(No Model.)

M. H. DETRICK.

WATER STRAINER FOR STEAM BOILERS.

No. 443,220. Patented Dec. 23, 1890.

Fig. 1.

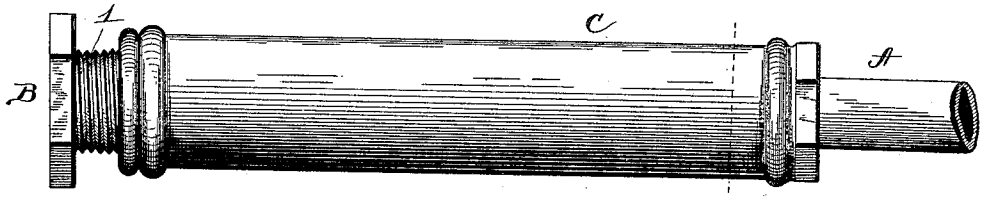


Fig. 2.

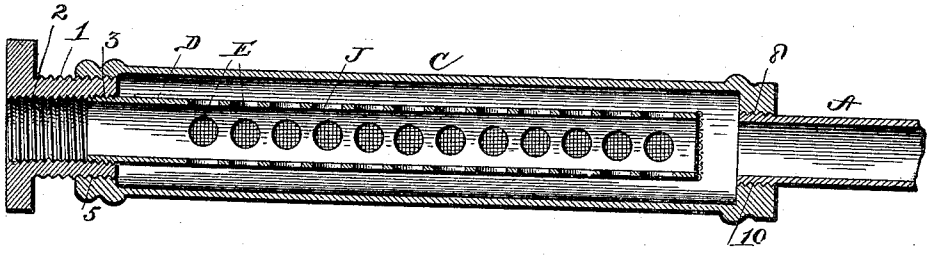
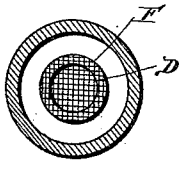


Fig. 3.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MYRON H. DETRICK, OF ROCK FALLS, ILLINOIS.

WATER-STRAINER FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 443,220, dated December 23, 1890.

Application filed April 23, 1890. Serial No. 349,205. (No model.)

To all whom it may concern:

Be it known that I, MYRON H. DETRICK, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Water-Strainers for Steam-Boilers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in water-strainers for use in connection with steam-boilers; and the object of my improvements is to prevent floating material carried in the water from passing into the boiler, and at the same time to preclude the clogging of the water-pipes by such refuse. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of a section of a water-pipe intermediate the boiler and the tank, showing the chamber within which the strainer referred to is seated. Fig. 2 is a longitudinal section through the center of the parts shown in Fig. 1. Fig. 3 is a cross-section in the line *x x* of Fig. 1, showing the open end of sieve-pipe D.

Similar letters and figures refer to similar parts throughout the several views.

Heretofore in the sucking of water into the boiler there has been difficulty experienced from floating matters carried by the water getting under the valves of the water tube or pump. This is more usually the case where the water is drawn from open tanks into the usual portable engines for thrashing, wood-sawing, corn-shelling, &c., where chaff, straw, and other light material is blown or cast into the water-receptacle. To obviate this difficulty a sieve or strainer across the entrance of the water-pipe has been employed; but the suction has had the effect of gathering such floating matters against the exterior side of said sieve until it was impracticable for the water to pass through or reach the latter, resulting in a suspension of the inflow of the water requisite to supply the boiler. In my invention this difficulty is sought to be avoided by providing a strainer with both end and lateral openings for the passage of the water, and by diverting the current from the end of the water-pipe to tend to keep such end free from the impediments mentioned.

A is the hose-pipe, to the outer end of which is attached the hose inserted in the usual water-receptacle.

B is a metallic water-pipe connected to the boiler.

C is an intermediate sleeve provided with threads on its interior at each end.

The outer end of the water-pipe B is provided with exterior threads 1 and interior threads 2.

D is the sieve-pipe, which is a short tube provided on four sides with inlet water-openings E. On the outer face of each of the water-openings E there is suitably fastened a wire sieve F, having meshes of sufficient size to admit the water but exclude floating material therein. The tube D is open at each end, and its outer end is also covered with a sieve F. The sieve-pipe D is provided at its inner end with peripheral threads 3, which engage the interior threads 2 of the pipe B, and said sieve is thereby screwed into the end of the pipe B and rigidly held thereon, projecting into the sleeve C. The inner end of the sleeve C is provided with interior threads 5, which engage the threads 1, formed on the exterior of the outer end of the pipe B, whereby the junction of the pipe B and sleeve C is effected at that point. The outer end of the sleeve C is provided with interior threads 8, which are screwed over and engage conformable threads 10, formed on the periphery of the adjacent end of the hose-pipe A. By the construction shown the sieve-pipe D is suspended centrally and longitudinally in the sleeve C, and an annular chamber J provided in said sleeve surrounding said sieve-pipe D. The water is drawn through the hose-pipe A and admitted within the sieve-pipe D through the sieve-openings E therein, and from this passes into and through the pipe B to the boiler. In the admission of the water within the sleeve C the entrance thereof through the lateral openings E in sieve-pipe D creates a current past the open end of the sieve-pipe D, which has the effect of diverting floating material from the end of

the sieve-pipe D to the sides thereof, thus in a measure leaving the end of said pipe D free from impediments. The openings E being frequent and distributed around the periphery of the sieve-pipe D, there is more or less current past all of the outer openings E, which in a measure has the same effect of relieving said openings of obstructions to the passage of the water. The floating material which is carried past the outer end of the sieve-pipe D is retained within the sleeve C, and as the latter is considerably larger than the pipe D room is afforded for the collection therein, external to the pipe D, of a large amount of such floating material. The filling of such annular interval between the pipe D and sleeve C will begin at the inner end of the latter and progress gradually toward the opposite or outer end thereof. At suitable intervals the sleeve C may be drawn from the pipe B by being unscrewed therefrom, when the contents of the sleeve C may be readily taken out and said sleeve replaced. As the hose A has no attachment at its outer end, it can be readily rotated with the sleeve C to disengage the latter from the pipe B.

The advantage of my invention is that the number and distribution of the water-inlets E are such as to preclude the choking thereof from floating material until the annular chamber J, within the sleeve C, has become substantially filled thereby, which could occur only at long intervals; also, the sleeve C protects the lateral openings E from the ingress of obstructive matter, except through the hose A; also, the convenience of removal and replacement of the sleeve C renders the cleansing of the latter from accumulations a simple and speedy operation.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a water-strainer, the combination, with the water-pipe, of a sieve-pipe secured thereto, said sieve-pipe being open at both ends and having its sides perforated, a wire sieve over the outer end of the sieve-pipe and over the perforations in its sides, a hose-pipe removably secured to the water-pipe surrounding the sieve-pipe and substantially concentric therewith, whereby a current of water is forced past the end of the sieve-pipe and along its sides toward its opposite or inner end, substantially as described.

2. In a water-strainer, the combination, with an interiorly and exteriorly screw-threaded water-pipe, of an open-ended and perforated sieve-pipe secured at one end to the water-pipe, a wire sieve over the end of the pipe and over the perforations in its sides, a cylindrical tube having its ends interiorly screw-threaded and detachably secured to the water-pipe at one end, and a hose secured to the opposite end of said tube, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

MYRON H. DETRICK.

Witnesses:
JOHN G. MANAHAN,
ADDA E. WARD.