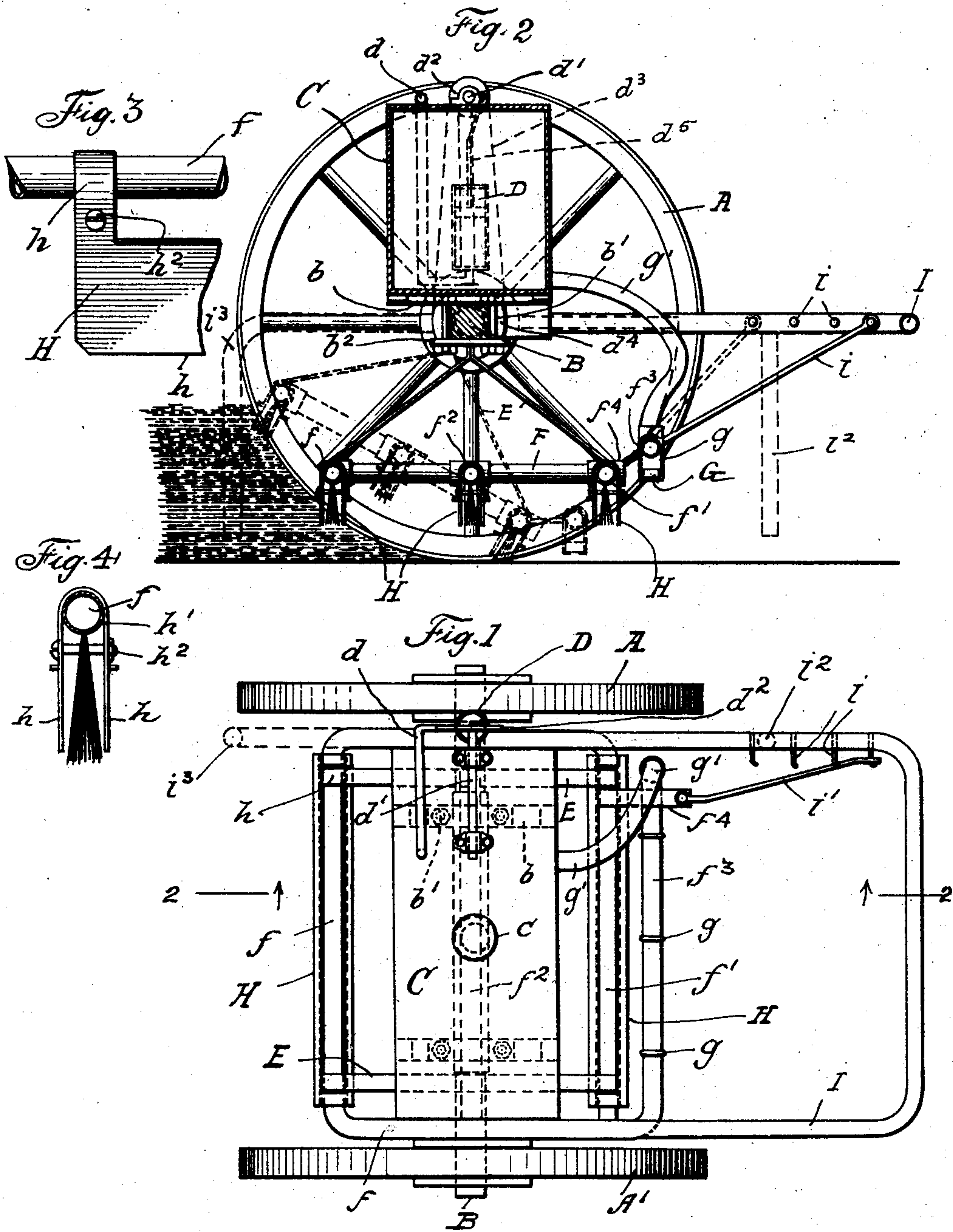


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SNOW MELTING MACHINE.
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919,328.

Patented Apr. 27, 1909.



WITNESSES
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GEORGE DUBOIS, OF CHICAGO, ILLINOIS.

SNOW-MELTING MACHINE.

No. 919,328.

Specification of Letters Patent.

Patented April 27, 1909.

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To all whom it may concern:

Be it known that I, GEORGE DUBOIS, a subject of the Emperor of Germany, and residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Snow-Melting Machines, of which the following is a complete specification.

This invention relates to improvements in snow melting machines and more particularly to a snow melting machine of that class adapted to melt the snow directly from the surface without handling it.

Heretofore snow melting machines have been devised adapted to travel over the surface on which the snow lies and by the direct application of heat to melt the snow therefrom. In some of these devices it has been possible to adjust the burners at various heights according to the depth of the snow, but it has not been usual to provide a plurality of burners capable of being adjusted at varying heights from the rearmost burner to the forward burner, so that the snow may be melted at varying depths or distances from the surface as the machine advances. Furthermore it has not heretofore been usual to provide means for directing the flames directly down onto the snow and to prevent the wind from deflecting them to one side.

The object of the invention is to provide a snow melting machine in which the burners are adapted to be tilted in such a position that they will be at varying distances from the surface and one in advance of the other so that when the snow is of considerable depth the forward burner may melt it for a certain depth and each succeeding burner for a like depth until the entire quantity beneath the machine is melted.

It is also an object of the invention to provide a machine in which, where the snow or ice is of comparatively slight depth, the burners may be held at approximately the same distance from the surface and thereby melt the snow very rapidly.

A further object of the invention is to provide a snow melting machine provided with flame protectors adapted to direct the flames and heat downwardly onto the snow and to prevent the wind from blowing the flames to one side.

The invention consists of the matters hereinafter described in the specification and

more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a top plan view of a device embodying my invention. Fig. 2 is a section taken on line 2—2 of Fig. 1. Fig. 3 is an enlarged, fragmentary view of one of the burners and flame protectors. Fig. 4 is an enlarged transverse section of the same.

As shown in said drawings: A and A' indicate the supporting wheels which may be of any preferred size and construction, and which are journaled on the axle B. The central portion of said axle, as shown more clearly in Fig. 2, is square and transverse bed pieces *b* are rigidly engaged on the top thereof by means of bolts *b'* passing downwardly at the sides of the axle and through tie plates *b²* beneath the axle. Rigidly engaged on said bed pieces in any preferred manner is the tank C adapted to contain gasoline or other liquid fuel and which is provided in its top with a filling aperture *c*. Supported at one end of said tank is an air pump D of any desired construction and a pipe *d* leads therefrom into the top of said tank and is adapted to supply air under pressure to the tank to force the gasoline into the burners. Said pump may be operated in any preferred manner but, as shown, a shaft *d'* is journaled in suitable bearings on the top of the tank and is provided with a sprocket wheel *d²* on the end thereof above the pump, and a sprocket chain *d³* is carried on said wheel and on a sprocket wheel *d⁴* attached to the hub of the wheel A. The piston rod *d⁵* of the pump is attached to the sprocket wheel *d²* at a point eccentric to the shaft *d'* and when the wheel A is rotated the motion thereof is transmitted to said piston rod. On the cylindrical end portions of said axle, beneath the end of the tank, are hung the yokes E which are adapted to swing thereon and the arms of which diverge downwardly and outwardly from the axle. Hung on the lower ends of said yokes is the burner frame or coil F, comprising a pipe bent to a rectangular form and the front and rear sides *f* and *f'* of which extend longitudinally of the axle and are perforated on their under sides for the escape of the fuel and comprise the front and rear burners. A central pipe or burner *f²* is connected at its ends in the ends of the coil F and extends longitudinally of and intermediate the burners *f* and *f'*. A generating pipe *f³* is connected at one end to said coil

and extends parallel with and at the rear of the rear burner and is supported at its other end in a support f^4 carried on said rear burner. A trough or receptacle G is supported on said generating pipe by means of hangers g which may turn or swing on said pipe to permit the trough to always hang in an upright position regardless of the position of the burners. Said trough is adapted to contain alcohol or other combustible material adapted to heat said generator pipe and convert the gasoline into gas as it passes therethrough. A flexible pipe g' leads from the tank C and opens into the end of said generator pipe and conducts the gasoline thereto. Supported on each of said burners is a flame protector H comprising two sheets h of metal or other preferred material spaced a distance apart and connected together at their ends by straps h' of metal which hang over said burners and are clamped thereto by means of bolts h^2 .

Rigidly engaged on the axle is a handle I by means of which the machine may be moved as occasion requires, and on one side of said handle is a plurality of hooks or pins i to which one end of an adjusting bar i' may be attached. The other end of said bar is attached to the support f^4 or to any other preferred part on the coil, and is adapted to hold the burners in adjusted position. Legs i^2 and i^3 may be provided on said handle and axle respectively if desired and which act to support the device in proper position when standing still.

The operation is as follows: The burner coil is adjusted, by means of the adjusting rod i' and hooks i , at an angle to the surface to best facilitate the melting of the snow. If the snow is of slight depth then the burner coil will be adjusted approximately parallel with the surface, but if of considerable depth then the coil will be swung forwardly, thereby raising the forward burner and lowering the rear burner. In this position the snow is melted in stages by the various burners and as the snow is melted to the required depth beneath each burner the machine is moved forwardly. The air pressure in the tank forces the gasoline into the burners and causes the flames to have considerable force, while the flame protectors direct the flames down on to the snow and thus apply the heat where needed.

Obviously a machine embodying my invention is adapted to melt the snow and ice very rapidly and with a minimum amount of heat, and obviously also many details of form and construction may be varied without departing from the principles of my invention.

I claim as my invention:

1. In a device of the class described the combination with a truck of a burner coil

swingingly mounted thereon, means for supplying fuel to said coil and means for tilting the coil at various angles.

2. In a device of the class described the combination with a truck of a burner coil suspended thereon, and means adapted to swing said coil forwardly on the truck and vary the inclination thereof.

3. In a device of the class described the combination with a truck of a burner coil hung on the axle thereof and provided with a plurality of burners, and means adapted to swing said coil backward and forward and adjust said burners at varying heights relatively to each other.

4. In a device of the class described the combination with an axle of supporting wheels therefor, a burner coil, supporting means for said coil journaled on the axle, and means adapted to vary the inclination of said coil.

5. In a device of the class described the combination with an axle of supporting wheels therefor, a plurality of burners, means adapted to suspend said burners from the axle, a handle on the axle and means connecting said burners with said handle and adapted to adjust said burners.

6. In a device of the class described the combination with an axle of supporting wheels thereon, a plurality of burners supported on said axle, means adapted to swing said burners on the axle and vary their heights, and a flame protector beneath each burner.

7. In a device of the class described the combination with an axle of supporting wheels therefor, a tank carried on said axle, a plurality of burners suspended beneath the axle, means connecting said burners with said tank, a flame protector beneath each burner and means adapted to tilt said burners and support one slightly above and forwardly of the other.

8. In a device of the class described the combination with an axle of supporting wheels therefor, a handle on said axle, a tank supported on said axle, a pipe coil, means suspending said coil from the axle, a plurality of burners in said coil, a protecting plate extending downwardly from each side of each burner, a generator pipe connected with said coil, a trough supported thereon, a pipe connecting the tank with said generator pipe, and an adjusting rod connecting said coil with said handle.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

GEORGE DUBOIS.

Witnesses:

M. R. CROFOOT,
ROBT. KLOTZ.