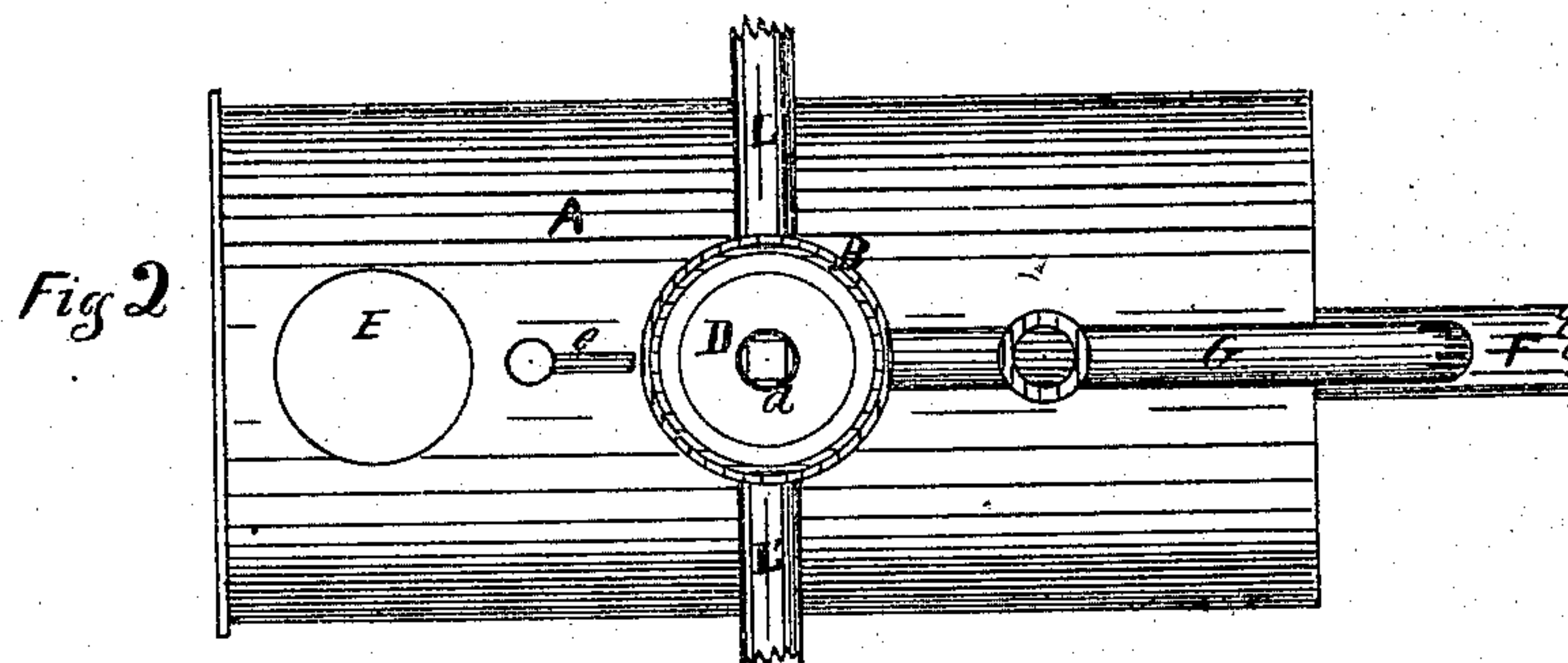
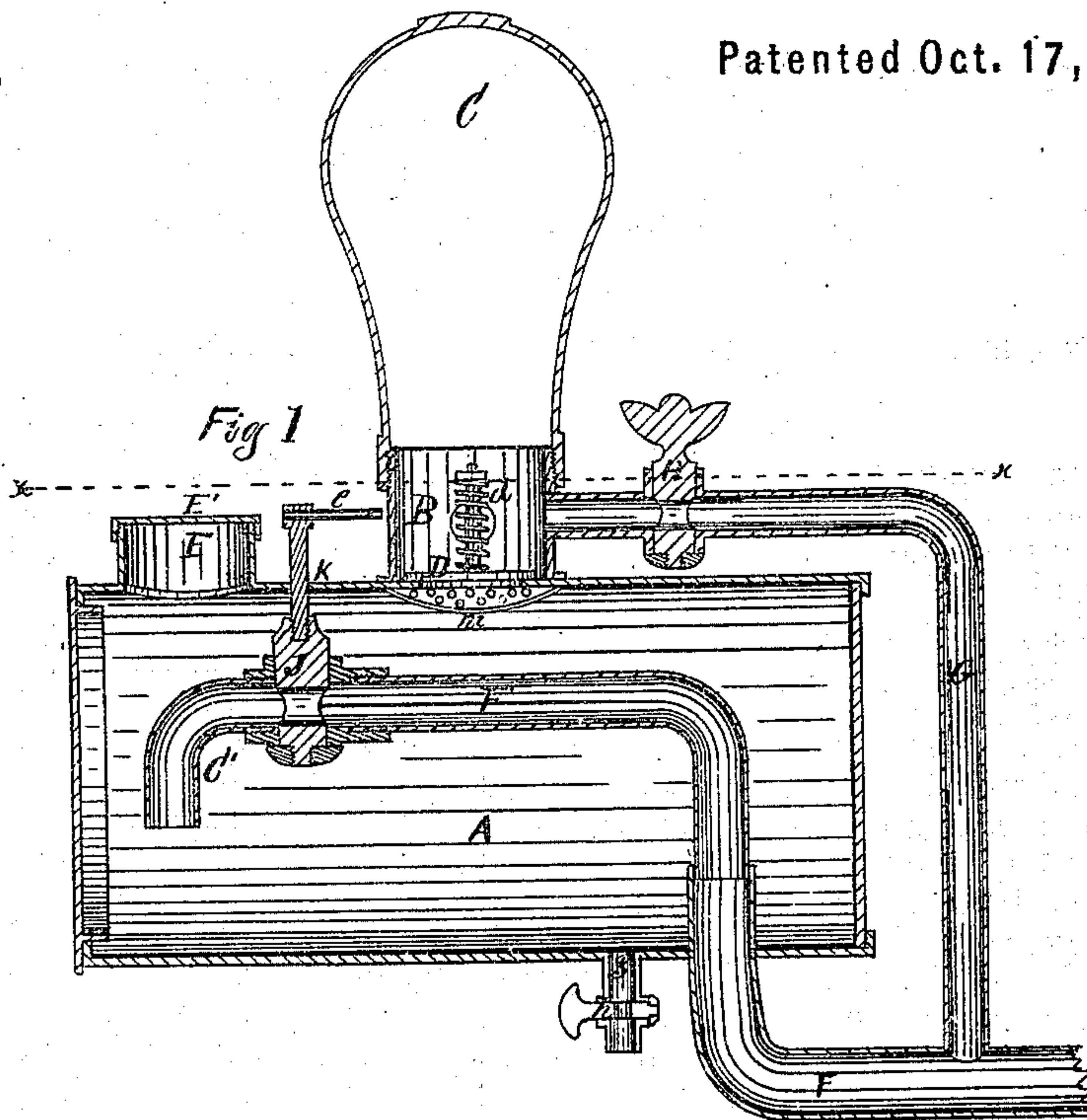


JOHN H. MANNING.

Improvement in Fire Extinguishers.

No. 119,936.

Patented Oct. 17, 1871,



Witnesses:

A. H. Sherburne

A. C. Guidley

Inventor

John H. Manning

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his atty -

UNITED STATES PATENT OFFICE.

JOHN H. MANNING, OF CHICAGO, ILLINOIS, ASSIGNOR TO EDWIN L. BUTTRICK,
OF SAME PLACE.

IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. 119,936, dated October 17, 1871.

To all whom it may concern:

Be it known that I, JOHN H. MANNING, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Chemical Fire Apparatus; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a vertical longitudinal central section of my improved chemical fire apparatus, and Fig. 2 is a top view of the same with those parts above the line *xx* broken off.

Similar letters of reference indicate like parts in both figures of the drawing.

My invention has for its object to provide an apparatus which may be attached to a steam fire-engine or to a hydrant, for the purpose of uniting a chemical solution with pure water for extinguishing fire; and to that end the improvement consists in the employment of a cylindrical case, within and to which is secured a system of pipes and valves, so arranged as to admit of forcing the water through the said cylindrical case containing the chemical solution, thereby uniting the said solution with the pure water as it is discharged into and from the case; also, in the arrangement of valves, whereby the pure water may be used without being united with the said solution; the whole of which will be more fully understood from the following description.

In the drawing, A represents a cylindrical case, which is constructed of sheet-metal of any desired thickness to resist the pressure of the water. Firmly affixed to the upper surface of the said case near its center longitudinally, and communicating with the interior thereof, is a vertical cylinder, B, to the upper end of which is secured a conical-shaped air-chamber, C, of the usual construction. Within the said cylinder and immediately over the opening communicating with the interior of the case is a valve, D, which is firmly secured in position over the said opening by a spiral spring, *d*, as shown in Fig. 1. Affixed to the upper surface of the case, near its end, is a vertical tube E, also communicating with the interior of the case. Through this tube the ingredients forming the chemical solution are introduced into the case by removing the screw-

threaded cap E', which is secured to the upper end of the tube. Firmly attached to the lower surface of the said case and communicating with the interior thereof, is a pipe, F, the lower end of which is attached to the discharge-pipe of the engine, (not shown.) Firmly attached to the end of this pipe, which passes into the case, is a pipe, F', which extends upward to a point near the upper surface of the case, and is there bent to a horizontal position, and extending backward to a point near the rear end of said case, and is there bent downward to a right angle with its plane, as shown at C'; thus as the water from the engine is forced into the case it is discharged from the pipe in a descending direction against the lower surface of the case, thereby producing the requisite agitation of the chemicals to effectually unite them with the water, and preventing the settling of such chemicals at the bottom of the case. Affixed to the said pipe F and communicating with the interior of the same is a pipe, G, which extends upward to a point slightly above the upper surface of the case, and is there bent to a horizontal position, and extends backward to and is connected with cylinder B at a point slightly above valve D, as shown in Fig. 1. Within the said pipe G near the cylinder is a faucet, H, which is so arranged as to admit of being opened or closed when desired. Affixed to and within pipe F' is a faucet, J, the shank of which extends upward through the upper surface of the case, as shown at K, and is provided with a handle, *e*, for opening or closing the said faucet. Firmly affixed to said cylinder, upon opposite sides thereof and communicating with the interior of the same, are pipes L and L', to which the hose is attached in the usual manner. Firmly attached to the inner side of the case under the valve of cylinder B is a perforated metal plate, *m*, through which the water is forced into the said cylinder, the object being to prevent any of the chemical ingredients, not dissolved from escaping. Attached to the lower surface of the said case and communicating with the interior thereof is a pipe, 3, within which is a faucet, *h*, as shown in Fig. 1; the object of which is to draw off the chemical solution from the case when desired.

It will be observed by reference to the drawing that the diameter of pipes F and F' are greater than that of pipe G, the object being to increase

the pressure of water within the case, thereby lifting valve D and allowing the chemical solution to escape when faucet J of said pipe F is opened.

In using my invention, the ingredients of which the chemical solution is formed are introduced into the case through tube E by removing cap E', and which is then replaced. Faucet H of pipe G is closed and faucet J of pipe F' is opened, thus allowing the current of water from the engine, hydrant, or force-pump to pass through pipes F and F' into the case, which is discharged in a descending direction and directly upon the bottom of said cylinder, so as to keep up a constant ebullition, stirring, or mixing of the chemical with the water, thereby producing a perfect and complete solution of the chemical, and preventing its settling at the bottom of the cylinder. The pressure of the water within the case forces valve D upward and is discharged therefrom through cylinder B and pipes L and L'. When it is desired to throw a stream of pure water fau-

cet J of pipe F' is closed and faucet H of pipe G is opened, which allows the water to pass through pipe G into cylinder B and is discharged therefrom in the usual manner.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The curved pipe F', provided with faucet J and united to pipe F, as described, whereby the water is discharged into the case in a descending direction, substantially as and for the purpose described.

2. The combination of pipes F, F', and G, cylinder B, valve D, plate *m*, and case A, all arranged substantially as and for the purpose described.

The foregoing specification signed by me this 29th day of July, A. D. 1871.

JOHN H. MANNING.

Witnesses:

N. C. GRIDLEY,
N. H. SHERBURNE.

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