

C. BIGEON.  
STREET GUTTER.

No. 192,811.

Patented July 10, 1877.

Fig.1

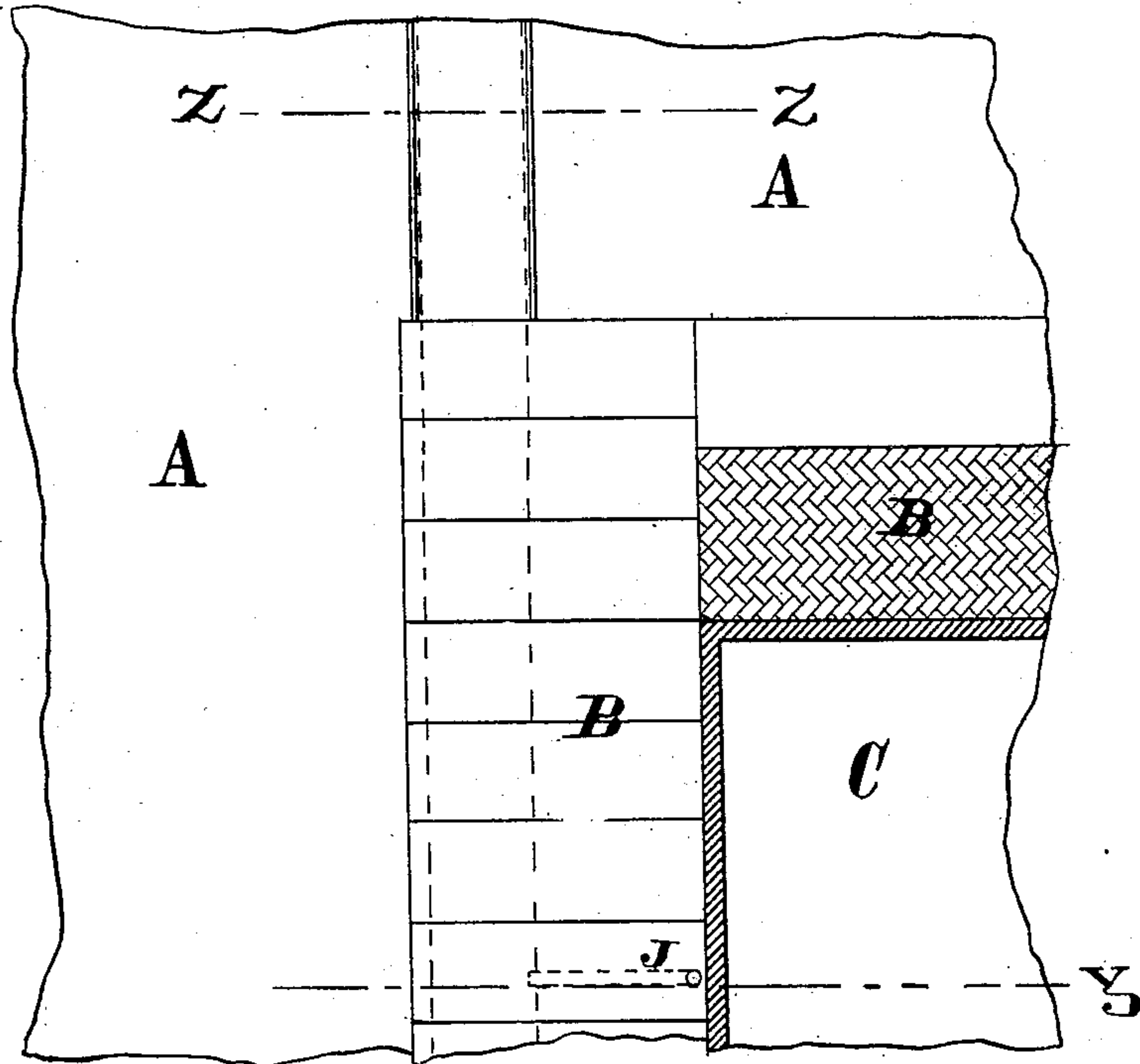


Fig.2

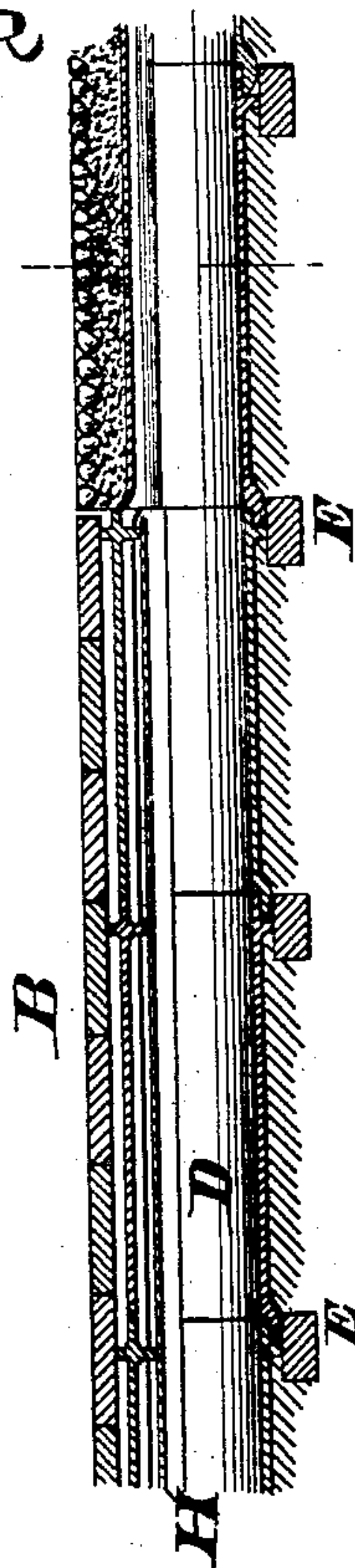


Fig.3

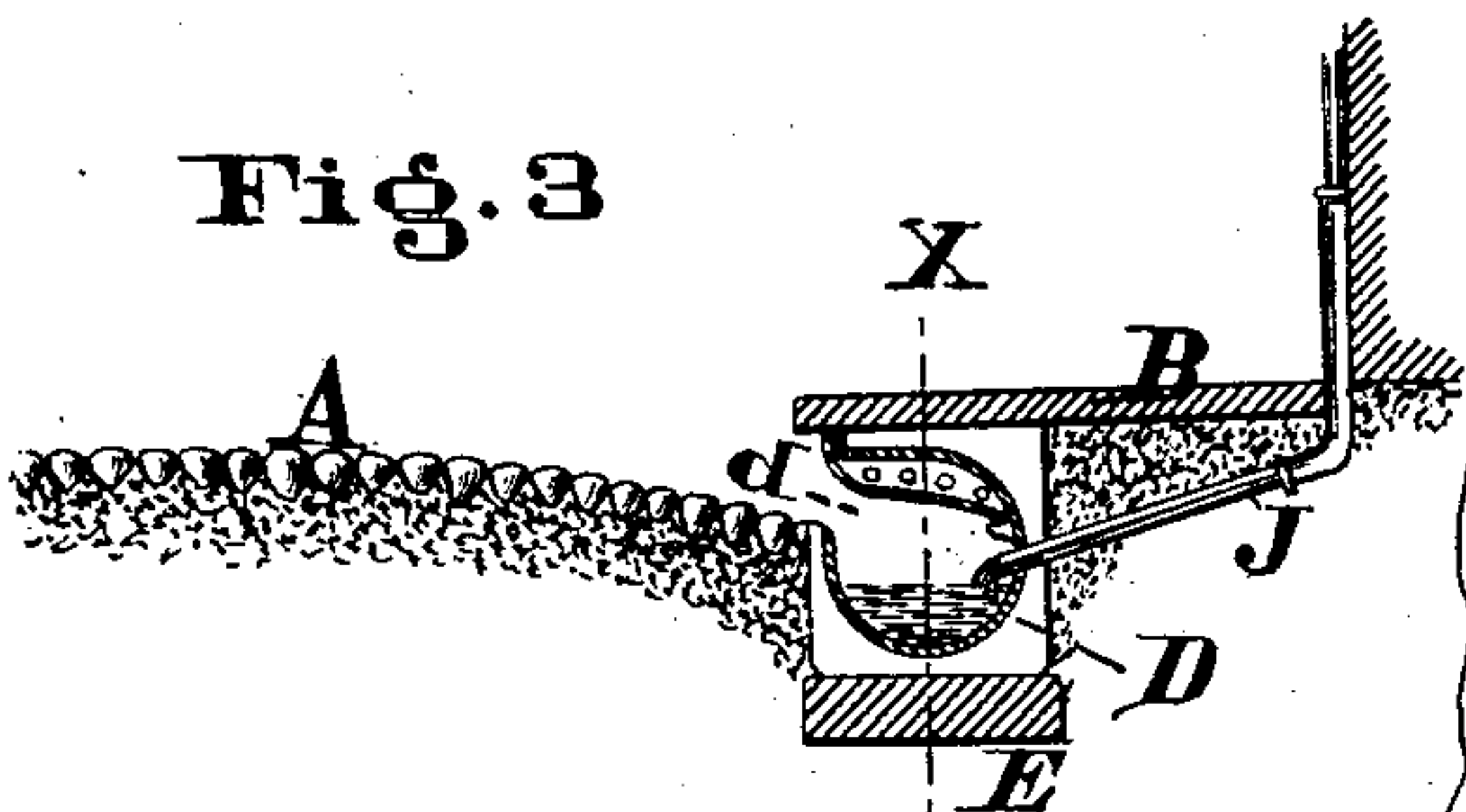


Fig.7

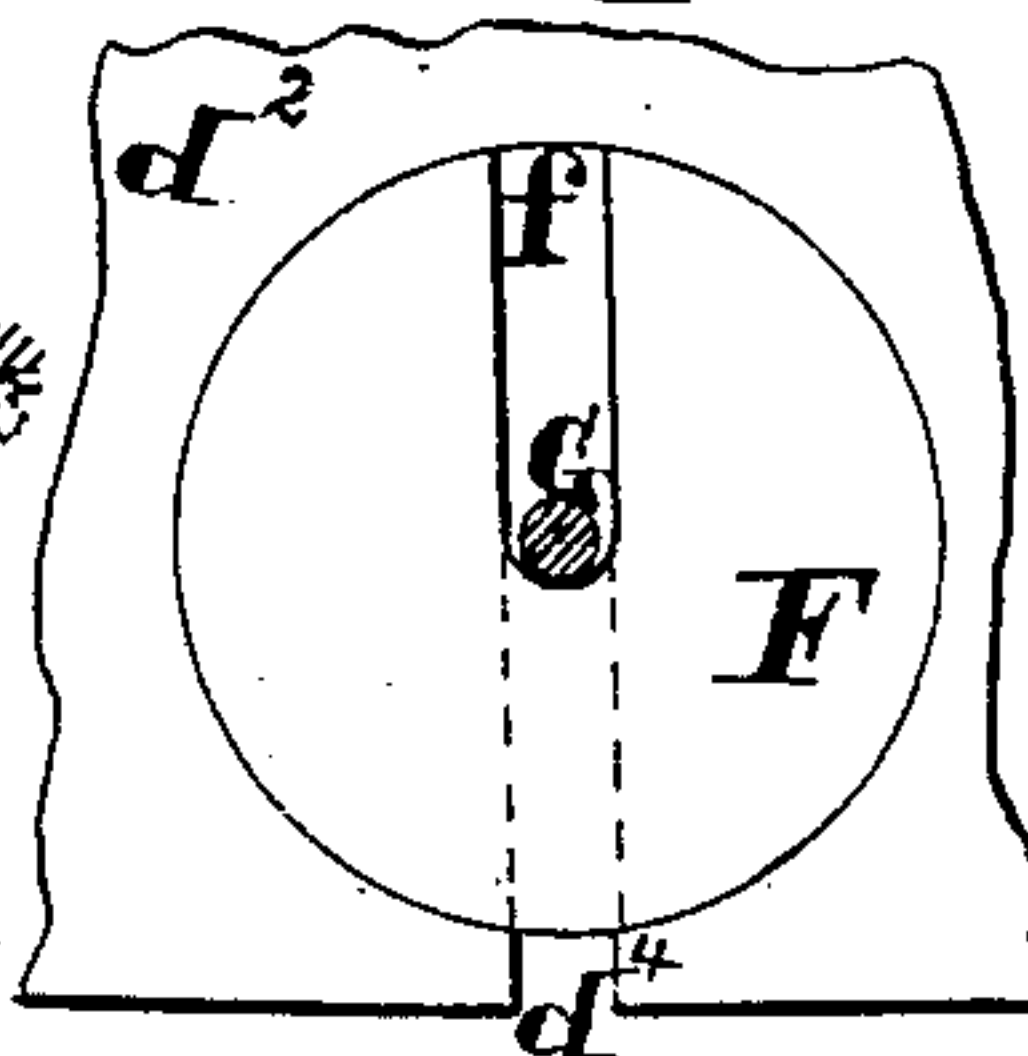


Fig.5

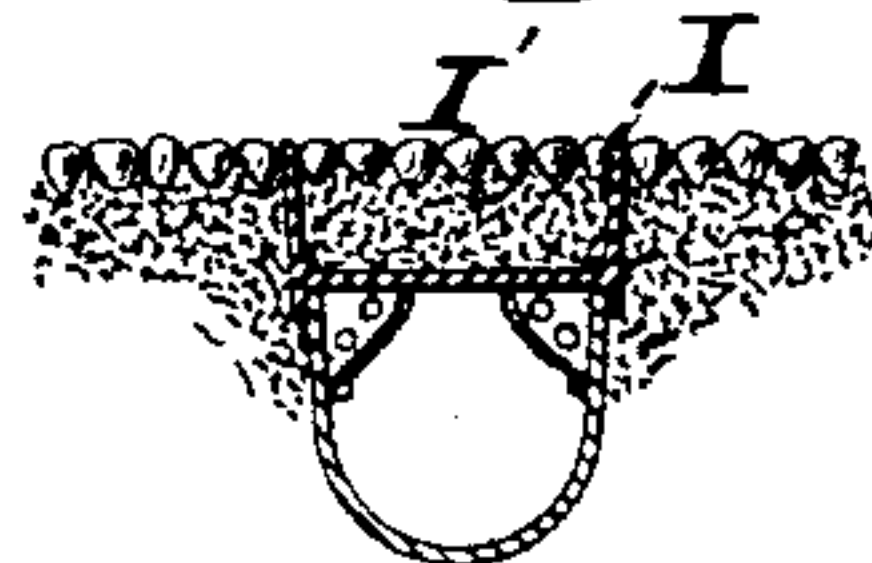


Fig.4

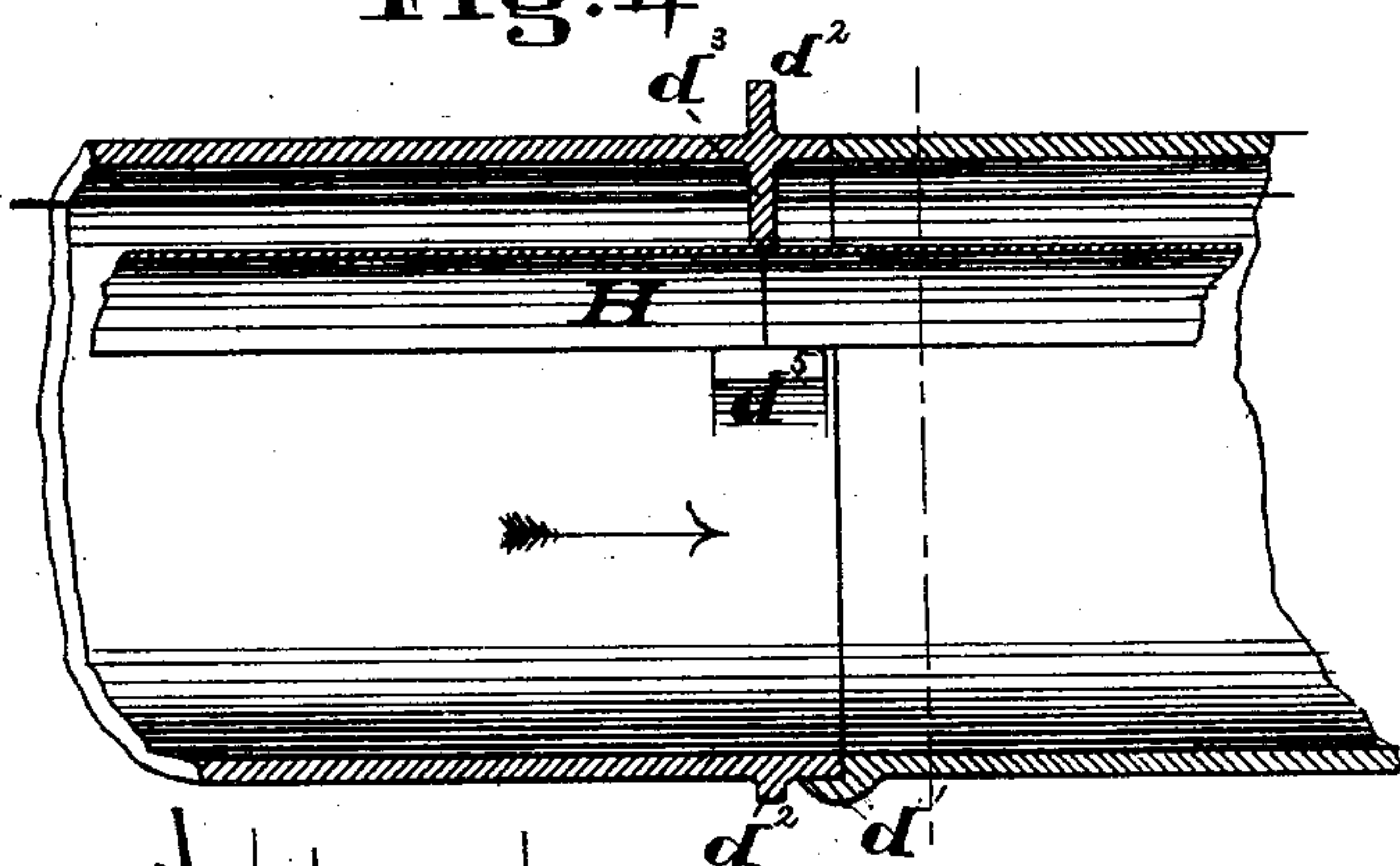
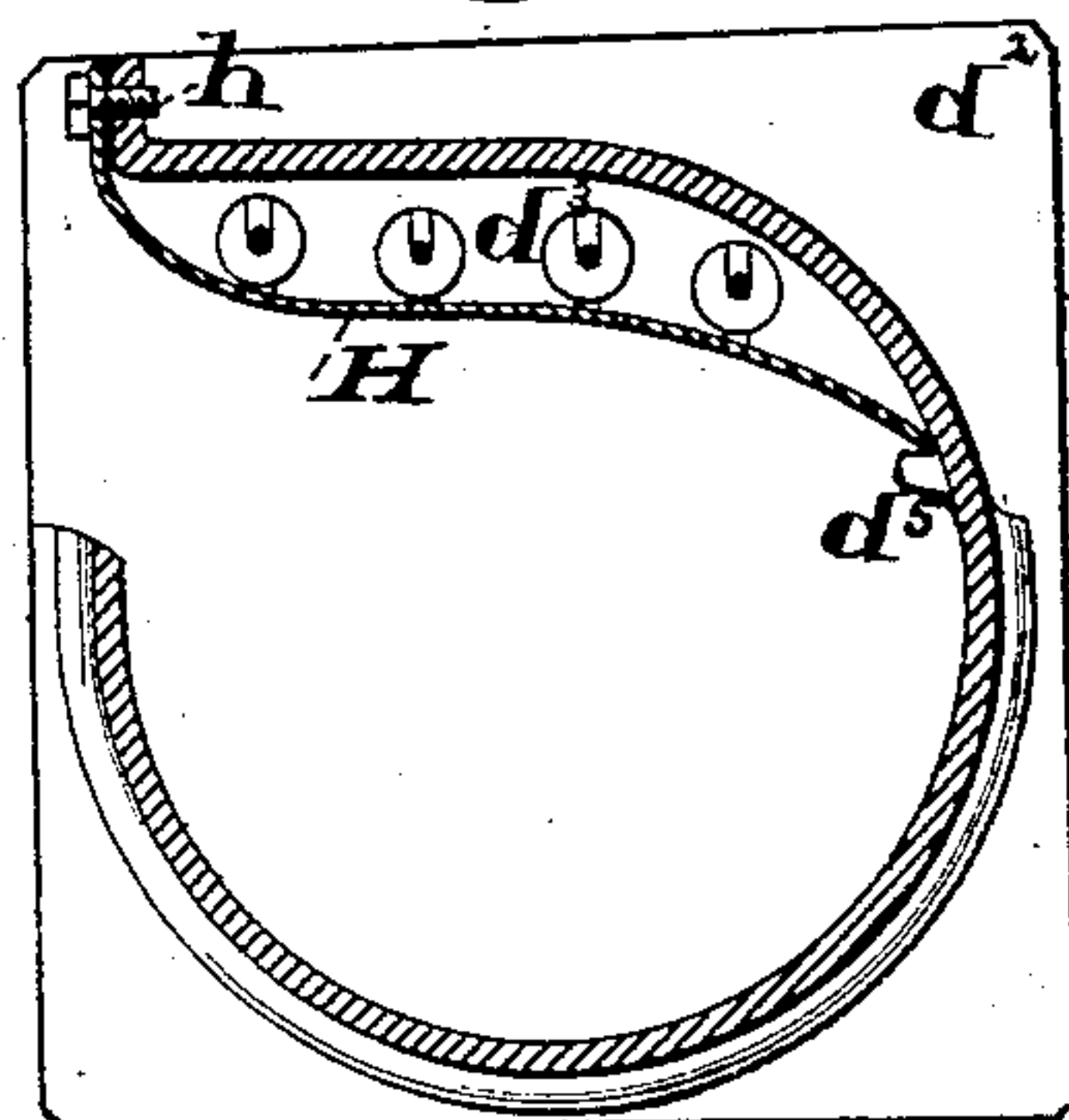


Fig.6



Attest  
The Word  
C. Van Keulen

Inventor  
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per J. Van Kannel  
att'y.



# UNITED STATES PATENT OFFICE.

CHARLES BIGEON, OF CINCINNATI, OHIO.

## IMPROVEMENT IN STREET-GUTTERS.

Specification forming part of Letters Patent No. **192,811**, dated July 10, 1877; application filed April 11, 1877.

*To all whom it may concern:*

Be it known that I, CHARLES BIGEON, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Street-Gutter; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In the drawings, Figure 1 is a plan, showing a portion of two intersecting streets, sidewalks, and of a corner house. Fig. 2 is a vertical section taken in the line *x* of Fig. 3. Fig. 3 is a vertical section taken in the line *y* of Fig. 1. Fig. 4 is an enlarged view of a portion of Fig. 2. Fig. 5 is a vertical section taken in the line *z* of Fig. 1. Fig. 6 is an enlarged view of Fig. 3, and Fig. 7 is an enlarged view of one of the insulators.

The nature of my invention relates to a street-gutter, which is somewhat similar in shape and action to a sewer, being situated just within and a small distance below the outer edge of the sidewalk. The side of the gutter looking toward the street has a longitudinal opening to receive the water running off the street. The stones forming the sidewalk project some distance over the gutter-casting to protect it from breakage by the wheels of vehicles. It also relates to provisions made in this gutter for the suspension therein of the city fire and police telegraph wires, which are thus protected from winds, sleet, and other causes of breakage and accidents, and saves their being attached to roofs, much to their detriment, as well as saves employes from the danger of climbing to house-tops, and its consequent annoyance to occupants thereof.

Among the advantages of this gutter may be mentioned its sanitary qualities, as its smooth and regular surface prevents any dirt from accumulating, and is therefore almost a self-cleaning gutter. Should, however, any quantity of solid matter accumulate, a scraper partaking of the form of the gutter may be introduced, and the same cleaned effectually; also, as the water cannot enter the earth from

this gutter for this reason, the earth cannot absorb the dirty water from the channel; further, the gutter-water being entirely hid from the action of the sun, no deleterious vapors are thrown off, as in the style now in use. For these and other obvious reasons this gutter will greatly add to the sanitary conditions of a city using them. Other advantages are, that the surface of the sidewalk, from that of the street, is less distant, which quality of a street is desirable, providing a sufficient water-channel is secured; also, it saves the curb-stone and the bottom stones forming the floor of the old-style gutter. It saves much labor in the repairing of streets, as the curb-stones become loose and settle when the paving of the street has in any way been interfered with. Also, in erecting new buildings it is now common to dig a trench across the street and direct the flow of the gutter-water therein, leaving the street in a dangerous condition for months at a time. Where my improved gutter is in use this trouble is entirely obviated, as the gutter-water would flow in its regular channel and not fill the newly-dug cellar or foundation-trenches. It is also arranged to receive house-gutters under the surface of the sidewalk, avoiding the nuisance of running a stream of filthy water across the sidewalk. It also adds practically to the width of the street, as there is no extra declivity given that part of the street next to the sidewalk.

Another advantage of my gutter consists in the cheap and efficient arrangement provided for lighting the street-lamps by means of electricity, by using simply a connecting-wire from the main line in the gutter to the key in the lamp through the lamp-post; also, the opportunity given to increase the drainage of the gutters where the streets are unusually level, and in many cases streets and cellars are flooded with water from want of sufficient drainage. It is intended to increase the size and capacity of the gutter according to the requirements—smaller in the beginning and deeper as it continues, leaving the side opening, however, always the same.

In construction my invention is as follows: A represents the street; B, the sidewalk; and C, a portion of a building. My improved gutter is represented at D, being open at *d*. This



gutter is made in sections and overlapped, as shown in the drawings at  $d^1$ , it being preferably made of cast-iron; but other suitable materials may be used. These sections are provided at certain points with ribs cast on transversely, and on the outside marked  $d^2$ , which secure its square sitting on the bed-stones E. Inside and near the top is another rib,  $d^3$ , being perforated at various points, as shown, to receive insulators F, in which are suspended wires G. These perforations are cut out with a narrow cut,  $d^4$ , to admit the wires, and a similar cut is given the insulator at  $f$ , as seen in Fig. 7. In order to protect the wires from being tampered with, a covering-lid, H, is laid on lugs  $d^5$  of the main casting, and the lid secured above by a bolt,  $h$ . Where the gutter crosses a street a modification of the gutter is seen in Fig. 5, where the top, instead of the side, is open, and the opening covered with sections of lids or covers I, made detachable and trough-shaped, being brought flush with the surface of the street, the space in the cavity at I' being filled with the same material as is used for paving the street. The upper portion of the sides are branched, so as to form cavities into which the insulators are fastened similarly to those in the gutter-casting.

In operation my invention is as follows: The water flowing from the streets enters the opening  $d$  of the gutter in uniform quantities.

As it increases, the depth only of the gutter is increased, thus giving the additional capacity required. Where it flows into a trap or main sewer, a suitable connection is made between the gutter and sewer, so as not to form an obstruction, and giving the stream no chance to wash the bowlders or other parts of the streets.

In the attachment of the wires the wire is first inserted in the cut of the rib, and also in that of the insulator, the latter having been screwed into the iron, and when left the cut of the insulator is made to point upward, thus holding the wire securely in place. The other portion of my improved gutter is easily understood from the description above given.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the following elements: the foundation E, the gutter D, having the rib  $d^2$ , adapted to rest upon the foundation, and the covering-plates B, adapted to rest upon the gutter, as described.

2. In combination with the gutter, having the ribs  $d^3$   $d^5$ , the inclosed wire and covering-plates H, as described.

CHARLES BIGEON.

Attest:

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