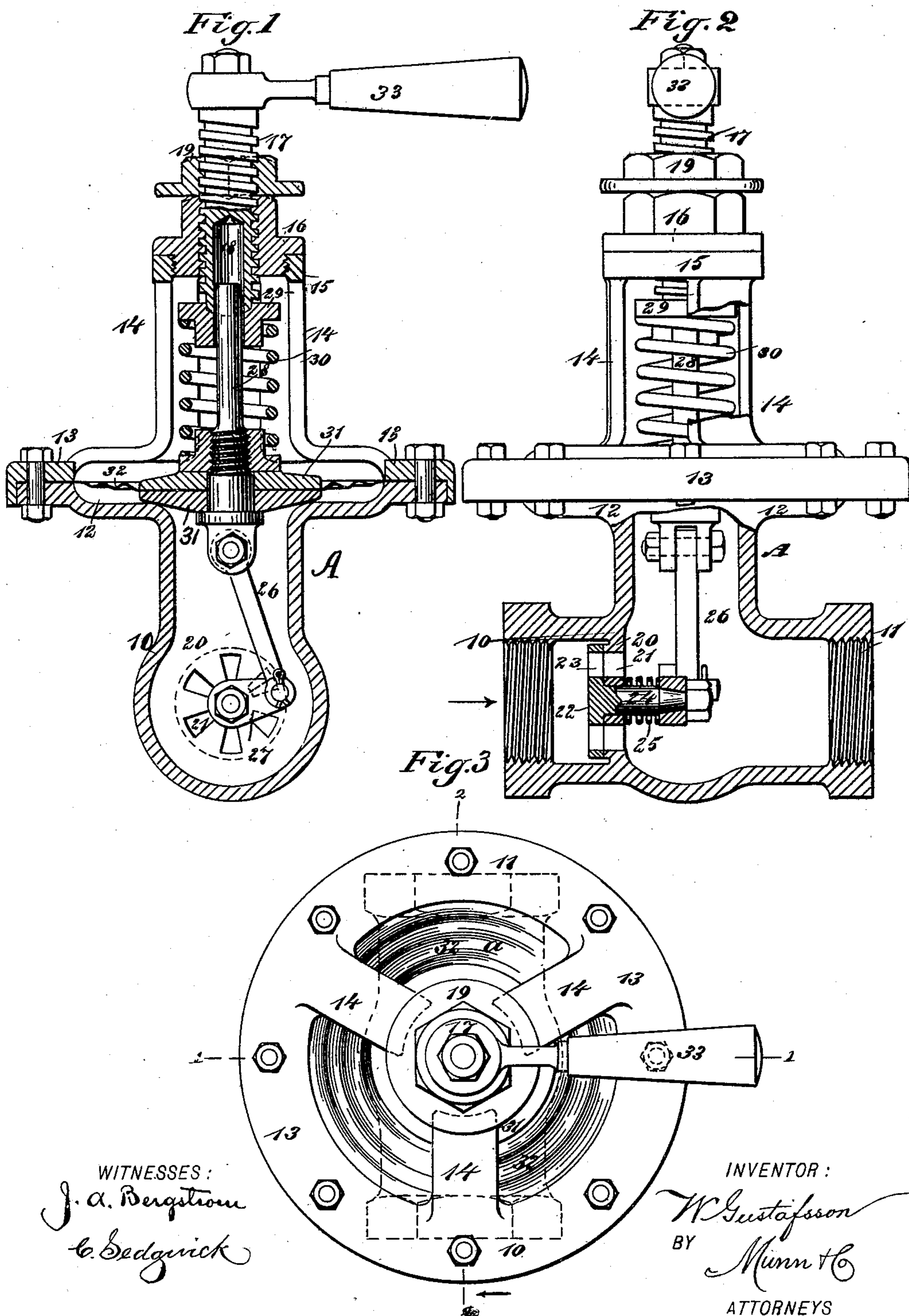


(No Model.)

W. GUSTAFSSON.
PRESSURE REGULATING VALVE.

No. 478,856.

Patented July 12, 1892.



WITNESSES:
J. A. Bergstrom
C. Sedgwick

INVENTOR:
W. Gustafsson
BY Munn & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

WALFRID GUSTAFSSON, OF BROOKLYN, NEW YORK.

PRESSURE-REGULATING VALVE.

SPECIFICATION forming part of Letters Patent No. 478,856, dated July 12, 1892.

Application filed December 18, 1891. Serial No. 415,483. (No model.)

To all whom it may concern:

Be it known that I, WALFRID GUSTAFSSON, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Pressure - Regulating Valves, of which the following is a full, clear, and exact description.

My invention relates to an improvement in pressure-regulating valves, and has for its object to provide a valve of simple, durable, and economic construction, whereby no matter what the pressure may be upon the inlet of the valve the pressure at the outlet may be diminished, as desired.

A further object of the invention is to provide a means whereby the regulating mechanism of the valve may be manipulated in a convenient and expeditious manner.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section through the valve, taken, practically, on the line 1 1 of Fig. 3. Fig. 2 is a side elevation, partly in section, the section being taken on the line 2 2 of Fig. 3; and Fig. 3 is a plan view of the valve.

The body A of the valve is shaped somewhat as a globe-valve, being provided with an inlet 10 and an outlet 11. The top of the body of the valve is flared outward to a disk form, the inner or central portion of this disk being concaved, as illustrated at 12 in Fig. 1. The upper or stem section of the valve consists of a ring 13, which is bolted or otherwise secured to the upper surface of the lower disk-section, the attachment being made through the medium of bolts or equivalent fastening devices.

From the ring 13 standards 14 are projected upward, being connected at their upper ends by a ring 15, interiorly threaded. This ring 15 has secured therein a collar 16, the collar being provided with an interior thread, and into the collar the adjusting-screw 17 of the valve is entered, the said adjusting-screw being carried downward below the collar, and

the lower portion of the screw is provided with an interior chamber 18, as is best illustrated in Fig. 1. The screw is further provided with a lock-nut 19, having a bearing upon the upper edge of the collar 16.

Where the inlet 10 connects with the body of the valve a partition 20 is formed, which partition is provided with a series of openings 21, and the valve proper 22, adapted to regulate the pressure, is held in engagement with the outer face of the partition 20, the said valve being provided with a series of openings 23, capable of registering with the openings 21 in the partition. The stem 24 of the valve is carried inward through the partition 20, and the valve is held in constant engagement with the said partition by a spring 25. The inner end of the valve-stem 24 has connected therewith a pitman or link 26, the connection between the pitman or link and the valve-stem being effected through the medium of a crank-arm 27, connected directly with the stem, as is best shown in Fig. 1. The upper end of the pitman or link 26 is pivotally connected with the lower end of a rod 28, the upper end of which rod has free movement in the chamber 18 of the adjusting-screw. The adjusting-screw has a bearing upon a collar 29, through which the rod 28 passes, and the said collar has bearing upon a spring 30, encircling the rod 28. The said spring at its lower end rests upon the upper member of two connected disks 31, the said disks being attached to the lower portion of the rod 28. The two disks 31 clamp between them a diaphragm 32, the said diaphragm being corrugated, as illustrated at a in Fig. 3, and the peripheral portion of the diaphragm is held between the ring 13 of the upper section of the valve-casing and the dished disk-section of the lower portion of said casing, as is best shown in Fig. 1.

In the operation of the valve a gage is located at the inlet and at the outlet. If, for instance, the pressure at the inlet of the valve is one hundred and sixty pounds, and it is desired to reduce the pressure at the outlet of the valve to about twenty pounds, for instance, the adjusting-screw 17 is manipulated, preferably, through the medium of an attached handle 33 in such a manner as to elevate it and thereby take a certain amount of

tension from the spring 30, and the screw is elevated until the gage at the outlet indicates the pressure desired. As the spring is rendered less strong the steam entering through the ports in the valve and in the partition against which the valve moves will act upon the disks 31, attached to the rod 28, and the diaphragm 32 and will press these parts upward, thereby turning the valve 22 through the medium of the pitman connection 26 in such a manner as to partially close its ports and thereby reduce the amount of steam entering the valve-casing and consequently reducing the pressure.

15 This valve is of exceedingly simple construction and is capable of being manipulated in a most convenient and expeditious manner, and by its means the pressure at the outlet of the valve may be increased or diminished, as the manipulator may desire.

20 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A pressure-regulating valve comprising a body having a flaring top and provided with a perforated partition in its inlet, a ring secured to the flaring top and provided with standards projecting from it, a diaphragm secured between the ring and flaring top, disks between which the diaphragm is clamped, a rod secured to the disks, a screw mounted in the upper end of the standards and having its lower end chambered and into which the said rod projects, a collar on the rod and upon which the screw rests, a spring surrounding the rod between the collar and disk, a valve held against the partition of the inlet and provided with openings and with a crank on its stem, and a link pivoted to the lower end of the said rod and to the crank of the valve-stem, substantially as described.

WALFRID GUSTAFSSON.

Witnesses:

J. FRED. ACKER,
E. M. CLARK.