(No Model.)

G. DUVINAGE.

SLIDE VALVE.

No. 441,541. Patented Nov. 25, 1890.

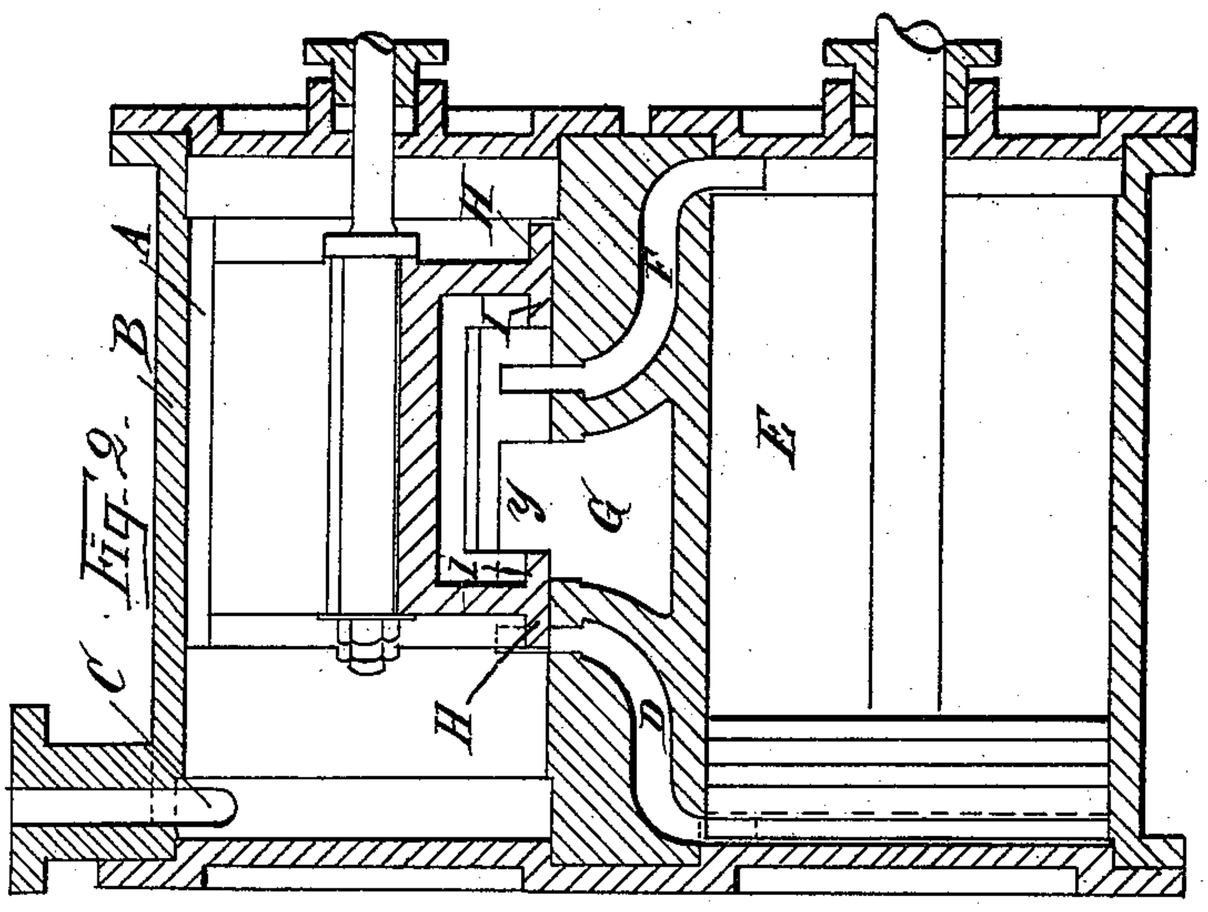

Fig. 2.

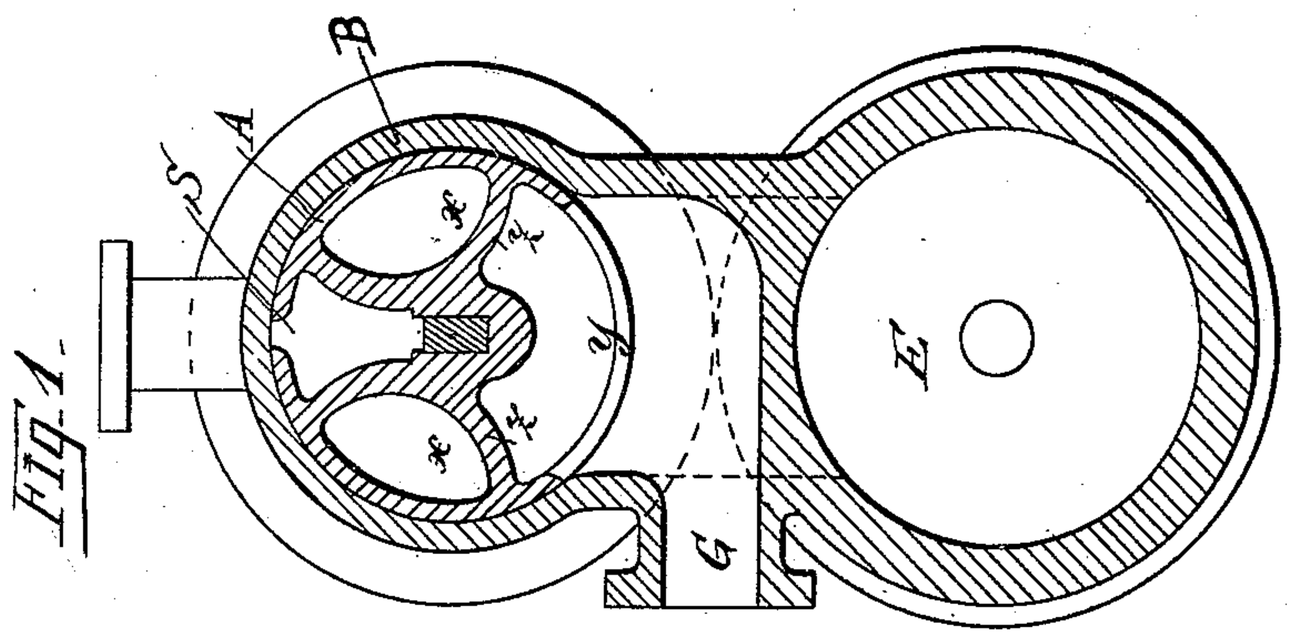

Fig. 1.

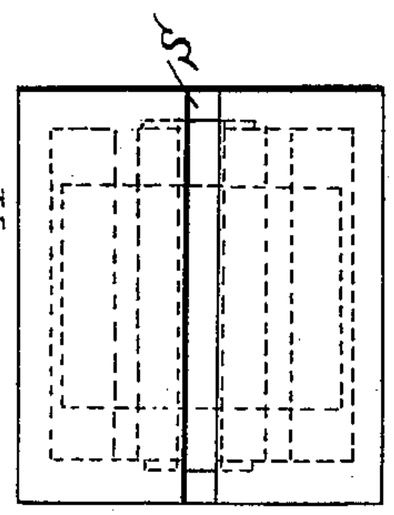

Fig. 3.

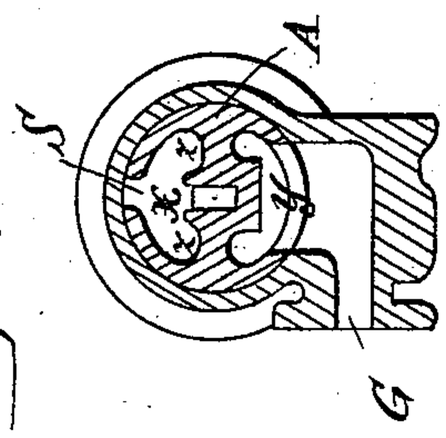

Fig. 4.

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UNITED STATES PATENT OFFICE.

GUSTAV DUVINAGE, OF PASEWALK, GERMANY.

SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 441,541, dated November 25, 1890.

Application filed June 18, 1890. Serial No. 355,857. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV DUVINAGE, of Pasewalk, in the Kingdom of Prussia and Empire of Germany, have invented a new and Improved Slide-Valve, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved slide-valve which is simple and durable in construction, very effective in operation, and is counterbalanced so as to be almost entirely relieved of steam-pressure.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a transverse section of the improvement as applied. Fig. 2 is a longitudinal section of the same. Fig. 3 is a plan view of the valve, and Fig. 4 is a transverse section of a modified form of the improvement.

The slide-valve A is made cylindrical in form, and is fitted to slide in a correspondingly-shaped steam-chest B, provided near one end with an inlet-pipe C, and connected at its bottom by the ports D and F with the cylinder E, in which operates a piston in the usual manner. The exhaust-port G in the cylinder E is adapted to be alternately connected with the ports D and F by the cavity *y*, formed in the under side of the valve A. The valve is also provided at its ends with the outwardly-projecting flanges H and the inwardly-projecting flanges I for forming the lap over the ports in the usual manner.

The valve A is provided with one or more longitudinally-extending walls *z z*, forming the top of the cavity *y*, and also forming longitudinally-extending openings *x*, which permit the steam entering the pipe C to pass from one end of the steam-chest to the other through the valve A.

The upper end of the cylindrical valve A is provided with a longitudinally-extending slit S, reaching from one end of the valve to the other and serving to give a certain amount of spring or elasticity to the said valve, so that it may fit closely against the inner surface of the steam-chest.

It will be seen that live steam in the steam-chest B in passing at all times through the valve A counterbalances the latter completely, as the pressure is equal on all sides, so that the valve moves forward and backward in the steam chest very freely.

The steam enters the cylinder E alternately at its ends through the ports D and F on the forward and backward movement of the valve A. The exhaust takes place from the cylinder alternately through the ports D and F to the exhaust-port G.

As shown in the modification in Fig. 4, only one partition-wall is shown, the longitudinal opening X being connected with the slit S.

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

The combination, with the cylindrical steam-chest, of the single cylindrical slide-valve A therein, having a longitudinal slit S from end to end in its upper side, a longitudinal opening *x* from end to end, a cavity *y*, and a wall *z*, the exterior of the valve being unbroken and closely fitting the interior of the steam-chest, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GUSTAV DUVINAGE.

Witnesses:
CARL SCHELL,
BRITTSCHNEIDER.