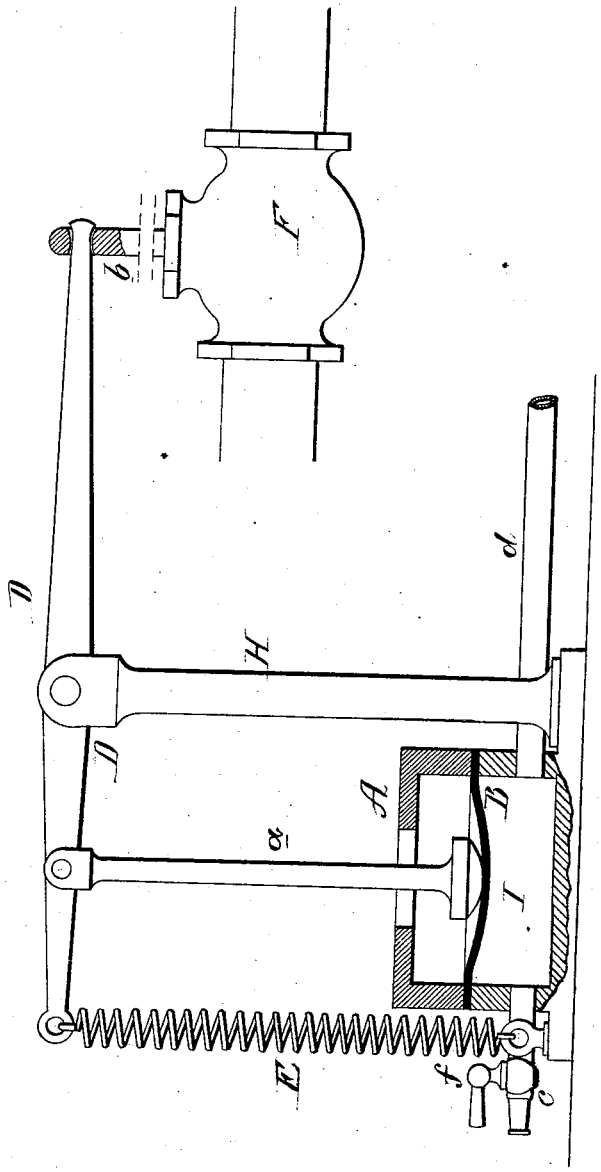
A. De BEAUMONT.

Automatic Regulating Device for Steam Engines.

No. 161,764. Patented April 6, 1875.



Witnesses, Thomas M Elvain
Hubert Howson

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UNITED STATES PATENT OFFICE.

ALEXANDRE DE BEAUMONT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN WEIDIG AND CHARLES YOCKEL, OF SAME PLACE.

IMPROVEMENT IN AUTOMATIC REGULATING DEVICES FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. **161,764**, dated April 6, 1875; application filed December 14, 1874.

To all whom it may concern:

Be it known that I, ALEXANDRE DE BEAUMONT, of Philadelphia, Pennsylvania, have invent a certain Automatic Regulating Device for Steam-Engines, of which the following is a specification:

The object of my invention is to provide a simple and economical automatic regulating device for steam-engines; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, which represents an elevation, partly in section, of my improved regulating device.

A is a cylindrical casing, separated into two chambers by means of an elastic diaphragm, B, on the upper side of which rests the enlarged and rounded head of a rod, *a*, connected to a lever, D. This lever is pivoted to a suitable standard, H, or to any fixed object, and its long arm is connected to the spindle *b* of a valve, F, by which the admission of steam to the engine is regulated, the short arm of the lever being attached to an adjustable spring, E, the tendency of which is to depress the said short arm and to elevate the regulating-valve. The pipe *d* affords a communication between the exhaust-pipe or exhaust-passage of the engine and the chamber below the diaphragm, this chamber having also an outlet-pipe, *e*, which is, by preference, furnished with a cock, *f*, for a purpose explained hereafter. The cock *f* is first so adjusted as to somewhat retard the escape of the steam from the chamber below the diaphragm.

The exhaust steam intermittently admitted to this chamber causes a constant pulsation of the elastic diaphragm, and a consequent vibration of the lever D, the upward movement of the diaphragm causing such a movement of the said lever as will contract the opening in the regulating-valve, through which the steam passes to the engine.

Any increase in the speed of the engine will cause an increase in the number of pulsations of the elastic diaphragm, and will reduce the volume of steam which passes to the engine to such an extent that it will soon resume its normal speed. The speed of the engine can be increased or diminished by adjusting the stop-cock *f*, for if the cock is fully opened the force of the pulsations of steam will be lessened, and the elastic diaphragm, and consequently the lever D, will be so restricted in its movement that a greater volume of steam will pass to the engine than when the cock is partly closed.

I wish it to be understood that I do not desire to claim the elastic diaphragm and its rod *a*, nor, in fact, any of the within-described parts viewed separately from each other; but

I claim as my invention—

A steam-engine regulator, in which are combined the following elements—namely, an elastic loaded diaphragm or piston, B, a chamber, I, beneath the same, the exhaust-pipe or exhaust-passage of the engine, a pipe, *b*, forming a communication between the exhaust-pipe and the chamber, an outlet, *e*, from the latter, a regulating-valve, F, and mechanism whereby the pulsating movements of the diaphragm or piston are communicated to the said regulating-valve, all substantially as set forth.

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

ALEXANDRE DE BEAUMONT.

Witnesses:

HUBERT HOWSON,

HARRY SMITH.