

(No Model.)

C. W. NASON.
NOISELESS STEAM NOZZLE.

No. 291,762.

Patented Jan. 8, 1884.

Fig. 1

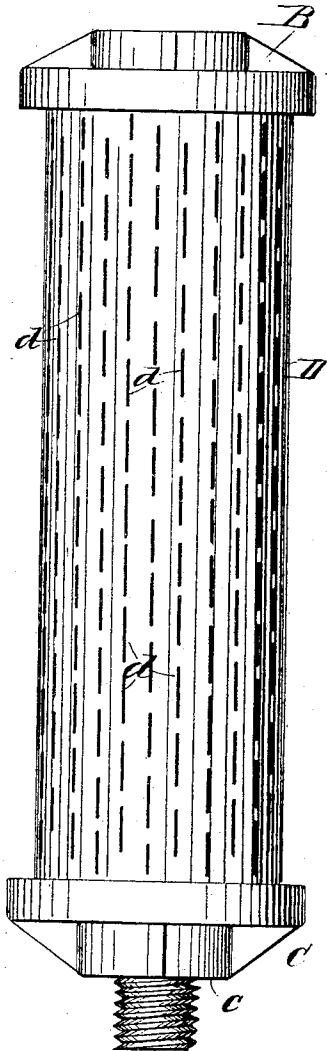


Fig. 3

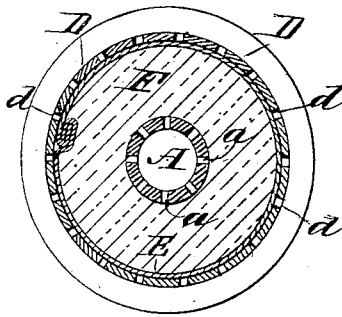


Fig. 4.

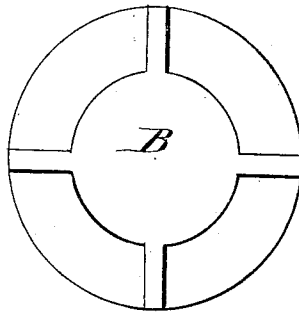
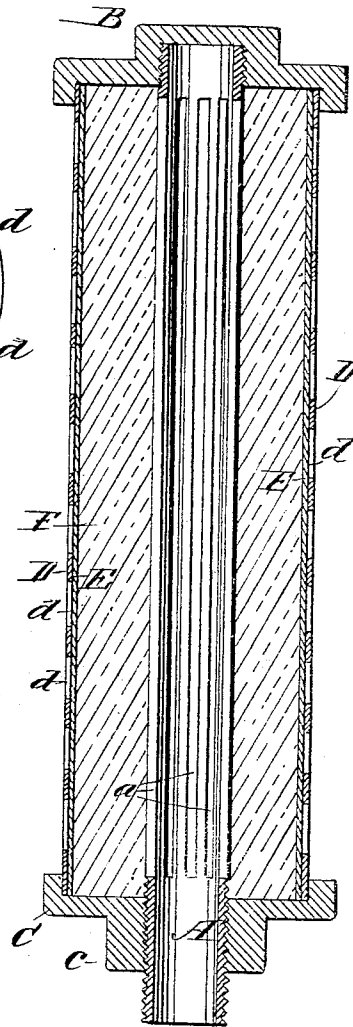


Fig. 2.



WITNESSES:

Francis McCordle.
C. Sedgwick

INVENTOR:

C. W. Nason

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CARLETON W. NASON, OF MONTCLAIR, NEW JERSEY.

NOISELESS STEAM-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 291,762, dated January 8, 1884.

Application filed October 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, CARLETON W. NASON, of Montclair, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Noiseless Steam-Nozzles, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved steam-nozzle for preventing steam that escapes under water from producing noises or the so-called "water-hammer."

The invention consists in a slotted tube surrounded by a perforated casing containing a packing of asbestos fiber, which fills the space between the casing and the slotted tube, so that the steam must go through the asbestos fiber in passing into the water, whereby all noises or water-hammer will be prevented.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of my improved noiseless steam-nozzle. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is a cross-sectional view, and Fig. 4 an end view of the same.

The tube A is provided with a series of longitudinal slots, *a*, the combined area of which is greatly in excess of the cross-section of the tube. On one end of the tube a closed flanged cap, B, is screwed, and on the other end a flanged cap, C, provided with a central internally-screw-threaded collar, *c*, is screwed. Between the two caps B C a cylinder, D, is held, which is provided with a series of longitudinal slots, *d*, arranged as shown. A piece of asbestos cloth, E, is placed against the inner surface of the cylinder D, and the space between the asbestos cloth or fabric and the tube A is filled with asbestos fiber F. The cap B closes one end of the tube A, and the other end is to be connected with a tube for conducting steam from the boiler into the nozzle. The steam passes from the said conducting-tube into the tube A of the nozzle through

the slots *a* of the said tube A, through the asbestos fiber F and cloth E, and through the slots *d* in the cylinder D, and escapes into the water in numerous jets, whereby all noises are prevented.

Gravel has been used in steam-nozzles of the above-described kind heretofore, but the steam disintegrates and breaks the gravel in a very short time. The asbestos fiber is not affected by heat, and as it is quite elastic it is not broken or disintegrated by the steam.

This nozzle is to be used for heating water or other liquids by inserting the nozzle in a bank and admitting steam into the bank through a pipe, on the end of which the nozzle is fastened.

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

1. In a steam-nozzle, a filling or packing of asbestos, applied substantially as and for the purpose set forth.

2. A steam-nozzle made substantially as herein shown and described, and consisting of a slotted tube surrounded by asbestos fiber, and a cylinder surrounding the latter, as set forth.

3. In a steam-nozzle, the combination, with the slotted tube A, of the asbestos fiber F, and the slotted cylinder D, substantially as herein shown and described.

4. In a steam-nozzle, the combination, with the slotted tube A, of the asbestos fiber F, a slotted cylinder, D, and a layer of asbestos cloth on the inner surface of the cylinder D, substantially as herein shown and described.

5. In a steam-nozzle, the combination, with a slotted tube, of a closed cap screwed on one end and closing the said end, a centrally-ported cap screwed on the other end, a cylinder held between the caps, and asbestos fiber filled in between the slotted tube and the cylinders, substantially as herein shown and described.

CARLETON W. NASON.

Witnesses:

C. SEDGWICK,

B. L. UNDERWOOD.