

No. 685,304.

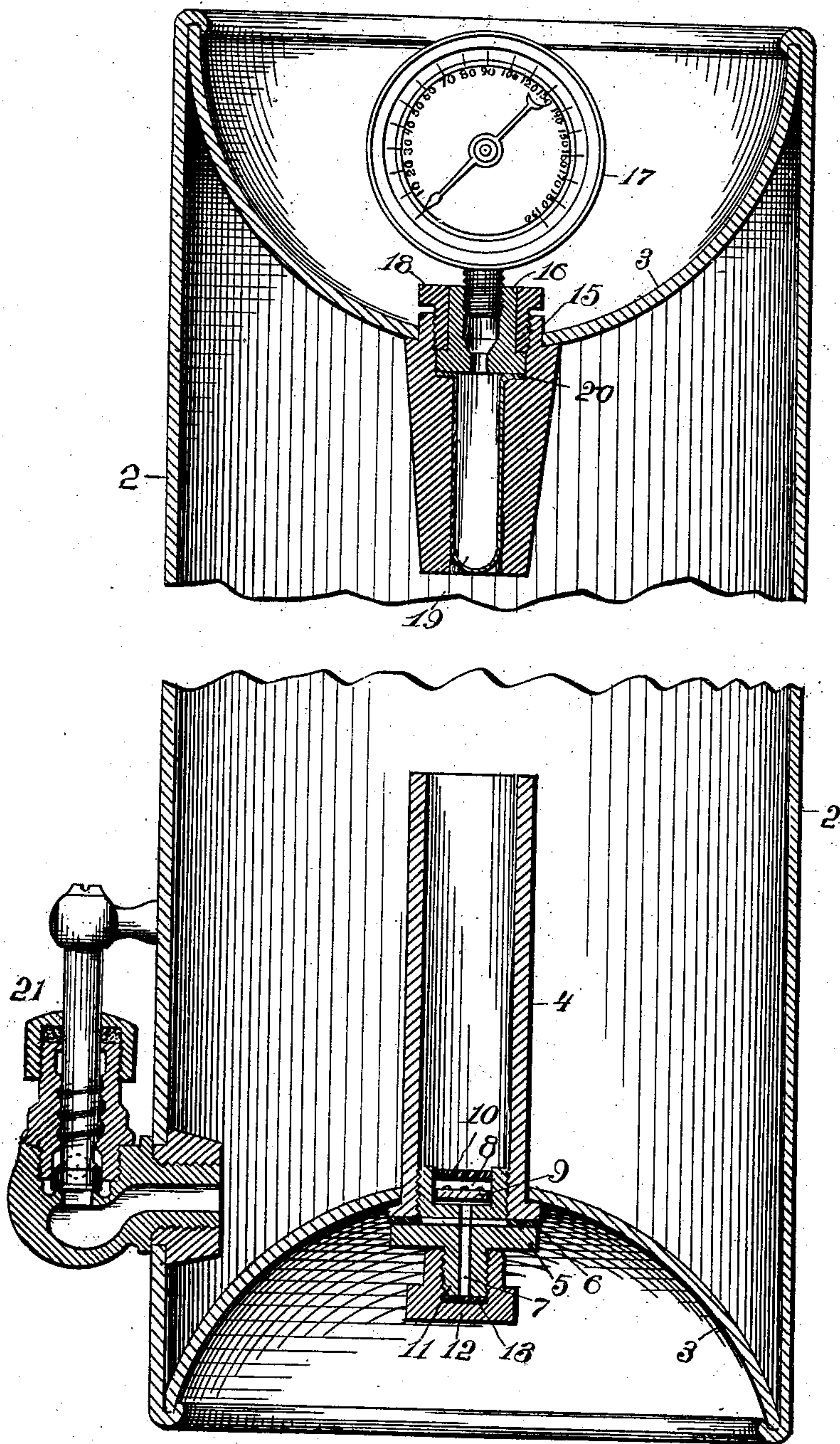
R. B. SIGAFOOS.

Patented Oct. 29, 1901.

GAGE ATTACHMENT FOR COMPRESSED AIR FIRE EXTINGUISHERS.

(Application filed July 17, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

RUSSEL BIGELOW SIGAFOOS, OF RACINE, WISCONSIN.

GAGE ATTACHMENT FOR COMPRESSED-AIR FIRE-EXTINGUISHERS.

SPECIFICATION forming part of Letters Patent No. 685,304, dated October 29, 1901.

Application filed July 17, 1900. Serial No. 23,920. (No model.)

To all whom it may concern:

Be it known that I, RUSSEL BIGELOW SIGAFOOS, a citizen of the United States, and a resident of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Gage Attachments for Compressed-Air Fire-Extinguishers, of which the following is a specification.

10 The object of this invention is to provide a means for using a pressure-gage with a cylinder having therein corrosive chemicals, and it also has reference to the construction of the shell or heads of the cylindrical reservoir
15 which holds the extinguishing fluid.

In the class of fire-extinguishers in which the chemicals used do not evolve gases or generate pressure by which the liquid is propelled from the cylinder compressed air has
20 been used as the expelling force, in which case the extinguisher is generally filled two-thirds full with liquid, leaving a third of the space for air.

The great difficulty attending the use of
25 compressed-air extinguishers is, first, the inconvenience of attaching a pressure-gage to the pumping device in order to ascertain how much air has been compressed and how much remains in the cylinder at all times. Machines of this class to be properly cared for
30 must be inspected regularly to determine whether the machine has been leaking air or not, so that it may be reliable, and for this purpose a pressure-gage becomes essential. In applying gages a difficulty arises, as is apparent from the fact that the chemicals used will corrode the mechanism of the gage, and for this reason many manufacturers have
35 abandoned the use of compressed-air extinguishers, considering the use of gages as impractical. It is also desirable to provide a means for protecting the gage when the machine is in use. Another difficulty has been to definitely ascertain how much of the liquid
40 is in each reservoir when in the process of filling, so that an operator might be able to fill a number of cylinders at the same time with an equal amount of liquid and leave a certain amount of air-space in the cylinder,
45 all of which will now be set forth in detail.

In the drawing the figure shows a longitudinal section of an extinguisher-cylinder,

the upper end of the figure representing the pressure-gage attachment and the lower end the filling-tube and attachment.

55 The reservoir is composed of a steel cylinder 2, with concave heads 3 at each end, so that the depression in the upper end is sufficiently deep to receive therein a pressure-gage and its attachments and still be below
60 the level of the rim of the cylinder. These heads are cast, spun, or stamped and either welded or brazed into the cylinder. The filling-tube 4 is secured to the lower concaved end and brazed or riveted to the head. Its inner
65 end is open, and it extends up into the cylinder a suitable distance. The lower end of this filling-tube is closed by a cap 5, which is screwed therein, a ring-gasket 6 being provided, against which the flanged seat of the
70 cap rests. This cap has an axial aperture 7, terminating at the inner end in a circular chamber 8, within which is a valve 9, held therein by a perforated cap 10. The valve 9 has on its upper side raised lugs or
75 other means to prevent it from closing up the perforations in the cap 10 when the cylinder is inverted. When, however, the cylinder is in its upright position, the valve 9 is seated firmly, so as to prevent the contents
80 of the cylinder escaping through the aperture 7. The lower end of the cap 5 is reduced and has a threaded end, as at 11, on which is screwed a top 12, a lead gasket 13 being placed in the base of the threaded top, so that
85 it will seat itself firmly against the threaded end 11. In order to fill the cylinder with the fire-extinguishing fluid, it is inverted and the screw-top 12 removed. The chemical is then poured into the end of the cylinder, and
90 it being depressed forms a funnel, so that the chemical fluid passes inside through the opening 7. The extinguisher is filled with the solution until the liquid reaches the inner end of the tube 4, and as the air is confined in the
95 space in the upper end above the lower end of the tube it becomes the air-chamber and no more liquid will enter. A compression-pump is then attached by a hose and connection to the threaded stem 11 and screwed
100 down until the lead gasket 13 in the cap is properly seated, the air having been compressed until the pressure-gage indicates the requisite amount. The cylinder is then

righted, and the liquid settles to the bottom, leaving the air-space at the upper end adjacent to the pressure-gage.

In order that the chemicals or the vapors arising therefrom shall not come in contact with the mechanism of the gage, I provide an inwardly-projecting tube 15 in the head of the cylinder. This has an enlarged threaded aperture at its upper end to receive a flanged ring 16, this flanged ring being designed to receive the pressure-gage 17 and is held within the tube by a threaded sleeve 18. Within the tube 15 is a rubber tube-like bulb 19, flanged at the upper end, as at 20, which flange seats itself between the end of the annular flanged ring 16 and the seat in the outer tube. This rubber tube is filled with glycerin or some other antigum oil or viscid fluid. This entirely separates the chemicals from the gage or any of its connections; but the pressure of the compressed air upon the bulb at its lower end has the same relative effect upon the index of the gage and accurately indicates the pressure.

What I claim as new is—

1. In a chemical fire-extinguisher the combination of a cylindrical shell, having a concaved or depressed head, a tube secured centrally to said concaved head and extending

into the cylinder, a pressure-gage attached to the outer end of the tube, a flexible tube-like bulb within the inwardly-extending tube and communicating with the gage, as set forth.

2. A fire-extinguisher cylinder, having at its upper end a concaved head, in combination with a vertical open-ended tube extending into the body of the cylinder, said tube having an annular enlargement at its upper end to provide a shoulder, a threaded plug to receive the tube of the gage, a flexible tube-like bulb within the tube which extends into the cylinder, the lower end thereof being closed and the upper end having an annular flange which rests on the shoulder within the interior tube, a tubular shell fitting within the tubular enlargement and adapted to be firmly seated on the flange of said bulb, and a gage attached to the tubular plug within the depression and below the rim of the cylinder, as set forth.

Signed at Racine, in the county of Racine and State of Wisconsin, this 22d day of June, A. D. 1900.

RUSSEL BIGELOW SIGAF00S.

Witnesses:

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