

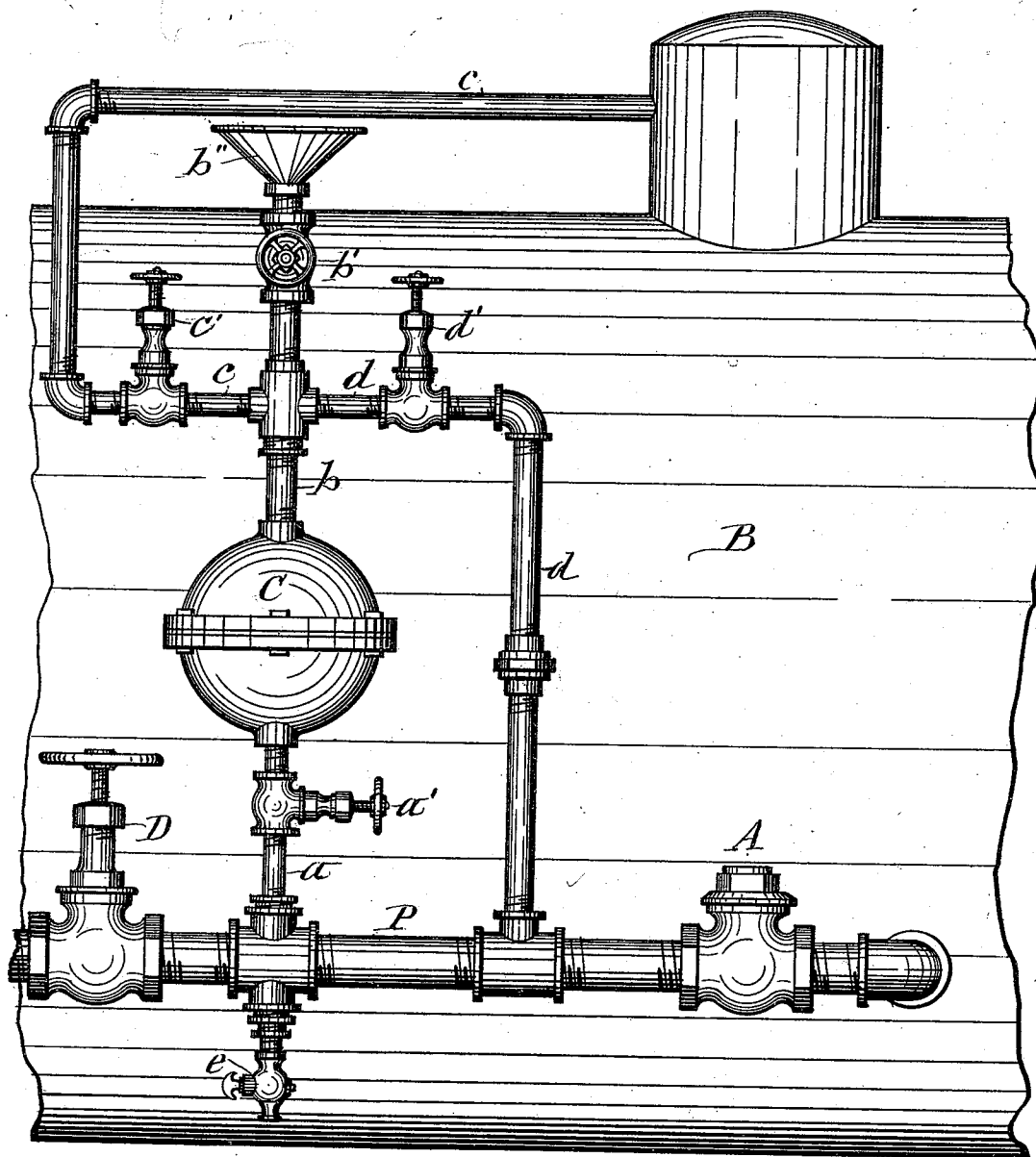
(No Model.)

E. JONES & D. W. COLLINS.

CLEANSING MATERIAL INJECTOR FOR STEAM BOILERS.

No. 506,045.

Patented Oct. 3, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EUGENE JONES AND DANIEL W. COLLINS, OF LITTLE FALLS, NEW YORK.

CLEANSING-MATERIAL INJECTOR FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 506,045, dated October 3, 1893.

Application filed May 15, 1893. Serial No. 474,213. (No model.)

To all whom it may concern:

Be it known that we, EUGENE JONES and DANIEL W. COLLINS, of Little Falls, in the county of Herkimer, in the State of New York, have invented new and useful Improvements in Cleansing-Material Injectors for Steam-Boilers, of which the following, taken in connection with the accompanying drawing, is a full, clear, and exact description.

This invention relates to the class of appliances which are employed for introducing cleansing material into steam-boilers while in operation.

Our present invention is specially designed to introduce the cleansing material into the boiler through the feed-water pipe. And it consists in the improved combination with the boiler and feed pipe, of the pipes which conduct the cleansing material and steam to that portion of the feed-pipe which is contained between the check-valve and stop-cock. This permits steam to be introduced into said portion of the feed-pipe to heat the same preparatory to introducing therein the cleansing material, all of said pipes being provided with suitable valves by which to control the operation of the apparatus, all as hereinafter more fully described and specifically set forth in the claim.

The annexed drawing presents a side elevation of an apparatus embodying our invention.

B—represents the boiler and —P— the feed water-pipe which is provided with the check-valve —A— and stop-cock —D—. Between said check-valve and stop-cock is the pipe —a— attached to the top thereof and rising therefrom and provided with the valve —a'—. To the top of this pipe —a— is attached the chamber —C— from the top of which extends vertically the pipe —b— which is provided with the valve —b'— and has secured to its upper end the funnel —b''—.

Between the valve —b'— and chamber —C— the pipe —b— has attached to it the pipe —c— which is extended to the dome or steam-space of the boiler and is provided with the valve —c'—.

Directly opposite the pipe —c— is the pipe

—d— attached to the pipe —b— and extended to and communicating with the feed water-pipe —P— at a point between the check-valve —A— and stop-cock —D—. Said pipe —d— is provided with a valve —d'—.

Directly under the pipe —a— and preferably in line therewith is the discharge valve —e— connected to the feed-pipe —P—.

The operation of the described apparatus is as follows: To introduce the cleansing material into the boiler, the stop-cock —D— and valves —c'— and —d'— are to be closed, and the valves —e— and —a'— to be opened to allow the water to escape from the pipes —a— and —b—, chamber —C— and the portion of the feed-pipe between the stop-cock and check-valve. Then the valves —e— and —a'— are to be closed and the valves —c'— and —d'— to be opened to admit sufficient steam to enter the chamber —C— and feed-pipe —P— to warm the same. Then the latter valves are to be closed and the valve —b'— opened, and the cleansing material to be introduced into the funnel —b''— from whence it passes to the chamber —C—. Then the valve —b'— is to be closed, and the valves —c'— and —a'— to be opened to force the cleansing material from the chamber —C— into the feed-pipe —P— by the pressure of steam admitted through the pipe —c—. Then the valves —c'— and —a'— are to be closed and the stop-cock —D— opened to allow the feed water to carry the cleansing material into the boiler. The feed water and cleansing material becoming partly heated between the stop-cock and check-valve allows said cleansing material to more readily circulate with the water in the boiler.

What we claim as our invention is—

The combination, with the boiler, feed water pipe —P— and stop-cock and check-valve attached to said pipe, the pipe —a— rising from the pipe —P— between the stop-cock and check-valve and provided with the valve —a'—, the chamber —C— mounted on the pipe —a—, the pipe —b— extending vertically from the top of said chamber and provided with the valve —b'— and funnel —b''—, the pipe —c— connected to the pipe —b—

beneath the valve thereof and extending to
and communicating with the steam-space of
the boiler and provided with the valve—*c'*—,
the pipe —*d*— connected to the pipe —*b*—
5 directly opposite the attachment of the pipe
—*c*— and extending to the feed-pipe —*P*—
and communicating therewith between the
stop-cock and check-valve and provided with
the valve—*d'*—, and the discharge valve—*e*—
10 connected to the feed-pipe —*P*— directly un-

der the pipe —*a*—, substantially as described
and shown.

In testimony whereof we have hereunto
signed our names this 8th day of May, 1893.

EUGENE JONES. [L. S.]
DANIEL W. COLLINS. [L. S.]

Witnesses:

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