C. G. WATERBURY.

Track-Clearer.

No. 161,718. Patented April 6, 1875.

Fig. 1.

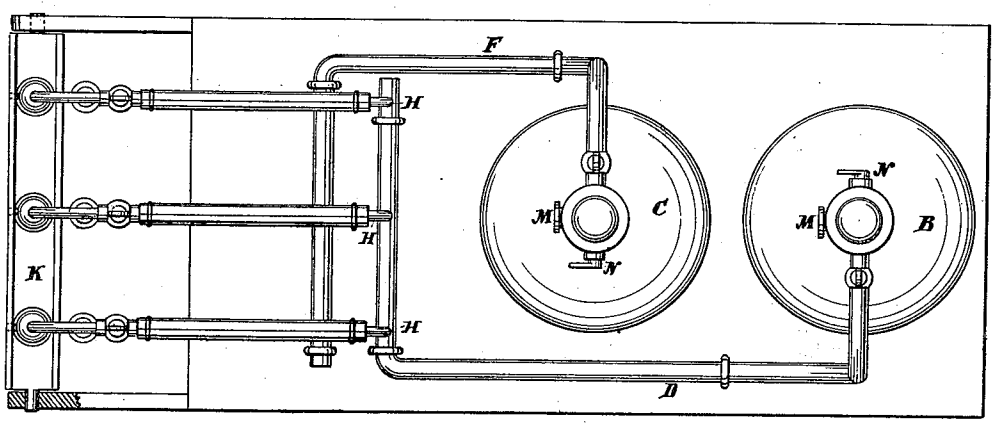
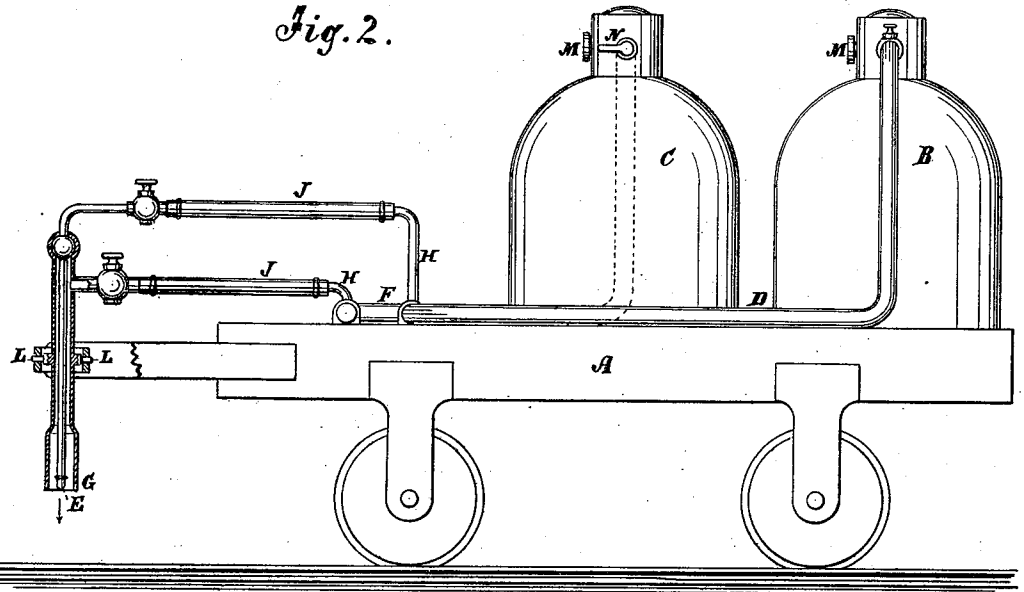


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES G. WATERBURY, OF NEW YORK, N. Y.

IMPROVEMENT IN TRACK-CLEARERS.

Specification forming part of Letters Patent No. **161,718**, dated April 6, 1875; application filed March 6, 1875.

To all whom it may concern:

Be it known that I, CHARLES G. WATERBURY, of the city, county, and State of New York, have invented a new and Improved Machine for Removing Snow and Ice from Roadways, Sidewalks, &c., of which the following is a specification:

My invention relates to that class of machines for removing snow and ice from roadways, sidewalks, &c., which operate by melting them with heat applied by a portable machine moving along the way on wheels or runners; and it has for its object to avoid the use of a furnace for supplying the heat; also, the use of steam or explosive vapors or gases in large and dangerous quantities, so as to remove as much as possible all danger of setting fire to buildings and endangering the lives of the operators and others in the street. It is also designed to economize the heat largely.

The invention consists of apparatus for using oxyhydrogen flames in contact with the snow and ice to be melted, the flames to be produced by the combination of oxygen and hydrogen at the burners by carrying the gases in separate holders and supplying them to the burners by separate conductors, so that the matters for producing the heat are carried in the safest possible manner, and there is no large concentration of heat in one body, as when a furnace is used, and in case of the bursting of one of the holders there will be no conflagration produced, as in the case of the explosion of a retort of hydrocarbon to be converted into vapor for producing the heat; nor will there be any injury by scalding, as in the case of the explosion of a steam-boiler, while there will be a large economy of heat, because all the heat employed is used directly in contact with the snow and ice. The gases will of course be compressed in the holders; but there will be little or no danger of bursting from that cause, and in case of its occurrence the effects will not be so disastrous as steam or hydrocarbon vapors or coal-gas.

Figure 1 is a plan view of my improved machine. Fig. 2 is partly a side elevation and partly a sectional elevation.

Similar letters of reference indicate corresponding parts.

A is the platform of the truck or other machine on which the apparatus is mounted to be moved along the roadway on wheels or runners. B is a holder for oxygen; C, a holder for hydrogen; D, the pipe for conducting the oxygen to the place of combustion; E, the nozzles or burners for the same; F, the pipe for conducting the hydrogen to the places of combustion, and G the nozzles or burners therefor. These latter surround the burners E, as in the common arrangement of these burners, and both terminate downward a little above the ground to discharge the heat directly thereon. The supply-pipes D and F branch at H to supply different burners, a number being employed in a row extending across the machine from side to side, say at the front end, and placed at suitable distances apart to melt the snow from a space as wide as the machine. The burner-tubes and the branches H are connected by flexible tubes J, to allow the burner-tubes to swing forward and backward on the pivoted support K, also laterally on their pivots L, for discharging the flames in different directions, which may sometimes be required.

It will be seen that there is no such waste of heat with this apparatus as in those machines in which a furnace is used either to make heat for direct application or to make steam or hydrocarbon vapor, or both, as in such mechanism a large measure of heat is lost by radiation.

The holders will have a safety-valve at M and a valve at N, or any suitable arrangement for preventing overcharging, and to prevent the escape of the gas after charging.

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

1. The combination, in a portable snow-melting track-clearer, of an oxygen-gas holder, a hydrogen-gas holder, oxyhydrogen-burners, and pipes connecting them with the gas-holders, substantially as and for the purposes set forth.

2. The combination of pivoted burners G E, pivoted support K, flexible joints J, and supply-pipes, substantially as and for the purpose set forth.

C. G. WATERBURY.

Witnesses:

T. B. MOSHER,

ALEX. F. ROBERTS.