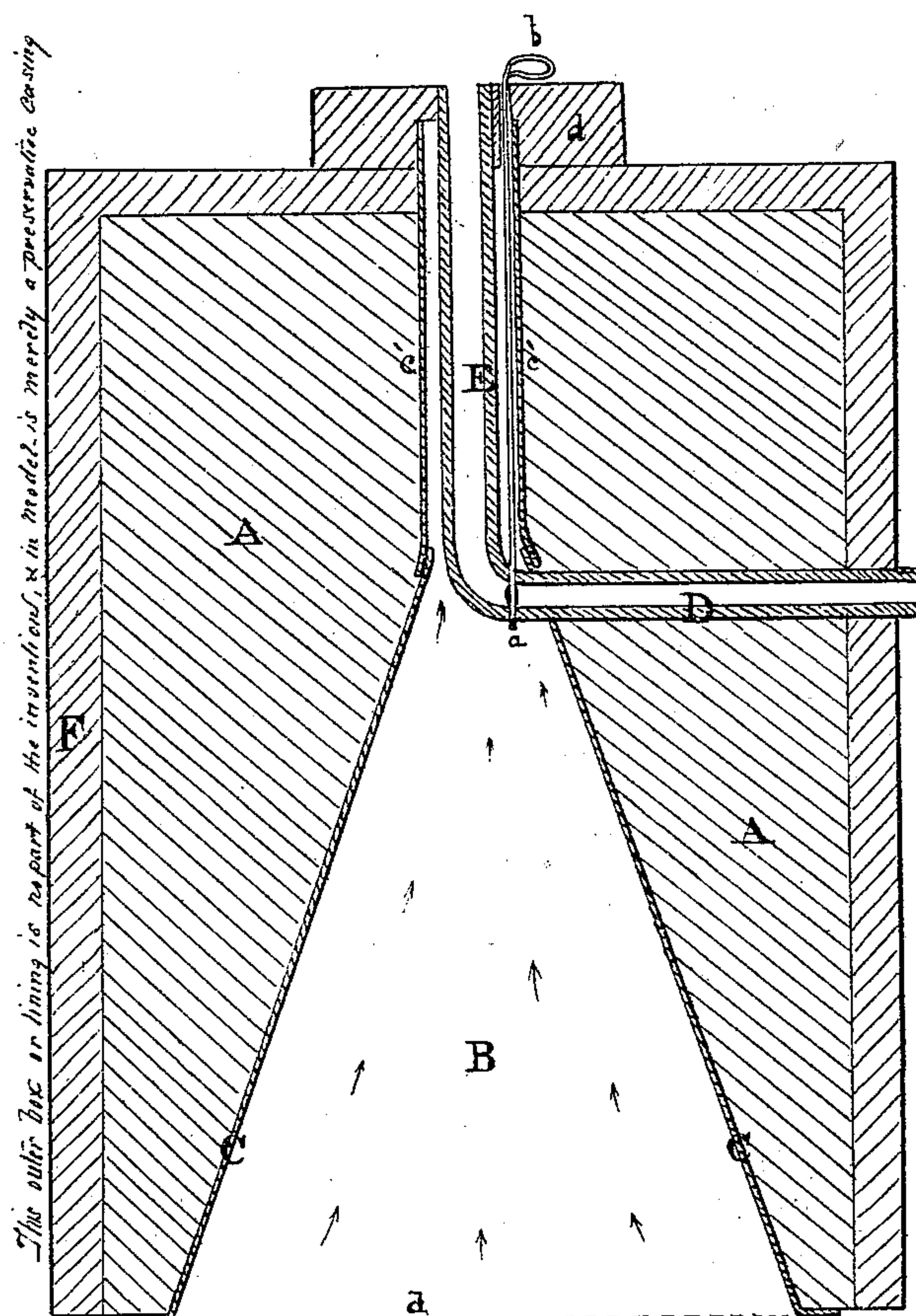


JOHN H. HALL.

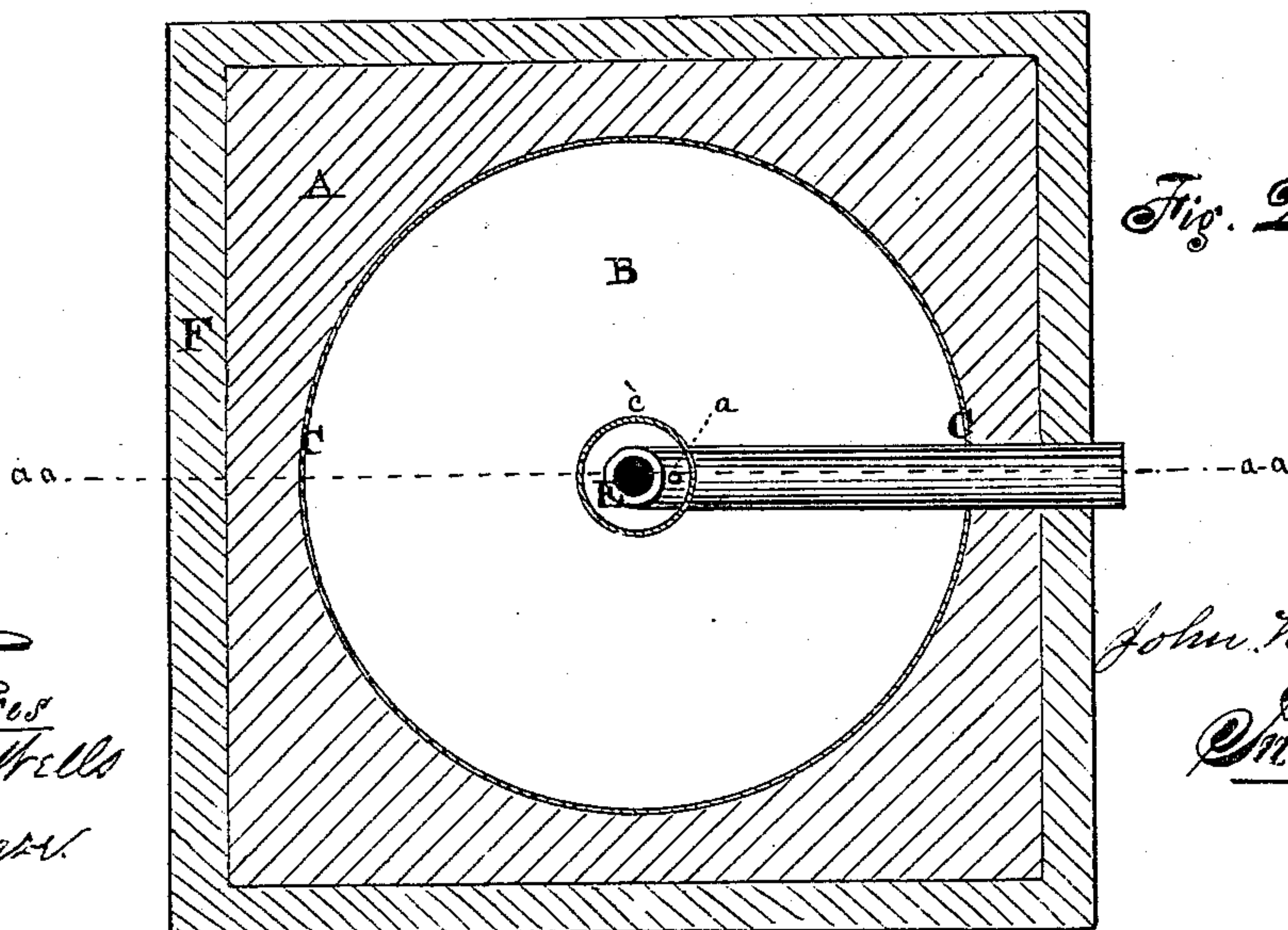
## Improvement in Non-Freezing Hydrants, &c.

No. 126,202.

Patented April 30, 1872.



*Fig. 1.*



*Fig. 2.*

Witnesses  
Henry H. Wells  
James Hurst.

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Inventor



## UNITED STATES PATENT OFFICE.

JOHN H. HALL, OF PEORIA, ILLINOIS.

## IMPROVEMENT IN NON-FREEZING HYDRANTS, &amp;c.

Specification forming part of Letters Patent No. 126,202, dated April 30, 1872.

*To all whom it may concern:*

Be it known that I, JOHN H. HALL, of the city of Peoria, in the county of Peoria and in the State of Illinois, have invented a Thermal Chamber or Subterranean Air-Space and Jacket for the Protection of Water-Main Hydrants, or Stop-Cocks, &c., from Frost; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a sectional elevation through the line *a a a a*, Fig. 2; and Fig. 2, a sectional plan of the same, drawn on a scale of half an inch to one foot.

This invention consists in excavating, in the soil beneath and around water or fire plugs or the waste-cocks of hydrants which are situated below the surface of the ground, a space or chamber, B, sufficiently wide and deep (about five feet below the stop-cock or pipe) to allow the warmer soil at that depth, in winter, to temper the space thus excavated surrounding the hydrant or its waste-cock or stop-cock by the escape of the warmth at such depth and its retention in said space or chamber, by which means the pipe and valve and contained water are prevented from freezing; also, in the protection and preservation of such excavated space by means of a suitable "jacket" or non-conductor, having an extension which reaches to the surface of the ground and surrounds the hydrant-pipe. The supply-pipe D passes through a hole or notch in the jacket.

In the drawing, A, Fig. 1, represents a vertical section of the soil surrounding the supply (vertical) pipe E, from the main pipe; B, the thermal chamber or warm-air space, which terminates at or near the stop-cock or waste-valve *a* in a narrower space or well surrounding the vertical hydrant-pipe E; D, horizontal supply-pipe from "main;" C, a jacket of metal or wood, or a non-conducting substance or combination of the same, and stands on the bottom of the chamber B, and is designed to keep the soil from filling said chamber. In the model and drawing the jacket C is a hol-

low cone, standing on its base on the bottom *d* of the chamber B, and terminating, at or near the hydrant-valve or waste-valve *a* of the pipe E, in a vertical tube, *c' c'*, which surrounds the latter pipe E, whence the tube extends to the surface of the ground, where it is closed to exclude cold of winter or the heat of summer. Of course any modification of this system which will preserve a space around the valve *a* and adjoining pipes for warm air from the chamber or lower part of it will have the same result.

The operation of this invention is as follows: The thermal chamber B is excavated deep enough below the vertical hydrant-pipe E and its elbow and waste-valve *a* to insure a sufficiency of warm air from the deeper soil, to be retained in said chamber so as to preserve the said valve *a* and adjoining parts of the pipes D E from freezing or from congealing from the operation of the waste water which would otherwise collect at the escape-duct *a*, under the valve, were the chamber B not excavated. The rising warmth from the lower part of chamber B is concentrated at the valve *a* and up the tube *c' c'* surrounding the vertical pipe E, and in some cases up through the waste-duct of valve *a* through the vertical hydrant-pipe E, so as to prevent the water from freezing when in contact with the sides of the pipe even for some distance above the surface of the pavement *d* or surface of the ground. In the model and drawing the outer box F merely protects the plaster model.

What I claim as my invention is—

The subterranean thermal chamber B *c*, in combination with supply-pipe D and hydrant-pipe E, substantially as and for the purpose as set forth.

In testimony that I claim the foregoing thermal chamber for hydrants, &c., I have hereunto set my hand this 16th day of February, 1872.

JOHN H. HALL.

Witnesses:

HENRY W. WELLS,  
JAMES MORSE.