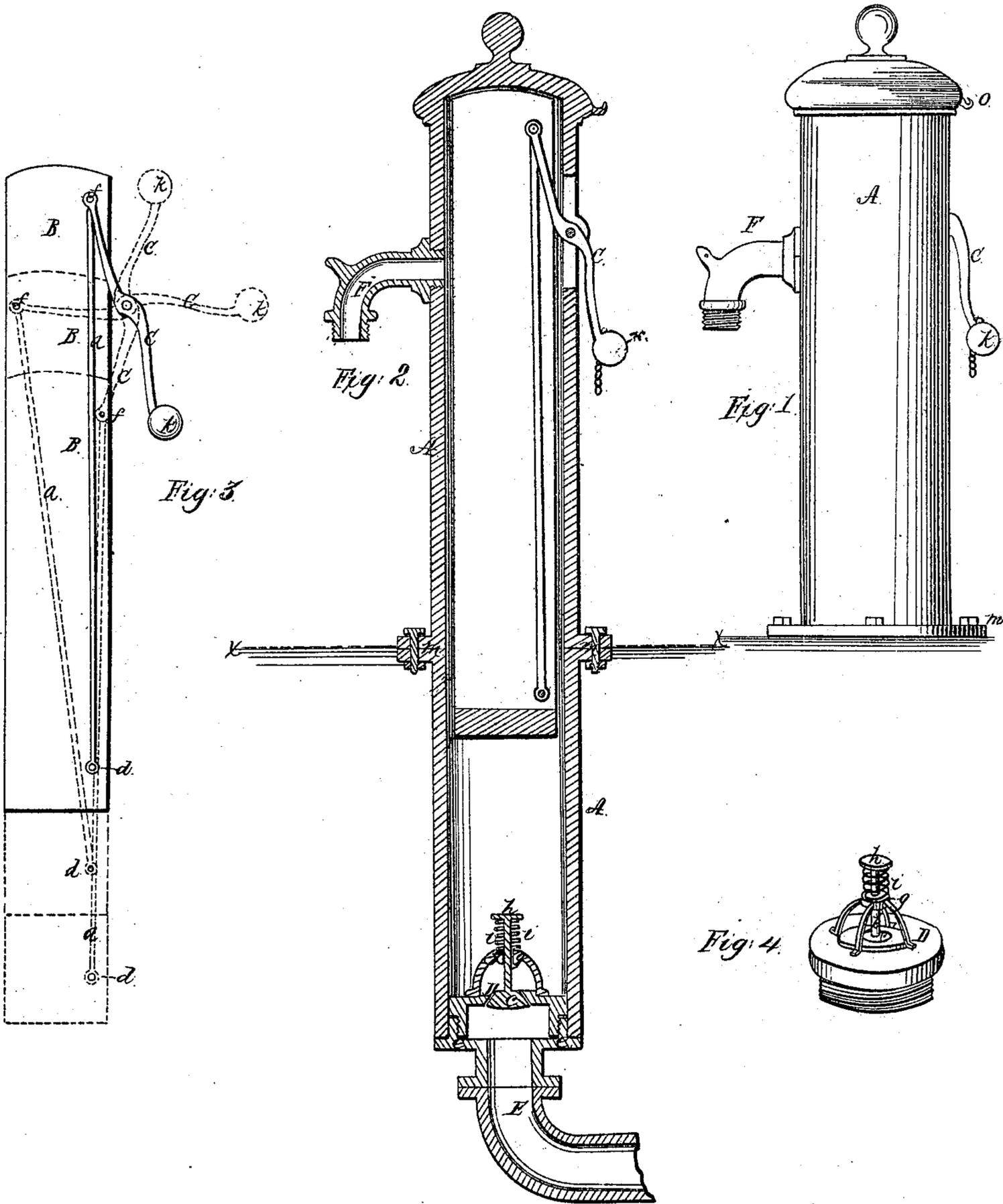


H. Goddard,

Hydrant.

N^o 19,330.

Patented Feb. 9, 1858.



UNITED STATES PATENT OFFICE.

KINGSTON GODDARD, OF PHILADELPHIA, PENNSYLVANIA.

HYDRANT.

Specification of Letters Patent No. 19,330, dated February 9, 1858.

To all whom it may concern:

Be it known that I, KINGSTON GODDARD, of Philadelphia, county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Hydrants; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in certain improvements in the construction of hydrants, as hereinafter more fully described, whereby the freezing of any water in the same is prevented and from which there is no "drip" or waste water.

To enable others skilled in the art to make and use my invention I will now proceed to describe its construction and operation.

In the accompanying drawing Figure 1, represents an elevation of my improved hydrant. Fig. 2, a vertical section through the same. Fig. 3, a skeleton view showing the construction and operation of the plunger and its attachments. Fig. 4, a perspective view of valve and its seat.

Before proceeding with the description of my improvement, I would remark that the two objections which are had to all hydrants in use, and which render them unfit to perform the functions for which they are made, are, 1st their freezing up and bursting, or becoming inoperative, and their "drip", or the quantity of water which is wasted by them continually; hence it is a very great desideratum to so construct a hydrant that it shall be subject to neither of the above named objections while at the same time its construction will be simple and economical, and this result I have obtained by constructing the hydrant, as follows: viz:—The same letter denoting the same part, in the different figures; A, represents the body or shell of the hydrant. B, the plunger operated upon by the handle or lever C, and connecting rod "A," and which operates upon the stem *b*, of the valve C.

D, is the valve seat. E, the pipe connecting with the water supply pipe and F, the spout or exit.

The shell A, may be made of cast iron of about the proportion shown in the drawing with the top solid or closed:—in the bottom or lower end of said shell is screwed, or otherwise secured the valve seat piece *e*, which has a tubular projection on its under side connected at pleasure to the main, or

water supply pipe E. The spout F, may be made solid with said shell, or separately and secured thereto.

The plunger B, should be made of wood or, such material as may be found best adapted to the purpose, its diameter being somewhat less than the internal diameter of the shell A, in order that the water may flow freely between the external surface of said plunger and the internal surface of said shell:—this plunger B, being intended to operate, not as a piston, but simply as a float or displacer of the water in the shell and may therefore be made of any form which may be found most convenient:—said plunger has a slot cut longitudinally, in a plane, passing through its axis, which slot is of sufficient width, merely to accommodate the thickness of the handle or lever C, and connecting rod *a*, and of the proper form and dimension in other respects to accommodate the play or motion of said handle and lever which latter is pivoted to it by a pin *d*, near its lower end and also to the end of the handle C, by a pin *f*. The plunger is made of such a length, as to enable its bottom or lower end to come in contact with, and depress, the valve stem *b*, sufficiently to open the valve *c*, entirely, when said plunger is caused to descend by the vibration of the handle C, and the said plunger and handle are so constructed and relatively arranged and connected by rod *a*, that this result may be obtained, with the valve *c*, situated as low down, or as far beneath the surface of the ground (which is represented by the line X, X,) as practicable.

The valve *c*, may be a simple "conical valve" as shown in the drawing with a proper seat D, and suitable stem *b*, which passes through a hub or bearing *g*, and has fastened on its upper end a plate *h*, between the under surface of which and the top of the hub *g*, is placed a spiral spring *i*, for the purpose of effectually closing the valve *c*, when the latter is relieved from the downward pressure of the plunger, caused by the lifting and holding up of the outer end of the lever or handle C. I would here remark that the handle C, is so weighted by a ball *k*, that the descent of its outer end (that end which protrudes from the hydrant) is certain under all circumstances, when released by the operator, which is a very necessary feature of my improved hydrant, since by the

ascent of the plunger the water in the shell A, is displaced or caused to descend below the freezing point.

The shell A, is made in two parts connected or bolted together at a point *m*, about even with the surface of the ground; the object of thus constructing the said shell is that it may be separated or disjointed at the surface of the ground and thus render any excavation unnecessary, in getting at the valve or other portions of the hydrant for the purpose of repairing the same, this peculiarity of construction embraces advantages practically, which are too evident to need further comment. A chain may be attached to the ball *k*, which may be fastened on to the hook *o*, when it is desired that the water should be kept flowing for some length of time, as for instance for the use of a fire engine.

The operation of my improvement is so simple as to need but little explanation after the construction has been described, I will however thus briefly allude to it:—When the water is required to run, the handle C, must have its outer end elevated, to a position as represented by red lines in Fig. 3, which causes the plunger B, to descend, (being connected thereto by the rod *a*.) and press upon the plate *h*, whereby the valve *e*, is opened and the water rushes up on all sides of the plunger and between it and the shell A, making its exit through the spout F. When a sufficient quantity of water is drawn the operator releases his hold upon the said handle, when its outer end, by virtue of the weight or ball *k*, immediately descends causing the plunger to ascend in doing which the said plunger, first relieves the valve *e*, which is instantaneously closed by its spiral spring *i*, and then, passing on up to occupy the upper part of the shell A, causes the water remaining in said upper portion of the shell A, to flow down and occupy the lower portion of said shell, occupied during the running of the water, by the plunger, and where such remaining water, being sufficiently below ground, is not sub-

ject to sufficient intensity of coldness to cause it to freeze and render the hydrant inoperative, as it does in hydrants now in use. This is one and the most important advantage of my improvement and one which will be readily appreciated. Another great advantage of my "improved nonfreezing hydrant" is that through it no water is wasted, since directly the handle is released by the operator, the valve through which the water is supplied, is closed, and all the water remaining in the shell A, is immediately displaced or flows down into the lower portion of said shell:—The construction of the shell A, in two parts, secured together at the surface of the ground and the valve and its seat so as to be readily extracted and replaced (by means of being screwed into the bottom piece, as seen at Fig. 2) also render my hydrant highly desirable in a practical sense no expense, comparatively, being necessary in subjecting the apparatus to inspection or repair.

Having now fully described the construction and operation of my improved "non-freezing hydrant," I do not wish to be understood as claiming broadly the use of a plunger, or the construction of a self-closing valve, but

What I do claim and desire to secure by Letters Patent is:—

1. The plunger B, operated upon by a weighted handle, in combination with the self closing spring valve *e*, the whole constructed and operating substantially as and for the purpose specified.

2. The construction of the shell A, in two sections, in combination with the removable valve seat piece, D, and bottom piece, *e*, the several parts arranged and operating substantially as described for the purposes set forth.

In testimony whereof I have hereunto set my hand this 18th day of December 1857.

KINGSTON GODDARD.

Witnesses:

JOHN THOMPSON,
I. H. BOOTH.