

(No Model.)

J. R. CRANE.

VALVE AND GAGE FOR ADMINISTERING OXYGEN OR OTHER GASES.

No. 598,242.

Patented Feb. 1, 1898.

Fig. 1

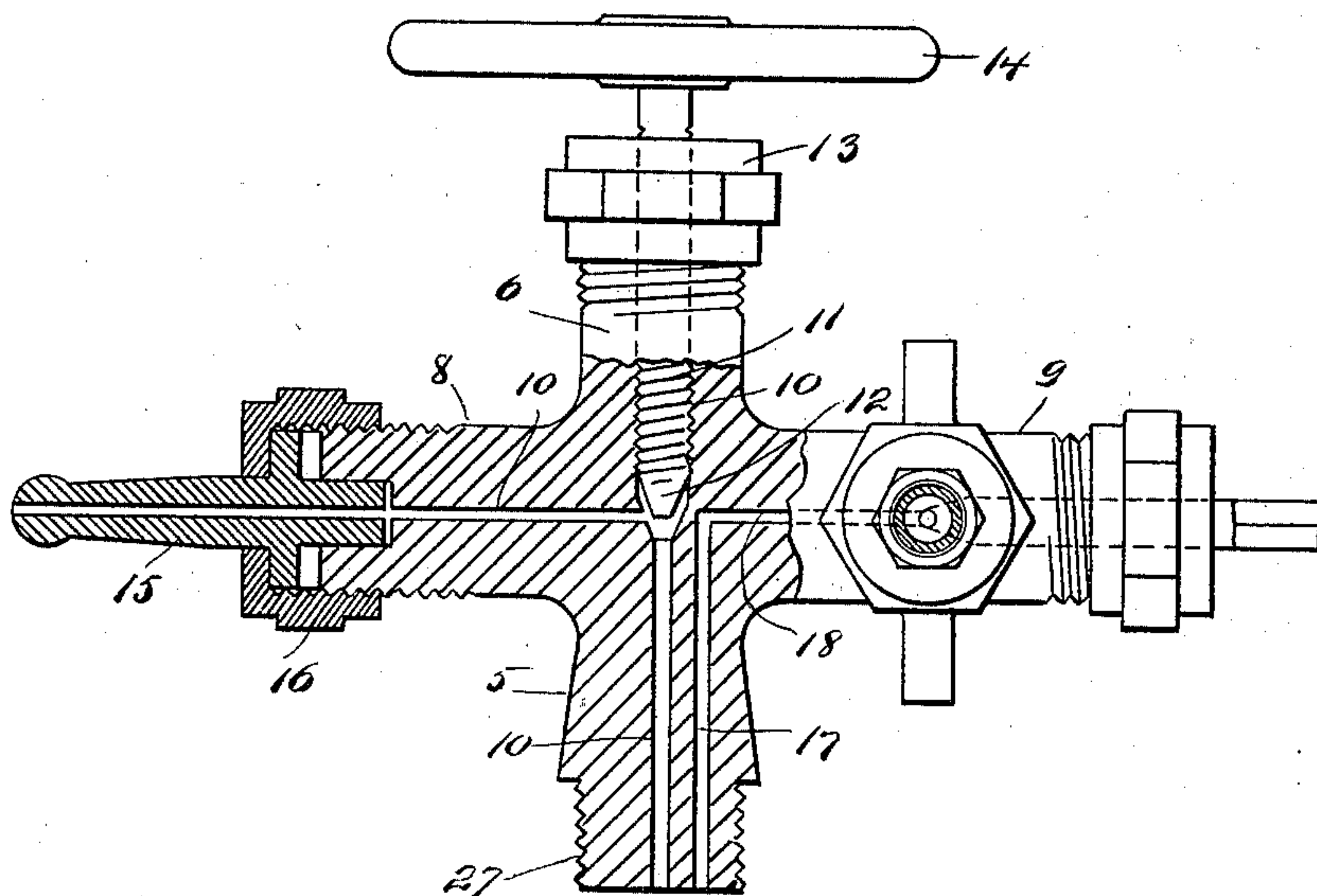
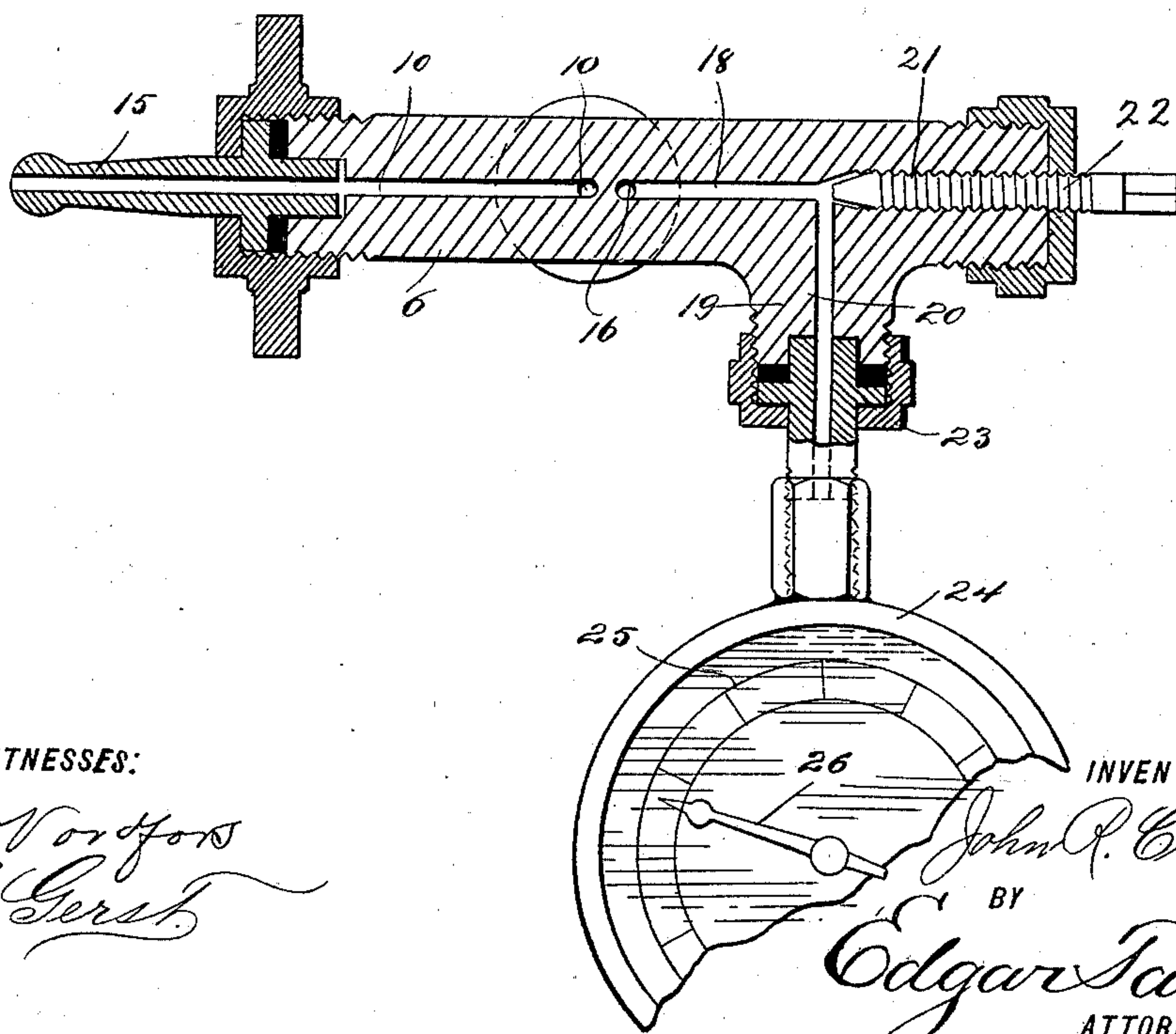


Fig. 2



WITNESSES:

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VALVE AND GAGE FOR ADMINISTERING OXYGEN OR OTHER GASES.

SPECIFICATION forming part of Letters Patent No. 598,242, dated February 1, 1898.

Application filed April 16, 1897. Serial No. 632,406. (No model.)

To all whom it may concern:

Be it known that I, JOHN RUSSELL CRANE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Valves and Gages for Administering Oxygen or other Gases, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to a combination valve, nozzle, and gage for use in administering to patients oxygen gas, nitrogen and oxygen, or ozone; and the object thereof is to provide an improved device of this class which is simple in construction and operation and which is adapted to be connected with a cylinder or tank containing the gas or gases mentioned and to be used when administering the latter, a further object being to provide a device of this class which will measure exactly the amount of gas administered during the operation of administering the same.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a sectional side view of my improvement, the gage being removed; and Fig. 2, a sectional plan view of the gage in position, a part of the gage being broken away.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same numerals of reference in each of the views, and in the practice of my invention I provide a device of the class herein specified which comprises a cross-shaped coupling which is provided with a depending branch 5, an upwardly-directed branch 6, and oppositely-directed side or horizontal branches 8 and 9.

The downwardly-directed branch 5, the upwardly-directed branch 6, and the horizontal branch 8 of the coupling are each provided with a longitudinal bore or passage 10, and these bores or passages meet at the center of the coupling, and the bore or passage 10 in the upwardly-directed branch 6 is much larger than the others and is provided with a screw-threaded shaft 11, at the lower end of which is a valve 12, which is adapted to close the bores or passages 10 in the branches 5 and 8.

The shaft 11 passes through a packing-box 13 and is provided with a ring or handle 14, and the branch 8 is provided with a nozzle 15, which is connected therewith by any suitable packing-box 16, and all these parts are of the usual construction and form no part of this invention.

In the practice of my invention, however, I form in the downwardly-directed branch 5 of the coupling a supplemental longitudinal bore or passage 17, which communicates with a corresponding bore or passage 18 in the horizontal branch 9 of the coupling, and formed on one side of the horizontal branch 9 of the coupling is an extension 19, in which is formed a bore or passage 20, which communicates with the bore or passage 18, and the outer end of the bore or passage 18 is enlarged, as shown at 21, and passing thereinto is a screw-threaded valve-plug 22, which is adapted to close the communication between the bores or passages 18 and 20.

Connected with the extension 19 of the branch 9 of the coupling, by means of a packing-box 23 or in any desired manner, is a gage 24, and this gage 24 may be of any desired form or construction and is intended to register at all times the exact pressure of the gas within the tank or cylinder, and said gage is provided with a scale-plate 25 and with a pointer 26, and the scale of the gage may be of any preferred style or character.

The downwardly-directed extension 5 of the coupling-head is screw-threaded, as shown at 27, and is adapted to be connected with the gas tank or cylinder in the usual manner, and the operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof.

The device is connected with the tank or cylinder containing the gas in the usual manner, and the gas is admitted into the gage 24 by turning the key-plug 22, and it will be understood that when the gas is being administered to the patient the bores or passages 17, 18, and 20 are always open, so that the gas is free to pass into the gage 24.

The passage into the nozzle 15 is controlled by the shaft 11, as will be readily understood, and this shaft is manipulated by the ring or handle 14, and when it is desired to administer

the gas the key-plug 22 is turned, and the exact pressure in the tank or cylinder is shown by the gage, and as the gas flows out of said cylinder or tank the exact amount thereof
 5 administered will be registered by the gage, the operation of which is automatic.

The operation of the gage continues as long as the gas is being administered and will cease the moment the gas is turned off by means of
 10 the valve-shaft 11.

This device is simple in construction and operation and is perfectly adapted to accomplish the result for which it is intended, and it will be apparent that changes in and modifications of the construction herein described
 15 may be made without departing from the spirit of my invention or sacrificing its advantages.

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

1. In a device for administering oxygen or other gas to patients, a valve and gage comprising a cross-shaped coupling provided with
 25 a depending branch having a reduced extension which is screw-threaded by which the same may be secured to a gas-reservoir, said depending branch being provided with two passages, one of which is in communication
 30 with a passage through the nozzle and the other being in communication with a passage through a pressure-gage each of said passages being controlled by a separate valve, substantially as and for the purpose described.

35 2. The herein-described valve and gage for administering oxygen and other gases, comprising a cross-shaped coupling provided with

a depending branch 5, an upwardly-directed branch 6, and oppositely-directed side or horizontal branches 8 and 9, said downwardly-
 40 directed branch 5, being provided with two bores or passages 10 and 17 and the said branch 6 and horizontal branch 8 being provided with a single longitudinal bore or passage, said bore 10 in the branch 5 and bores
 45 or passages, in the branch 8, and branch 6 being in communication with each other at the central part of the said coupling, a valve mounted in the bore or passage of the said branch 6, and adapted to close both the bore
 50 or passage in the branch 8, and the bore or passage 10 in the branch 5, said branch 8 being provided at the outer end thereof with a nozzle, said branch 9 being provided with a bore or passage 18 which is in communication
 55 with said bore or passage 17, an extension 19 secured to one side of said branch 9 and provided with a central bore or passage which is in communication with said bore or passage 18, a pressure-gage mounted upon
 60 the outer end of said extension 19 and the central bore or passage thereof being in communication with said pressure-gage, and a valve mounted in said branch 9, and adapted to close said passages 20 and 18, substantially
 65 as and for the purpose described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 13th day of April, 1897.

JOHN RUSSELL CRANE.

Witnesses:

C. GERST,

A. C. VAN BLASCOM.