(No Model.)

G. H. NYE.

STEAM VACUUM PUMP.

No. 263,803. Patented Sept. 5, 1882.

FIG. I.

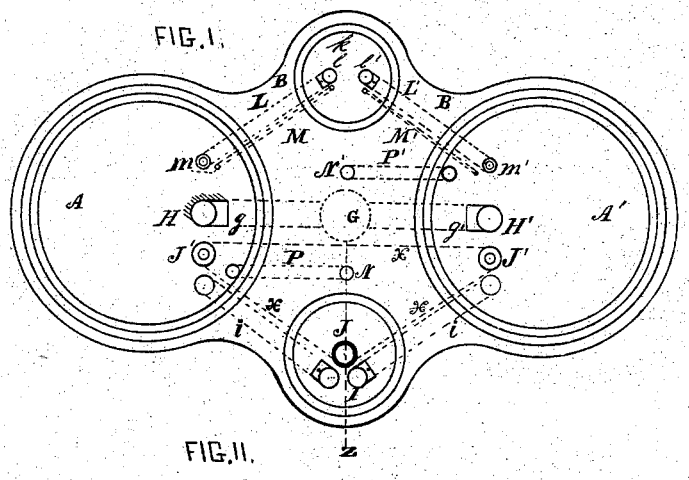


FIG. II.

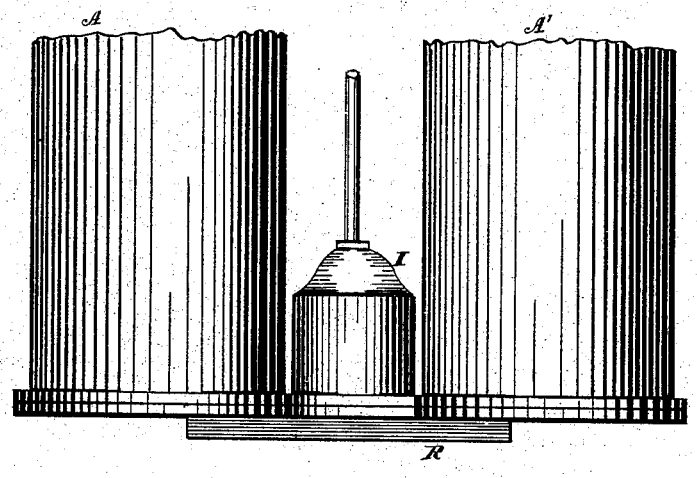
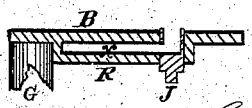


FIG. III.



WITNESSES.

Arthur W. Long

S. M. Kenney

INVENTOR.

George H. Nye.

By G. L. Chapin,

Atty

UNITED STATES PATENT OFFICE.

GEORGE H. NYE, OF CHICAGO, ILLINOIS.

STEAM VACUUM-PUMP.

SPECIFICATION forming part of Letters Patent No. 263,803, dated September 5, 1882.

Application filed January 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. NYE, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Steam Vacuum-Pumps, of which the following is a specification, reference being had to the accompanying drawings, illustrating the invention, in which—

Figure I represents the bottom of a steam vacuum-pump embodying my improvement; Fig. II, a broken elevation thereof; Fig. III, a section of the bottom on line *z*, Fig. I.

The present invention relates to an improvement on the steam vacuum-pump patented to me on December 15, 1874, No. 157,863.

The invention consists in a chamber communicating with the pump-cylinders and the discharge-chamber. The benefit to be attained by this connecting-chamber is as follows: When raising water in the winter months the pump as patented will throw a large body of water into a reservoir above. After such an elevation it becomes necessary to free the pump as a whole to avoid damage by frost acting on the water therein. This was done by shutting a valve to hold the water in the tank above, and then, by cocks in the various passages in the pump, draining off the water, involving the necessity of priming at each time the pump was to be put in operation after such drainage. My present improvement avoids such priming in that by opening a cock, J, which controls the communication of the pump-cylinders with discharge-chamber I by means of my new chamber *x*, the water will pass into both pump-cylinders, and thus leave the pump primed for use. The chamber *x* is also an additional element of convenience in low lifts—that is, where water is to be raised to the height of the pump.

A A′ represent the pump-cylinders, B the base plate, I the discharge-chamber, and K the condenser, of the patented pump referred to; G, the induction-pipe; H H′, its branches. *i i* are the pipes which communicate with the pump-cylinders and discharge-chamber. L L′ are the pipes which communicate with the condenser and pump-cylinders, and M M′ are the small ducts leading from the pump-cylinders A A′ to the condenser-cylinder. P P′ are pipes connected with the valve-movement, all of which are shown to be old in the said patent.

My improvement consists of a chamber, *x*, Fig. III, and valve or cut-off J, the plan form of the chamber being shown at *x x x*, Fig. I.

In practice the base-plate B is extended down, as shown at R, and cored out to form the chamber *x*. The valve J controls the communication of the pump-cylinders with the discharge-chamber I, and when said cock is closed there remains a free communication between the pump-cylinders A A′ by means of the ports J′ J′ and the chamber *x*. This, to my knowledge, has not been before successfully done in steam vacuum-pumps.

My improvement can be used to a great advantage on pumps which take water after the discharge—that is, after the water has passed the discharge-valve—inasmuch as the incoming water is introduced colder, and therefore produces a more nearly perfect vacuum. It is true that in most pumps of this kind the warmer water is at the top of the column, where it comes in contact with the steam, and that it is the last to leave the cylinders, and that it is desirable to replace it with cold water to produce a working-vacuum; hence the importance of a direct communication between the cylinders A A′.

I claim—

The chamber *x*, communicating with the chamber I by means of the valve J and with the cylinders A A′ by means of ports J′ J′, as and for the purpose set forth.

GEORGE H. NYE.

Witnesses:
J. S. HUEY,
G. L. CHAPIN.