

# UNITED STATES PATENT OFFICE.

WALTER FROST, OF NEWARK, NEW JERSEY.

## IMPROVEMENT IN DIAPHRAGMS FOR GAS-GOVERNORS.

Specification forming part of Letters Patent No. **165,161**, dated July 6, 1875; application filed March 25, 1875.

*To all whom it may concern:*

Be it known that I, WALTER FROST, of Newark, in the county of Essex and State of New Jersey, have invented a certain Improvement in Diaphragm Gas-Governors, of which the following is a specification:

My invention consists in the coating of the leather composing the diaphragm of a gas-governor, by which it is rendered impervious to any gas made for illuminating purposes.

The diaphragms commonly used are coated with whale-oil or other similar oil; but it is found that the present mode of preparation will not resist the action of gas made from gasoline, rosin, naphtha, and the like, and will not prevent the escaping of these gases through the pores of the leather into the room, producing great annoyance. To remedy this difficulty is the object of this invention; and this I do by coating the leather composing the diaphragm with a composition of glycerine and castor-oil, in about equal proportions,

and the leather thus prepared I have found will be perfectly unporous, and still remain as soft and pliable as in the use of any other oils. This composition is also found to resist the action of heat and cold, and to render the diaphragm always capable of securing the gas in the governor, and from escaping into the room.

There is nothing new about any part of the mechanism of the governor; but rendering the diaphragm impervious to gas, as shown, is of great value, as also it is believed to be novel.

I claim—

A process for treating leather for diaphragms for gas-regulators with a composition of about equal parts of glycerine and castor-oil, as and for the purpose specified.

WALTER FROST.

Witnesses:

HORACE HARRIS,  
JOHN H. ROSS.