

(No Model.)

D. H. RICE.
HOSE NOZZLE.

No. 426,514.

Patented Apr. 29, 1890.

Fig. 1

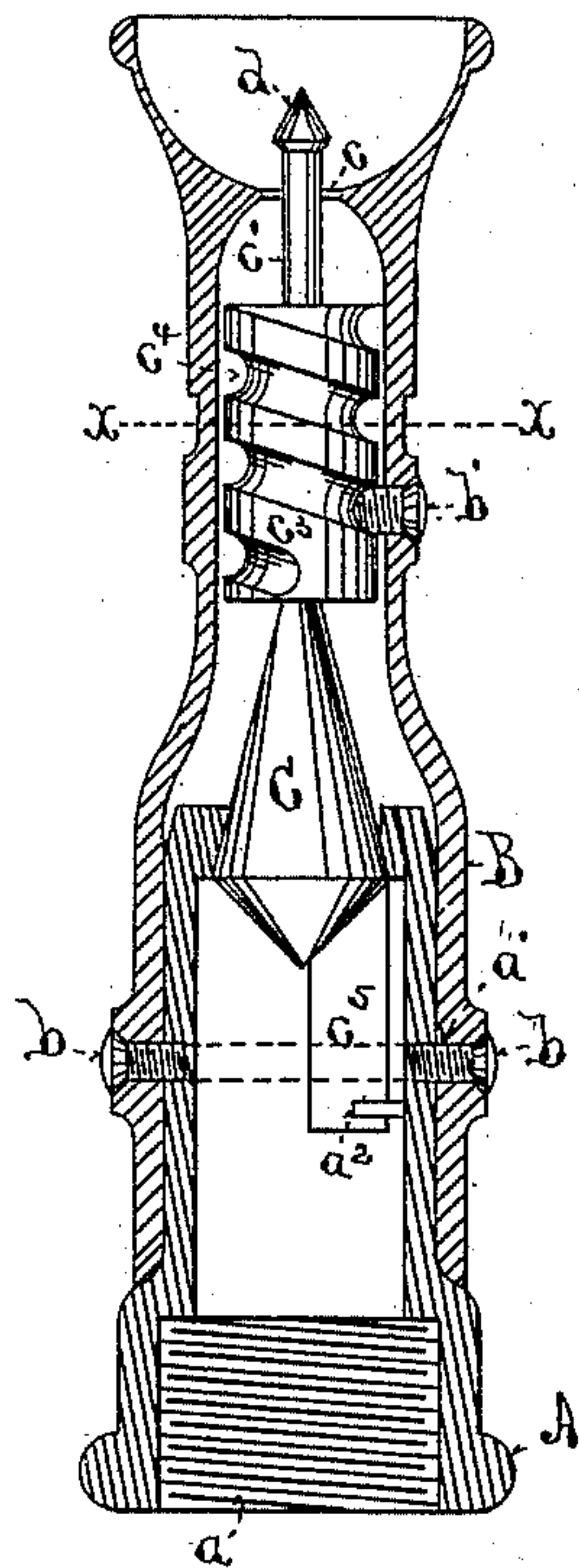


Fig. 2

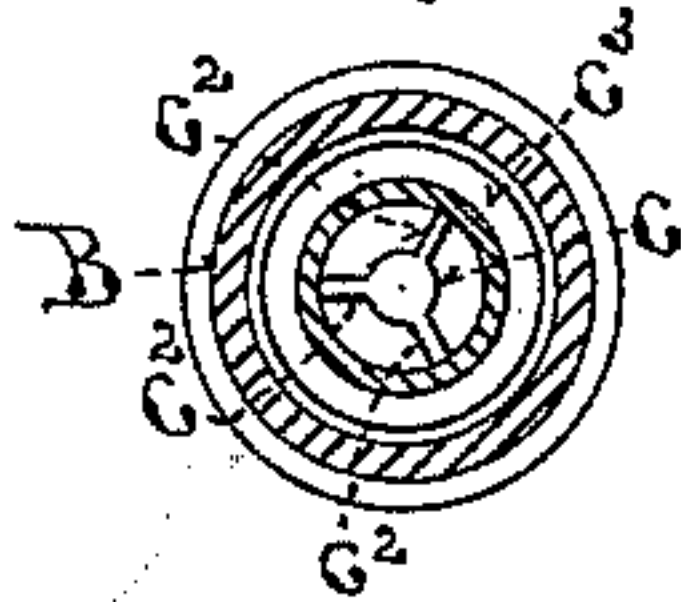
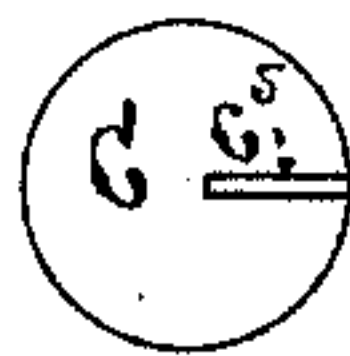


Fig. 3



Witnesses:

Wm. E. Brown
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Inventor

INVENTOR
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DAVID HALL RICE, OF BROOKLINE, MASSACHUSETTS, ASSIGNOR TO THE
EATON, COLE & BURNHAM COMPANY, OF CONNECTICUT.

HOSE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 426,514, dated April 29, 1890.

Application filed February 23, 1886. Serial No. 192,842. (No model.)

To all whom it may concern:

Be it known that I, DAVID HALL RICE, of Brookline, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Hose-Nozzles, of which the following is a specification.

My invention relates to hose-nozzles; and it consists in a certain improved construction and arrangement of the several parts of such nozzles, substantially as hereinafter described and claimed.

My invention is an improvement upon the hose-nozzle patented to Gilchrist & Anderson, No. 196,216, dated October 16, 1877.

In the drawings, Figure 1 is a view of a hose-nozzle, with its exterior parts in longitudinal central section, constructed according to my invention. Fig. 2 is a transverse section of the same on the line X X. Fig. 3 is a rear view of the valve detached.

A is the outer tubular shell of the nozzle, provided with an internal screw-thread a , into which the hose-connection is screwed in the usual way.

B is a second shell or tubular portion, which is fitted at its rear end over the part A. The latter within the part B is provided with an annular exterior groove a' , and one or more screws b are tapped into the shell B and have their point or points entering groove a' , so as to secure the parts A and B together, while allowing the latter to revolve about the former.

The valve C and spraying attachment are constructed to be moved back and forth within the tubular portions A B, as follows: The valve C is made to fit within the discharge-orifice of tube A, which is at some distance back from the discharge-orifice c of the nozzle, and close the water-passage tightly at that point. This effects two advantageous results—first, in shutting off the water behind the joint between the tubes A and B and preventing all leakage through it when the valve is closed, and, secondly, in enabling the stream of water to pass out of the discharge-orifice c in a direction nearer axial to the bore of tube B than if the valve closed the passage at orifice c , as in the patent referred to. This axial direction of the stream in passing through the nozzle-discharge c causes it to

strike behind the spraying-bulb d on the end of the valve-stem in a direction more favorable to producing a perfect spray and with greater force. From the front end of valve C a valve-stem c' projects forward axially through tube B and its discharge-aperture c and carries on its outer end the spraying-bulb d . Around its middle part stem c' is provided with three wings c^2 c^2 c^2 , Fig. 2, between which the water flows toward the discharge-orifice c . Around and upon these wings is secured the tube c^3 , through which the water passes. This tube c^3 fits the bore of tubular part B closely, and so serves to guide the valve-stem in moving back and forth and to keep spraying-bulb d axial in discharge-orifice c in passing through it.

In the outer surface of tube c^3 a screw-thread c^4 is cut, and a screw b' , passing through part B, has its point entering this screw-thread, so as to cause the valve C and its stem c' to traverse back and forth when part B is revolved about part A. In order to insure this movement valve C is provided with a fin c^5 , projecting rearwardly from one side of it, parallel to the axis of the valve and its stem, and a pin a^2 is driven through part A, so as to engage with this fin and prevent it and the valve from revolving around while allowing it to traverse back and forth. The outside diameter of tube c^3 is slightly less than the diameter of the valve-seat orifice in the discharge end of tube A, and I am thus enabled to construct the valve and tube c^3 in one piece and introduce them into place through tube A from the rear end; but although I prefer this construction, tube c^3 may be secured to the wings of the valve-stem after it is passed through the tubular part A.

The operation of the nozzle is as follows: The valve being closed, as shown in Fig. 1, is held in that position by the screw b' engaging with the screw-thread in tube c^3 , and it is evident that no leakage can occur at the joint between parts A and B, because no pressure of water comes upon the joint. By revolving part B, however, the valve will be forced backward and opened, and as soon as the water commences to escape it will flow through tube c^3 and between wings c^2 c^2 c^2 toward the discharge-orifice c of the nozzle and through the

latter, and striking bulb d with great force will be thrown from the nozzle in the form of spray. As the valve continues to open and bulb d is drawn backward through the discharge-orifice c , the nozzle throws a solid stream; but in no case does the water approach the orifice c other than substantially axially along the valve-stem. When the valve is made to close the nozzle at discharge-orifice c , the conical valve-seat must be placed so near to bulb d that the water is directed in a more or less radial course at this discharge-orifice, and the consequent friction greatly impairs the force of its discharge. With the valve closing in rear of the discharge-orifice this difficulty is overcome.

What I claim as new and of my invention is—

1. In a hose-nozzle, a valve-stem carrying at one end the valve C and at the other the spraying-bulb d , and provided with the wings

c^2 and the spirally-threaded sleeve c^3 , in combination with a jointed tubular casing provided with a screw b' , a discharge-orifice c , a valve-seat, and suitable means for preventing the turning of the valve-stem within the inner tubular casing, all arranged and operated substantially as and for the purposes described.

2. The combination of tubular part A , provided with pin a^2 and groove a' , tubular part B , adapted to revolve around part A and provided with one or more screws b , engaging with groove a' , discharge-orifice c , screw b' , and the valve C and its stem c' , provided with bulb d , screw-threaded cylinder c^3 , and fin c^5 , substantially as described.

DAVID HALL RICE.

Witnesses:

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