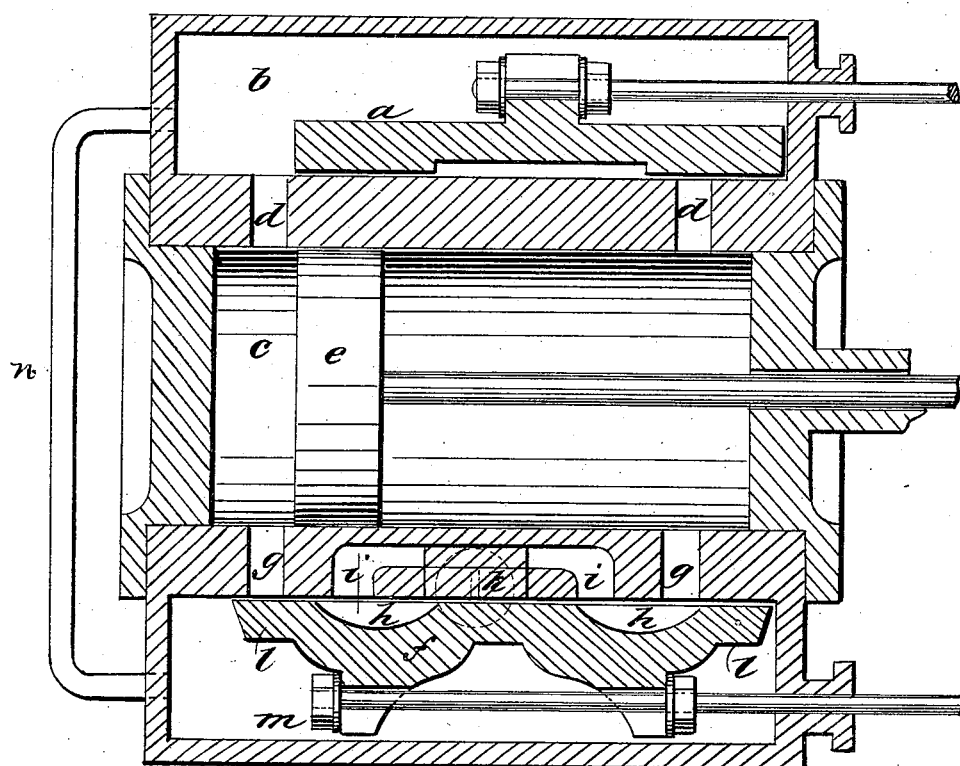


(No Model.)

R. DOTY.  
SLIDE VALVE.

No. 304,186.

Patented Aug. 26, 1884.



WITNESSES:

*Francis M. Andle*  
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INVENTOR:

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# UNITED STATES PATENT OFFICE.

RILEY DOTY, OF LEONARDSBURG, OHIO.

## SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 304,186, dated August 26, 1884.

Application filed December 5, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, RILEY DOTY, of Leonardsburg, in the county of Delaware and State of Ohio, have invented certain new and useful Improvements in Slide-Valve Steam-Engines, of which the following is a full, clear, and exact description.

This invention is an improvement of the invention on which a patent was granted to me September 25, 1883, No. 285,737, for a contrivance of separate steam and exhaust valves with an arrangement of the exhaust-valve to be overbalanced by live steam on the outside against the outward pressure of the steam in the cylinder, and to be held on its seat thereby.

The invention consists in this case of the live-steam-supply pipe to the back of the exhaust-valve connected with the live-steam chest, so that the water of condensation may escape back through said pipe to the live-steam chest and escape through the cylinder and exhaust with the steam, instead of being retained in the exhaust-valve chest, as when said supply-pipe connects with the steam-pipe above the engine, whereby the exhaust-valve will work better than when the chest is flooded with water, all as hereinafter fully described.

Reference is to be had to the accompanying drawing, forming part of this specification, which is a horizontal section of a steam-cylinder and valve-chests with the supply-pipe for the exhaust-steam chest arranged as I now propose to fix it.

The valve *a* is for the live steam, which is to be admitted from the live-steam chest *b* to the cylinder *c* through the ports *d*, in the usual manner, for taking effect on the opposite sides of the piston *e* alternately.

The valve *f* is for the exhaust which escapes from the ports *g* through the cavities *h* to the outlets *i*, leading to the exhaust-pipe *k*, the said

valve having extensions *l*, so that cavities *h* and ports *g* and *i* are covered at all times to prevent the waste of live steam used in the chest *m* to act on the back of the valve *f* and overbalance the pressure of the steam in the cylinder to hold the said valve *f* on its seat. The live steam is admitted to this chest *m* by the pipe *n*, which I also connect with the live-steam chest *b* for taking the water condensing from the steam in chest *m* back into the live-steam chest, so as to escape along with the steam working through the cylinder.

The action of the valves and the means for operating them are the same as in my former patent, but may be modified according to any of the well-known arrangements and modes of action common to such valves.

I do not limit myself to the use of the pipe *n* for the supply of live steam to the chest *m*, as the purpose of the present invention would be accomplished all the same if another supply-pipe were used, as before—that is, connected with the live-steam pipe above the engine; but with the present connection no other is needed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a steam-engine having separate inlet and exhaust valves arranged in separate steam-chests, with live steam admitted to the back of the exhaust-valve for holding said valve on its seat against the pressure from within the cylinder, the pipe for admitting the live steam to the exhaust-valve chest connected to the live-steam chest in such manner that the water of condensation will flow back from the exhaust-steam chest to the live-steam chest for escape with the steam working through the cylinder, substantially as described.

RILEY DOTY.

Witnesses:

HUGH LIVINGSTON,  
SADIE E. LIVINGSTON.