

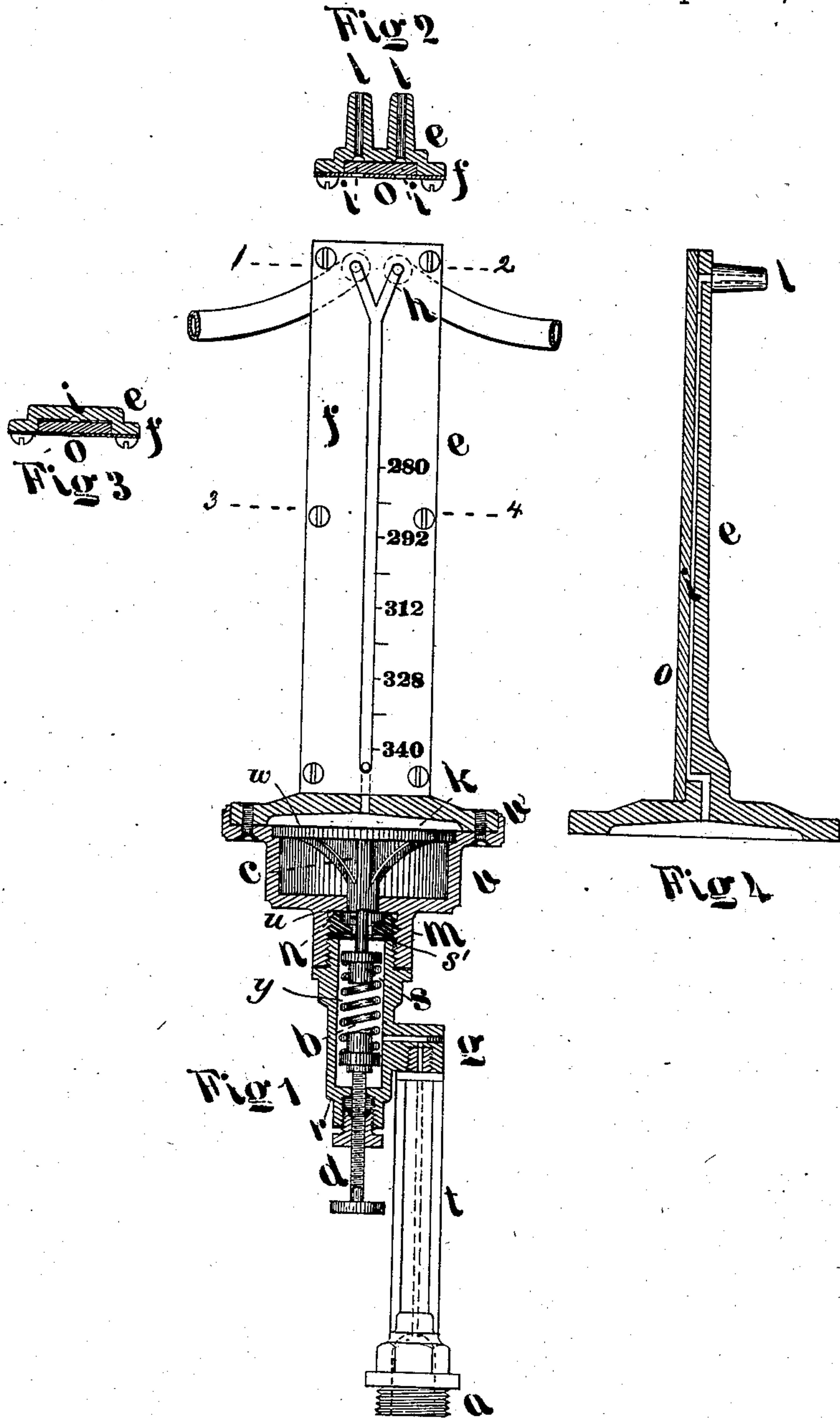
(No Model.)

T. SHAW

GAS GOVERNOR FOR VULCANIZERS.

No. 256,508.

Patented Apr. 18, 1882.



WITNESSES:

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THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

GAS-GOVERNOR FOR VULCANIZERS.

SPECIFICATION forming part of Letters Patent No. 256,508, dated April 18, 1882.

Application filed February 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, Pennsylvania, have invented a new and Improved Gas-Governor for Vulcanizers and other like Purposes; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention is a regulating attachment to vulcanizers, whereby I am enabled to cut off the gas or other fluid and arrest the vulcanizing operations at any predetermined pressure.

In the drawings, Figure 1 is an elevation in part section of my improved regulator. Fig. 2 is a cross-section on the line 1 2, Fig. 1. Fig. 3 is a cross-section on the line 3 4, Fig. 1, and Fig. 4 is a sectional elevation through the upper part of the instrument.

The device which I use to cut off the flow of the heating-fluid is similar in many respects to that shown in the Letters Patent granted to me on May 17, 1881, there being a "Shaw mercury pressure-gage," comprising a casing, *v*, containing a plunger, *c*, a standard, *e*, having a channel, *i*, into which the mercury is forced by pressure or temperature in the vulcanizer, resulting in raising the plunger *c*, said channel being forked at the upper end, and the forks forming part of the conduit for the gas or fluid from the reservoir to the heater, the elevation of the mercury to the point where the forks meet closing the conduit and arresting the flow of the fluid.

With the device above described and fully set forth in my aforesaid Letters Patent I combine the additional features which I will now describe.

The case *v* has at the bottom a hollow nipple, *m*, into which may be screwed a screw-nut, *n*, having a peripheral flange that clamps a rubber diaphragm, *u*, to the under side of the case, and a central orifice that guides a pin, *s*, which bears upon the bottom of the plunger *c*, or on the intervening rubber diaphragm. Into the nipple *m* screws the end of a case, *r*, through a threaded and packed orifice in the lower end of which extends a screw-rod, *d*, and between the enlarged inner end of the latter and an enlargement on the pin *s* intervenes a spiral spring, *b*.

An arm, *t*, projects from or is part of the case *r*, is adapted for attachment to the vulcanizer, and is perforated throughout its length to form a capillary channel of about one-sixteenth of an inch in diameter, constituting a communication between the vulcanizer and the chamber *y* in the case *r*. I make this capillary channel to prevent the circulation which would interfere with a free communication of the pressure from the vulcanizer to the plunger *c*, whereas a capillary passage will hold the condensed water and permit the same to pulsate freely without circulating.

Upon the standard *e*, opposite the channel *i*, are figures indicating the pressure or temperature within the vulcanizer. As shown, they indicate temperature, and are so placed as to indicate the position to which the mercury should be raised prior to the application of any steam-pressure. This adjustment of the mercury column is effected by turning the screw-rod *d* to bring a greater or less spring-pressure on the plunger *c* and force the mercury to a greater or less extent from the chamber *w*. By this arrangement, if the mercury column is set, say, at 292, a temperature of 292° in the vulcanizer will suffice to give such increased pressure as will raise the column to the forked channel *h* and cut off the liquid fuel to a greater or less extent; but if the mercury column is only set as high as the number 340 on the index it will not rise to the forked part of the channel until the temperature in the vulcanizer is 340°.

I do not limit myself to the precise arrangement of passages herein described, so that the fluid will be cut off, or partly cut off, on the temperature or pressure reaching a certain temperature; nor do I limit myself to the devices described for increasing or decreasing the capacity of the chamber *w*, as others may be employed, it merely being necessary to set the mercury at such a height that the predetermined temperature will cause it to close more or less the fluid-passage.

As it is not possible in glass tubes to secure bores of uniform diameter, which results in irregular movements of the mercury columns, I form a channel by cutting a groove of uniform size in the standard *e* and covering the same with a glass plate, *o*, interposing strips of rubber to secure a tight joint, and I confine the glass plate in place by the index-plate *f*, which

is screwed to the standard and slotted to permit the mercury to be seen.

To facilitate connection with the gas tubes, I form two hollow nipples, *l l*, upon the standard *e*, each communicating with one branch of the forked channel *h*. The ends of the rubber tubes may be readily applied to the nipples and removed therefrom.

Without confining myself to the precise construction of the several parts described, as they can be considerably modified, I claim—

1. In a governor for vulcanizers, a tube supplying the liquid fuel or gas to the vulcanizer, and means for closing the same by the ascent of a mercury column, in combination with a casing containing a chamber communicating with the mercury column and a chamber communicating with the vulcanizer, and devices, substantially as described, whereby the mercury-chamber can be contracted or expanded to set the mercury column at any desired height prior to the admission of steam, as specified.

2. The combination, in a governor for vulcanizers, of the casing *v*, standard containing a mercury-channel communicating with the casing, plunger *c*, set-screw *d*, spring interposed between the screw and the plunger, and branch having a channel forming a communication between the vulcanizer and the chamber below the plunger, all substantially as specified.

3. The within-described improvement in tubes for the mercury columns of gages, the same consisting of a plate or standard having a groove or channel and a glass plate covering the said groove, as set forth.

4. The combination, with a regulator for vulcanizers, of a branch having a capillary opening or channel constituting the communication between the vulcanizer and the regulator, as set forth.

THOMAS SHAW.

Witnesses:

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