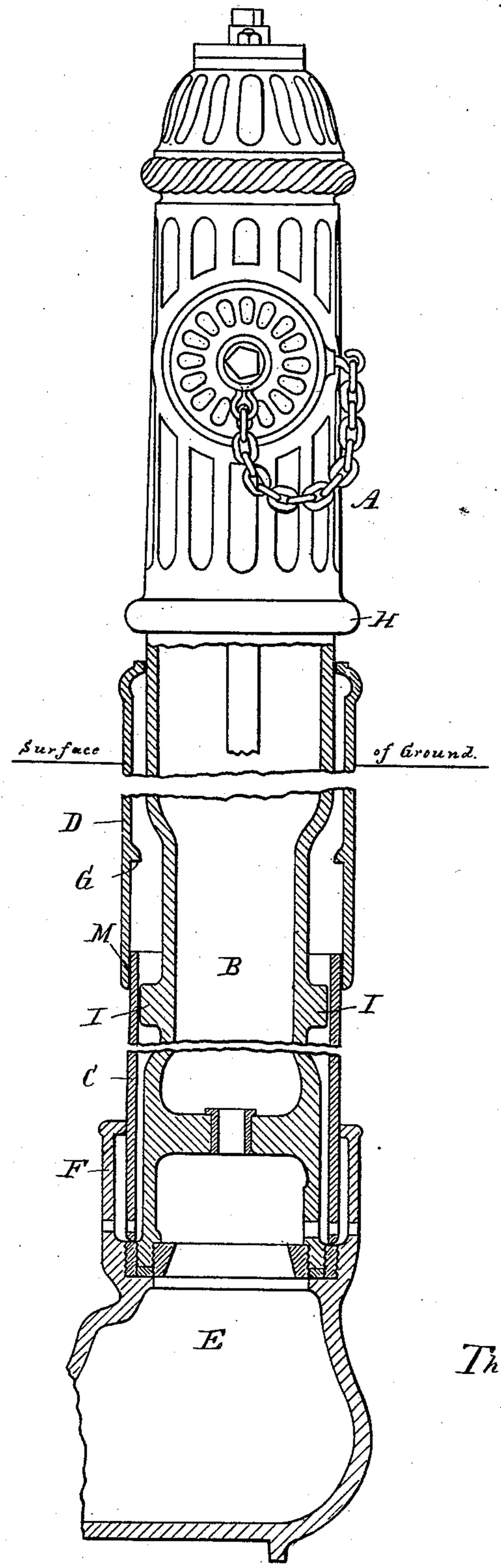
(No Model.)

T. K. CHRISTIE.

HYDRANT.

No. 349,206. Patented Sept. 14, 1886.



Attest:
John Schuman.
[illegible]

Inventor:
Thomas K. Christie
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UNITED STATES PATENT OFFICE.

THOMAS K. CHRISTIE, OF DETROIT, MICHIGAN.

HYDRANT.

SPECIFICATION forming part of Letters Patent No. 349,206, dated September 14, 1886.

Application filed February 4, 1886. Serial No. 190,752. (No model.)

To all whom it may concern:

Be it known that I, THOMAS K. CHRISTIE, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Hydrants; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification.

This invention relates to a new and useful improvement in hydrants; and the special feature of my invention consists in a new and improved construction of the so-called "frost-case" of a hydrant, and which, as at present constructed, consists of a loose case or jacket surrounding that portion of the hydrant-stock embedded in the ground, all so arranged that the heaving action of the ground is entirely expended upon this outside case, and can in nowise affect the hydrant and cause damage.

The drawing accompanying this specification shows in vertical central section a hydrant to which my improved frost-case is applied, and in which the letters refer to the following parts.

A indicates the upper portion of the hydrant proper, which is above ground, and B the lower portion of the same, which is below ground and inclosed by the frost-case. The frost-case is of cylindrical form, and consists of two sections, C D, of about equal length, and connecting with each other by means of a slip-joint, M. The lower section, C, of the frost-case rests upon the elbow E, which latter is provided with a cylindrical extension, F, with which this section also forms a slip-joint. The upper section, D, of the frost-case slips over the lower section, and rests thereon by means of a shoulder, G, formed on the inside of the upper section. The two sections of the frost-case together surround all that portion B of the hydrant which is buried in the ground, and the upper end of the frost-case, which reaches to or above the surface of the ground, forms a slip-joint with the stock of the hydrant. The latter is provided some distance above the ground with a stop or shoulder, H, so arranged as to prevent the upward displacement of the upper section of the frost-case beyond the limit of the engagement of the two sections. The lower portion of the stock of the hydrant is provided with several projecting lugs, I, arranged to keep the lower section of the frost-case properly centered in relation to the stock of the hydrant and prevent the two sections from binding upon each other.

It will be seen that my improved frost-jacket can be given considerable more end-play, to compensate for heaving by frost, than the ordinary jacket in one piece. In the latter construction the amount of end-play provided is equal to the length of the slip-joint of the jacket in the elbow. In my improved construction it is equal to the length of that same slip-joint plus the length of the slip-joint in the middle of the case.

There are practical objections against making a long slip-joint between the case and the elbow, and experience has proved that in our severe northern winters this joint is found generally insufficient (or inefficient) to compensate for the upheaving by frost, and, if this joint fails to work, damage to the hydrant is inevitable.

In my improved construction there is little possibility of failure with the slip-joint in the middle of the case; nor is there any practical objection to making it as long as required, and therefore the upheaving of the ground, which is most pronounced nearer the surface of ground, cannot work injury through the failure of the frost-case to heave. Furthermore, I find that in such winters where a succession of freezing and thawing spells occur the jacket in one piece is gradually heaved up to its full limit, and remains there until it is forcibly driven back, while with my improved case the upper section drops readily back again into place during a thawing spell, thus leaving its further utility unimpaired.

I consider it within the spirit of my invention to increase the number of sections; but I preferably confine myself to a frost-case in two sections as the most practical for use.

What I claim as my invention is—

1. In a hydrant, the combination, with the elbow provided with cylindrical extension F, of the lower section, C, of the frost-case, resting on said elbow and loosely fitted within said extension, and the outer section, D, loose-

ly fitted over the section C, and provided with a shoulder to engage the top edge of the section C, substantially as and for the purpose specified.

2. The combination, with the lower sections, B, of the hydrant, provided with shoulder H and lugs I, of the elbow E, provided with cylindrical extension F, the lower section, C, of the frost-case, resting upon said elbow within said extension, and the upper outer section, D, of the frost-case, loosely fitted over the section C, and having formed integral therewith the shoulder G, to engage the top edge of said section C to prevent the section D from falling too far, substantially as described.

THOS. K. CHRISTIE.

Witnesses:
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