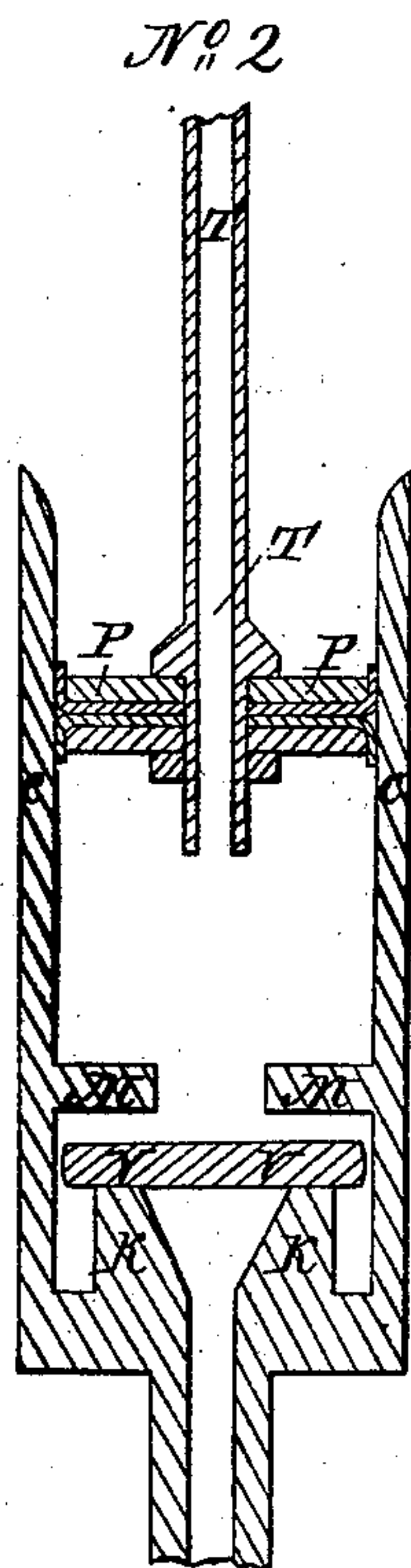
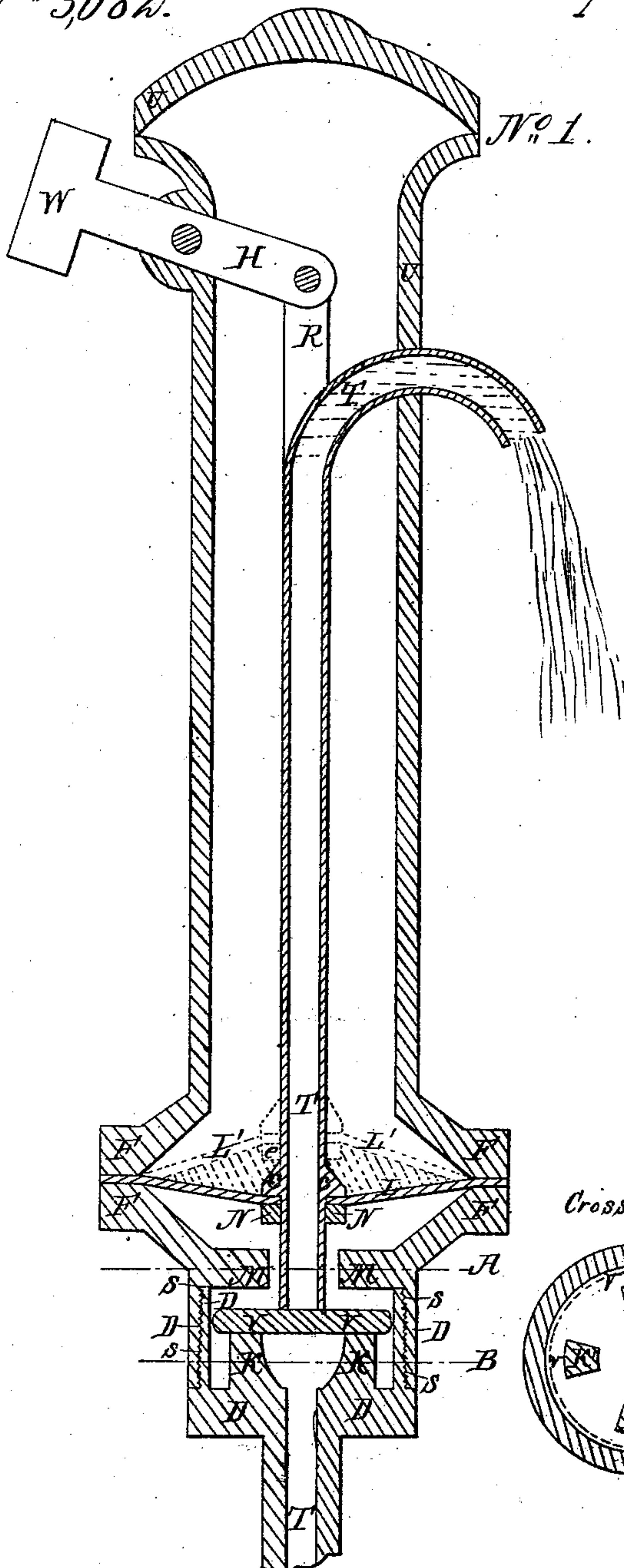


T. A. Davies,

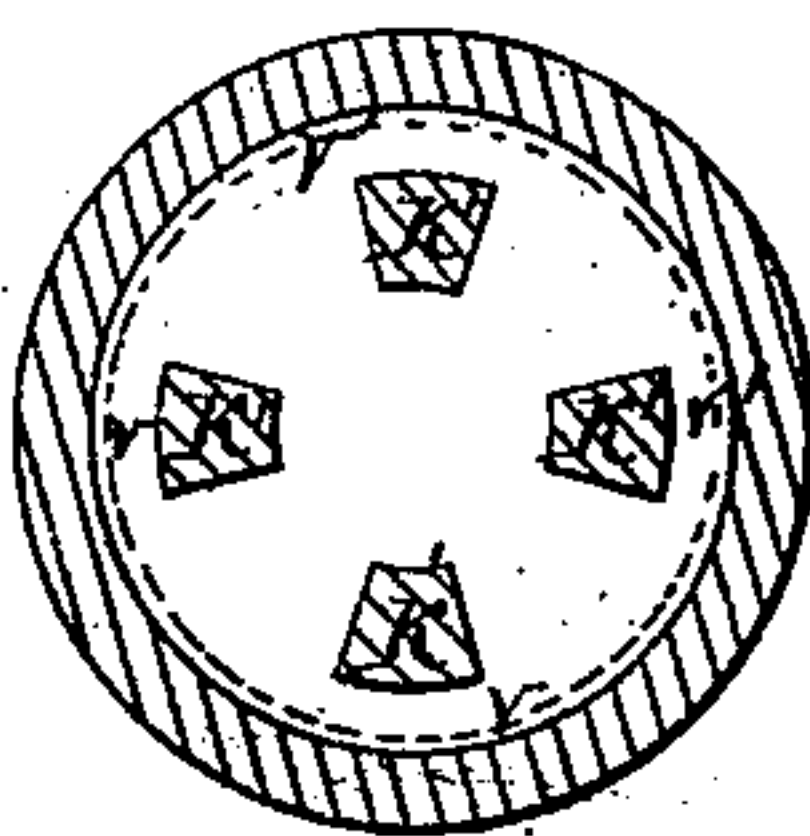
Hydrant.

N^o 3082.

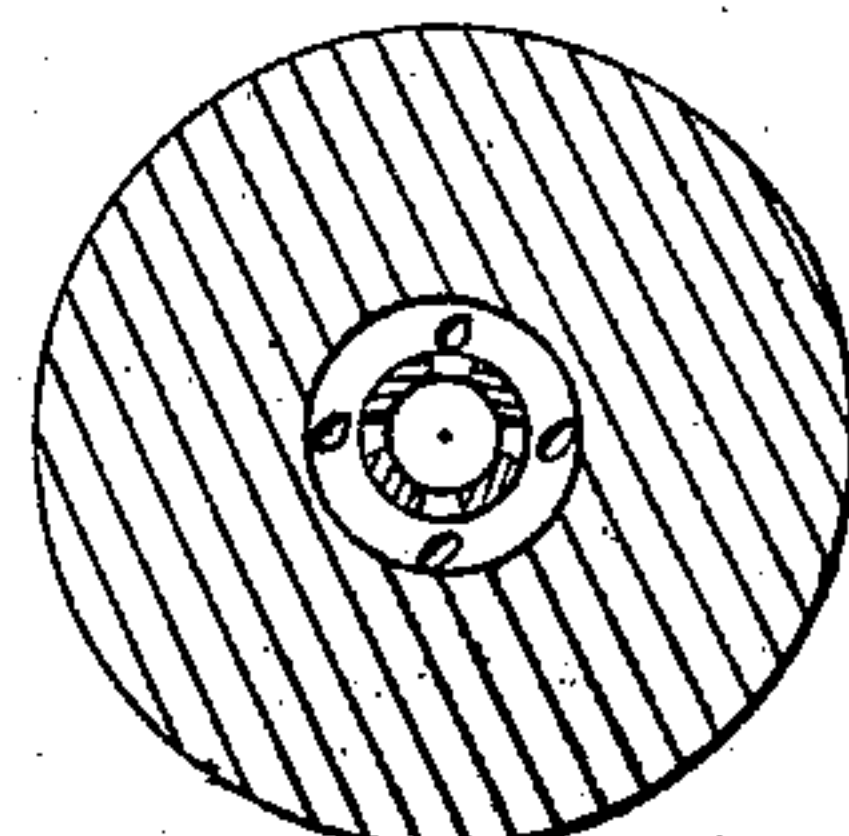
Patented May 12, 1843.



Cross Section B.



Cross Section A.



Witnesses;

*Wm. Phinley
H. N. Gamble*

*Inventor,
T. A. Davies*

UNITED STATES PATENT OFFICE.

THOMAS A. DAVIES, OF NEW YORK, N. Y.

HYDRANT.

Specification of Letters Patent No. 3,082, dated May 12, 1843.

To all whom it may concern:

Be it known that I, THOMAS A. DAVIES, of the city, county, and State of New York, have invented a new and Improved Hydrant; and I do hereby declare that the following is a full and exact description of the same.

The nature of my invention consists in combining the usual fixtures of a hydrant with a chamber, by which the water in the eduction pipe (after the induction valve is closed) is drawn back or falls back to a point below the influence of the post and thus remains till it is forced up again to its first position, thereby avoiding the necessity as heretofore of emptying that water into the adjacent earth.

By reference to the drawings, *u, u, u, u*, is an outside case of iron or other material clasping by the flanges *F F* as represented, a circular piece of leather *L L*, or other flexible substance, which leather is perforated in the center admitting the tube *T, T*, with a collar *C, C*, above the leather, and a nut *N, N*, and screw below and by screwing up the nut against the collar the joining is water tight. The tube *T, T*, extends down to the valve *v v* and up to the point of discharge as represented. The lower part of the tube is perforated with holes, as is represented in the cross section at *A*, in the points at *o, o, o, o*, which holes are made for the purpose of allowing the water after the valve is opened to escape by means of the eduction tube. The valve *v v* is a circular or other formed piece of metal or leather which is closed by means of the pressure of the water upward or against it and against the seat *M, M*, which may be of leather or metal. In the cross section at *B* the valve is horizontally projected by the dotted line *v', v', v', v'*, leaving a space for the water to flow out between the valve and the outside case.

I is the inlet for the water to run to the machine from the reservoir.

The bottom *D, D, D, D*, supports the knees *k k* and is either driven, screwed or in any other way secured to the case *u, u, u, u*, at the points represented at *s, s, s, s*. The tube *T, T*, is attached to the rod *R* to the handle *H* by means of a joint, which handle is loaded with a weight *W* sufficient to overbalance the weight of the tube and rod.

Operation: We will suppose that the

hydrant is now in operation as is represented and the water flowing from the tube. Those parts of the drawings colored blue represent the parts filled with water. The handle having been raised to the present position and the valve below being open the water is flowing in at the inlet between the knees under the valve, then around the edges of the valve into the space above it, and below the leather from thence into the holes in the bottom of the tube, thence up the tube and out at the point of discharge. Suppose you now let go the handle, the weight *W*, overbalancing the weight of the rod and tube, will cause them to raise, and as the tube is not attached to the valve it will leave it, and the pressure of the water upward will close it. The leather now giving or springing will assume a position *L, L*, and the water in the discharge pipe will fall down and occupy the space shaded with red ink.

The chamber can be increased in size at pleasure to admit all the water which is contained in the tube. The tube is now supposed emptied into the space *L L, L' L'* which is below the influence of the frost. Now raise the handle *H*; this forces down the tube *T, T*, and consequently the center of the leather *L' L'* till it assumes nearly the position *L L* when the end of the tube reaches the valve *v, v*, opens it, and then all the valves, the tube and the leather go down together a small comparative distance till the valve rests upon the knees *k k*. The result of the contraction of the space *L' L', L L* by the forcing down of the leather *L' L'* causes the water which had before fallen back into that space to be forced up again to its former position in the tube, before the bottom of the tube reaches the valve *v, v*.

By this contrivance it has been shown in what way a chamber can be made to increase in size so as to admit the water from the eduction pipe below the influence of the frost and then by diminishing in size is made to discharge the water again into the eduction pipe without wasting it into the adjacent earth.

There are various modes which I have used to produce this same result, one of which is represented by drawing No. 2, where *T T* is the tube inclosed by a packed piston of leather *L L, P P* which works up and down in a cylinder *C, C*. When the

piston is down so that the end of the tube T reaches the valve and opens it the water flows as in the first instance. When the piston goes up the valve closes and
5 the water in the tube descends into the chamber as represented. The chamber is made by the sides of the cylinder, the piston and the valve seat and valve. The solid piston working as a force pump has also
10 been used as one of the plans.

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

1. Making a water chamber of variable capacity in the lower part of the hydrant
15 above or around the induction valve, which chamber communicates with the induction and eduction pipes or other means of admitting or discharging the water, for the purpose of receiving the water contained in
20 the eduction pipe after the induction valve

has been closed as herein described whether the capacity of this chamber be changed by means of a piston, a flexible disk or any other means of effecting such an object.

2. I also claim the mode of letting up the
25 water through the eduction pipe, which operates the induction valve below, saving the expense of a separate rod for that purpose.

3. I also claim the combination of the eduction pipe T having a stem for opening
30 the induction valve v, with the flexible disk L by which the water chamber is enlarged, when the valve is closed, to permit the water contained in the eduction pipe to descend into it, and thus prevent freezing as de-
35 scribed.

THOS. A. DAVIES.

Witnesses:

H. N. GAMBLE,

A. V. HAMMOND.