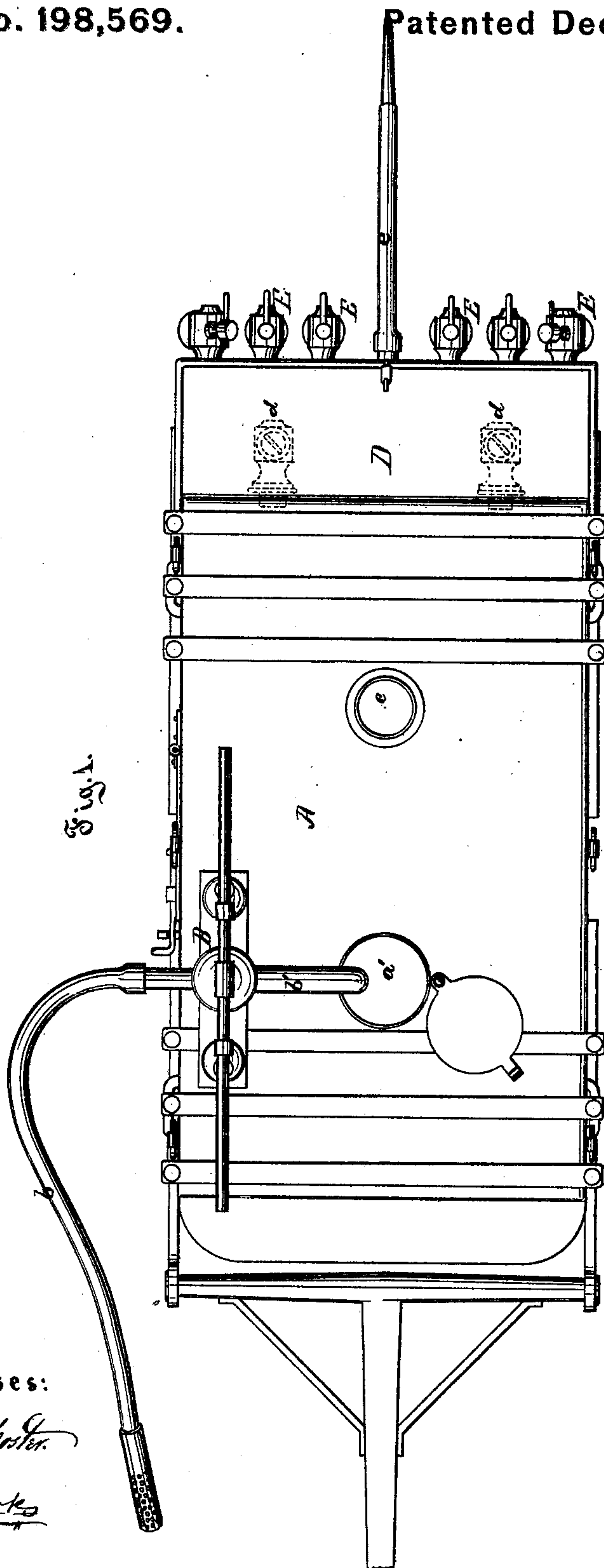


F. BYRON.
Apparatus for Covering the Surface of Roads with Ice.
No. 198,569. Patented Dec. 25, 1877.



Witnesses:
Phedoreb. Foster.
B. S. Clark

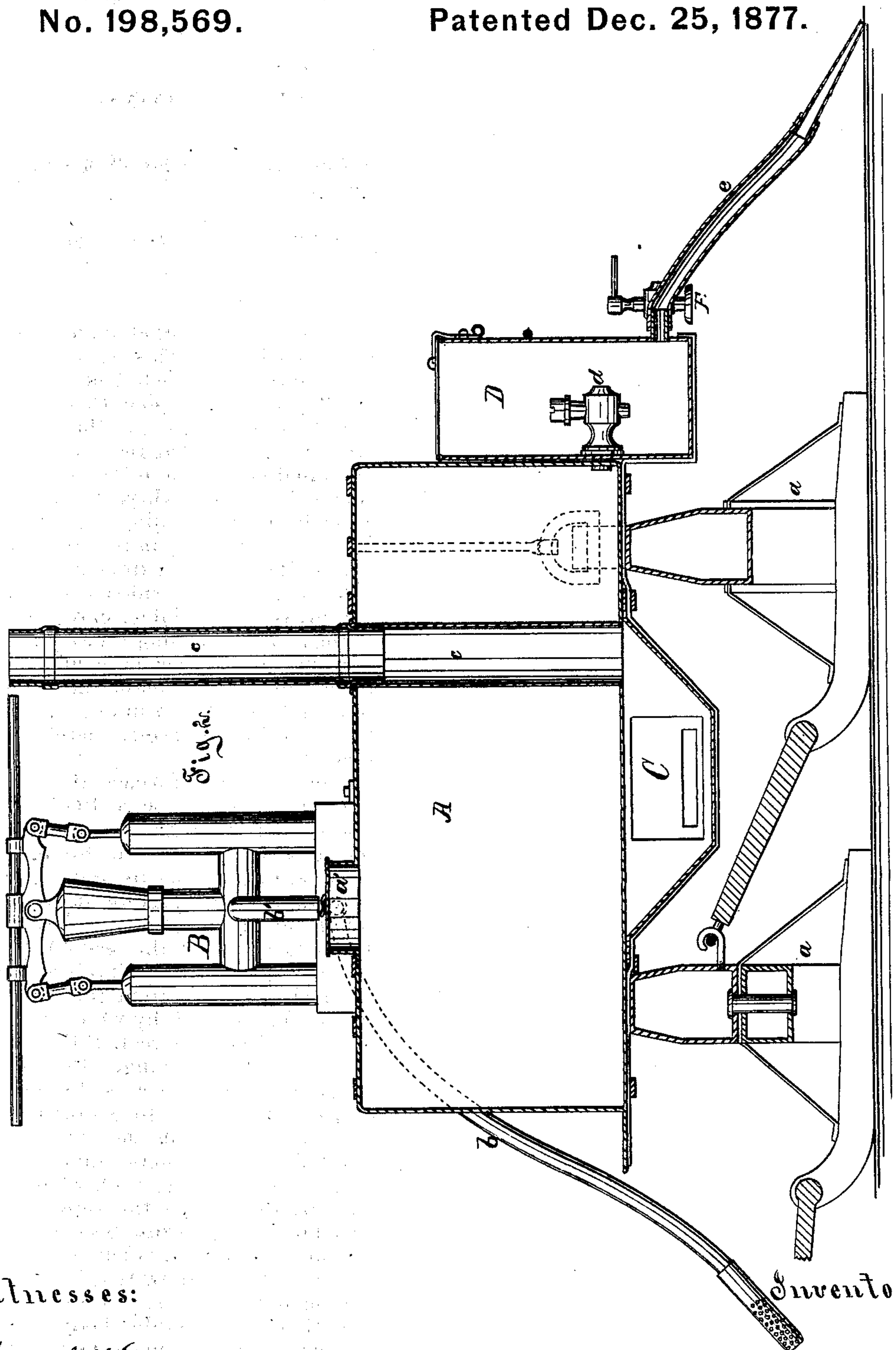
Inventor:
Francis Byron
B. S. Clark
Atty.

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Witnesses:

Theodore Weston

B. S. Clark

Inventor:

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UNITED STATES PATENT OFFICE.

FRANCIS BYRON, OF GRAND RAPIDS, WISCONSIN.

IMPROVEMENT IN APPARATUS FOR COVERING THE SURFACE OF ROADS WITH ICE.

Specification forming part of Letters Patent No. **198,569**, dated December 25, 1877; application filed July 10, 1877.

To all whom it may concern:

Be it known that I, FRANCIS BYRON, of Grand Rapids, Wood county, in the State of Wisconsin, have invented an Improved Apparatus for Icing the Surface of Roads by flooding or sprinkling them with water, either taken up in its natural state or produced by melting snow, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan of my apparatus, and Fig. 2 is a vertical central sectional elevation of the same.

It is well known that in regions where high winds prevail during the winter season the snow deposited by storms upon the roads is blown into drifts, thus leaving exposed certain portions of the soil, and also that after a thaw parts or sections of the roads will be bared of their snow or ice surface.

In the lumber districts of the country, where heavy loads are hauled in the winter season over the roads, great trouble is caused, and inconvenience to the drivers and teams which haul the sleds, &c., by the roads being thus bare in certain portions and along some distances.

The object of my invention is to provide an apparatus which may be operated during cold weather to overcome these difficulties, by flooding or sprinkling water drawn from ponds, or produced by melting snow, upon these bare or thawed places, or upon deep soft snow which may cover the road, and thus, by the freezing of this water, produce an ice surface continuous throughout the length of the road, which will enable heavy loads to be hauled with ease and convenience.

My invention consists in an apparatus having a main reservoir for water or snow, provided with a pump for filling it with water, and a furnace for heating the reservoir, together with a supplemental reservoir, into which the water from the main reservoir is conducted, and from which it is discharged through sprinklers or jets upon the road, the apparatus being mounted on runners, as hereinafter particularly set forth, and recited in the claims.

A is the main reservoir, preferably made of

boiler-iron, and mounted upon runners or bobsleds *a*, as shown. This reservoir is provided with a pump, B, which has a strainer-hose, *b*, and a discharge-pipe, *b'*, communicating, through an opening, *a'*, in the top of the tank or reservoir, with said reservoir. This pump is mounted on the top of the reservoir A, and at one side thereof, where it may be readily worked by a man standing upon the apparatus.

By means of this pump, water may be supplied to the reservoir from a pond or other similar source at the road-side. If such source of supply is not available, snow may be passed into the reservoir through the opening *a'*. The reservoir has a furnace or heater, C, which is attached to the bottom of the reservoir, and has a smoke-stack, *c*, running up through the interior of the reservoir, thereby increasing the heating-surface.

By means of this furnace the snow used in the reservoir A may be melted, while, in extremely cold weather, the water produced from the snow or supplied through the pump may be warmed, so as to prevent its freezing in the tank, and enabling it to pass freely through the apparatus.

Upon the rear of the main tank A is secured a supplemental reservoir or receiver, D, into which the water from the tank A passes through the cocks *d*, by which the supply is regulated. Upon the rear, at the bottom edge of this tank D, are arranged the sprinklers E, through which the water is discharged upon the road. These are so arranged that they throw the water upon the sides of the road, where the sleigh-runners travel, and do not flood the middle of the road, where the teams walk. By this means the sides of the road, when the water freezes, become iced, while the middle of the road is left bare soil, or covered only with the snow that has fallen there.

A hose and nozzle, *e*, is provided, as seen, and by this a considerable body of water may be thrown in any one place, as may be desirable in filling up ruts or breaks in the road-bed, or other uneven places, and giving an ice surface.

By means of my apparatus it is evident that roads over which large and heavy loads are hauled in the winter season, such as logging in pineries, may be coated with ice, so as to

be rendered easy and convenient for travel in the absence of snow, or when the snow has drifted or is soft, and impedes the teams and loads.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, the main tank A, mounted on runners *a*, the pump B, having supply hose or pipe *b* and discharge-pipe *b'*, emptying into the opening *a'*, and the furnace C, with its smoke-stack *c*, all arranged to operate as and for the purpose specified.

2. In combination with a heating-tank, A, as described, the reservoir D and its supply-cocks *d*, together with sprinklers E and hose *e*, all arranged to operate as and for the purpose specified.

FRANCIS BYRON.

Witnesses:

J. W. COCHRAN,
CHAS. M. WEBB.