

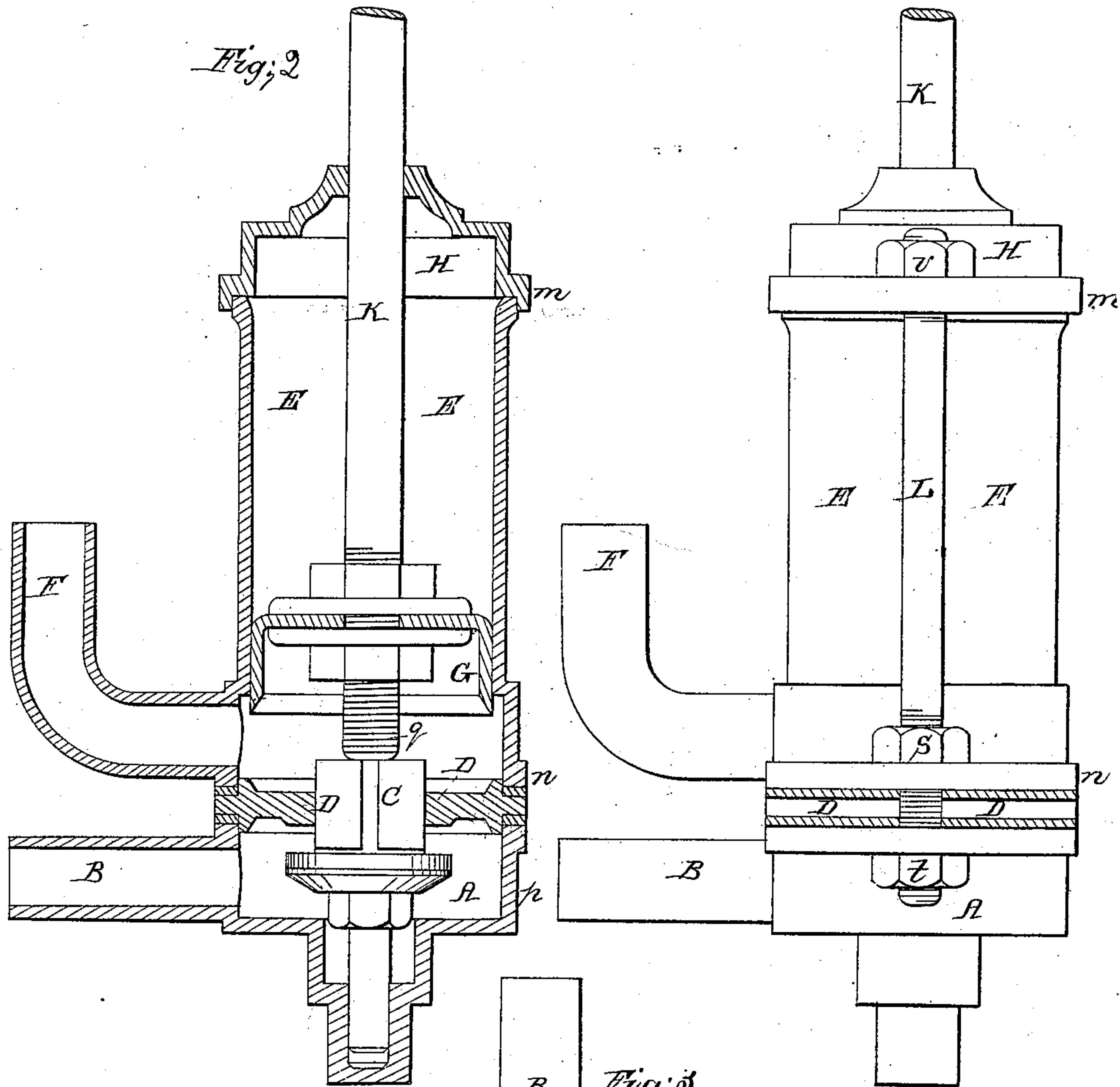
E. J. Baker,

Hydrant,

N^o 14,592.

Patented Apr. 8, 1856.

Fig; 1.



Fig; 3.

Witnesses;
John Cochrane
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Inventor;
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WASTE ATTACHMENT FOR HYDRANTS.

Specification of Letters Patent No. 14,592, dated April 8, 1856.

To all whom it may concern:

Be it known that I, EDWARD JOHN BAKER, of the city of Baltimore and State of Maryland, brass finisher, have invented a new and useful improvement in the Construction of Hydrants, by means of which improvement the freezing of the hydrant in cold weather and the loss of water arising from the use of a waste vent are completely prevented.

In the setting of hydrants it is usual to place the valve or cock, which controls the flow of water from the main or supply pipe, at a point sufficiently below the surface of the ground to be out of the reach of frost, so as to prevent its freezing. And to get rid of the water, intercepted between the nozzle of the discharging pipe and this valve, a small vent is used, which is so arranged in connection with the valve or cock that the opening of the valve or cock closes the waste vent, and vice versa. This method of preventing the freezing of hydrants by the use of the waste vent, has several objections viz. 1st. The waste of water, which, in those situations where pumping has to be resorted to in order to furnish the supply, proves to be a serious evil, for the waste is generally continued through the summer as well as in the season of frost, and the aggregate quantity thus wasted, from the frequent demands upon the hydrants, is found to have a considerable ratio to the whole quantity consumed. 2nd. The dampness and moisture arising from the saturation of the ground by the waste water is particularly objectionable, being injurious to health, as well as to the premises and the property therein. 3d. The waste vent being small, the intercepted water in the discharge pipe must necessarily subside very slowly, accordingly, in hard frosts it is frequently frozen before effecting an exit, thus rendering the hydrant inoperative till thawed out, or repaired.

The object of my invention is to obviate these evils and difficulties, so that the hydrant shall neither waste the water nor freeze. This I accomplish by means of a chamber, fitted with a sliding piston, of sufficient capacity, when the piston is drawn into the upper part of the chamber, to absorb the entire contents of the discharge pipe. The downward motion of the piston forces the water back from the chamber into

the discharge pipe, preparatory to letting on the water from the main or supply pipe, which is also accomplished by the downward movement of the piston, when near the bottom of its chamber, forcing open the valve between the main and discharge pipe.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation; and I hereby declare that the following is a full and exact description thereof, referring as I proceed to the accompanying drawings, and to the letters of reference marked thereon, in which—Figure 1, is a side elevation of the apparatus and Fig. 2, a vertical longitudinal section of the same.

The same letters are used to designate the same parts in both figures.

In Figs. 1, and 2, A is the bottom part or valve box, into which the water is received from the main or supply pipe by the branch B. The flow of water through the hydrant is controlled by the valve C, Fig. 2, opening downward or against the pressure and current of the water from the main pipe. The valve C, which is faced with leather, in the usual way, has its seat in the diaphragm D D, between the bottom part A and the chamber E E. From the lower part of this chamber proceeds the upturned outlet branch F, to which the discharge pipe is attached. The chamber E E should be bored out smooth and be accurately fitted with the sliding piston G which is packed with a cupped leather, as shown, or in any other mode that will answer the purpose. The upper part of the chamber E E is closed by the top piece or bonnet H, through which the piston rod K freely passes, and without packing, the use of this bonnet being to prevent the admission of dirt into the chamber E E, and to serve as a guide to the piston rod K. The diaphragm joints are bedded with leather washers; and the several parts of the apparatus, viz. the top piece or bonnet H, the chamber E E, the diaphragm D and the bottom piece or valve box A, are secured and held together by two side bolts and nuts, one of which is shown at L Fig. 1, the other bolt being on the opposite side is not seen. These bolts pass through projecting flanges cast on the members *m*, *n* and *p*, (as shown in Fig. 3, at M and N) the member *m* being on the top piece or bonnet H, the member *n* being on the lower part of

the chamber E E and the member *p* being on the valve box or bottom piece A. The diaphragm D is embraced between the bottom piece A and the lower edge of the chamber E E and is secured in its place by the two nuts *s* and *t* on each side bolt, Fig. 1. The top piece or bonnet H being also secured by the separate nuts *v*, Fig. 1, it can be removed, if required, without disturbing the other parts or breaking the water joints.

The position of the several parts indicated in Fig. 2, represents the hydrant as open or running, the valve C being forced down from its seat by the part *q* of the piston rod K, projecting below the piston G, which projection does not come into contact with the valve C, till the piston G has nearly completed its downward movement; accordingly, the first effect of the upward movement of the piston G will be to permit the valve C to close upward against its seat in the diaphragm D, and thus stop the flow of water from the main or supply pipe, and after closing the valve C the continued movement of the piston G, till it reaches the top of the chamber E E, will draw all the water contained in the discharge or outlet pipe, into the chamber E E, where it is reserved for use and out of the reach of frost,

and is the first water discharged on operating the hydrant.

The advantages which this hydrant possesses over those in common use are, 1st, it is nonwasting and therefore free from all the objections urged against wasting hydrants; 2nd, it is nonfreezing, if placed at a proper point below the surface of the ground, for the water is suddenly absorbed from the outlet or discharge pipe into the chamber, by the action of the piston after closing the valve, before the frost has time to congeal it in the pipe; which is a matter of frequent occurrence when the evacuation of the outlet pipe is left to the tedious operation of a small waste vent.

Having thus described the construction and operation of my said improvement, what I claim therein as my invention, and desire to secure by Letters Patent is—

The application to a hydrant of the receiving chamber and piston, constructed and operated in the manner and for the purpose substantially as described.

EDWARD JOHN BAKER.

Witnesses:

JOHN COCHRANE,
JAMES COCHRANE.