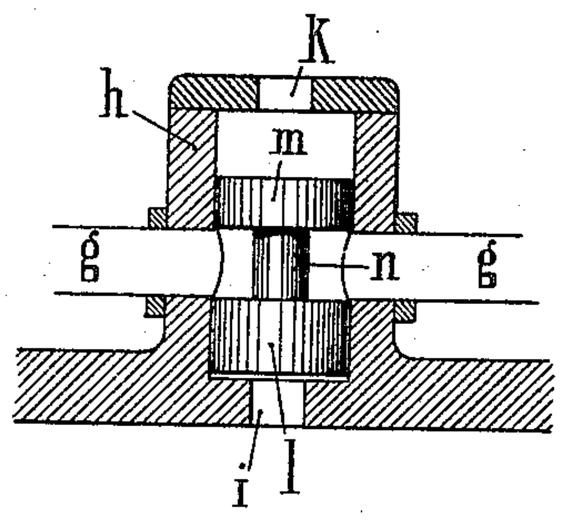
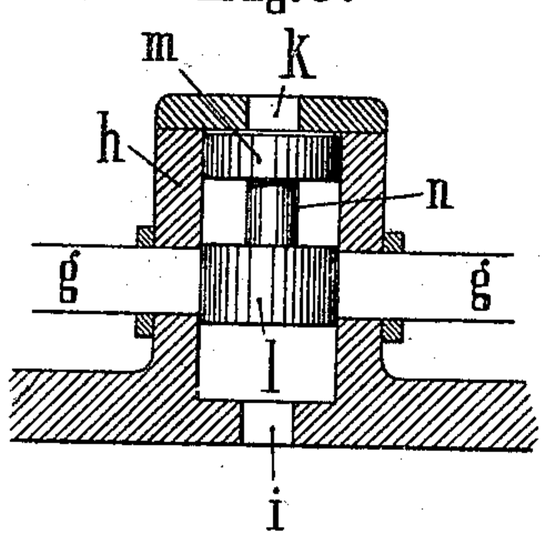


Fig.3.



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UNITED STATES PATENT OFFICE.

ALEXIS SIABLOFF, OF KOLOMNA, RUSSIA.

STEAM-ENGINE.

No. 875,294. Specification of Letters Patent. Patented Dec. 31, 1907.

Application filed March 9, 1907. Serial No. 361,487.

To all whom it may concern:

Be it known that I, ALEXIS SIABLOFF, a subject of the Russian Emperor, and resident of Kolomna, Government Moscow, Russia, have invented certain new and useful Improvements in and Relating to Piston Steam-Engines, of which the following is a specification.

My present invention relates to piston steam-engines especially for use in connection with locomotives and consists in an automatic device controlling the connection of the two ends of a steam cylinder on opposite sides of the piston working therein.

An embodiment of the invention is represented on the accompanying drawings, forming part of this specification, wherein

Figure 1 shows a part of a longitudinal section through the cylinder of a steam-engine provided with the new automatic controlling device. Figs. 2 and 3 show the automatic valve in different positions.

In the drawing the cylinder is designated *a;* the letter *b* indicates the piston working in cylinder *a; c* is the steam-chest feeding the cylinder *a* with steam through channels *d, e; f* is the valve controlling the passage of steam through channels *d, e.*

g is a pipe leading from one end of cylinder *a* to the other end and being provided with an enlargement *h* forming a valve-chest. The valve-chest *h* is in free communication on one side with steam-chest *c* by opening *i* and on the other side with the atmosphere by opening *k.* Mounted within the valve-chest *h* is a piston-valve having two pistons *l, m* connected with each other by a rod *n.*

The operation of the device is as follows: As long as live steam is supplied to the steam-chest *c* and to cylinder *a* the steam-pressure acting through opening *i* on piston *l* will keep the valve in the valve-chest *h* in its raised position shown in Fig. 3. In this position piston *l* interrupts the passage from one end of cylinder *a* to the other through pipe *g.* If however the regulator of the engine (not shown on the drawing) is shut with the effect that live steam is no more supplied to steam-chest *c* the valve in chest *h* will be depressed through the action of the open air pressure and will assume the position shown in Figs. 1 and 2. As long as the valve in the chest *h* retains this position, the two cylinder-ends on opposite sides of the piston *b* are in free communication as is clearly shown in the drawing. The piston *b* therefore can move freely within the cylinder *a* without cold air being sucked into the cylinder. At the same time dirt and impure gases are prevented from entering the cylinder. The new automatic device therefore has the effect of saving steam and of increasing the durability of the engine.

The invention is not limited to the exact form of construction above referred to. The two ends of the cylinder may be connected in any other suitable manner. For instance the connection may be effected by pipes *o* fixed to the live steam channels *d, e* as shown in dotted lines in Fig. 1.

Having now described my invention, what I claim is:

1. In a steam-engine a cylinder, a piston reciprocating therein, a conduit leading from one end of said cylinder to the other and having an enlargement forming a valve-chest, said valve-chest being in communication with the steam chest by a passage different from said conduit connecting the two ends of the cylinder with each other and at the same time with the open air, a piston valve within said valve-chest separating the open air from the steam-chamber and adapted to be actuated by pressure outside the valve-chest so as to automatically keep the passage from one end of the cylinder to the other by said conduit closed as long as live steam is fed to the cylinder and to open it when the steam-supply is shut off without admission of outside air.

2. In a steam-engine a cylinder, a piston reciprocating therein, a conduit leading from one end of said cylinder to the other and having an enlargement forming a valve-chest, a piston-valve within said valve-chest and slidingly mounted therein, said piston-valve adapted to interrupt the passage through said conduit in one position and to open it in a second position and openings in said valve-chest on opposite sides of the piston of said valve, one of said openings securing communication of said valve-chest with the steam

chamber from which the engine-cylinder is fed with steam and the other with the open air the piston valve in all its positions preventing free communication between each of said openings of the valve chest with said conduit connecting the two opposite cylinder ends.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ALEXIS SIABLOFF.

Witnesses:

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