

Sept. 25, 1928.

1,685,131

C. I. HUMMER
TANK CAR COIL HEATER

Filed May 6, 1927.

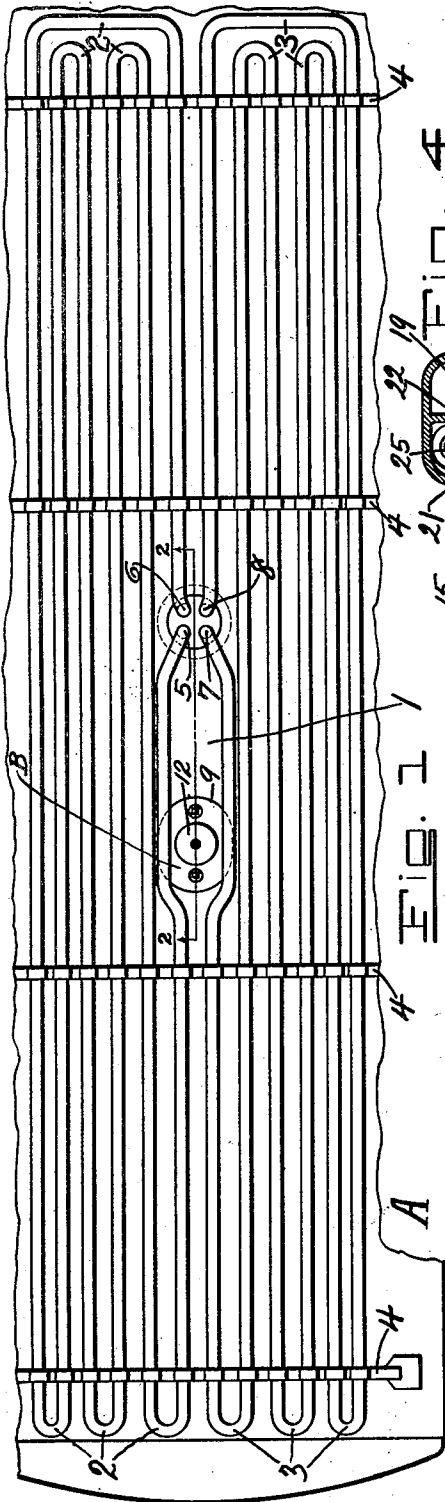


FIG. 1

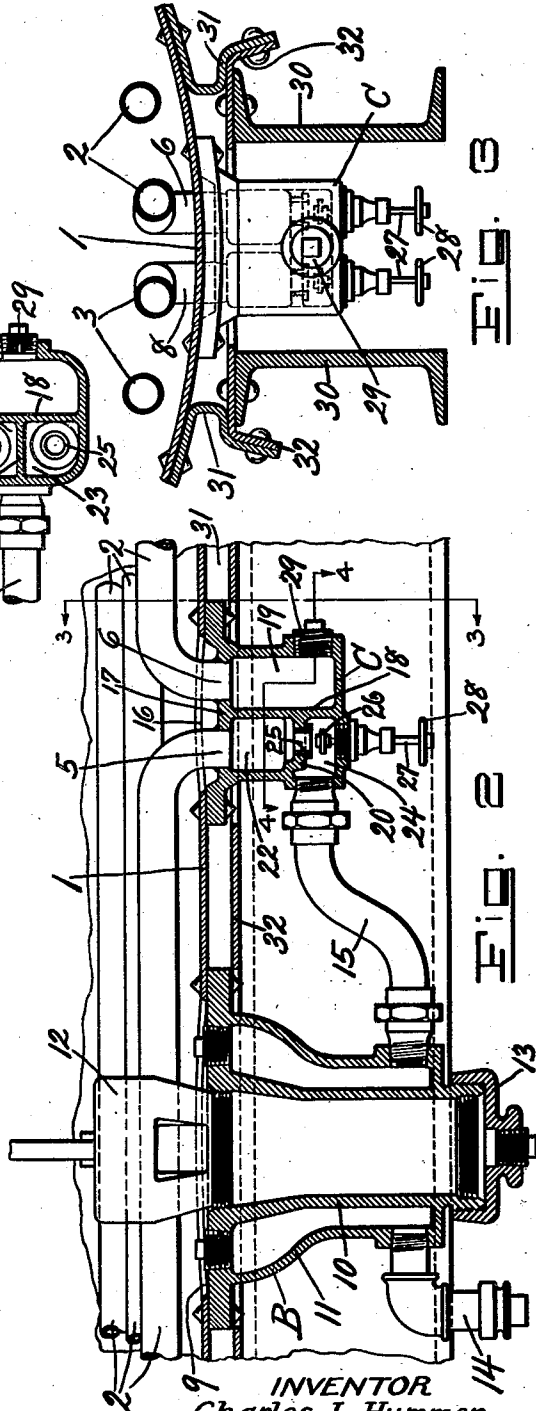


FIG. 2

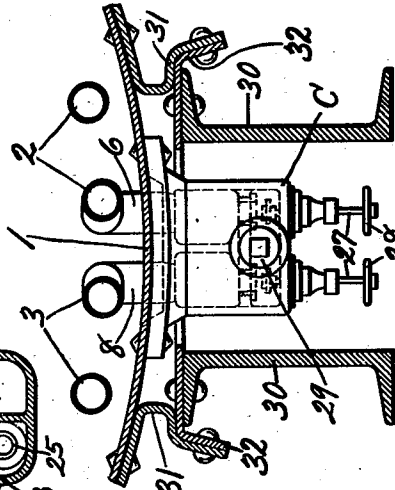


FIG. 3

INVENTOR
Charles I. Hummer.
BY *J. A. Libbo*
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES I. HUMMER, OF NEWARK, NEW JERSEY, ASSIGNOR TO AMERICAN CAR AND
FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TANK-CAR COIL HEATER.

Application filed May 6, 1927. Serial No. 189,319.

Reference is had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof within the scope of the claims will occur to persons skilled in the art.

In said drawings:

Figure 1 is a fragmentary top plan view of the bottom of a car tank, showing the heating coils therein;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view on the line 3—3 of Fig. 2, and

Fig. 4 is a sectional view on the line 4—4 of Fig. 2.

This invention relates generally to tanks and more particularly to car tanks having heating coils arranged therein, and comprehends a means for distributing steam or other heating means to the coils.

It is one object of this invention to provide heating coils arranged in sections in the tank with means for controlling the distribution of steam thereto whereby either section or both may be heated, as desired, and the heating of the sections regulated in accordance with existing conditions.

Another object of this invention is to provide a discharge nozzle for the tank which is arranged in series with a heat distributor for coils arranged in the tank whereby the steam or other heating medium will first heat the nozzle and then be passed through the distributor and into the coil sections in the tank to heat the lading in the tank.

The tank shown in the drawings is designated generally as A, and the bottom thereof is indicated at 1, the latter having coil sections 2 and 3 mounted thereon by suitable supports 4. The inlet end of the coil section 2 is shown at 5 and the outlet end is shown at 6, while the inlet and outlet ends of section 3 are shown at 7 and 8 respectively.

Secured to the tank bottom 1 adjacent an opening 9 therein is a discharge nozzle B which comprises a jacketed casting having an inner wall 10 and an outer wall 11, the inner wall providing a passage for the discharge of the tank lading and having its upper end threaded to accommodate the valve 12. The lower end of the discharge passage is normally closed by a cap 13. The casting is pro-

vided with an inlet pipe 14 to conduct steam into the jacket, and an outlet pipe 15 leads from the jacket as clearly shown at Fig. 2.

The bottom 1 has secured thereto adjacent an opening 16 the steam distributor indicated generally at C, the same comprising a casting having a top 17 into which the inlet and outlet ends of coil sections 2 and 3 extend. The casting is substantially of hollow box-like construction and is subdivided into compartments by means of a central vertical partition 18 which defines section or compartment 19. The other section or compartment defined by the partition 18 is provided with a horizontal partition 20 (see Fig. 2) and a vertical partition 21 (see Fig. 4), the partitions 20 and 21 thus defining three chambers, 22, 23 and 24 respectively, chamber 24 receiving steam from the outlet pipe 15 which leads thereto from the casting B.

The partition 20 provides a bottom for the chambers 22 and 23 and the bottom of each of said chambers is provided with an opening in which is secured an annular ring 25 forming a seat for a valve 26 mounted through the bottom of the casting and provided with an operating rod 27 controlled by a hand wheel 28 or the like.

The chamber 24 provides a common inlet for admitting steam to either or both of the chambers 22 and 23, said chamber 24 extending beneath both of said chambers 22 and 23, and the compartment 19 provides a common outlet for the two series of coils 2 and 3. This common outlet 19 is normally closed by a plug 29 by which the compartment 19 and the coil sections may be drained or to permit the passage through the coils of steam or other heating medium injected therinto.

The tank is mounted on the frame of a car and as shown in Fig. 3, the casting C is positioned within the center sill or girder 30, the casting thus being protected, and the tank is anchored by brackets 31 secured to a plate 32 carried by said center girder. The specific mounting means for the tank as shown in the drawings are merely illustrative, they forming no particular part of the invention, and the tank may be mounted on a car frame in any suitable manner.

With the construction just described, it will be apparent that steam passed through the inlet 14 into the discharge nozzle B will heat said discharge nozzle and will pass through the pipe 15 into the common inlet 24

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of casting C; the valves 26 controlling the admission of steam into the chambers 22 and 23 may either or both be open to permit the steam to pass from the common inlet 24 into either or both of the chambers 22 and 23 whence it will pass into the coil sections 2 and 3 and pass from said coil sections into the compartment 19 and then out to the atmosphere when the plug 29 has been removed from the casting C. It is apparent also that the amount of steam which passes into the coil sections 2 and 3 may be varied by proper manipulation of the valves 26, thereby varying the temperature of the coil sections 2 and 3 as required.

What is claimed is:

1. In a car tank having series of continuous heating coils therein, a distributor secured to

the tank and having valve controlled steam inlet chambers connected respectively to the inlet ends of the series of coils, a steam inlet chamber common to said first named steam inlet chambers, and a steam outlet chamber common to the series of coils and into which the outlet end of each series is connected.

2. In a car tank, series of continuous heating coils therein each having an inlet and an outlet, a distributor secured to the tank and provided with a steam outlet common to each series of coils, a valve controlled chamber to which the inlet end of each series of coils is connected, and a common steam inlet chamber for said valve controlled chambers.

In witness whereof I have hereunto set my hand.

CHARLES I. HUMMER.