Sept. 16, 1947. E. FRANCK 2,427,452

TROUGH TYPE OIL BURNER

Filed March 23, 1945

Fig. 1.

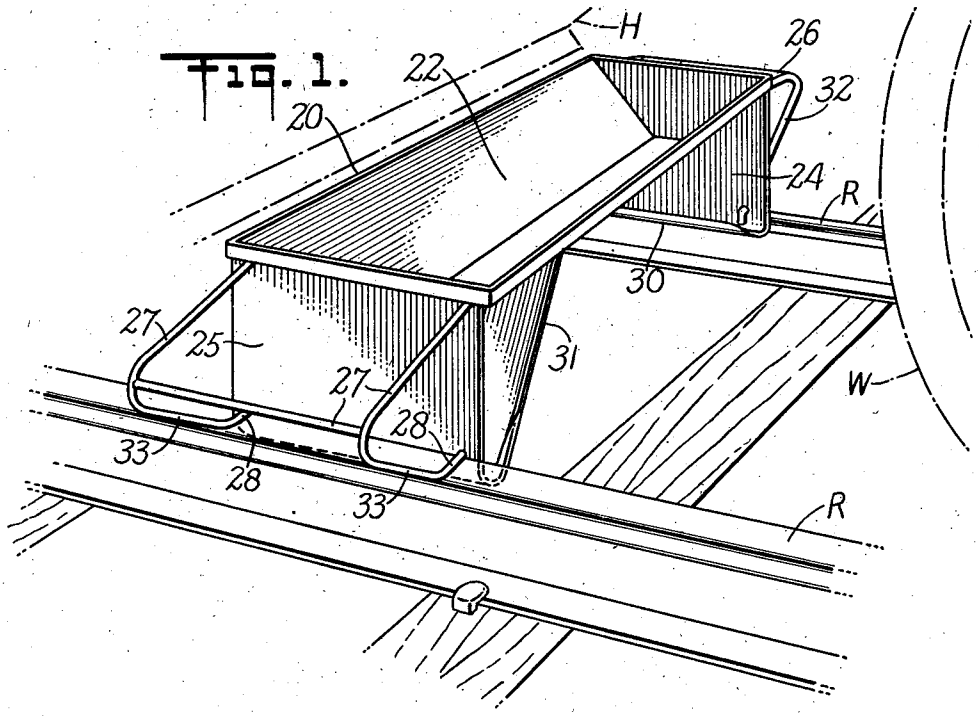


Fig. 2.

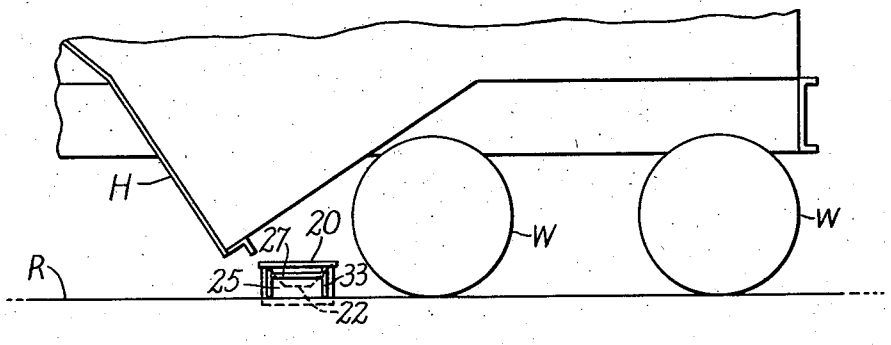
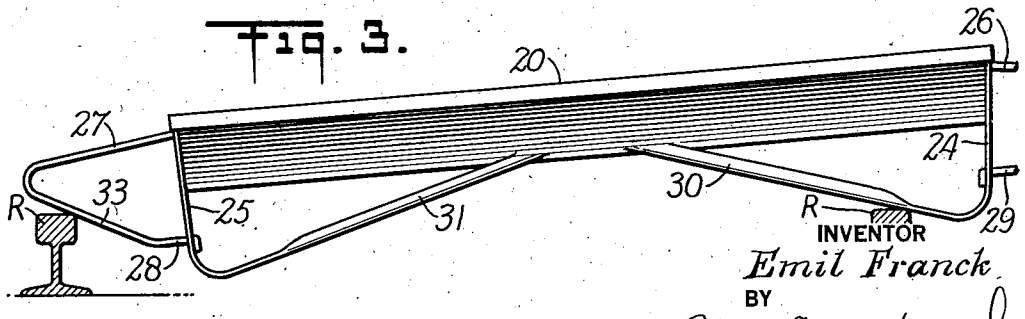


Fig. 3.



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Patented Sept. 16, 1947

2,427,452

UNITED STATES PATENT OFFICE

2,427,452

TROUGH TYPE OIL BURNER

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Application March 23, 1945, Serial No. 584,415

5 Claims. (Cl. 158—91)

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This invention relates to heaters for railroad hopper cars of steel or other fire-resistant constructions. More particularly it pertains to a portable type of heater which may be used effectively by one man to thaw the ice from the hopper of a loaded hopper car so that its load may be discharged.

When coal, for example, is loaded into hopper cars it is usually wet, and in transit rain or thawing snow may accumulate additional water in the bottoms of the hoppers. In cold weather such water freezes in the cars with the result that the coal remains solid in the railroad cars and will not flow out after hopper gates have been opened in the coal yards. This has long presented a problem of how to get the coal sufficiently thawed that it may be discharged through the car hoppers.

There have been various constructions suggested for directing flames against the exterior of the car hoppers, after the fashion of a large blow torch, and there have been types of hopper cars suggested wherein a heating unit was included in association with each car hopper. However, these expedients have not been well received because of the fact that some of the constructions were unwieldy and awkward to use and because the coal yard operators were afraid to use others of them. The result has been that most frozen hoppers have been thawed either by building a fire on the tracks underneath the car thereby often damaging railroad ties or by the crude resort of placing a bucket of oil under the hopper and then igniting the oil.

It is an object of the present invention to provide a portable car heater which can be operated by one man and which will effectively and rapidly thaw the ice from a frozen car hopper. A further object is the provision of a heater having a novel arrangement of ramp-like supporting structures such that one man can easily position the heater beneath the hopper of a car. A further object is the provision of a car heater which is simple and durable in construction and effective in operation and which will rapidly thaw a frozen car hopper. Other objects will be in part pointed out as the description proceeds and will in part become apparent therefrom.

In this specification and the accompanying drawings, I have shown and described a preferred embodiment of my invention; but it is to be understood that this is not intended to be exhaustive nor limiting of the invention, but on the contrary is given for purposes of illustration in

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order that others skilled in the art may fully understand the invention and the principles thereof and the manner of applying it in practical use so that they may modify and adapt it in various forms, each as may be best suited to the conditions of a particular use.

In the drawings:

Figure 1 is a perspective view of a car heater embodying the invention resting upon a pair of railroad rails underneath the hopper of a coal car;

Figure 2 is an elevational end view of the car heater showing a portion of a hopper car, the car heater being positioned beneath the hopper; and

Figure 3 is a side elevational view showing the car heater as it is pushed across a pair of railroad rails to position it beneath the hopper of a car.

In Figure 1 a car heater 20 is illustrated consisting of a trough 22 carried by end plates 24 and 25 located one at each end. A pair of handles 26 and 27 are provided at opposite ends of the heater. The end plates 24 and 25 are spaced apart a distance such that they fit between a pair of standard railroad rails R, and the heater is supported between the rails by the downturned ends 28 and 29 of handles 26 and 27 as will be described. The wheel W of a hopper car is indicated diagrammatically in Figure 1 and a portion of a hopper H also appears. The standard distance between the inner running edges of a pair of rails is four feet eight and one-half inches and accordingly the distance between the outer surfaces of end plates 24 and 25 will ordinarily be an amount slightly less than four feet eight and one-half inches.

The end plate 24 is extended inwardly and upwardly (see Figure 3) from its lowest portion toward the central bottom portion of trough 22 to form a supporting ramp 30. Correspondingly end plate 25 is turned inwardly and upwardly to form a supporting ramp 31. Handle 26, which projects beyond one end of the heater, is turned downwardly (see Figure 1) and forms a handle ramp 32 which is fastened to end plate 24 near the bottom of the support. Correspondingly handle 27 is turned downwardly and extended back to support 25 to form a handle ramp 33.

The trough may be drawn from a single piece of sheet steel or the bottom ends stamped from one piece and the sides from another and the seams welded. The handles are formed from bar or tube stock and welded together and to the

trough. Thus there is no part of the device which could be injured by overheating.

With the described arrangement of ramps located along the bottom of heater 20 it is possible for one man to push the heater toward and over the farther rail. Referring now to Figure 3, the leading handle ramp 33 smoothly lifts the advancing end of the heater until the portion 28 rests on the rail. The other end is held up by the operator until the end 25 strikes the rail R, and is then lowered until the portion 29 rests on the other rail.

After the heater has been properly positioned it can be supplied with a small amount of oil which is lighted in any conventional manner as, for example, with a burning piece of rag. Furthermore the construction of the handles is such that one man can remove the heater from beneath a car hopper. For this purpose the ends 24 and 25 are curved as shown so that they readily slide up over the rail.

In practice it has been found that a thawing trough constructed in accordance with my invention can heat a loaded car sufficiently to cause substantially all of the ice in the car to melt and drain from the car through the hopper, leaving a relatively dry load. The coal may advantageously be warmed and dried considerably more than is necessary simply to release it from the car because dry coal will not freeze in a storage bin. Thus, by heating the loaded cars it is possible to condition the coal so that it will thereafter discharge readily without further thawing from a storage bin or silo.

From the foregoing, it will be seen that a device made in accordance with the present invention is well adapted to attain the ends and objects hereinbefore set forth, and to be economically manufactured. Heaters embodying the invention are suited to common production methods and are susceptible to a wide latitude of variations, as may be desirable in adapting the invention to different applications.

As various embodiments may be made of the above invention and as changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. Thawing apparatus for railway cars and the like comprising a trough for fuel, means for supporting said apparatus in spaced relation above the roadbed, stop means substantially at one end of said trough adapted to bear against the inner side of a rail, and means defining a surface sloping upwardly and outwardly from said stop means and outwardly of the end of the trough, said surface acting to cam the end of the apparatus upwardly as it is pushed against a rail.

2. Thawing apparatus for railway cars and the like comprising a trough for fuel, supports for holding said apparatus in spaced relation above the roadbed, stops at opposite ends of said trough

each adapted to bear against the inner side of a rail, and means defining a surface sloping upwardly and outwardly from each stop and outwardly of the end of the trough, said surfaces being adapted to cam one end of the apparatus upwardly as it is pushed from the other end under a railway car.

3. Thawing apparatus for railway cars and the like comprising a trough for fuel, stops at opposite ends of said trough each adapted to bear against the inner side of a rail, a handle ramp extending outwardly from each end of said trough, each handle ramp including a supporting surface adapted to rest on the railhead to support the apparatus in spaced relation above the roadbed, and a surface sloping upwardly and outwardly from said supporting surface, said sloping surface acting to cam one end of the apparatus upwardly as it is pushed from the other end and said supporting surfaces serving to support the apparatus on the rails.

4. Thawing apparatus for railway cars and the like comprising a trough for fuel, means for supporting said apparatus in spaced relation above the roadbed, a stop portion at each end of the trough adapted to bear against the inner side of a rail, a ramp portion sloping upwardly from the bottom of each stop portion toward the center of the trough, and means defining a surface sloping upwardly and outwardly from each stop portion and outwardly of the end of the trough, said surfaces being adapted to cam one end of the heater upwardly as it is pushed from the other end under a railway car.

5. Thawing apparatus for railway cars and the like comprising a trough for fuel, means for supporting said apparatus in spaced relation above the roadbed, a stop portion at each end of the trough adapted to bear against the inner side of a rail, a ramp portion sloping upwardly from the bottom of each stop portion toward the center of the trough, and handles at each end of said trough, each of said handles including the trough supporting means and means defining a surface sloping upwardly and outwardly from each stop portion and outwardly of the end of the trough, said surfaces being adapted to cam one end of the heater upwardly as it is pushed from the other end under a railway car.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
940,965	Hamilton	Nov. 23, 1909
970,044	Hamilton	Sept. 13, 1910
2,306,467	Reynolds	Dec. 29, 1942
1,727,610	Kramer	Sept. 10, 1929
2,165,968	Hill	July 11, 1939
1,198,034	Higgins et al.	Sept. 12, 1916
1,899,519	Nielsen	Feb. 28, 1933