C. EVANS, Jr.

METHOD OF SNOW DISPOSAL.

APPLICATION FILED MAR. 20, 1911.

995,446.

Patented June 20, 1911.

FIG.1

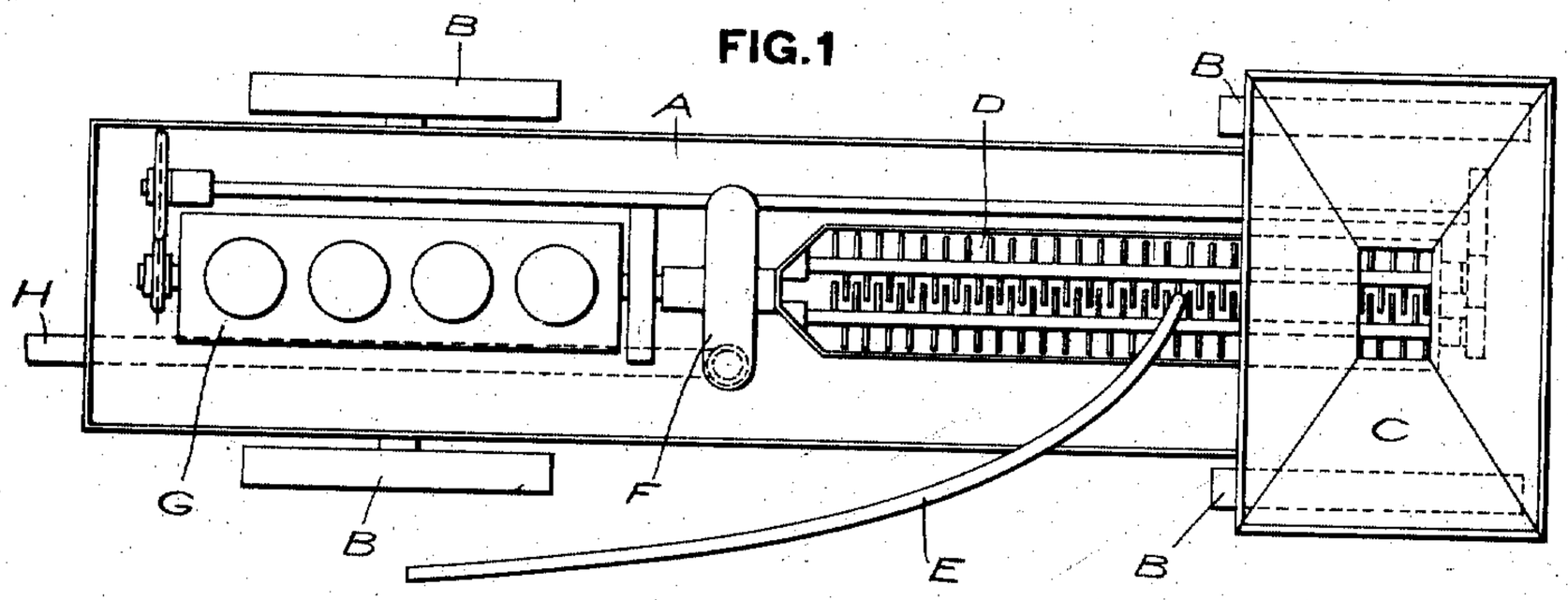


FIG.2

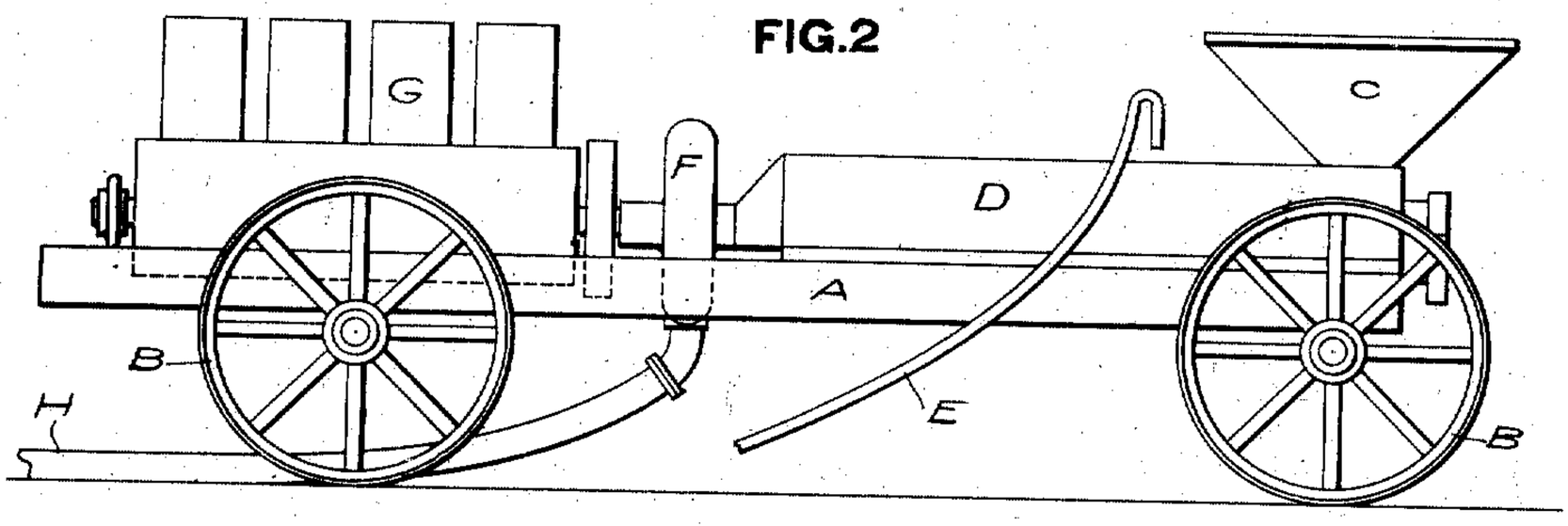
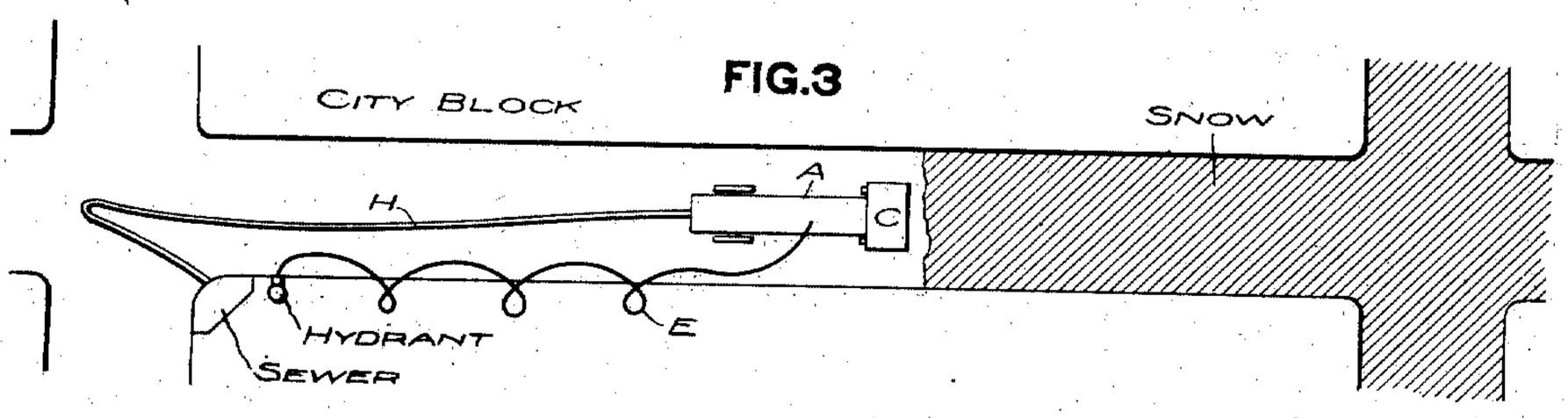


FIG.3



WITNESSES

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METHOD OF SNOW DISPOSAL.

995,446. Specification of Letters Patent. Patented June 20, 1911.

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To all whom it may concern:

Be it known that I, CADWALLADER EVANS, Jr., a citizen of the United States, and resident of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Method of Snow Disposal, of which the following is a specification.

My invention relates principally to a method of removing snow from the streets of large cities to avoid interference with traffic thereon.

I have discovered that freshly fallen snow may be reduced by agitation alone, to a sufficiently fluid condition to be forced through a pipe by any convenient means as for instance fluid pressure used directly such as air, steam, or water or by any suitable mechanical device such as a centrifugal pump, and that snow which has been subjected to the compressive action of street traffic, even when it has reached a condition bordering on the hardness of ice, or when mixed with actual ice, may be reduced to a similar condition by agitation, and the addition of a slight amount of water. It is not necessary in either case to reduce the mixture to a real fluid, which will flow of its own accord, nor if ice be present is it necessary to reduce the ice to a finely subdivided state. Lumps of ice of several inches diameter may be carried when in a semi-fluid slush, such as is used by my improved method.

The removal of snow in American cities costs a vast amount of money annually, and the present process takes further toll on the health and lives of the laborers employed, as the work must of necessity be done in inclement weather and under conditions inimical to health.

The present method of removing snow from streets is very crude, and is accomplished usually by men with shovels, who load the snow into wagons, from whence it is hauled to the nearest sewer opening, and discharged therein. This process is necessarily slow, and consequently expensive, as a large force of men and teams must be employed to cover any considerable area, it being usually necessary to completely remove the snow within a few hours time. I am aware that various methods have been suggested to facilitate the handling of this problem. For instance, it has been proposed by several inventors to melt the snow by the application of heat, and allow the water thus formed to run into the sewers; as in the patent to D. Hommergue 933837. The expense of this process is practically prohibitory and it works poorly in cold weather, as much of the water freezes again before reaching the sewer. It has also been proposed to triturate the snow by suitable mechanism, thus melting it by heat developed by friction, as in the patent to Blake No. 818072. Other inventors have proposed the combined use of heat and agitation, as shown by Muller *et al* No. 967716. None of these processes are practical, being either too expensive, too slow, or both, and in no case is it desirable to discharge the melted snow on the streets for gravity flow to the sewers.

By my improved method the snow and ice mixed therewith may be expeditiously removed at small cost, and at great speed, and conveyed directly to the nearest sewer without being a second time in contact with the street.

My improved method is independent of any specific apparatus, and may be performed manually, but greater speed may be obtained by the use of suitable apparatus such as will now be described.

The truck A, mounted on the wheels B, carries a hopper C, to which the snow may be delivered manually, or by suitable mechanism. The hopper C discharges into an agitator D, whose principal function is to reduce the fine snow to slush by agitation thereof, and to break up masses of caked ice or snow, into lumps small enough to enter the pump F. If necessary water may be supplied to agitator D, through pipe E. The pump F, receives the mixture from agitator D, and forces the same under pressure through the large hose H, to the nearest sewer. Pump F, and agitator D, are driven by a motor G, herein represented as a gas engine. The hose H may be of any desired length, as for instance equal to one or two city blocks, and the truck may therefore move forward continuously toward the snow to be removed, at the same time being all times in direct connection with the sewer.

If desired, the engine G can be arranged to propel the truck wheels B, and the exhaust from the engine G can be turned into the agitator D, or pump F, to assist the process by its contained heat. Suitable conveyers may also be provided to lift the snow directly from the street into the hopper C. The pipe E may be connected by a small

hose of any desired length, to the nearest street hydrant.

It will be obvious that many simple and efficient forms of apparatus may be provided for carrying out my improved method, the value and usefulness of which is thereby greatly enhanced.

It will be noticed that I do not triturate the snow or ice, nor reduce either to a finely divided state, it being sufficient merely to provide enough fluid to act as a carrier for the remainder of the mass.

I claim as my invention:

1. The method of removing snow from city streets comprising the following steps: 1st, gathering the snow; 2nd, agitating the same; 3rd, forcing the agitated mixture to a distant point.

2. The method of removing snow from city streets comprising the following steps: 1st, gathering the snow; 2nd, agitating the same; 3rd, pumping the agitated mixture to a distant point.

3. The method of removing snow from city streets comprising the following steps: 1st, gathering the snow; 2nd, agitating the same; 3rd, adding water during the agitation; 4th, forcing the mixture to a distant point.

4. The method of removing snow from city streets comprising the following steps: 1st, gathering the snow; 2nd, agitating the same; 3rd, heating the mixture during agitation; 4th, forcing the mixture to a distant point.

5. The method of removing snow from city streets comprising the following steps: 1st, gathering the snow; 2nd, agitating the same; 3rd, adding water during agitation; 4th, heating the mixture during agitation; 5th, forcing the mixture to a distant point.

CADWALLADER EVANS, JR.

Witnesses:
W. W. MACFARREN,
ROSE NEVIN.