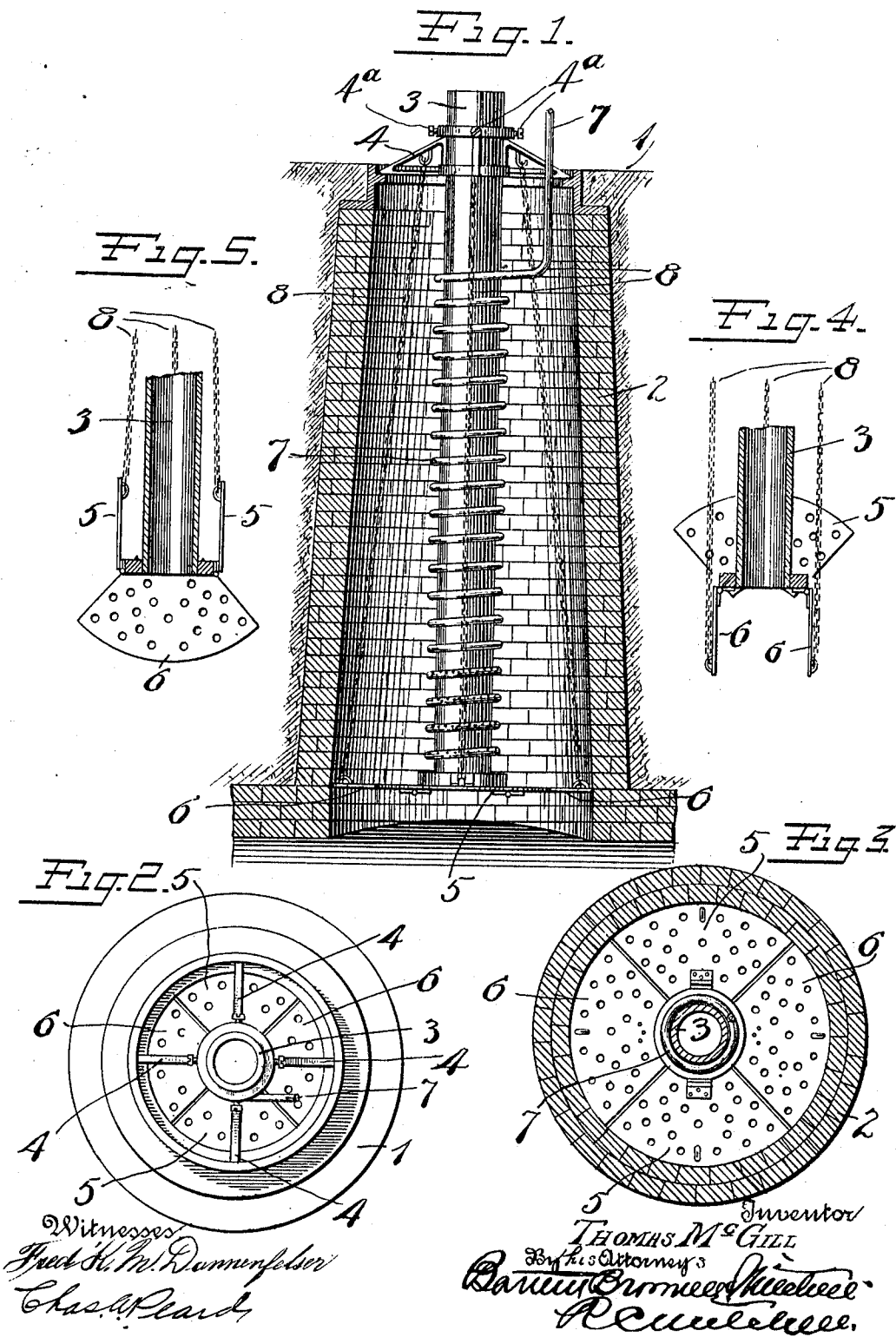


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 SNOW MELTER FOR MANHOLES OR SEWER PIPES.
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UNITED STATES PATENT OFFICE.

THOMAS MCGILL, OF BROOKLYN, NEW YORK.

SNOW-MELTER FOR MANHOLES OR SEWER-PIPES.

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Specification of Letters Patent.

Patented Jan. 3, 1911.

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To all whom it may concern:

Be it known that I, THOMAS MCGILL, a citizen of the United States, residing at Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Snow-Melters for Manholes or Sewer-Pipes, of which the following is a full, clear, and exact description.

My invention relates to improvements in snow melting apparatus, the object of the invention being to provide an improved means for permitting of the ready disposal of snow that accumulates upon roadways.

In the accompanying drawings, Figure 1 is a vertical sectional elevation of a sewer manhole with my improved apparatus in place therein. Fig. 2 is a plan view thereof. Fig. 3 is a section on the line $x-x$ Fig. 1, looking down. Fig. 4 is a side elevation, partly in section, of the device as shown in Fig. 1, with the parts in a different position. Fig. 5 is a similar view taken at right angles to the position of the parts shown in Fig. 1, also showing said parts in a different position, or, in other words, in the position shown in Fig. 4.

1 represents a street level; 2 represents the wall of a manhole leading down to a sewer.

In the cleaning of streets, it is sometimes customary to open sewer manholes and to push the snow from the street into the sewer. This, however, is exceedingly objectionable owing to the fact that the solid mass of snow entering the sewer tends to choke and clog the same. It is my purpose to make this method of disposal of the snow possible and practical by the employment of an improved means whereby the snow, so disposed of, is melted prior to delivery into the sewer proper. To that end, my apparatus, in its preferred form, is constructed substantially as shown in the drawings, and includes what I will term the main frame or backbone 3, which preferably is in the form of a tube so that it may perform the double function of a backbone, or mounting for the various elements, as well as a vent to allow of the escape of gases from the sewer in the immediate vicinity of said manhole during the process of disposing of the snow. This backbone 3 is provided near its upper end with a spider-like bracket 4 of any suitable form, but which, in the form shown, comprises a frame suitably adapted to fit upon the top border of the manhole to thereby

support the backbone 3 and the associated parts. At or near the lower end of the tubular backbone 3 are a plurality of gates 5—5 6—6. These gates are preferably connected to the backbone by hinges, or the like. In use these gates are elevated to the position shown in Fig. 1 so as to close the lower part of the manhole to a sufficient extent to support any snow pushed into the manhole opening. These gates are perforated, or slotted, to permit water to drip through into the sewer as the snow is melted. Any suitable heating apparatus may be inserted into the manhole, for example, a steam pipe 7. As shown, the steam pipe 7 is coiled around the vent pipe 3 to provide a large heating area, and preferably the lower end of the steam pipe is provided with a number of perforations to permit steam jets to be ejected to strike the body of the snow at a point just above the gates 5—6 to hasten the melting. These perforations also permit circulation of the steam and the escape of any condensation in the pipe 7.

From the foregoing, it will be seen that there is nothing that projects above the surface of the street that will tend to retard or render difficult the introduction of the snow into the manhole opening. It is likewise apparent that any snow pushed into the opening will settle upon and be supported by the gates 5—6, so that said snow will come into direct and intimate contact with the heater and become thereby melted. Any steam or gases generated are readily liberated by the open vent through the backbone 3. Any suitable means may be provided for collapsing the gates, provided, indeed, it is important that the same should be collapsed. Where, as shown, the gates are hinged, they may be operated by chains 8—8 which lead up to the top of the apparatus where they can be readily handled. As shown, four gates are employed, two gates 5—5 being hinged so as to fold up, as shown in Fig. 5, and two gates 6—6 being hinged so as to swing down, as shown in Fig. 4. The advantage of employing collapsible gates is found where the apparatus is adapted to manholes which have flaring walls as they proceed downwardly. In such a manhole, it is obvious that in order to properly cut off the manhole at the lower part, the gates must be of appropriate size to practically fill the space from wall to wall.

Inasmuch as this space is greater than the opening at the surface of the street, the gates must be so constructed that when it is desired to insert or remove the apparatus, they will not prevent the passage of the apparatus into the narrowest part of the manhole opening. Ordinarily, manholes are made of a standard design, hence, a single apparatus may be readily applied to a large number of manholes.

It will be observed that the upper end of the tubular backbone 3, or vent, projects preferably sufficiently above the street surface 1 to prevent the snow from being pushed into said tube through which it might descend into the sewer in an unmelted state. Although only a comparatively small quantity could thus find its way into the sewer, it is preferable that the entire mass should first be melted.

I wish to have it distinctly understood that in a broad sense the particular means for operating the gates, and, indeed, the particular construction of said gates, is immaterial, likewise, it is also immaterial what form of heater is employed to melt the snow since any suitable heating apparatus, best adapted to the conditions where the snow melter is to be employed, may be adopted, although in the drawings and in the previous description I have endeavored to show and outline a preferred construction. As shown the bracket 4 is preferably adjustable up and down on the backbone 3, the same being secured thereon in any suitable way as by set-screws 4^a. One advantage of making the bracket adjustable is that it enables the position of the gates 5 and 6 to be shifted to best adapt them to the diameter of the tapered manhole 2.

What I claim is:

1. In a snow melting apparatus for use in sewer manholes, a backbone element, means carried thereby for supporting the same at the manhole opening, snow supporting means at or near the lower end of said backbone, and heating means associated with said parts and carried thereby.

2. In a snow melting apparatus for use in sewer manholes, a backbone element, means carried thereby for supporting the same at the manhole opening, snow supporting means at or near the lower end of said backbone, and heating means associated with said parts and carried thereby, said snow supporting means being collapsible.

3. In a snow melting apparatus for use in sewer manholes, a backbone element, means carried thereby for supporting the same at the manhole opening, snow supporting means at or near the lower end of said backbone, and heating means associated with said parts and carried thereby, said snow

supporting means being made in sections, each section being hinged to the backbone. 65

4. In a snow melting apparatus for use in sewer manholes, a backbone element, means carried thereby for supporting the same at the manhole opening, snow supporting means at or near the lower end of said backbone, and heating means associated with said parts and carried thereby, said heating means comprising a steam pipe. 70

5. In a snow melting apparatus for use in sewer manholes, a backbone element, means carried thereby for supporting the same at the manhole opening, snow supporting means at or near the lower end of said backbone, and heating means associated with said parts and carried thereby, said heating means comprising a steam pipe, the lower end of said pipe extending to a point near said snow supporting means and being provided with one or more steam outlets in the vicinity of said snow supporting means. 85

6. In a snow melting apparatus for use in sewer manholes, a tubular backbone extending from a point at or near the surface well down into the manhole, a collapsible snow support, carried by said tubular backbone near its lower end, means for collapsing said snow support, means at or near the upper end of said tubular backbone for resting upon the upper end of the manhole to support said apparatus from above, and a heating means carried by said apparatus. 95

7. In a snow melting apparatus for use in sewer manholes, a backbone element, means carried thereby for supporting the same at the manhole opening, snow supporting means at or near the lower end of said backbone, and heating means associated with said parts and carried thereby, and a vent passage. 100

8. In a snow melting apparatus for use in sewer manholes, a backbone element, means carried thereby for supporting the same at the manhole opening, snow supporting means at or near the lower end of said backbone, and heating means associated with said parts and carried thereby, and a vent through said backbone. 105

9. In a snow melting apparatus for use in sewer manholes, a backbone element, means carried thereby for supporting the same at the manhole opening, snow supporting means at or near the lower end of said backbone, and heating means associated with said parts and carried thereby, and a vent passage, said vent extending above the upper end of said manhole. 115 120

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Witnesses:

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