

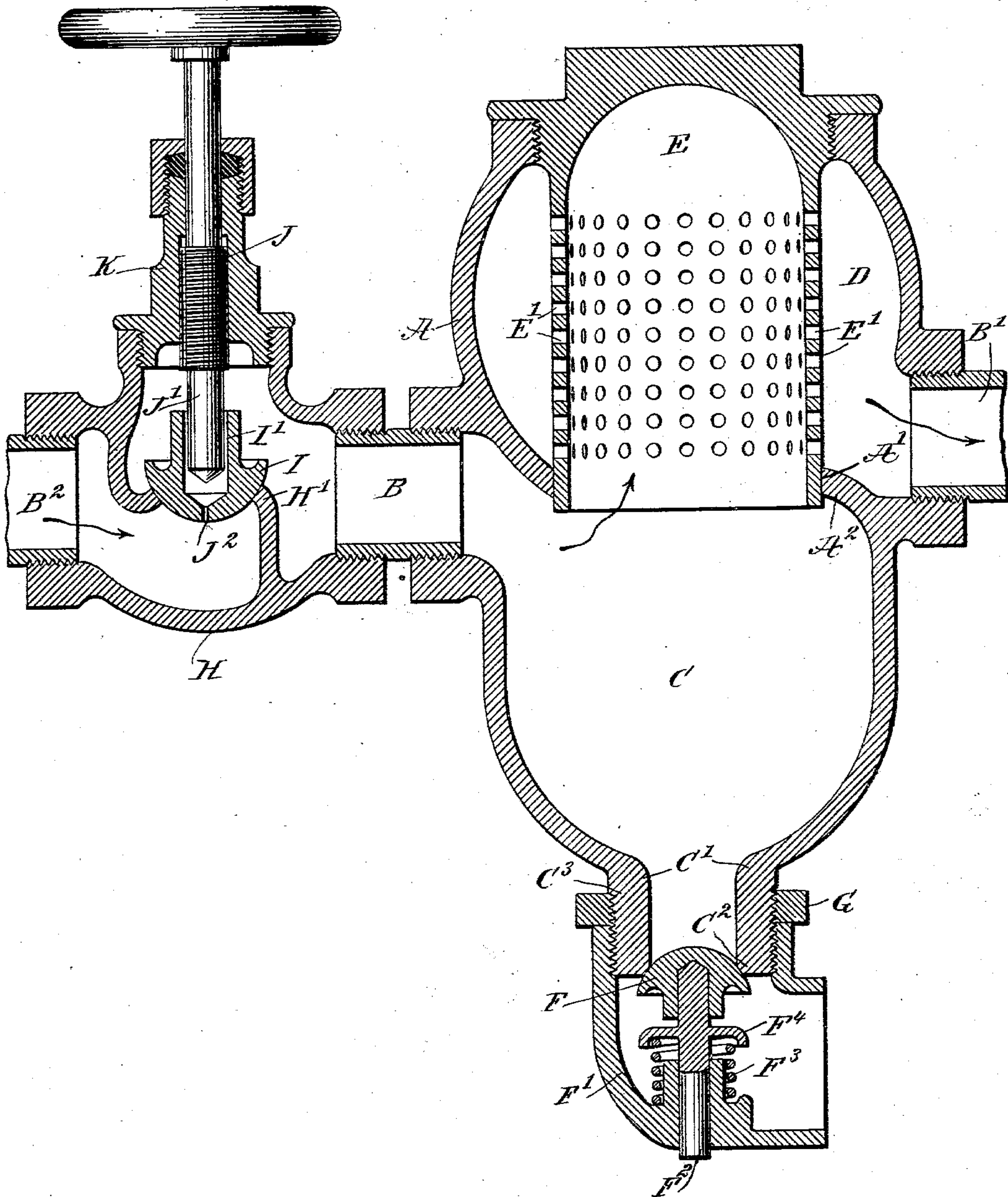
No. 740,225.

PATENTED SEPT. 29, 1903.

F. G. BROWN.  
STRAINER.

APPLICATION FILED JAN. 5, 1903.

NO MODEL.



WITNESSES:

*Edward Thorpe*  
*Neely Koster*

INVENTOR

*Francis G. Brown*

BY

*Mumford*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

FRANCIS GROVER BROWN, OF SHEFFIELD, ALABAMA.

## STRAINER.

SPECIFICATION forming part of Letters Patent No. 740,225, dated September 29, 1903.

Application filed January 5, 1903. Serial No. 137,864. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS GROVER BROWN, a citizen of the United States, and a resident of Sheffield, in the county of Colbert and State of Alabama, have invented a new and Improved Strainer, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved pipe-line attachment for straining water or other liquid flowing through the pipe-line to prevent trash or other extraneous matter from passing with the feed-water into the boiler or other apparatus.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure is a sectional side elevation of the improvement.

The strainer-casing A is attached to the pipe-line by pipes B B' and is provided with an inlet-chamber C, connected with the inlet-pipe B, and with an outlet-chamber D, connected with the outlet-pipe B'. In the top of the outlet-chamber D is screwed or otherwise secured a strainer E, preferably in the form of a tubular plug, closed at the upper end and extending at its lower open end snugly through an aperture A', formed in a partition A<sup>2</sup>, separating the chambers C and D from each other. The lower open end of the strainer E is thus open to the water or other liquid in the inlet-chamber C, and the perforated side wall of the said strainer has its perforations E' opening into the outlet-chamber D. Thus liquid flowing through the pipe-line in the direction of the arrows passes from the pipe B into the chamber C, then into the strainer E and through the perforations E' thereof into the outlet-chamber D, from which the liquid flows through the pipe B' of the pipe-line to the injector or into the boiler directly, as the case may be.

Now trash and other extraneous matter flowing with the liquid into the chamber C and strainer E are retained by the latter and can settle in the apertured bottom C' of the chamber C to be discharged from the same from time to time through a valve-seat C<sup>2</sup> and valve F into a discharge nipple or elbow F',

screwing on an externally-threaded boss C<sup>3</sup>, formed on the bottom of the chamber C, as plainly illustrated in the drawing. A jam-nut G screws on the said boss to lock the nipple F' in place after the latter is adjusted thereon. The valve F has its valve-stem F<sup>2</sup> mounted to slide in a suitable bearing in the nipple F', and a spring F<sup>3</sup> presses against a collar F<sup>4</sup> on the said valve-stem to normally hold the valve F firmly to its seat C<sup>2</sup>. Now it will be seen that by screwing the nipple F' up or down on the boss C<sup>3</sup> the tension of the spring F<sup>3</sup> is regulated, so as to press the valve F with more or less force against its seat C<sup>2</sup>. After the tension of the spring F<sup>3</sup> is adjusted as described, then the nipple F' is fastened in place by the jam-nut G. When it is desired to cleanse the strainer E and the chamber C of the trash previously collected, then steam is passed through the pipe B' into the chamber D to pass through the perforations E' inwardly into the strainer E, thus loosening any trash or other extraneous matter which may have gathered in the interior of the strainer E. At the same time the steam, with the trash from the strainer E, passes into the chamber C and presses on the valve F to finally open the same and cause the trash and other extraneous matter to be discharged through the valve-seat C<sup>2</sup> and nipple F' to the outside.

In the pipe-line and at the entrance side of the strainer-casing A is arranged a valve-body H, connected, as shown, with the pipe B and the pipe B<sup>2</sup> of the pipe-line, and the said valve-body H is provided with a valve-seat H', on which is seated a check-valve I, formed on its top with a recess I', into which projects the lower end J' of a screw-rod J, screwing in a stuffing-box K, attached to the upper portion of the valve-body H. The end J' of the screw-rod J limits the upward sliding movement of the check-valve I; but when the strainer E is cleansed of trash and other extraneous matter by the use of steam, as above described, then the valve I is held firmly to its seat by the pressure of the steam; but, if desired, the screw-rod J may be screwed downward, so as to engage the bottom of the recess I', and thereby lock the valve I firmly on its seat H'. From the bottom of the recess I' leads an opening J<sup>2</sup> to the under side of the check-



valve I, so that steam can pass through the recess I' and the said opening J<sup>2</sup> to the pipe B<sup>2</sup> to keep the same from freezing during cold weather.

- 5 It is understood that when it is desired to remove the strainer from the pipes B and B' of the pipe-line then the screw-rod J is screwed down to hold the valve I to its seat and also to close the opening J<sup>2</sup> to prevent  
10 water from passing through the check-valve H to the pipe B.

It is understood that the strainer E and the inlet-chamber C can be cleansed of trash or other extraneous matter by return water-pressure passing from the pipe B' into the  
15 chamber D; but in this case it is desirable to lock the valve I firmly to its seat by the screw-rod J and to close the opening J<sup>2</sup>, so that the water-pressure in the pipe-line at the pipe  
20 B<sup>2</sup> can force water through the check-valve to the pipe B.

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

- 25 1. A pipe-line attachment comprising a strainer-casing in the pipe-line and containing a strainer, and a spring-pressed discharge-valve in the casing, on the inlet side thereof, as set forth.
- 30 2. A pipe-line attachment comprising a strainer-casing in the pipe-line, a strainer in the said casing, a spring-pressed discharge-valve in the casing on the inlet side thereof, and a check-valve in the pipe-line, on the in-  
35 let side of the casing, as set forth.
3. A pipe-line attachment, comprising a strainer interposed in the line between its inlet end and its outlet end, and a relief-valve in said line between said strainer and the in-  
40 let end of the pipe, as set forth.
4. A pipe-line attachment having a casing in the pipe-line and provided with an inlet-chamber, an outlet-chamber, a strainer ex-

tending in the casing and having its open end opening into the inlet-chamber and the per- 45 forations in its side wall opening into the outlet-chamber, and a spring-pressed discharge-valve in the bottom of the inlet-chamber, as set forth.

5. A pipe-line attachment having a casing 50 in the pipe-line and provided with an inlet-chamber, an outlet-chamber, a strainer extending in the casing and having its open end opening into the inlet-chamber and the per- forations in its side wall opening into the out- 55 let-chamber, a spring-pressed discharge-valve in the bottom of the inlet-chamber, and a check-valve in the pipe-line, on the inlet side of the said inlet-chamber, as set forth.

6. A pipe-line provided with a strainer- 60 casing, a strainer therein, and a spring-pressed discharge-valve for the said casing, having its valve-body adjusted on the strainer-casing, to regulate the tension of the spring of the valve, as set forth. 65

7. A pipe-line provided with a strainer- casing having an inlet-chamber, an outlet- chamber, a strainer extending in the casing and having its open end opening into the said inlet-chamber and the perforations in its side 70 wall opening into the outlet-chamber, a valve closing the valve-seat in the bottom of the said inlet-chamber, a nipple in which the valve is mounted to slide, a spring pressing the said valve against its seat, and means for 75 holding the nipple adjustably on the valve-casing, to regulate the tension of the said spring, as set forth.

In testimony whereof I have signed my name to this specification in the presence of 80 two subscribing witnesses.

FRANCIS GROVER BROWN.

Witnesses:

W. W. LINDSEY,  
LEWIS GUSMUS.