

No. 843,130.

PATENTED FEB. 5, 1907.

C. E. BUELL.  
AUTOMATIC SPRINKLER.  
APPLICATION FILED MAY 9, 1887.

Fig. 3.

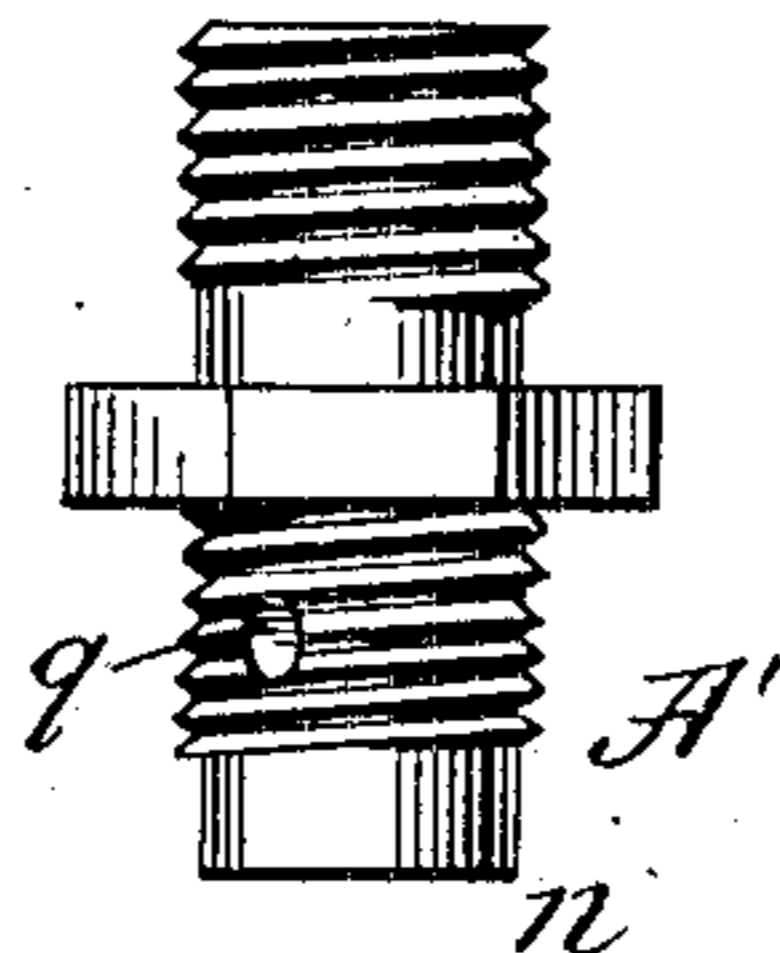


Fig. 2.

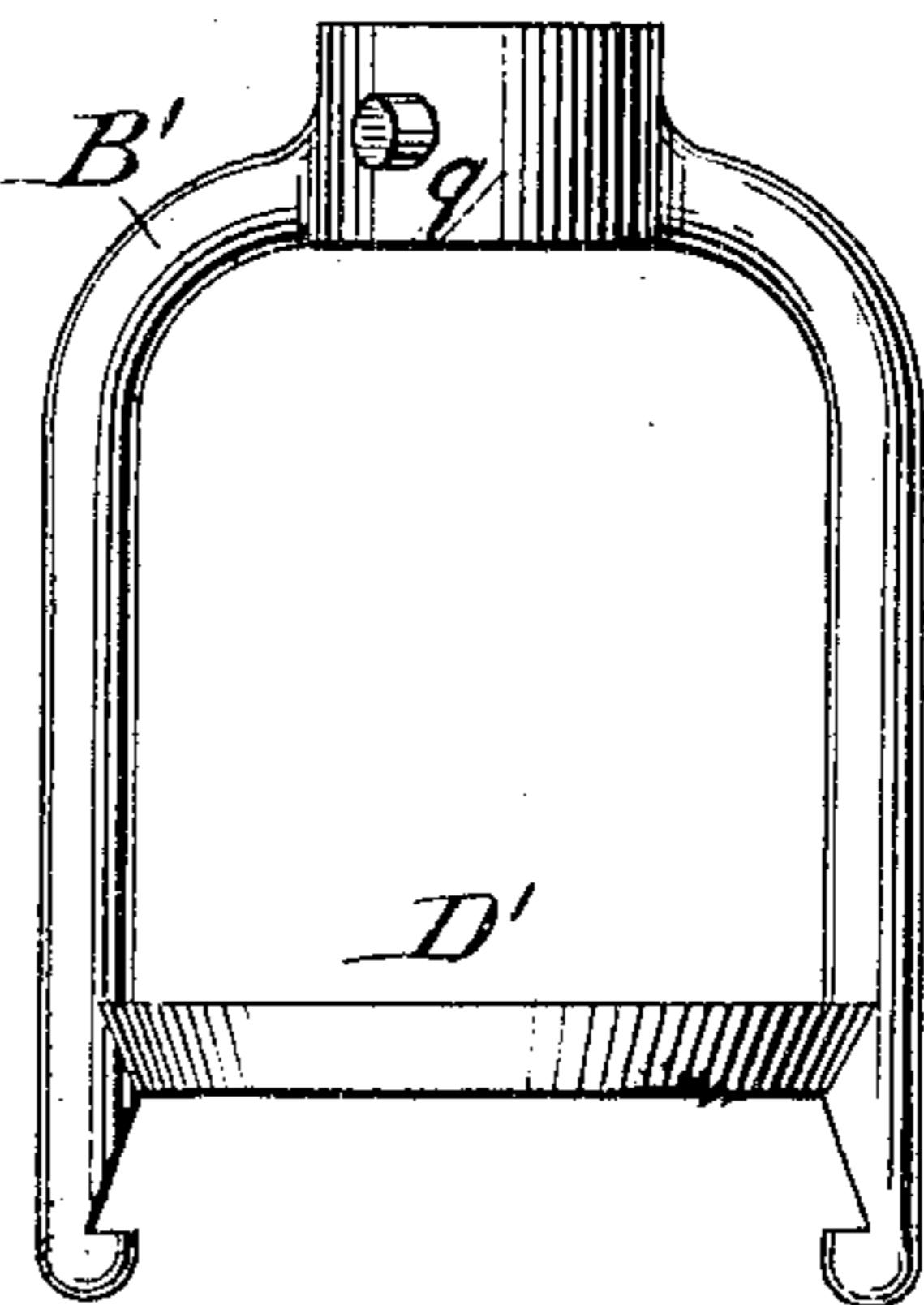


Fig. 4.

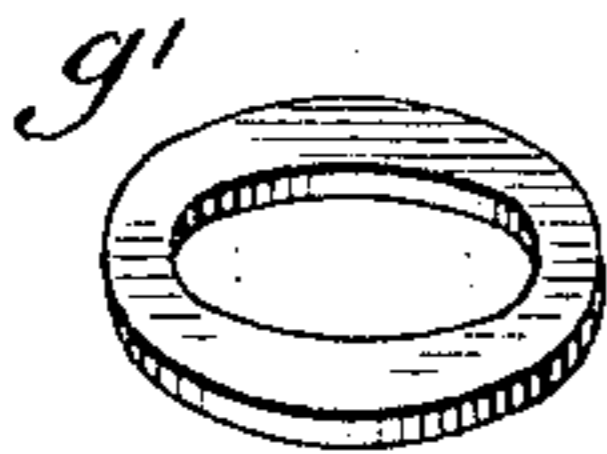


Fig. 5.



Fig. 6.



Fig. 7.

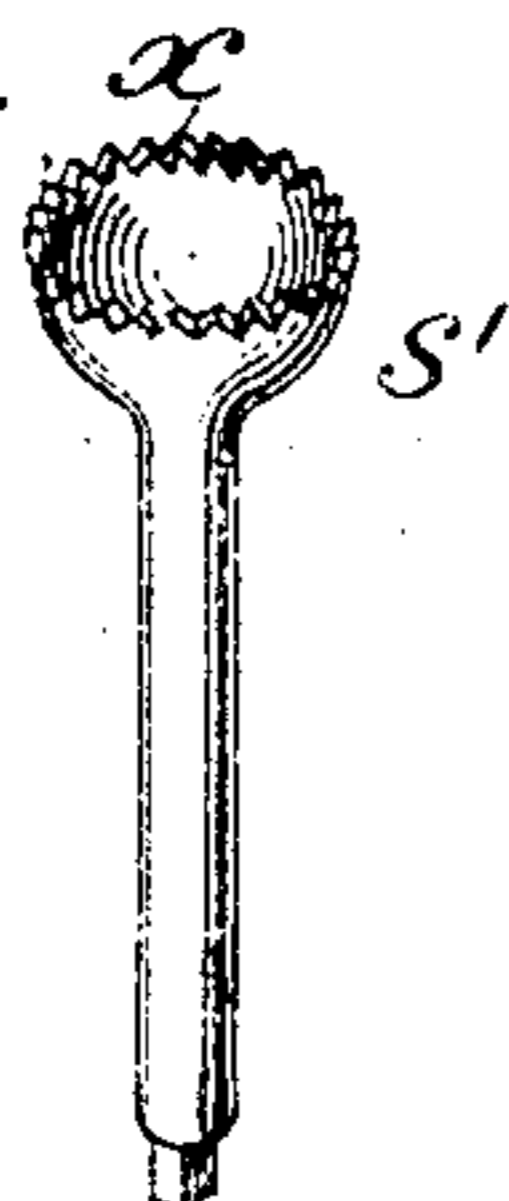


Fig. 11.

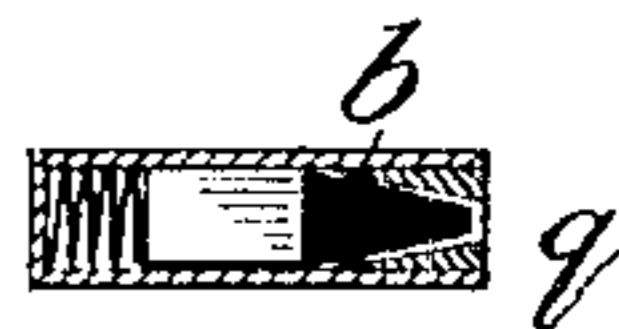


Fig. 8.

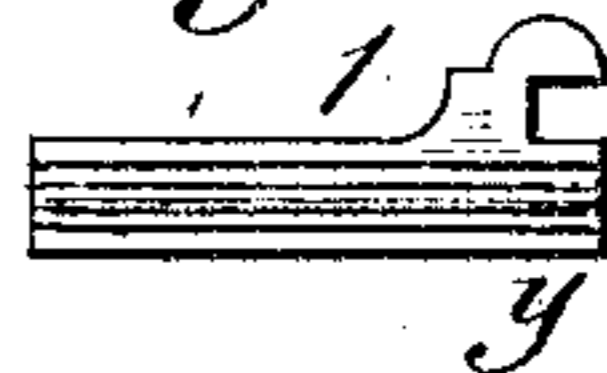


Fig. 10.

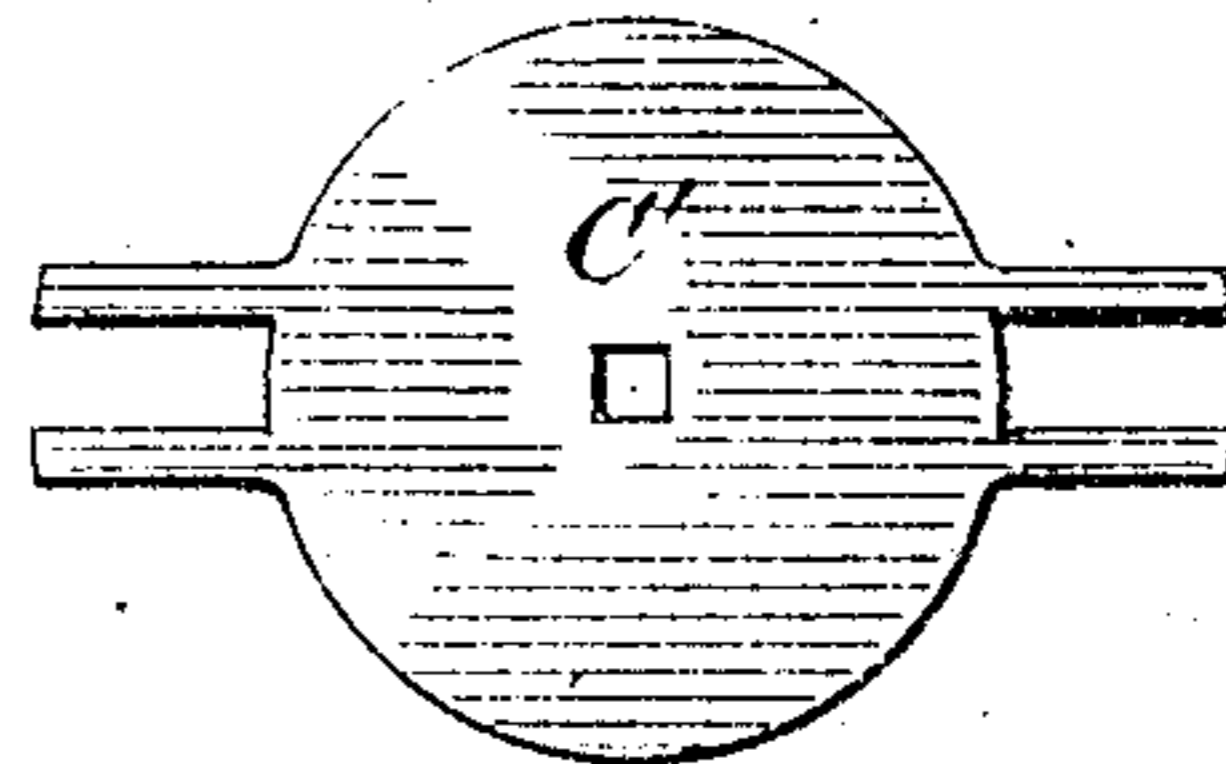
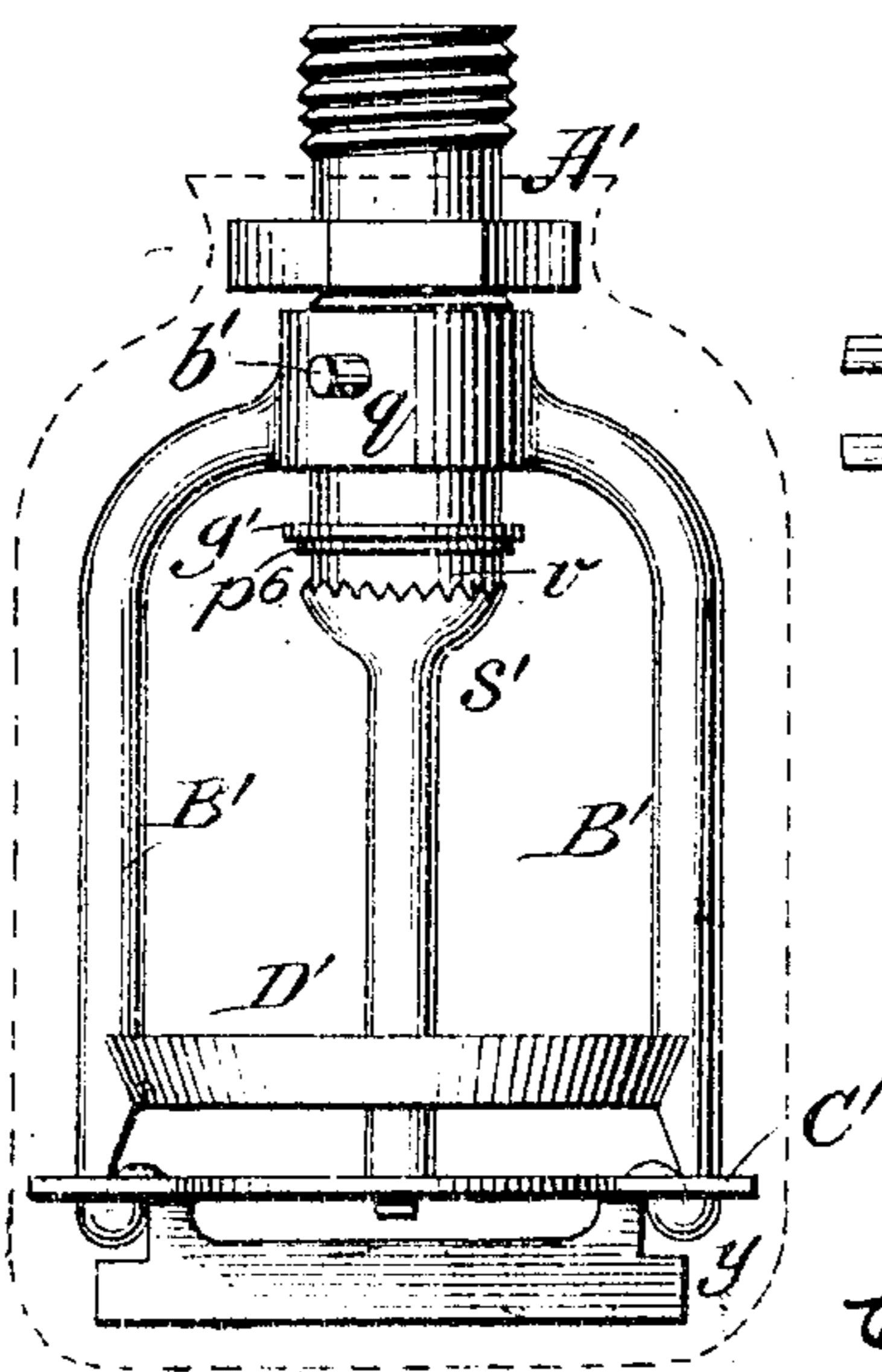


Fig. 1.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC SPRINKLER.

No. 843,130.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed May 9, 1887. Serial No. 237,647.

*To all whom it may concern:*

Be it known that I, CHARLES E. BUELL, a citizen of the United States, residing at North Plainfield, in the county of Somerset and State of New Jersey, but a former resident of Springfield, Hampden county, State of Massachusetts, have invented certain new and useful Improvements in Automatic Sprinklers, of which the following is a specification.

The invention relates to an automatic sprinkler which is especially adapted for use in a fire-extinguishing system in which the distributing-pipes normally contain a vacuum, said sprinkler being adapted to operate when acted upon by heat to admit air to the distributing-pipes and destroy said vacuum.

To this end the invention consists in a sprinkler of this character containing certain novel features of construction hereinafter described and claimed.

In describing the invention in detail reference may be made to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved sprinkler with all the parts assembled. Fig. 2 is a side elevation of the sprinkler-frame. Fig. 3 is a side elevation of the sprinkler-nozzle. Figs. 4, 5, and 6 are detail views of the valve device employed. Figs. 7, 8, 9, and 10 are detail views of the valve-holding devices. Fig. 11 is a sectional view, on an enlarged scale, of the valve device for destroying the vacuum.

Referring to the drawings, A' is the tubular portion of a sprinkler, terminating at its lower end in a nozzle *n*. It is screw-threaded at its upper end to screw into the supply-pipe. Below this point it has another screw-thread to screw into the internally-screw-threaded annular neck of the part B', through which the nozzle *n* protrudes. From the annular screw-threaded neck of the body part B' extend downwardly-hanging arms, which carry the spreader D' and are provided with hooked lower ends to receive and engage the hooks of the two-part yoke *y*, which is formed of the two pieces 1 2, soldered together with an easily-fused alloy. The meeting faces of the parts 1 2 to be soldered together are preferably corrugated, so that they will interlock, and thus in a measure take from the solder the strain of any pres-

sure that may come upon them. Upon the yoke thus constructed and located is supported the cross-bar C', provided with forked laterally-projecting terminals which straddle the arms of the body B' and prevent displacement of the yoke *y*. The plate C' supports the stem *s'*, the upper cup-shaped end of which receives the lower end of the valve *v*, this valve having in its lower or small end a hole that is closed by a drop of solder. The valve at the top is faced by a plate *p'*, preferably of lead, which has a hole in it to admit air when the solder in valve *v* is melted.

Interposed between the plate *p'* and the nozzle *n* is a gasket *g'*. When the parts of the sprinkler are assembled, the nozzle *n* is screwed down to adjustment and then locked in place by a tube or pin at *q*, the hole in the part A', into which the tube or pin enters; being drilled after the sprinkler is adjusted. The tube *q* contains a valve *b'*, that is soldered in with an easily-fusible solder, and when the solder melts the valve sucks into the pipe under vacuum, thus admitting air thereto through the now open tube *q*.

When the parts of the yoke *y* separate and drop and the plate C' is released, the stem *s'* will drop away from the valve *v*. The heat is thus permitted to reach the solder, which closes the hole in the latter, and the melting of the solder opens that hole and admits air to the pipe system under vacuum.

I may use a spring or its equivalent to lift or force the sprinkler-valve from its seat; but the devices shown are preferred.

I propose coating the sprinkler with platinum, porcelain, or other coating not acted upon by fumes or corroding vapors.

By the construction described I prevent sticking action due to corrosion and provide between the valve and its seat a non-corrodible heat-insulating bearing.

What I claim herein as new, and desire to secure by Letters Patent, is—

1. An automatic sprinkler for use in a vacuum system comprising an outlet and a valve closing said outlet, and provided with an opening normally closed by an inwardly-opening valve adapted to be released by the action of heat to admit air to the system, substantially as described.

2. An automatic sprinkler comprising a nozzle, a yoke or frame adjustable on said

nozzle, a tube passing through said frame and nozzle, and means normally closing said tube, substantially as described.

3. An automatic sprinkler comprising a  
5 nozzle, a yoke or frame adjustable on said nozzle, a tube passing through said frame and nozzle, and fusible means for normally closing said tube, substantially as described.

4. An automatic sprinkler comprising a

nozzle, a yoke or frame adjustable on said nozzle, a tube passing through said frame and nozzle, a valve in said tube, and fusible means for normally closing said tube, substantially as described.

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