No. 752,911. PATENTED FEB. 23, 1904.

J. C. MARRIOTT.

SYSTEM OF SNOW DISPOSAL.

APPLICATION FILED JUNE 30, 1903.

NO MODEL.

Fig. 1.

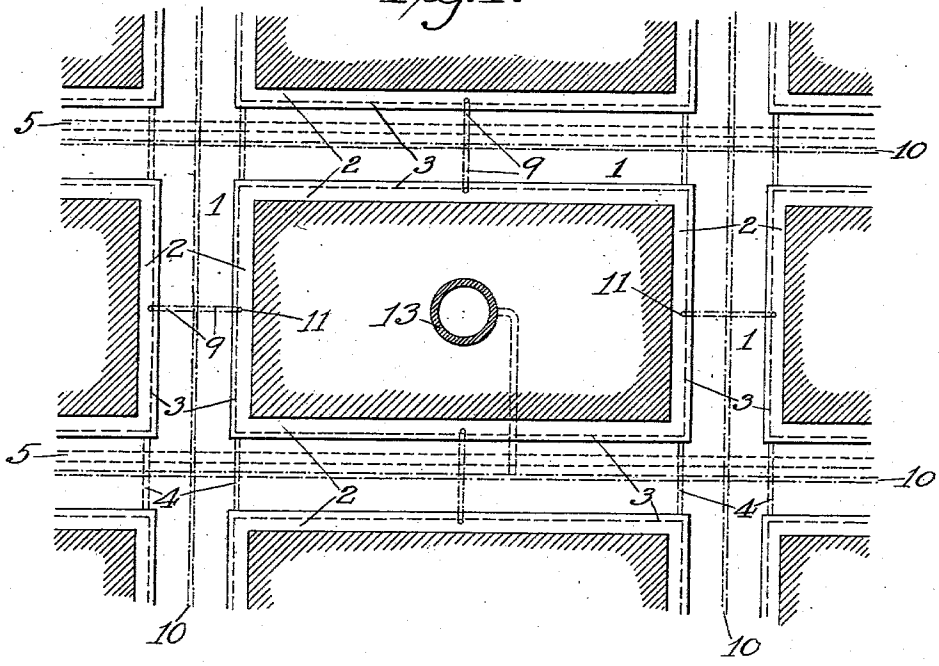


Fig. 2.

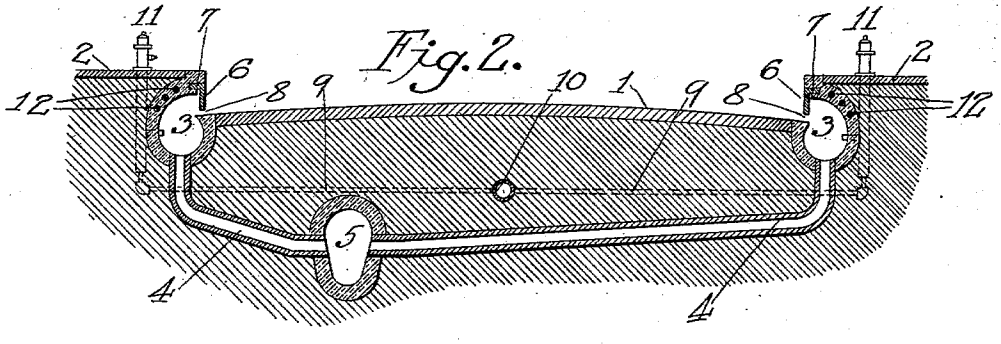
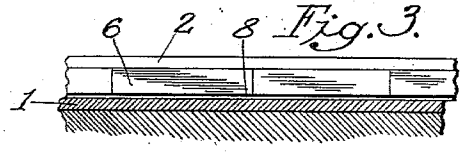


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES C. MARRIOTT, OF NEW YORK, N. Y.

SYSTEM OF SNOW DISPOSAL.

SPECIFICATION forming part of Letters Patent No. 752,911, dated February 23, 1904.

Application filed June 30, 1903. Serial No. 163,672. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. MARRIOTT, a citizen of the United States, residing in the city of New York, county of Richmond, and State of New York, have invented a certain new and useful System of Snow Disposal; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a system of snow disposal intended particularly for use in removing snow from the streets of cities, bridges, viaducts, and open spaces generally; and my invention consists in snow-removal conduits having openings through which snow may be introduced therein, said conduits connected to the water-mains or other suitable sources of water-supply and provided with means for admitting and regulating the flow of water from such mains into the conduits to melt and carry away the snow. These conduits are conveniently located at the curb-lines of streets or driveways and may form the curbs. When sewers are available, the conduits are preferably connected to the sewers at intervals, so as to discharge therein. The openings for the admission of snow with which the said conduits are provided may be continuous, or substantially so, throughout the length of each conduit and arranged to permit snow to be shoveled directly into the conduits, and such openings may be closed by guard-plates which may be removed or moved out of the way when snow is to be passed into the conduits, but which at other times prevent the entrance of articles into said conduits. However, these guard-plates are usully so arranged as to permit the passage of surface water from the street into the conduits, so that said conduits may normally serve to receive rain-water and the like and to discharge the same into the sewers, thus serving the purpose of gutters.

The objects of my invention are to facilitate the removal of snow from city streets, to reduce the expense of such removal, and to avoid the necessity of carrying the snow away in wagons, as is now the common practice.

A further object of my invention is to remove surface water, such as rain-water, from streets in an improved manner and to avoid running streams through exposed gutters of streets during heavy rainfalls.

In the accompanying drawings I illustrate one method of carrying out my invention.

In the said drawings, Figure 1 is a plan view showing four city streets and in dotted lines sewers and water-pipes therein, together with the conduits for removing snow employed according to my invention. Fig. 2 shows a cross-section of a street, showing the snow-removal conduits, the connections thereof to sewers, and the connection of water-pipes to the conduits. Fig. 3 is a longitudinal view showing particularly the sectional guard-plates.

In the said drawings, Figure 1 designates the road-surface or pavement of a street, 2 2 the sidewalks thereof, and 3 3 the snow-removal conduits above mentioned. These conduits may be formed of any suitable material, such as cast-iron, concrete, cement, and the like. Ordinarily I prefer to form them of concrete or cement and to make them of sufficient strength and stability, so that, as shown, they may serve as curbstones. These conduits are connected at suitable intervals by means of pipes 4 to sewers 5 or other suitable means for carrying away surface water and melted snow.

As shown, the snow-conduits 3 are preferably provided with openings adjacent to the roadway adapted to be closed by guard-plates 6. These guard-plates are capable of being removed or moved out of the way to permit snow to be shoveled into the conduits, and for such purpose said guard-plates may have lips 7 fitting within corresponding grooves in the conduits, and thereby supporting said guard-plates. These cover-plates do not extend quite to the street-surface, openings 8 being left to permit the escape of surface water into the conduits. Such openings, however, are so narrow as to prevent all but the very smallest objects from falling into the conduits, and so becoming lost. Pipes 9 are provided for admitting water from any suitable water-main 10 to the conduits 3, the flow of water through said pipes being controlled, preferably, by

suitable hydrants 11, which may also serve as fire-plugs.

In the sides of the conduits 3 ducts 12 may be provided for electric wires or for gas or water pipes.

In the use of this snow-removal system after a fall of snow the guard-plates 6, which are in sections of such length as to permit easy handling, are removed, and the snow on the surface of the street is shoveled into the conduits 3, water under considerable pressure being admitted to the said conduits at the same time through the pipes 9. Subsurface water, and particularly that in street mains, always has a temperature considerably higher than the freezing-point of water, and therefore when brought into contact with snow in a relatively confined space, such as these conduits, will melt the snow, in part at least, so that the slush will flow rapidly through the conduits into the sewer connections 4 and thence into the sewers 5. Where it is practicable to do so, the water thus supplied is preferably salt, as the freezing temperature of salt water is lower than that of fresh water. To obtain the desired pressure and to avoid drawing too heavily upon the source of supply, stand-pipes or storage-tanks may be located at intervals, each such tank containing sufficient water for the removal of snow from the territory served by the pipes connected to such tank. Since the snow removal will proceed block by block, water will be turned on only to those conduits which are being used at the time for the removal of snow, and as soon as the snow has been removed from any block or street-section the flow of water from the street-mains through such conduit will be stopped, thereby avoiding drawing too heavily upon the source of supply. When sewers are not available to receive the flow from the conduits, the discharge from said conduits may be carried off in any other convenient manner.

It is obvious that the construction of the conduits 3 and their guard-plates 6 may be varied considerably without departing from my invention, that these conduits are not necessarily located at the curb-line of a street, and that one conduit may be sufficient for each street. It is also obvious that the conduits may be connected to the sewers at such intervals as may be practicable or convenient. I do not limit myself, therefore, to the particular arrangement and construction of the parts as shown.

In the following claims the term "street" is intended to include bridges, viaducts, driveways, walks, and open spaces generally.

The source of water-supply employed in connection with my snow-removal system must not be one which is dependent upon temporarily existing atmospheric conditions. For example, rain-leaders connected with the eaves of a house would not be a suitable source of water-supply, because there would be no certainty that rain would be falling at the time when the snow should be removed, and, in fact, rain does not fall ordinarily immediately after a snowfall. Some constantly-available source of water-supply is required—such, for example, as a storage-tank of proper capacity or a street water-main or a pump—and it is such sources of water-supply that are meant by the term "constantly-available source of water-supply" in the first of the following claims.

What I claim is—

1. In a system for snow removal, the combination of a conduit having openings through which snow may be introduced, a constantly-available source of water-supply, means connecting the same with said conduit for admitting water directly thereto, and means for controlling the flow of water into said conduit.

2. In a system for snow removal, the combination with a conduit extending along a street, and having at a plurality of points openings through which snow may be introduced, of a sewer or channel connected at intervals to said conduit for carrying away water and slush, a source of water-supply independent of said sewer or channel, and means connecting the same with said conduit for introducing water directly into said conduit.

3. In a system for snow removal, the combination with a conduit extending along a street, and having at a plurality of points openings through which snow may be introduced, and sectional guard-plates normally closing said openings, of a sewer or channel connected at intervals to said conduit for carrying away water and slush, a source of water-supply independent of said sewer or channel, and means connecting the same with said conduit for introducing water directly into said conduit.

4. In a system for snow removal, the combination with a conduit located at the curb-line of a street and forming a curb thereof, said conduit having openings through which snow may be introduced, of means for introducing water into said conduit.

5. In a system for snow removal, the combination with a conduit located at the curb-line of a street and forming a curb thereof, said conduit having openings through which snow may be introduced, of a sewer or channel connected to said conduit for carrying away water and slush, and means for introducing water into said conduit.

6. In a system for snow removal, the combination with a conduit located at the curb-line of a street and forming a curb thereof, said conduit having openings through which snow may be introduced, and guard-plates normally closing said openings, of a sewer or channel connected to said conduit for carrying away water and slush, and means for introducing water into said conduit.

7. In a system for snow removal, the combination with a conduit located at the curb-

line of a street and forming a curb thereof, said conduit having openings in its face adjacent to the driveway of the street, through which snow may be introduced, of a sewer or channel connected to said conduit for carrying away water and slush, and means for introducing water into said conduit.

8. In a system for snow removal, the combination with a conduit located at the curb-line of a street and forming a curb thereof, said conduit having openings in its face adjacent to the driveway of the street, through which snow may be introduced, and guard-plates, normally closing said openings, of a sewer or channel connected to said conduit for carrying away water and slush, and means for introducing water into said conduit.

9. In a system for snow removal, the combination with a conduit located at the curb-line of a street and forming a curb thereof, said conduit having openings in its face adjacent to the driveway of the street, through which snow may be introduced, and guard-plates, normally closing said openings, openings being provided, between said guard-plates and the street-surface, for the passage of surface water into said conduit, of a sewer or channel connected to said conduit for carrying away water and slush, and means for introducing water into said conduit.

10. In a system for snow removal, the combination with a snow-removal conduit having at a plurality of points openings through which snow may be introduced, and sectional guard-plates normally closing said openings, but adapted to be removed, of a water-supply system connected directly to such conduit, for introducing water therein to melt and carry away the snow.

11. In a system for snow removal, the combination with a snow-removal conduit having at a plurality of points openings through which snow may be introduced, of a sewer or channel connected to said conduit for carrying away water and slush, and a water-supply system connected directly to said conduit for introducing water to melt and carry away the snow.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES C. MARRIOTT.

Witnesses:
H. M. MARBLE,
C. F. CARRINGTON.