E. R. BENNETT & M. J. EKERN.

STEAM THAWING MACHINE.

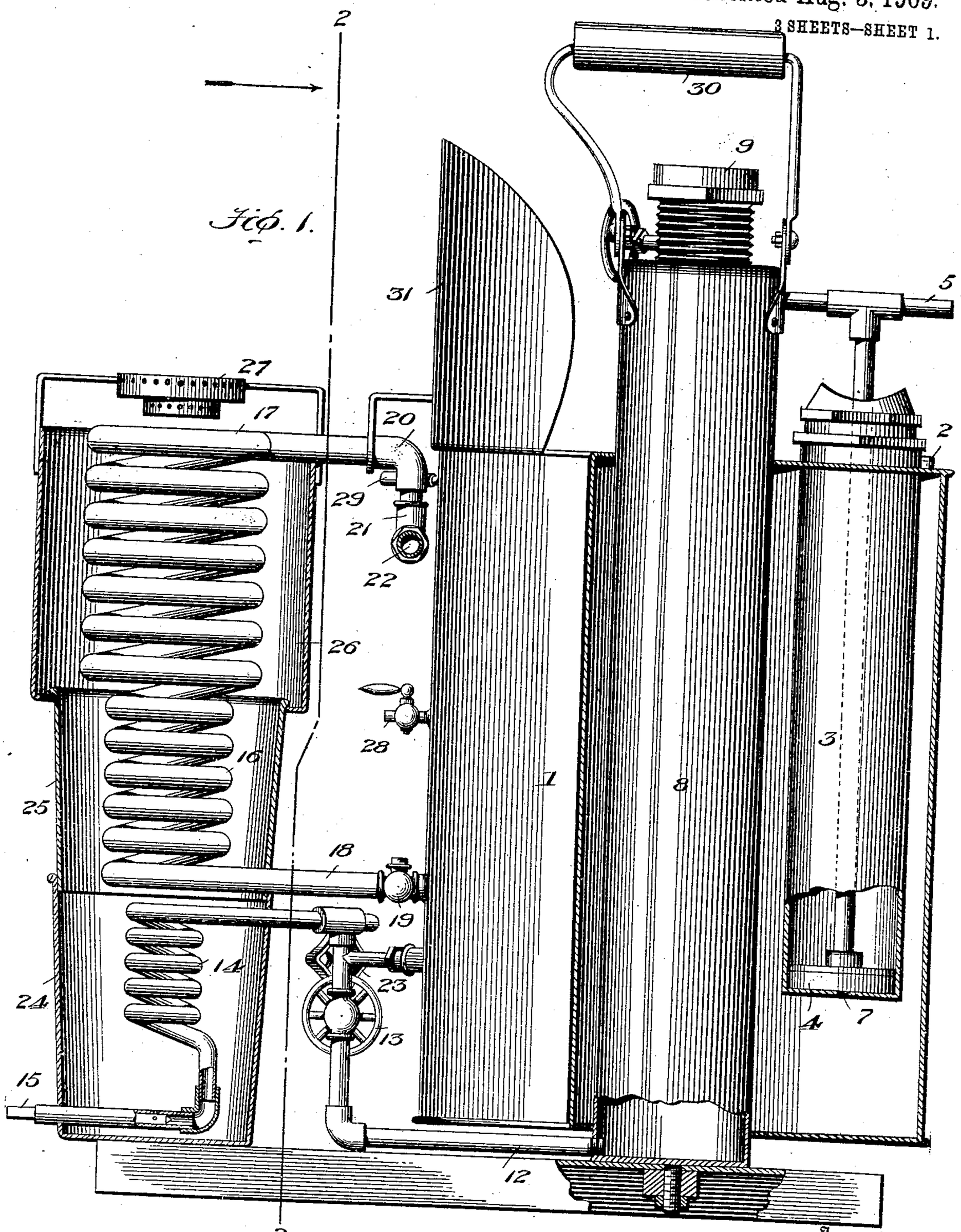
APPLICATION FILED JUNE 7, 1907.

930,131.

Patented Aug. 3, 1909.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

[illegible]

[illegible]

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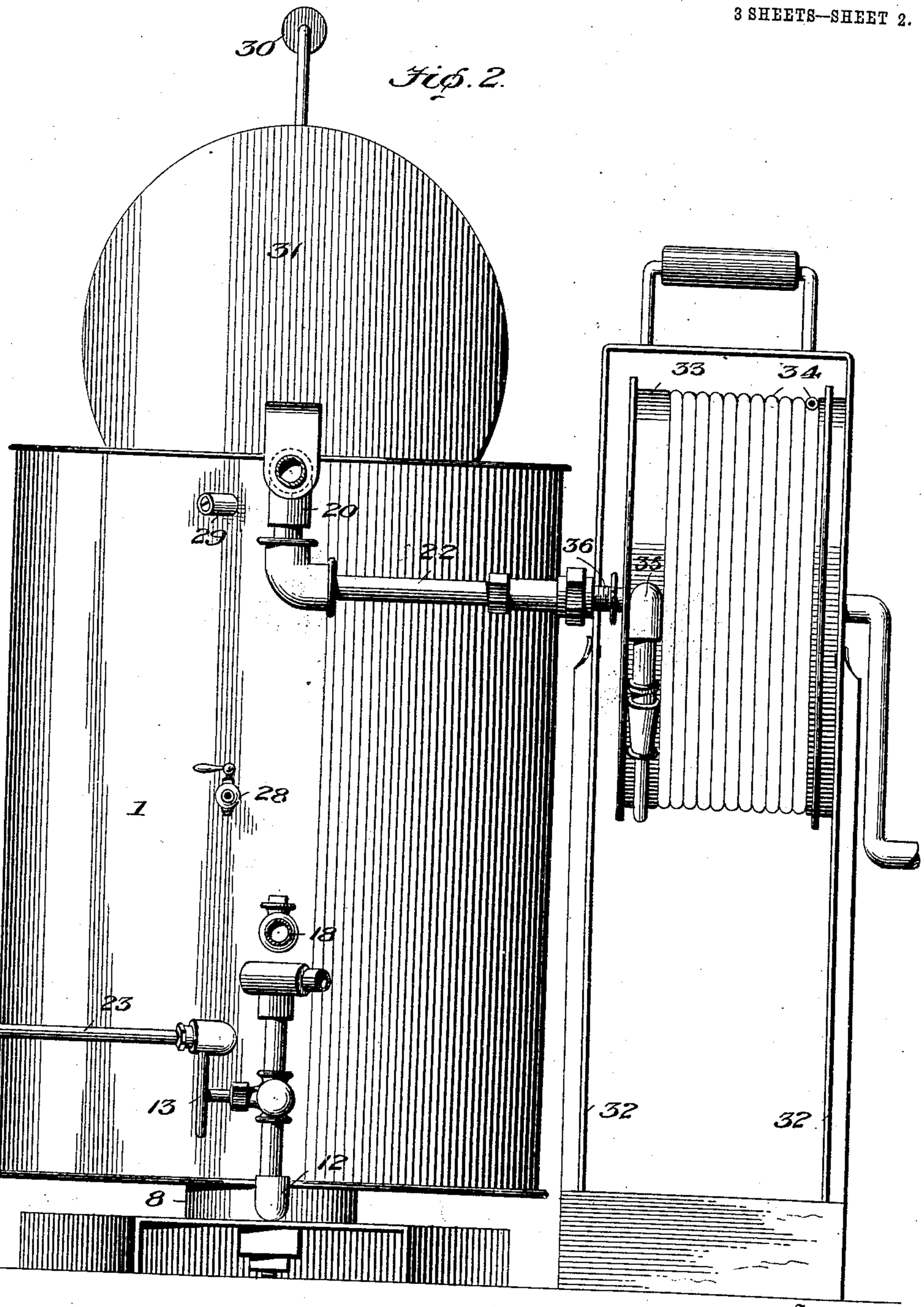
3 SHEETS—SHEET 2.

Fig. 2.



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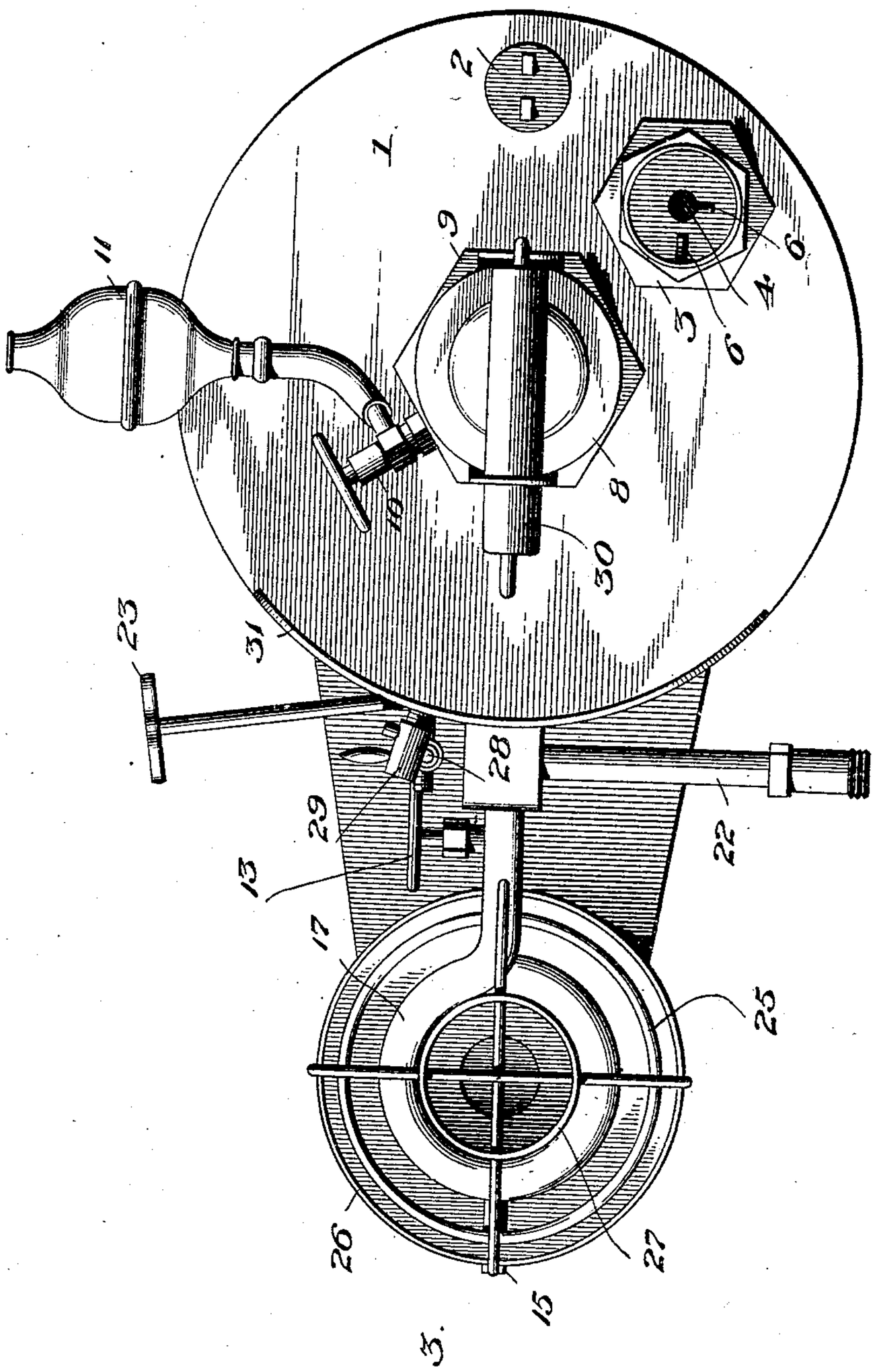

Fig. 3.

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UNITED STATES PATENT OFFICE

EDWIN R. BENNETT AND MELVIN I. EKERN, OF FLANDREAU, SOUTH DAKOTA.

STEAM THAWING-MACHINE.

No. 930,131. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed June 7, 1907. Serial No. 377,747.

To all whom it may concern:

Be it known that we, EDWIN R. BENNETT and MELVIN I. EKERN, citizens of the United States, residing at Flandreau, county of Moody, and State of South Dakota, have invented certain new and useful Improvements in Steam Thawing-Machines, of which the following is a specification.

Our invention relates to steam thawing machines.

The present invention has for its object the provision of a steam thawing machine adapted for thawing out frozen pipes from the inside, cleansing drain and waste pipes on plumbing systems, cleaning out beer pipes and removing wall paper, or other use where dry, wet, or superheated steam is necessary.

Other objects of the invention are the provision of means for placing under air pressure the water which is to undergo heating to thereby obtain, as desired, dry, moist, or superheated steam.

Another object of the invention is the provision of gasolene and water tanks in a novel fashion, whereby the structure is rendered compact, the gasolene is preliminarily heated so that its later vaporization is more satisfactorily accomplished; to provide a simple and improved arrangement of water coils in connection with a gasolene heater, whereby the water is more readily converted into steam, and to provide for the control of the water, steam and gasolene and avoid freezing.

Another object of the invention is the provision of an improved drum and piping for use within the pipe to be cleansed or thawed, together with a novel coupling on the generator for connection to the drum or reel.

Other objects of the invention will more fully appear hereinafter and the novel features are recited in the appended claims.

In the accompanying drawings:—Figure 1 is a side view, partly in section, of all of the device except the reel; Fig. 2 is a sectional elevation on line 2—2 of Fig. 1, showing the reel attached; and Fig. 3 is a plan view of Fig. 1.

The numeral 1 designates a water tank which has an opening provided with a closure 2 for the filling thereof. Depending within the water tank is the cylinder 3 of an air pump in which plays a plunger 4 having a handle 5 at its upper end for manipulation by the operator. Locking means 6 are employed to hold the plunger down when not in use. An opening 7 in the lower end of the cylinder 3 is for the passage of the air into the tank 1.

The numeral 8 designates a gasolene tank which extends centrally within the water tank from end to end thereof and projects beyond the upper end of said tank, this gasolene tank being provided with a cap 9 and having a valve 10 and a bulb 11 for pumping up air pressure on top of the gasolene to form the proper pressure.

Leading from the bottom of the gasolene tank is a pipe 12 provided with a controlling valve 13 and extended into a vaporizing coil 14, the valve 15 being provided for controlling the escape of the gasolene vapor, which thereupon is adapted to rise around the vaporizing coil. Located above the vaporizing coil are the steam coils 16 and 17 in circuit with each other, the former being connected to the water tank at 18 and provided with a check-valve 19, which prevents backward flow into the tank. The upper end of the coil is provided with a coupling 20 adapted to swing in a vertical plane and connected to which is a coupling 21, which is attached to pipe 22 and adapted to swing with said coupling in a horizontal plane, whereby the pipe 22 can be brought to different positions. For controlling the flow of water into the steam coils, a valve 23 is provided. The steam coils and the vaporizing coil are surrounded by articulated shells 24, 25 and 26, the lower ones of which are provided with perforations to establish a draft so that the gasolene flame will be drawn upward in a proper fashion.

Surmounting the upper steam coil and connected to the shell or casing 26 is a deflector cap 27 which causes spreading of the gasolene flame so that it comes into intimate relation with all parts of the steam coils.

The water tank is provided with a valved coupling 28 on its side to which the pipe 22 may be attached by suitable piping to heat the water in the water tank to any degree desired, when necessary, to keep the water from freezing.

A release or safety valve 29 is provided at the upper part of the water tank.

The device may be provided with a handle 30 so that it can be conveniently carried from place to place and the water tank has a

shield 31 to protect the upper parts of the gasolene tank and the water tank from the gasolene flame.

The numeral 32 designates a standard in which is journaled a drum or reel 33, which carries a suitable length of copper piping 34, one end of which is free for unreeling and insertion into the frozen pipe to be thawed or other pipe to be cleansed, while the other end is connected by pipe 35 to the journal 36, which is in the form of a pipe coupling and is adapted for connection to the pipe 22 so that the steam coming from pipe 22, passes to the piping 34.

In operating the machine, the water tank is first suitably filled with water and the gasolene tank with gasolene. The air pressures are then pumped up in both the gasolene tank and the water tank. The valve 13 is then opened, which admits gasolene to the gasoline cup and when the proper amount has been received, the valve is closed and the gasolene lighted, which thereupon heats the gasolene coil 14 to the proper degree to vaporize the gasolene. The valve 13 may then be reopened and the continuous vaporization of the gasolene will ensue. When the steam coils 16 and 17 have been properly heated by the gasolene flame, the valve 23 is opened and the water flowing into said coils becomes instantly converted into steam. The amount of moisture or heat in the steam may be regulated by the pressure of the air on the water in the water tank, which in turn, is controlled by operating the pump. The check-valve 19 prevents back flow of the steam pressure from the steam coils into the water tank. As soon as the steam issues from the pipe 34, the latter may be inserted into the pipe to be thawed or cleansed.

Having thus described our invention, what we claim as new and desire to secure by Letters-Patent, is:—

1. In a steam thawing machine, the combination with a water tank, of an air pump for supplying air pressure to the said water tank whereby the amount of moisture or heat in the subsequently generated steam may be regulated, a pipe connected to the water tank and provided with an outlet, and means for converting the water in said pipe into steam.

2. In a steam thawing machine, the combination with a water tank, of an air pump for supplying air pressure to the said water tank whereby the amount of moisture or heat in the subsequently generated steam may be regulated, a pipe connected to the water tank and provided with an outlet, means for converting the water in said pipe into steam, and a check valve to prevent back flow of the generated steam into the tank.

3. In a steam thawing machine, the combination with a water tank, of a steam coil connected thereto, a gasolene tank contained within the water tank, a burner for heating the steam coil, and a valved connection between the burner and the gasolene tank.

4. In a steam thawing machine, the combination with a water tank, of an air pump for supplying air pressure to the said water tank whereby the amount of moisture or heat in the subsequently generated steam may be regulated, a steam coil having a connection with the water tank, an outlet for the steam, a burner for heating said coil, and a check valve for preventing back flow of the steam into the tank.

In testimony whereof, we hereunto affix our signatures in presence of two witnesses.

EDWIN R. BENNETT.
MELVIN I. EKERN.

Witnesses:
LEWIS BENSON.
VERNA EICK.