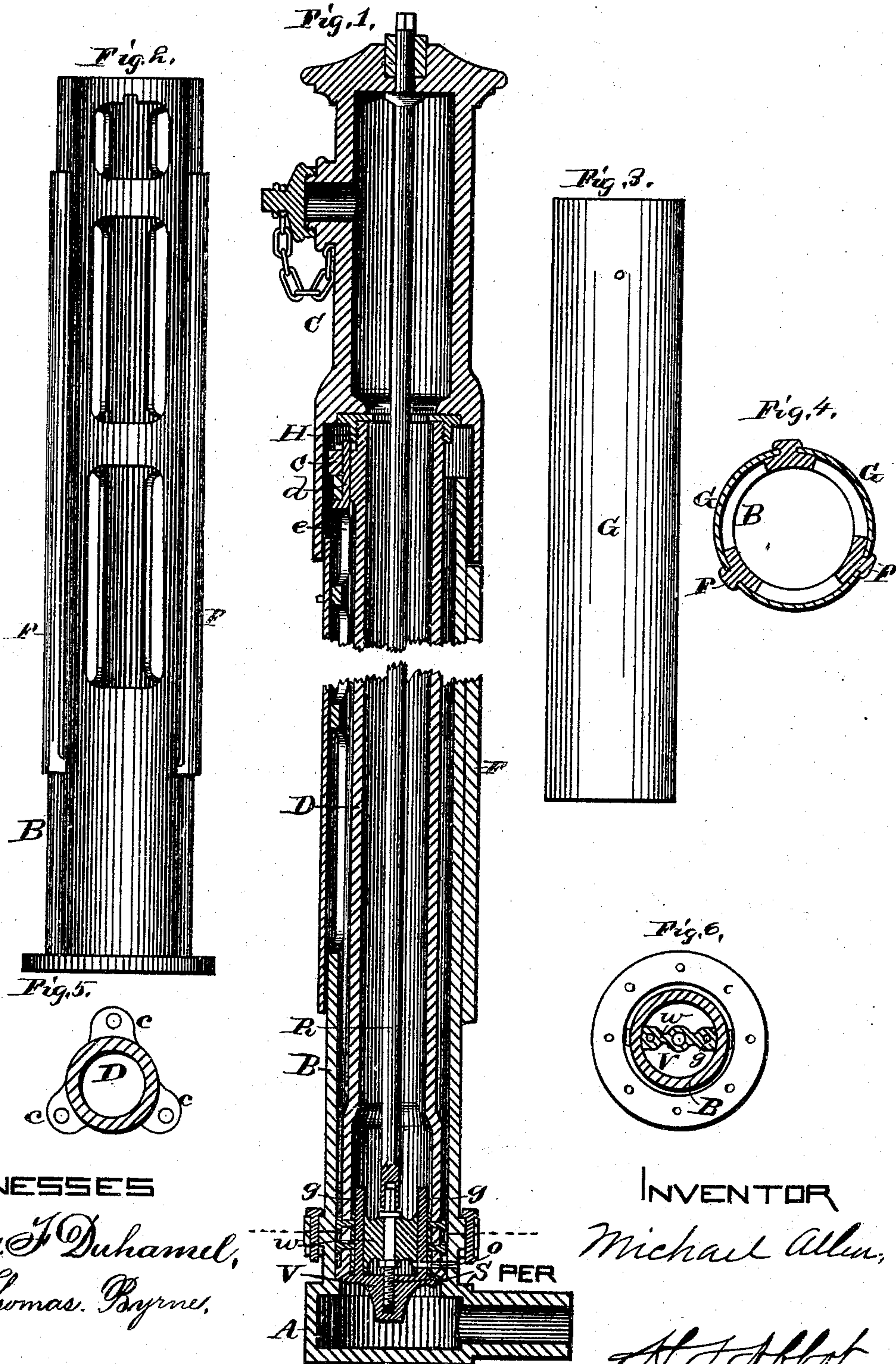


M. ALLEN.
HYDRANT.

No. 171,206.

Patented Dec. 21, 1875.



WITNESSES

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IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **171,206**, dated December 21, 1875; application filed November 5, 1875.

To all whom it may concern:

Be it known that I, MICHAEL ALLEN, of Natick, county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Hydrants, of which the following is a specification:

This invention consists in an improvement upon the hydrant for which Letters Patent No. 149,628 were heretofore granted to me on the 14th day of April, 1874, the details of which improvement will now be described.

In the drawing forming part of this specification, Figure 1 is a vertical section through the whole hydrant. Fig. 2 is an elevation of the skeleton or ribbed casing forming a middle section of the hydrant, which casing is provided with open panels, which are closed by the curved staves seen in elevation in Fig. 3 and in horizontal section in Fig. 4. Fig. 5 is a plan of the top of the hollow post or water-pipe proper of the hydrant, and Fig. 6 is a horizontal section through the cross-bar or web at the bottom of the hydrant, forming a guide for both the main valve and the screw, by which said valve is opened and closed.

The hydrant illustrated in the drawing and embodying the improvements constituting this invention is composed of three outer main sections, A, B, and C, and one inner section, D, which forms the water-pipe proper of the hydrant. The middle section B is secured to the lower section A by ordinary bolts and flanges, as clearly seen in the drawing. The base of section D rests upon a seat, either cast in section A or bored out to receive it, and near its top the said section D is provided with lugs *c*, through which it is secured by bolts *d* to the middle section B. The bolts *d* have hook-heads, which take hold in slots *e* in the upper panels of section B, and thus securely hold section D in position. The upper section C, provided with an ordinary fire-plug or hydrant nozzle, is secured to section D by means of the screw-threads *H*. The valve *V* is provided with two guide-stems, *g g*, which pass through holes in the cross web or bar *w*, and the valve is opened and closed by means of the screw-stem *S*, which stem having a square head is operated by the rod *R*, which passes up through the top of the hydrant, where it is packed by a stuffing-box, if de-

sired, and turned by means of any suitable handle or wrench. One of the guide-stems *g* is perforated, as seen at *o*, as is also the lug of the cross-web through which the stem *S* passes, which perforations, registering with each other when the valve is closed, allow any water which may be in the pipe *D* to escape, and thus prevent any danger of water remaining therein and freezing. The cross-web or guide-bar *w* is bolted to the pipe *D*, as clearly seen in the drawing. Such guides or webs have usually been cast in one piece with the pipe, or when cast separate they have been fitted between lugs or in recesses cast with the pipes; but experience has shown that in very cold weather they often break, owing to the contraction of the larger mass of metal composing the pipes, whose pressure they are unable to resist, on account of their necessarily smaller mass.

The object of making the middle section B in skeleton form, whose panels *p* are closed by curved staves *G*, is to reduce the weight of section B, so that it can readily be handled and put in place and removed by one man. The covers or staves *G* can be readily driven down between the grooved ribs *F* and removed therefrom by one man, thus reducing the force required for erecting and repairing the hydrants, which, as heretofore constructed, often require the joint efforts of several men to either set or remove them.

Having thus fully described these improvements in hydrants, as of my invention I claim—

1. The skeleton or open panel-section B, provided with grooved ribs *F*, for the purpose hereinbefore set forth.

2. The combination, with the open panel-section B, of the curved staves or panel-covers *G*, for the purpose hereinbefore set forth.

3. The combination of the sections A, B, and D, secured together by means of ordinary flanges and bolts connecting sections A and B, and by hook-headed bolts *d* connecting sections B and D through lugs *c* upon section *d*, and slots *e* in the panels of sections B, in the manner substantially as described, for the purposes hereinbefore set forth.

4. The detachable cross-web or guide-bar *w*, perforated for the guide-stems of the valve,

and also with a waste-water passage or passages, *o*, in the manner substantially as described, for the purposes hereinbefore set forth.

5. The valve *V*, shaped substantially as described, and provided within its base with screw-threads for its screw-stems *S*, and with guide-stems *g g*, one or both perforated by a waste-water passage or passages, *o*, in the manner substantially as described, for the purposes hereinbefore set forth.

6. The combination of the guide-web or

cross-bar *w*, valve *V*, and screw valve-stem *S*, all constructed, arranged, and operating substantially in the manner hereinabove described, for the purposes set forth.

In testimony that I claim the foregoing as my invention, I hereunto affix my signature.

MICHAEL ALLEN.

Witnesses:

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