

C. P. PHILLIPS & L. S. BARGER.

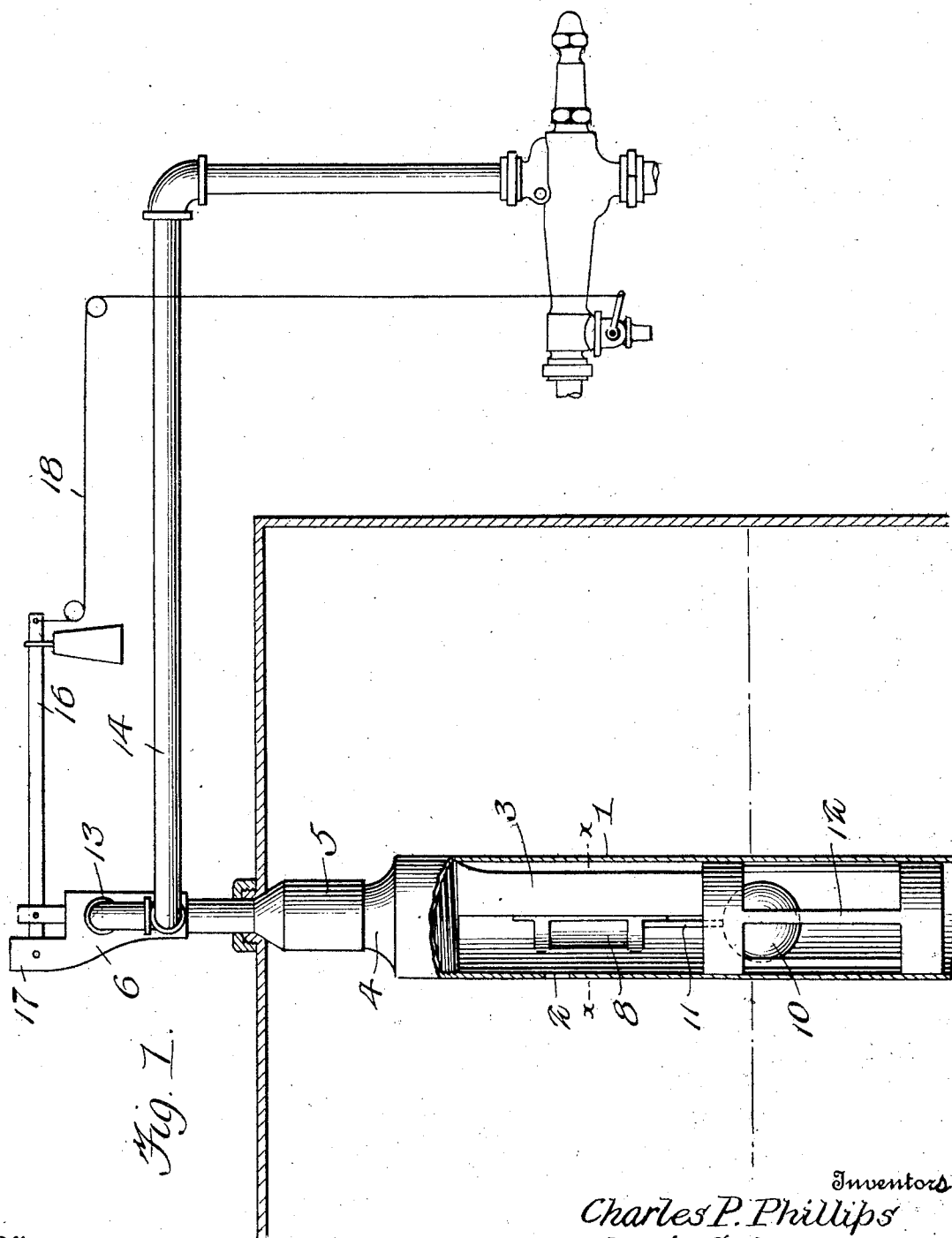
FEED WATER REGULATOR.

APPLICATION FILED MAY 5, 1911.

1,037,980.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 1.



Witnesses

Hugh R. Ott.
V. B. Hillyard.

Inventors

Charles P. Phillips

Leri S. Barger

By Victor J. Evans

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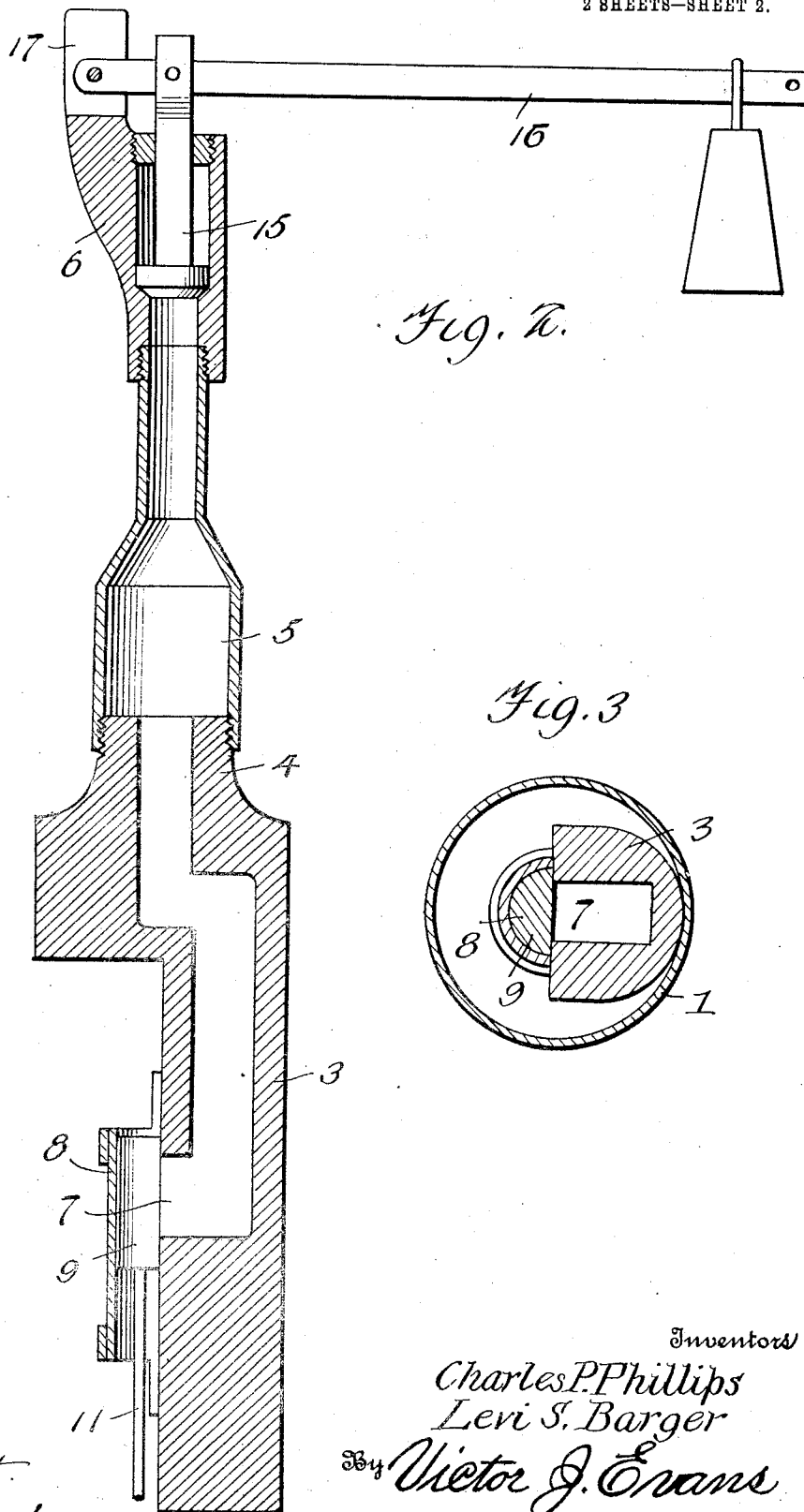


Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES P. PHILLIPS AND LEVI S. BARGER, OF McGEHEE, ARKANSAS.

FEED-WATER REGULATOR.

1,637,980.

Specification of Letters Patent.

Patented Sept. 10, 1912.

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To all whom it may concern:

Be it known that we, CHARLES P. PHILLIPS and LEVI S. BARGER, citizens of the United States, residing at McGehee, in the county of Desha and State of Arkansas, have invented new and useful Improvements in Feed-Water Regulators, of which the following is a specification.

The present invention provides means whereby the supply of water to a steam boiler may be automatically regulated to maintain a predetermined level, thereby preventing fatalities from low water.

A further purpose of the invention is the provision of a regulator of the character stated which also opens the drain cock of the feed water pump to draw off all water and prevent injury to the pump in extreme cold weather from freezing when water is left standing therein.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawings, and pointed out in the appended claim.

Referring to the drawings, forming a part of the specification, Figure 1 is a view in elevation of a feed water regulator showing the same applied to a steam generator. Fig. 2 is a sectional view of the regulator. Fig. 3 is a horizontal section on the line *x-x* of Fig. 1.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawings, by the same reference characters.

A casing 1 is located within the boiler or generator and has an opening 2 near its upper end in communication with the steam space. The body of the regulator is indicated at 3 and has a head 4 to which is fitted a pipe 5, said pipe having its upper portion reduced and having a valve casing 6 fitted to the upper end thereof. The body 3 is hollow and one side is flattened and has an opening 7 formed therein and in communication with the space of the body. A cover 8 is secured to the flattened side of the body 3 and extends over the opening 7 and incloses a valve 9 which covers the opening 7. The valve 9 fits close against the flattened side of the body and is packed to fit close within the cover 8. A float 10 is connected by means of a rod 11 with the valve 9 to move the same according to the

change of level of water within the boiler or generator. A cage 12 is fitted to the lower end of the body 3 and protects the float 10 and rod 11. The body 3, float 10 and cage 12 are located within the casing 1.

The valve casing 6 has an opening 13 in a side to which a pipe 14 is connected, said pipe running to the pump by means of which water is supplied to the boiler. A plunger valve 15 is arranged to operate in the valve casing 6 and cover the opening 13 and is attached to a weighted lever 16, which is pivoted at one end to a lug or bracket 17 extending upwardly from the valve casing 6. The outer end of the lever 16 is connected by means of a chain or wire 18 to the drain cock of the pump to open the same when the pump is not in operation, thereby preventing water standing in the pump and freezing in extreme cold weather.

In the operation of the device the parts are so adjusted that when the water in the boiler occupies a given level the valve 9 closes the opening 7, but when the level of the water recedes the float 10 descending moves the valve 9 downward and uncovers the opening 7, thereby permitting steam to pass through said opening into the valve body, thence through the pipe 5 and valve casing 6 to the lower end of the plunger valve 15, which is moved upwardly and uncovers the opening 13, thereby permitting steam to pass through the opening 13 and pipe 14 to the pump whereby water is automatically supplied to the boiler or generator. When the level of the water rises in the boiler the float 10 is carried upward and closes the opening 7, thereby shutting off the steam and admitting of the plunger valve 15 moving downward and closing the opening 13 and shutting off the supply of steam to the pump and at the same time opening the drain cock and admitting of the water passing off from the pump.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while we have described the principle of operation of the invention, together with the device which we now consider to be the embodiment thereof, we desire to have it understood that the device shown is merely illustrative, and that such changes may be made when de-

sired as are within the scope of the claim appended hereto.

Having thus described the invention what is claimed as new, is:—

- 5 A feed water regulator comprising a hollow body having a flattened side and provided at its upper end with a head, a cover fitted to the flattened side of the body and extending over an opening formed therein,
10 a float controlled valve for closing the opening in the side of the body, a cage fitted to the lower end of the hollow body and inclosing the float, a pipe attached to the upper end of the hollow body and having
15 its upper portion reduced, a valve casing fitted to the upper end of said pipe and having an opening in its side, a valve arranged

within the valve casing and adapted to be operated by the pressure of the steam to uncover the opening in the side of the valve casing, a lever connected with the plunger valve and adapted to be used for opening a drain cock of the device for feeding water to a boiler, and a casing inclosing the hollow body and fitted to the head thereof and also receiving the said cage. 20 25

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES P. PHILLIPS.
LEVI S. BARGER.

Witnesses:

PEARLE KNOWLTON,
M. A. TUCKER.