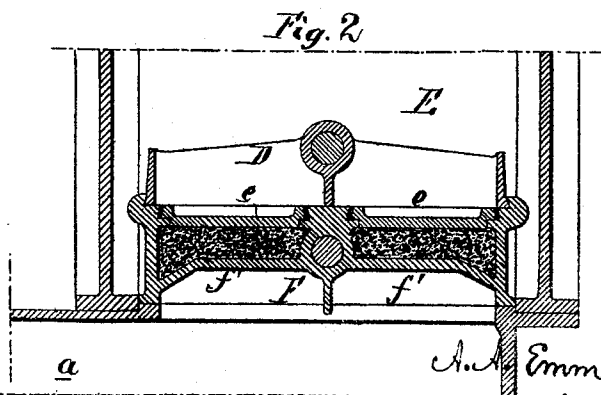
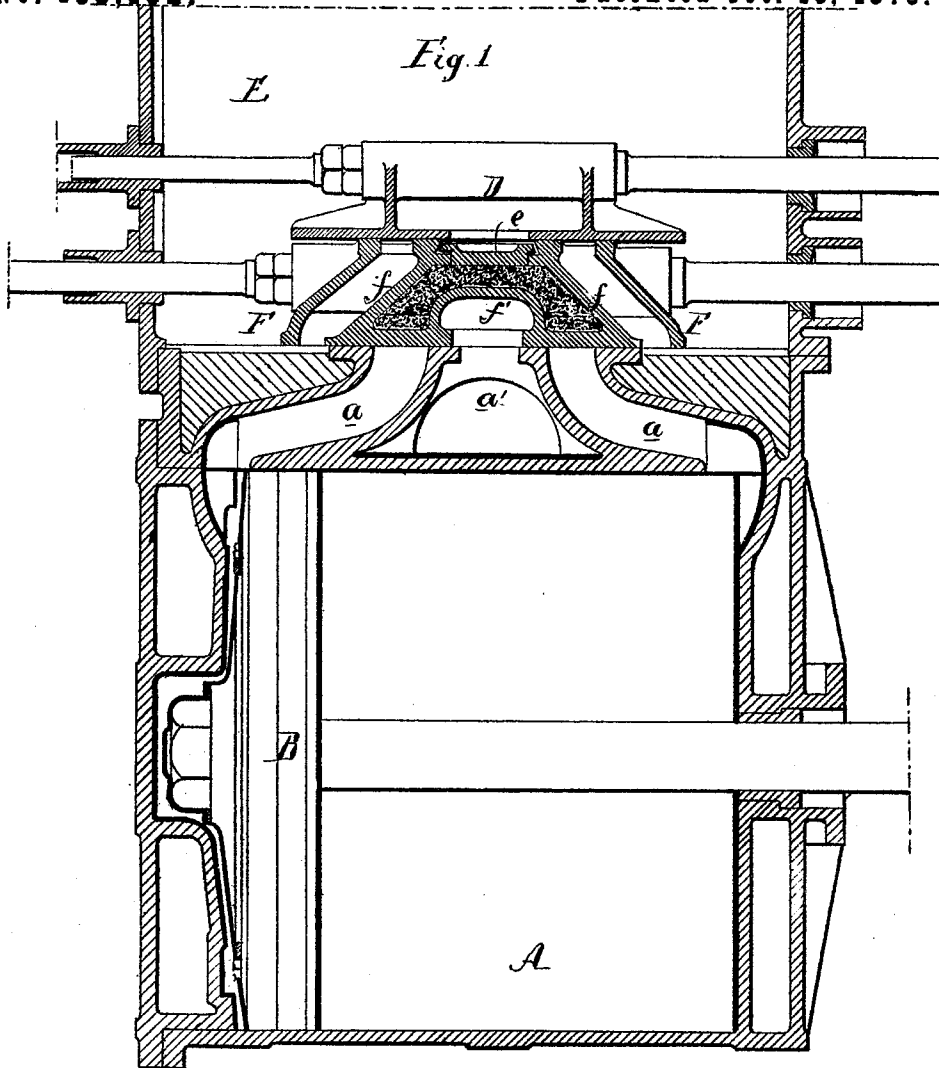


A. A. E. LISSIGNOL.

STEAM-ENGINES.

No. 183,182.

Patented Oct. 10, 1876.



Witnesses,
J. G. Skidmore
Henry Bowson Jr

A. A. Emmanuel Lissignol
 by his attorneys
Houston and Son

UNITED STATES PATENT OFFICE.

A. A. EMMANUEL LISSIGNOL, OF BRUSSELS, BELGIUM, ASSIGNOR TO HENRY G. HAUTERMANN, PRESIDENT OF THE SOCIÉTÉ ANONYME LE PROGRÈS, OF SAME PLACE.

IMPROVEMENT IN STEAM-ENGINES.

Specification forming part of Letters Patent No. **183,182**, dated October 10, 1876; application filed April 3, 1876.

To all whom it may concern:

Be it known that I, A. A. EMMANUEL LISSIGNOL, of Brussels, Belgium, have invented certain Improvements in Preventing Condensation in Steam-Engines, of which the following is a specification.

The object of my invention is to prevent the condensation of steam in steam-engines due to the different degrees of temperature of the steam contained in adjoining chambers or conduits of the engine; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a longitudinal section of the cylinder and steam-chest of a steam-engine with my improvements, and Fig. 2 a transverse section of the slide-valve.

A is the cylinder of the steam-engine, *a a* being the steam-ports, and *a'* the exhaust-port. These parts, with the piston B, steam-chest E, and cut-off-valve D, are of the usual construction. The slide-valve F, however, which

constitutes the main part of my improvement, I construct in the following manner: The exhaust steam passing to the exhaust-port, being of a lower temperature than the fresh steam on the other side of the slide-valve of the steam-engine as ordinarily constructed, tends to lower the temperature of this fresh steam, and consequently produce condensation. In order to prevent this, I make the slide-valve double, and the space between its walls *f f'* I fill with charcoal or other non-conducting material, which is inserted through openings closed by the covers *e e*, the edges of the latter being sealed by plastic material.

I claim as my invention—

The within-described slide-valve, consisting of the walls *f f'* and detachable covers *e e*, the whole being arranged for the reception of a non-conducting substance, as set forth.

A. A. EML. LISSIGNOL.

Witnesses:

P. VANOFBERG,
A. VANDERSTEER.