

B.P. Bower,

Hydrant,

N^o 54,845,

Patented May 22, 1866.

Fig: 1.

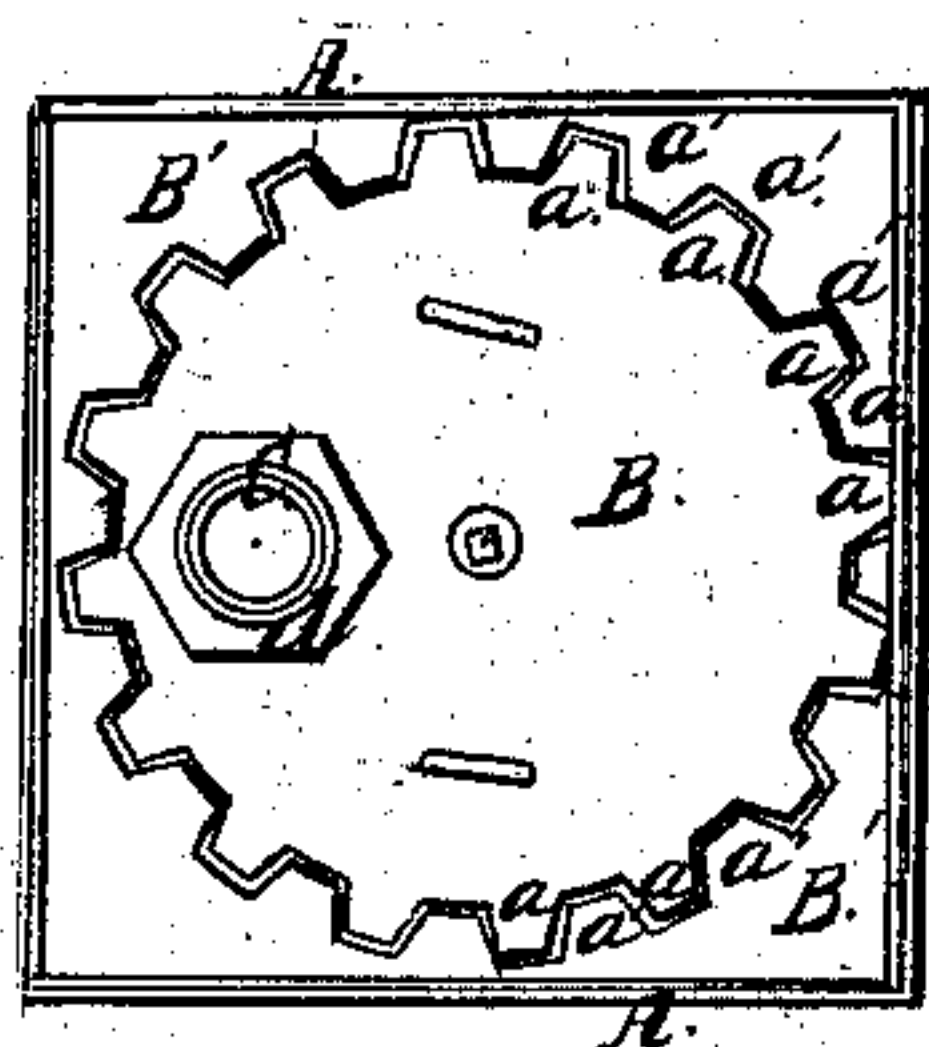


Fig: 3.

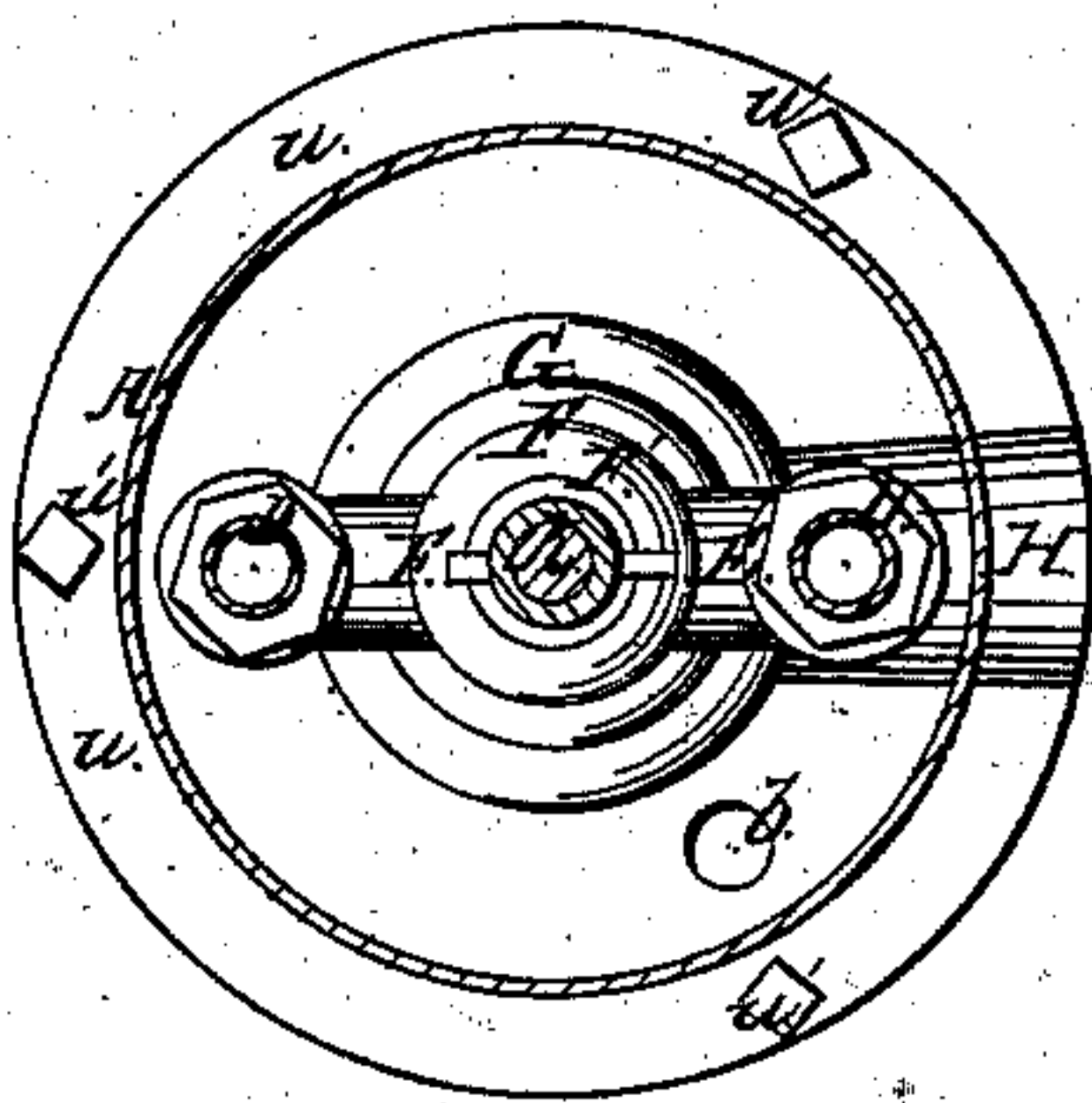


Fig: 2.

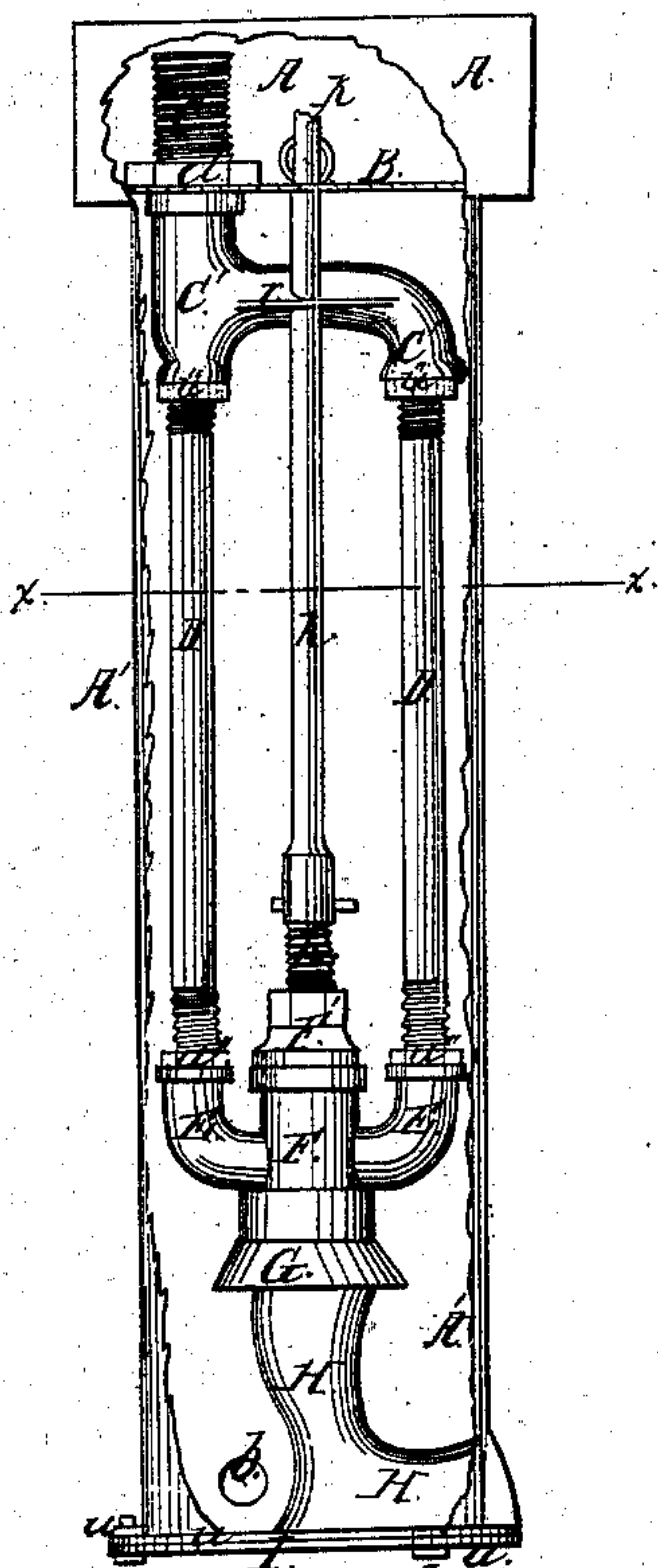


Fig: 4.

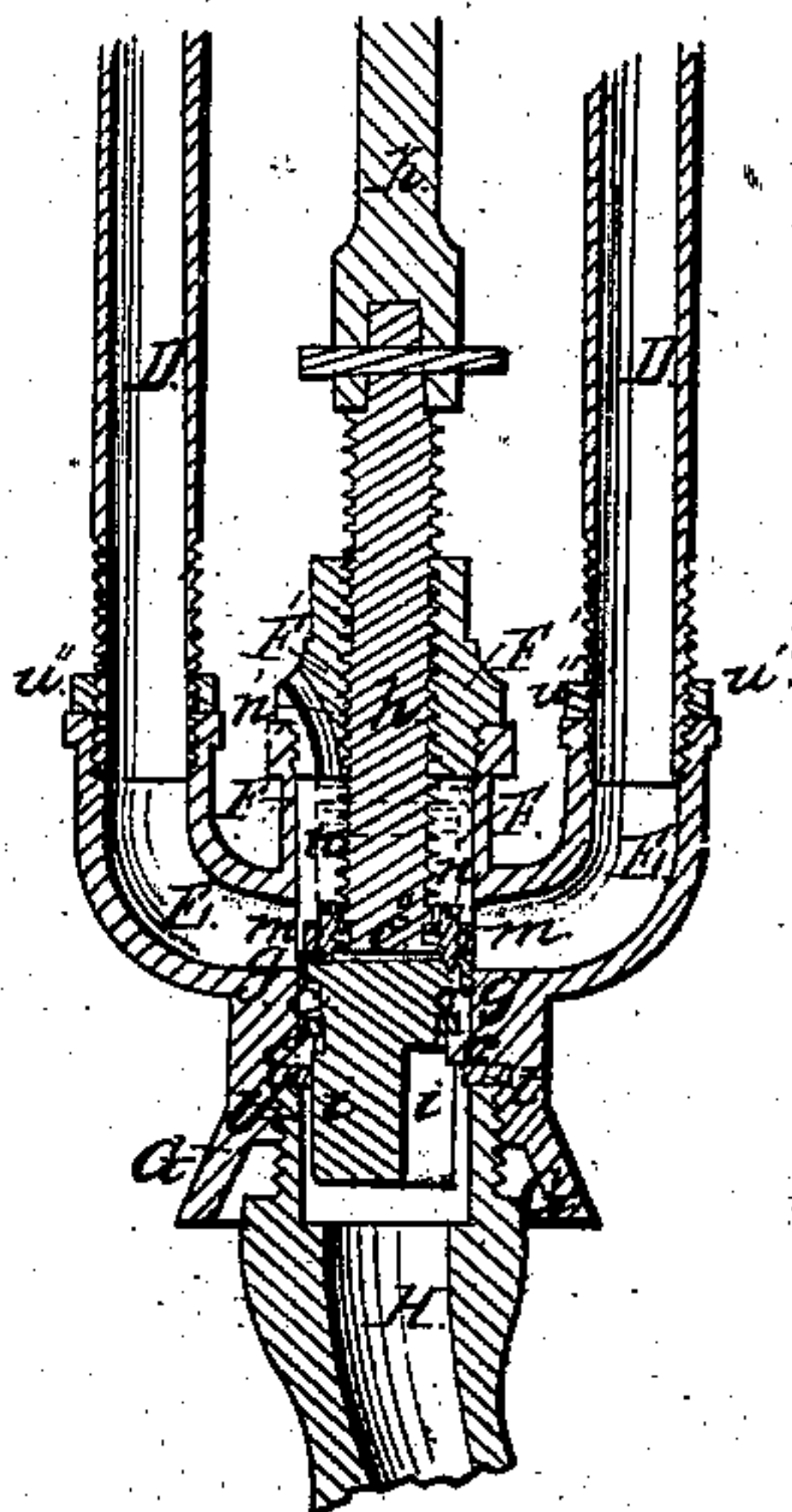
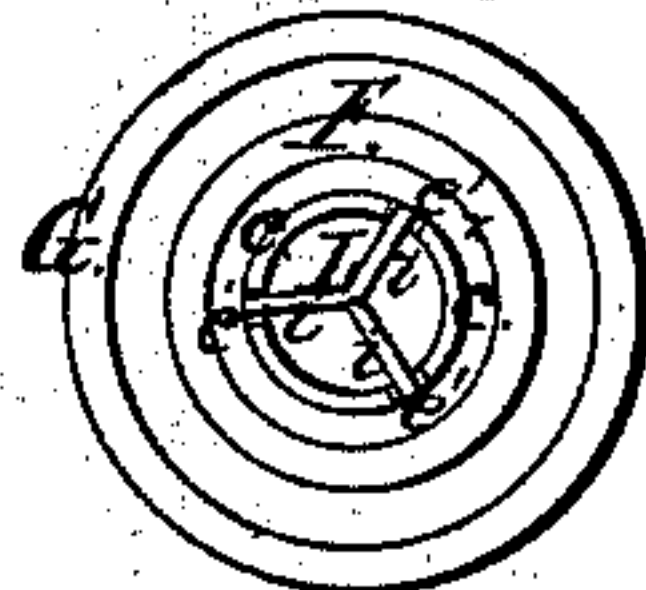


Fig: 5.



Witnesses:
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B. P. BOWER, OF CLEVELAND, OHIO.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. 54,845, dated May 22, 1866.

To all whom it may concern:

Be it known that I, B. P. BOWER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hydrants; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of the hydrant with the cover raised. Fig. 2 is a side elevation, with a part of the outside casing broken away to represent the inside. Fig. 3 is an enlarged transverse section in the direction of the line *xx* in Fig. 2. Fig. 4 is an enlarged vertical section through the lower part of the hydrant. Fig. 5 is a sectional view.

Like letters of reference refer to like parts in the different views.

My improvement relates to the manner of constructing hydrants, as hereinafter described.

In Figs. 1, 2, and 3, *A A'* represents the case. The part *A'* is of a cylindrical form, or it can be square, and the top *A* forms a box, to one side of which is hinged a cover that is opened in Fig. 1 to show the inside.

B is a circular plate with cogs or notches *a* round on the outside, that fit into notches *a'*, formed in the plate or bottom *B'* of the box, the notches in the bottom that receive the notches *a'* being depressed the depth of the plate *B*, whereby the plate is securely held in place. Through one side of this plate extends up a screw, *C*, from a bent pipe, *C'*, shaped as seen in Fig. 2, and from this pipe extends down connecting or side pipes, *D D*, which are screwed at the upper ends into the pipe, and at the lower ends they are screwed into curved pipes *E*, that project out from a cylinder, *F*, in the center. The lower part of the cylinder or valve-pipe *F* is enlarged and flaring, as at *G*, and is placed and screwed on the top of an induction-pipe, *H*, that enters the case on one side, where it is connected with the main. The pipe *H* can be cast in one with the bottom plate, *I*, of the case, entering at one side and extending up in the center. The bottom is secured on the case by flanges *u* and bolts *u'*, as represented in Figs. 2 and 3.

An enlarged view of the cylinder or pipe *F* and its connections, with the valve arranged

inside, is shown in Fig. 4, being a vertical section.

The valve *L* is constructed with wings *i* at the lower part, as seen in Figs. 4 and 5, that fit into notches or grooves *e'*, cut out in the valve-seat *e*, projecting from the inside of the cylinder to guide the valve and prevent it from working or turning round as it is opened or closed. Around the valve, where it comes onto the valve-seat, is packing *c*, to form a close joint, and above this, on the valve, is arranged cupped packing *g* that forms a close joint in the upper part of the cylinder when the valve is open, for the purpose as will be hereinafter described.

h is the valve-stem attached to the top of the valve by means of a collar, *e''*, that fits into a space formed by a washer, *m*, secured on the valve by screws *n*, as represented. By this means the valve-stem can be turned round without turning the valve, and at the same time raise or lower it, by means of the screw-thread on the valve-stem turning through a cap, *F'*, screwed into the top of the pipe *F*. In one side of the cap *F'* is a wasteway, *n'*, leading into the pipe *F* from the outside. The upper end of the valve-stem is attached to a rod, *k*, that extends up through a guide, *r*, on one side of the pipe *C*, through a hole in the center of the plate *B*, and to the top a key may be connected for opening and closing the valve.

d is a jam-nut on the screw *C* for holding the plate *B* down in place. *u'' u''* are jam-nuts at both ends of the pipes *D* to aid in holding them firmly in place.

The pipe or cylinder *F* is screwed onto the upper end of the pipe *H*, as seen in Fig. 4, there being packing *t*, that fits into a shoulder formed round in the pipe to make a close joint.

The manner of operating this hydrant as constructed and its advantages are as follows: The water coming from the main and rising in the pipe *H*, when the valve *L* is opened by turning the valve-rod *k* so as to raise the valve into the position indicated by the dotted lines in Fig. 4, the water will run into the curved pipes *E*, up through the connecting-pipes *D*, into the pipe *C*, to which the hose is connected. When the water is thus running through the pipes, the valve being elevated, the pressure of water in the pipe *F* around the valve forces the cup-packing *g* out against the inside of the cylin-

der, thereby preventing the water from rising past this point and being wasted by running through the wasteway *n'* or around the screw-stem. When the valve is turned down or closed, by reversing the motion of the screw the water in the pipes is emptied by running down into the cylinder, above the valve, and out through the wasteway *n'* into the case, from which it is discharged through holes *b* into the ground. The cup-packing *g* forms, also, a close joint in the cylinder, by the pressure of water below the entrance of the pipes *E* when it is closed, as shown in Fig. 4. When the valve is closed or down the water is shut off from the main and the water in the pipes discharged through the wasteway *n'*, as described, the wasteway being below the freezing-point. By this means the water can be drawn from pipes when not in use, which is a great advantage, particularly in cold weather, being thereby prevented from freezing, that produces much inconvenience and injures the pipes.

The valve is opened or closed, for the purpose of obtaining water or shutting it off, by raising the lid and turning the valve-rod by a key, which screws the stem up or down, raising or lowering the valve that moves vertically while the valve-stem turns, the valve being prevented from turning by the edge of the wings fitting into slots in the valve-seat. This prevents the friction or grinding there would be on the packing *c* if the valve revolved with the stem.

The screw-pipe *C*, cross or bent pipe *C'*, side connecting-pipes, *D*, curved pipes *E*, and cylinder *F* are all connected together with the valve and valve-rod, as represented and described, and can all be detached together from the case by unscrewing the nut *d* and lifting out the plate *B*; then place the hand upon the cross-pipe *C'* and unscrew the cylinder from the induction-pipe *H*, when they can all be

lifted out together for repair or any other purpose, and can readily be adjusted again into place by lowering them in the case, when, by means of the lower end of the cylinder being flaring, it will be easily guided onto the screw on the pipe *H* and screwed down in place. The plate *B* is then put on the top, and this plate being circular, it will fit onto the screw-pipe *C*, in whatever position it may be, whether turned more or less, and by means of the notches or cogs *a* it can be adjusted or turned so as to fit down into the cogs *a'*, if it does not come at first exactly down in place, so that the cogs will match into each other. This part of the hydrant being thus easily removed from and replaced in the case is a great convenience, as it requires no digging up of the ground, and is of much value in repairing the hydrant at any time.

The hydrant, constructed as described, can either extend above or be even with the ground.

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

1. The adjustable toothed plate *B*, the corresponding depressions in the plate *B'*, and the pipes *C'* and *D*, arranged in the manner and for the purpose set forth.

2. The adjustable tooth-plate *B*, with the corresponding depressions in the plate *B'*, as arranged in relation to the screw-stem *h* and cap *F'*, the washers *m*, valve *L*, packing *g*, and grooves *e*, in the manner and for the purpose set forth.

3. The cylinder *F*, with the flaring end *G*, pipes *E*, and pipes *D*, in combination with the packing *t* and induction-pipe *H*, arranged as and for the purpose set forth.

B. P. BOWER.

Witnesses:

W. H. BURRIDGE,

A. W. McCLELLAND.