

No. 652,859.

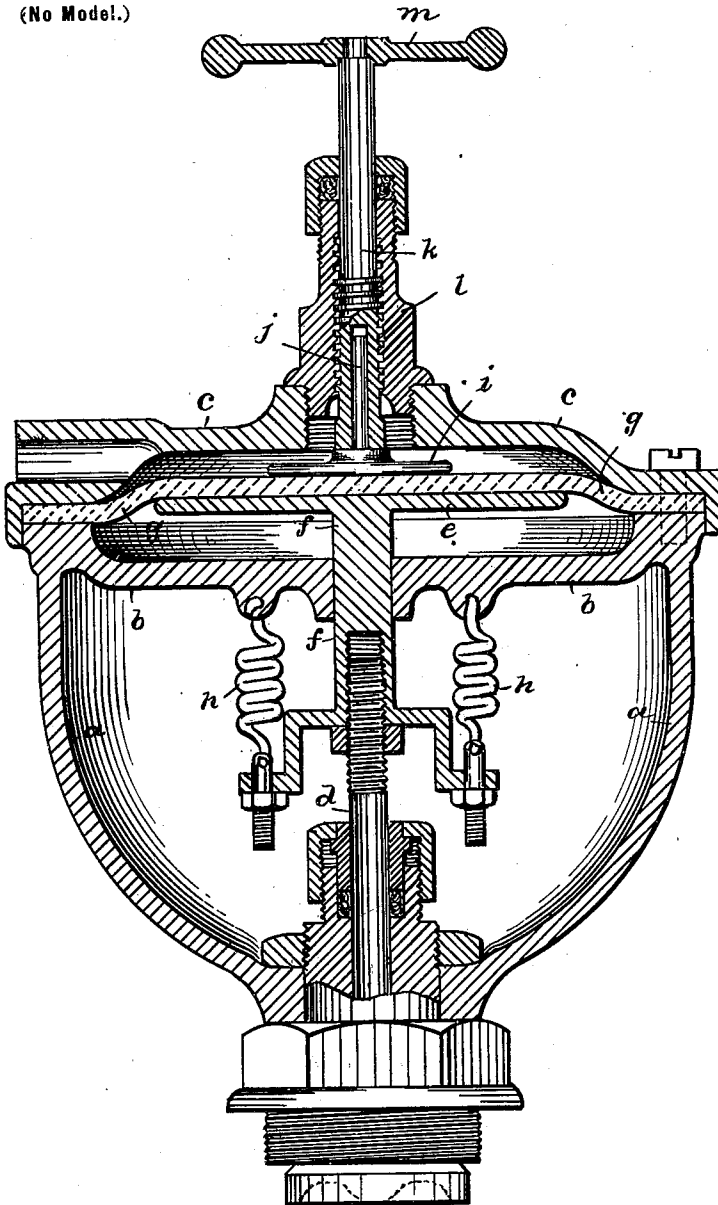
Patented July 3, 1900.

F. S. NEWMAN.

DIAPHRAGM DEVICE FOR OPERATING VALVES, &c.

(Application filed Jan. 17, 1898.)

(No Model.)



Witnesses
H. C. Allen.
C. M. Newman

Inventor
Frederick S. Newman
By Allen Webster
Attorney

UNITED STATES PATENT OFFICE.

FREDERICK S. NEWMAN, OF SPRINGFIELD, MASSACHUSETTS.

DIAPHRAGM DEVICE FOR OPERATING VALVES, &c.

SPECIFICATION forming part of Letters Patent No. 652,859, dated July 3, 1900.

Application filed January 17, 1898. Serial No. 666,995. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK S. NEWMAN, a citizen of the United States of America, residing in Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Diaphragm Devices for Operating Valves, &c., of which the following is a specification, reference being had to the accompanying drawing and letters of reference marked thereon.

I have illustrated my invention as applied to a diaphragm-valve, the construction being shown in a vertical sectional view.

In detail, *a* designates a supporting yoke or piece; *b*, a lower wall of the diaphragm-chamber; *c*, the upper wall of the diaphragm-chamber; *d*, the valve-stem threaded in the stem *f* and projecting through the lower wall of the diaphragm-chamber; *e*, the plate; *g*, the diaphragm; *h h*, springs to lift the stem *f*; *i*, a plate mounted in the chamber above the diaphragm. *j* is a stem on the plate *i*; *k*, adjusting-screw or threaded stem. *l* is a threaded cap in which the stem *k* is mounted.

The objects of my invention are to provide a construction wherein the diaphragm will not be injured or in any manner rendered liable to leakage, to avoid danger of injury to the diaphragm, to simplify and cheapen the construction, and to improve the efficiency of the device.

The construction of my device will be readily understood on reference to the drawing, wherein is shown a diaphragm-chamber having a diaphragm *g* mounted therein, and the plate *e*, provided with the stem *f*, mounted in the chamber below the diaphragm, said stem being suitably connected with a valve-stem, the device to be operated and suitable means being provided to run the diaphragm and parts operating therewith to their normal position when pressure above the diaphragm is released. A plate *i* is provided, having stem *j*, which stem fits somewhat loosely in the end of the threaded stem of the rod *k*, so that when it is desired to secure the diaphragm and parts operated therewith

in their lowered position this may be accomplished by turning the threaded stem *k* to carry it downwardly, thus forcing the parts below to their lowered position, while on the other hand when it is not desired to employ the stem *k* for that purpose it remains in its elevated position and the diaphragm is free to move without reference to the threaded stem *k*, and if, as is common in this class of devices, the diaphragm shall adhere to the plate *i* the operation of the device will be in no wise affected, because the plate *i*, with its stem *j*, will move upward and downward with perfect freedom, and it will be observed that this construction renders it entirely unnecessary to provide the diaphragm between the plates with a very large area, so that danger of injury because of contact with the small area is entirely avoided and the construction of the device is simplified and cheapened.

Having therefore described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a suitable diaphragm-chamber, a diaphragm mounted therein, a plate as *e* located below the diaphragm, a stem attached to said plate and projecting through the wall and a plate *i* arranged above the diaphragm restrained from lateral movement but free to move vertically through the medium of a reciprocating stem extending from plate *i*.

2. The combination of a suitable diaphragm-chamber, a diaphragm mounted therein, a plate as *e* located below the diaphragm, a stem attached to the plate *e* and projecting through the wall, a plate *i* arranged above the diaphragm restrained from lateral movement but free to move vertically, through the medium of a reciprocating stem extending from plate *i* and threaded stem *k* arranged to engage the plate *i* substantially as shown.

FREDERICK S. NEWMAN.

Witnesses:

ALLEN WEBSTER,
S. SWEENEY.