

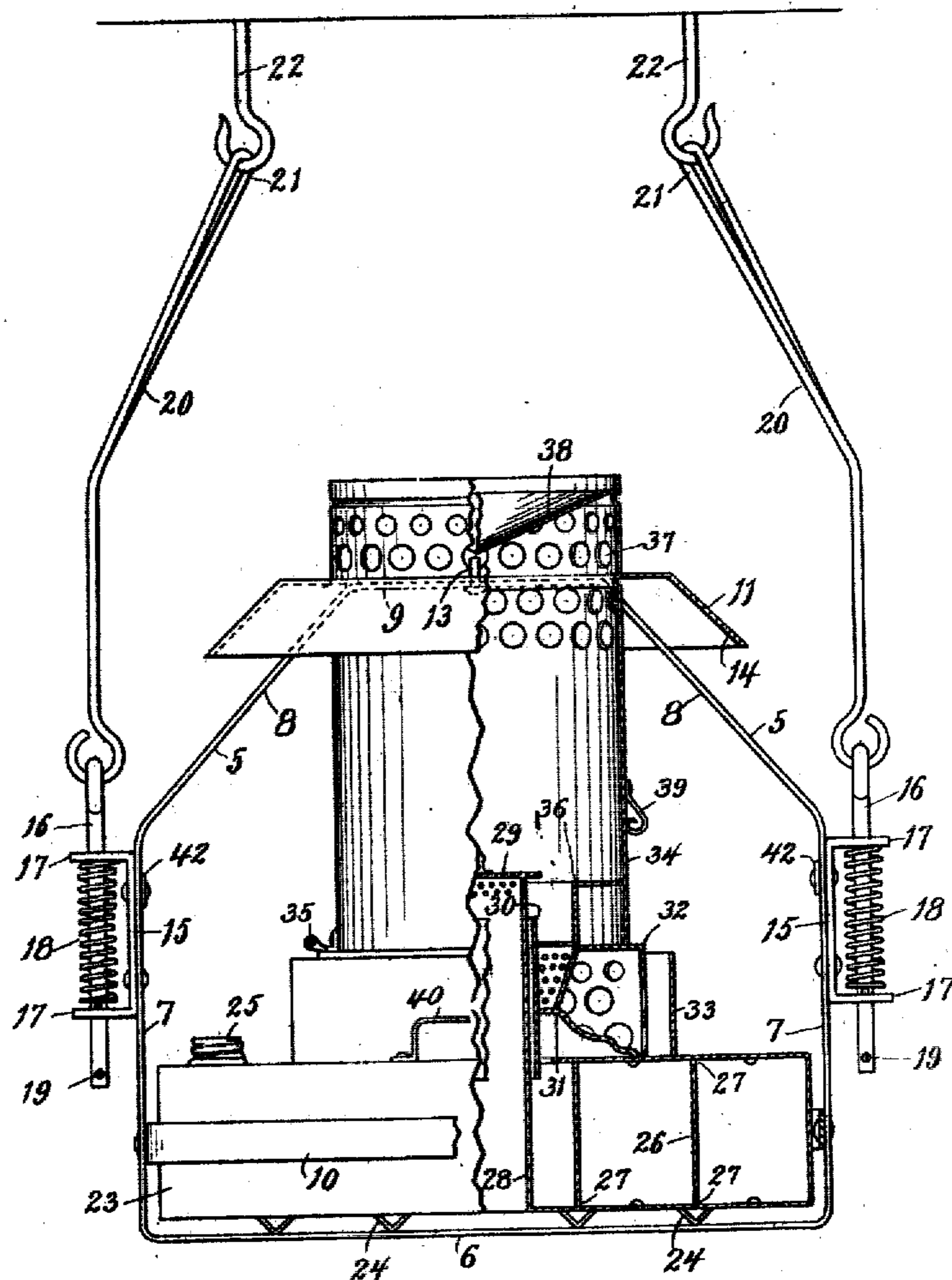
No. 814,296.

PATENTED MAR. 6, 1906.

E. KLAUSMAN,
HEATER FOR THERMAL CARS.
APPLICATION FILED JAN. 12, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
C. H. Keeney,
Anna F. Schmidtbauer

Inventor:
Edward Klausman
By Benedict & Merrill
Attorneys.

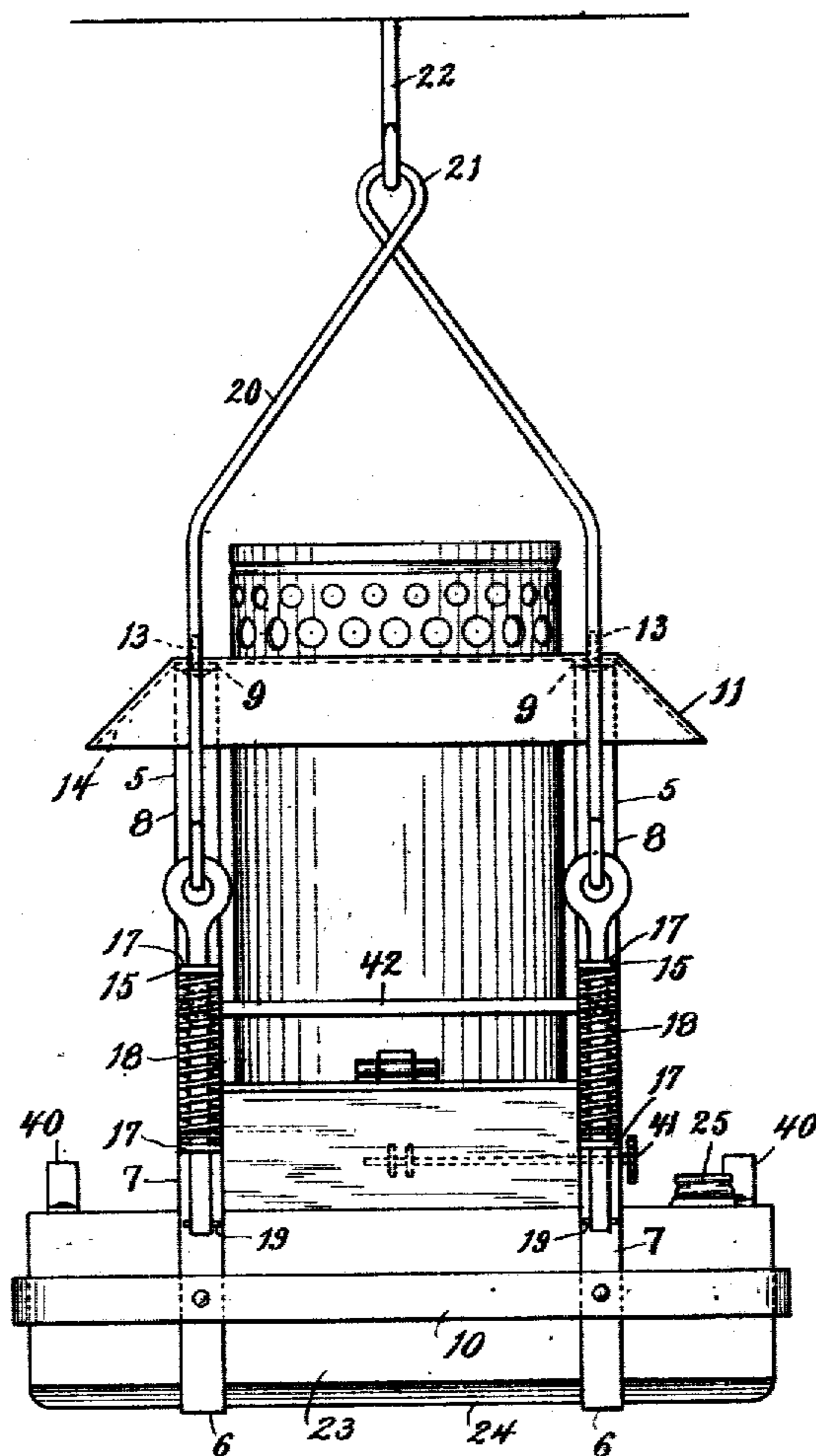
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3 SHEETS—SHEET 2.

Fig. 2.



Witnesses.

A. Keeney,

Anna F. Schmidtbauer

Inventor.

Edward Klausman

R. Benedict & Morrell
Attorneys.

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3 SHEETS—SHEET 3.

Fig. 3.

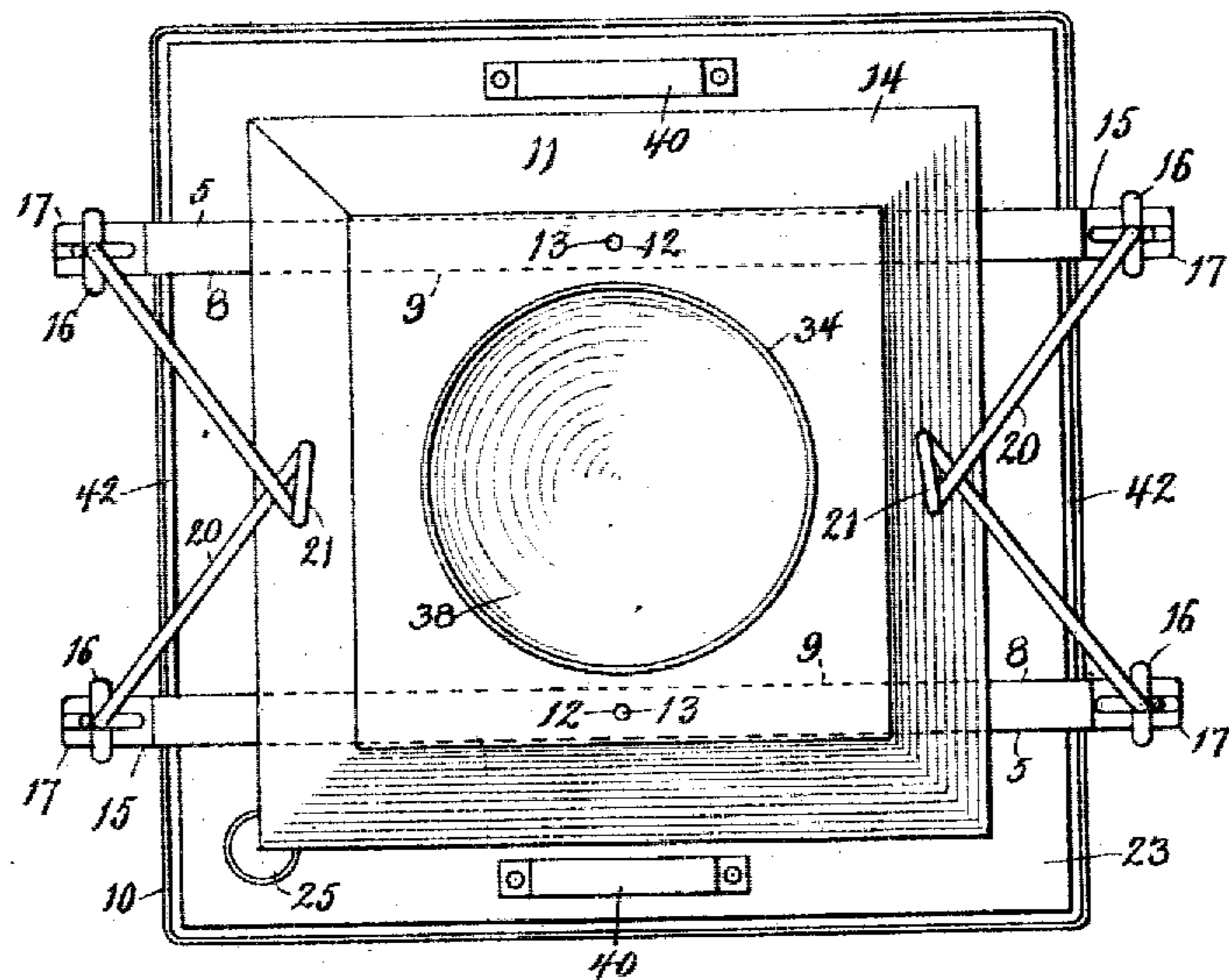
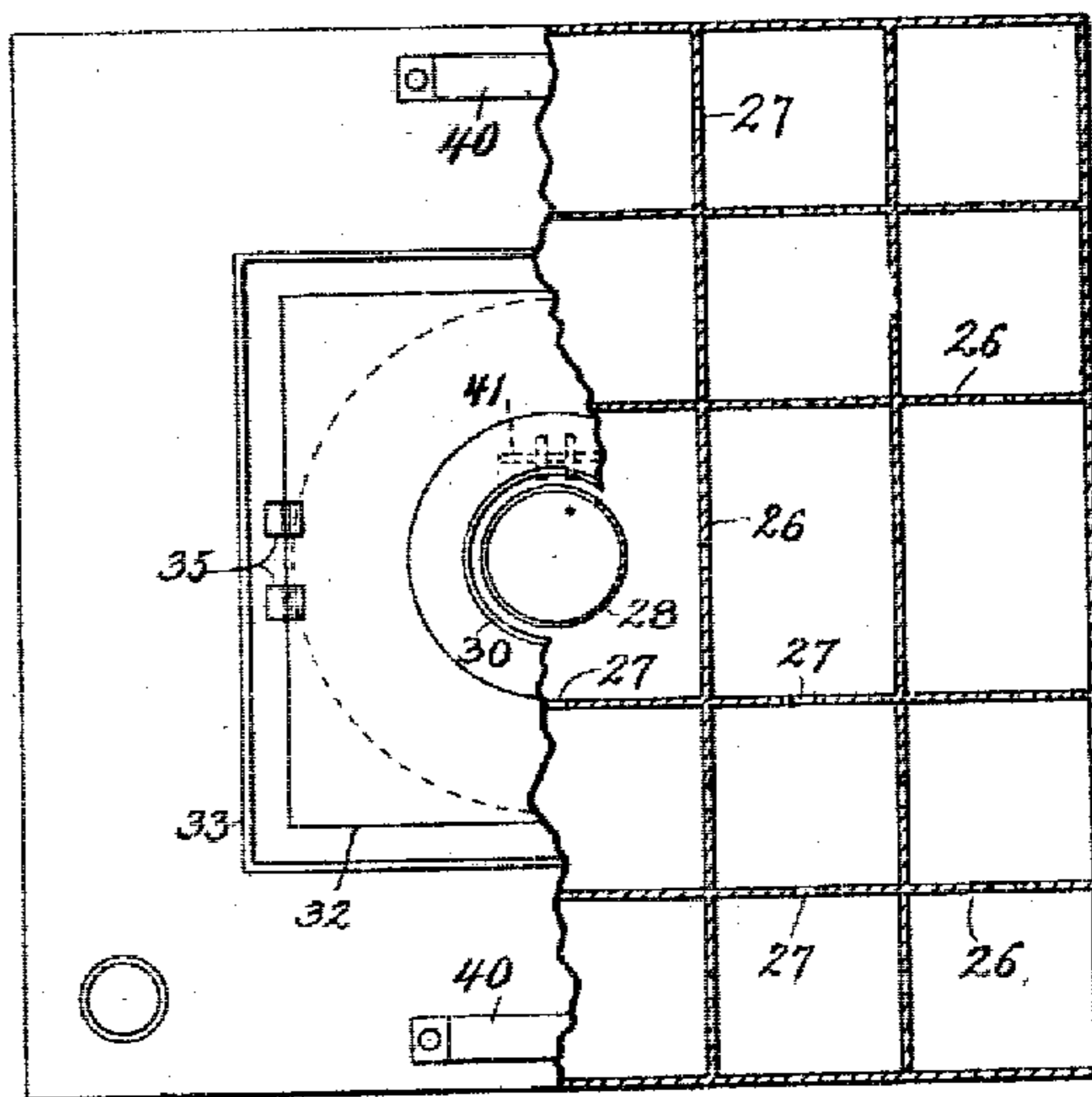


Fig. 4.



Witnesses.
O. H. Keeney.
Anna F. Schmidtbauer

Inventor.
Edward Klausman
By Benedict & Morrell
Attorneys.

UNITED STATES PATENT OFFICE.

EDWARD KLAUSMAN, OF MILWAUKEE, WISCONSIN.

HEATER FOR THERMAL CARS.

No. 814,296.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed January 12, 1905. Serial No. 240,726.

To all whom it may concern:

Be it known that I, EDWARD KLAUSMAN, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Heaters for Thermal Cars, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The object of my invention is to provide an improved heater for a thermal car—that is, a heater adapted to warm a car in the winter in those parts of the country where the temperature of the atmosphere goes down to such extent as to destroy or injure fruit, beer, eggs, or other products in a car during transportation where heat is not employed. It is the common practice to use for this purpose those cars that in the summer are employed as refrigerating-cars, which in the winter, being heated, are well adapted for winter transportation of such perishable products.

In the drawings, Figure 1 is an elevation of my improved heater, parts being broken away to exhibit interior construction in section. Fig. 2 is an elevation of the same heater shown in Fig. 1, the view being at a right angle to that of Fig. 1. Fig. 3 is a top plan of the improved heater, and Fig. 4 is a plan, partly in section, of the tank forming a part of the heating device.

The improved heating device is adapted to be suspended in a car in which it is used for heating, and for this purpose an open or basket frame is provided which forms a part of the heater as assembled for use. This open or basket frame consists of two metal straps 5 5, so bent and formed as to provide parallel horizontally-disposed bottom portions 6 6, upright side portions 7 7, and converging upper portions 8 8, and flat top portions 9 9. There are two of these straps located at a distance apart and parallel with each other, and near the bottom a binding-strap 10 is employed, which passes around the straps 5 and is secured thereto in some suitable manner, conveniently by rivets. In this manner the straps 5 are held in constant position relative to each other and an open basket or cage is formed for holding the tank and burner of the heater. A deflector 11 is provided, the interior portion of which on the under side rests on the top portions 9 9 of the straps 5 and is held in place and detachably thereon by being provided with holes 12 12, which receive therethrough the upwardly-

projecting pins 13, fixed in the top portions 9 of the straps 5. The margin 14 of the deflector 11 is turned downwardly and flares outwardly, being thereby adapted to deflect heat downwardly and laterally. The deflector is provided with a central aperture for receiving the chimney of the burner through it, as is hereinafter set forth. For suspending this basket-frame in a car the side portions 7 of each of the straps 5 is provided with a winged bracket 15, which is riveted to the strap 5, and an eyebolt 16 passes loosely through apertures therefor in the wings 17 of the bracket. The strap in each instance is supported yieldingly on the eyebolt by means of a spring 18, coiled about the stem of the eyebolt and resting at the bottom on a pin through the eyebolt above the lower wing 17, the spring bearing upwardly against the upper wing 17. The eyebolts are each provided with a transverse stop-pin 19 to limit the movement of the bracket downwardly on the eyebolt. For supporting these eyebolts and the basket-frame thereon two hangers 20 20 are provided, constructed advisably severally of a heavy wire or small rod bent centrally, forming a loop 21, adapted to take into a hook 22 or equivalent suspending device. The ends of each hanger 20 are separated from each other and are hooked into the eyebolts 16 at one end of the heater. In suspending the heater it is to be so placed that one end of the heater will be toward the front and the other toward the rear of the car. The hooks 22, on which a heater is suspended, are therefore arranged in line in the direction of the front and the rear of the car. By means of these thus doubly-linked and substantially parallel hangers the heater can swing or sway to a certain extent from front to rear and will still remain in horizontal position. This means for supporting the heater constantly in a horizontal position notwithstanding the forward and rearward shocks that are given to the car in starting and stopping and otherwise during its employment as a means of transportation is not only well adapted to secure the safe use of the heater in a car, but is an ample provision for maintaining the heater in the desirable horizontal position.

This heater is intended to use kerosene-oil or other suitable liquid for fuel, and for holding a supply of such oil a tank 23 is provided, which tank is advisably made of sheet metal of a size and form to fit loosely, but properly

and removably, in the basket-frame. To support this tank in the most desirable manner in the frame, it is provided with a plurality of ribs 24 on and transversely of its bottom, which ribs may be made of sheet metal and are secured rigidly to the bottom, which ribs serve as short legs to rest on the bottom portions 6 of the straps 5, and thereby support the tank thereon. The tank is provided with an opening and a screw-cap 25, through which opening when the cap is removed the tank can be supplied with oil or other fluid fuel for combustion. To prevent the liquid fuel from swashing in the tank, the tank is advisably divided into a considerable number of small chambers by means of transverse partitions 26 in both directions, which partitions are provided between each two adjacent chambers with small apertures 27, one advisably located near the top and another near the bottom of the partition, so that the liquid fuel can flow freely from one chamber to the other, while it is prevented from moving about in bulk or swashing in mass against one side of the tank. At the center of the tank a tubular wick-holder is provided, consisting of an inner tube 28, secured at its lower end to the bottom of the tank and extending upwardly through the top of the tank to a distance above it, and is covered at the top with a circular disk 29, projecting at its peripheral margin a little distance all around in a horizontal direction beyond the tube. About this central tube and at a little distance therefrom there is another tube 30, the upper end of which is somewhat below the top of the inner tube 28, which tube 30 extends down into the top of the tank. This outer tube is held in place by an encircling and outwardly-flaring base-piece 31, which rests on and is secured to the top of the tank. This wick-holder is adapted to receive thereon between the inner tube 28 and the outer tube 30 a tubular wick of a common form, which wick extending down into the tank absorbs and carries up the fluid fuel for consumption at and near the top of the wick-holder or burner. The wick-holder or burner is of a form in common use and of itself does not involve novelty.

Directly above the tank 23 and secured to and supported on the tank there is a chimney-pedestal consisting of a case 32, surrounding the wick-holder at a distance therefrom, the sides of which pedestal are provided with holes for the admission of air through them. Also around this pedestal and at a little distance therefrom there is an upright guard 33. The space between this guard and the pedestal being open at the top permits of the passage of air from the outside into the combustion-chamber through the apertured walls of the pedestal 32. Above this pedestal and supported on it is a tubular metal chimney 34, which is advisably hinged at one side, as

shown at 35, to the pedestal 32. The top of the pedestal 32 extends inwardly from its outer side walls toward the wick-holder, but is cut away around the wick-holder to permit air to pass upwardly about the wick-holder from the pedestal into the chimney. Above the pedestal and around on the inside of the chimney there is a combustion-guard 36, which is conveniently made in the form of an upright annular wall with a top flange, which being placed against and secured to the chimney forms an annular chamber around inside of the chimney at the bottom. This chamber-space protects the lower part of the chimney somewhat from the heat of combustion and at the same time forms a comparatively narrow passage upwardly from the chamber of the pedestal into the chimney, through which air passes, being thereby directed to the locality of the combustion of the fuel in the wick on and around the tube 28. The chimney near its upper end is provided with a series of apertures 37 both above and below the plane of the deflector 11, through which heated air escapes from the chimney into the surrounding atmosphere. The chimney is closed at the top by a cone-shaped cover 38, the apex of the cone being downwardly, whereby the products of the combustion within the chimney are deflected outwardly through the apertures in the chimney. It will be understood that by lifting the deflector 11 off its support and removing it from around the chimney the chimney can be tilted rearwardly on and around the pivot of the hinge 35 to get at the wick-holder for renewing the wick or trimming it. A handle 39 is affixed to the chimney for this purpose. The tank 23 is also provided with handles 40 for conveniently lifting it. The rod 41, mounted on the pedestal, is provided with ratchet-wheels and a fitting-head and is adapted for raising or lowering the wick. Horizontal bars 42, one at each end, are fastened to the upright straps 7 and serve as handles for carrying the heater and at one side as a rest for the chimney when it is tipped back.

What I claim as my invention is—

1. In a car-heater, an open heater-supporting frame, hangers in sets at the front and rear hinged at their lower ends to the frame and adapted to be hinged at their upper ends in the front and rear line and at a distance apart similar to their lower ends severally to supports whereby the heater-frame will maintain its horizontal position when swung to front and rear.

2. In a car-heater, an open heater-supporting frame, winged brackets on the frame, eyebolts movable vertically in the wings of the brackets, springs supporting the brackets and frame yieldingly on the bolts, and hangers supporting the eyebolts and the frame thereon.

3. In a car-heater, a frame consisting of a plurality of bottom upright side and top straps, and a continuous horizontally-disposed surrounding side strap secured rigidly at a little distance from the bottom to the upright straps, and means on and connected to the frame for supporting it yieldingly vertically and oscillatingly laterally.

4. In a car-heater, a liquid-fuel burner, a cylindrical chimney on the burner provided with a plurality of annularly-arranged series of apertures in its wall near the top, a cone-shaped outwardly and upwardly flaring closure in the chimney above the series of apertures, and an annular downwardly-flaring deflector about the chimney exteriorly below some of the apertures and above others of the apertures.

5. In a car-heater, a frame, a liquid-fuel tank on the frame, a burner on the tank, a chimney about and above the burner the chimney being closed at the top and having several horizontal annular series of apertures one above another in its sides near the top, and a deflector on the frame about the chimney above some and below others of the series of apertures in its sides.

6. In a car-heater, a frame including a plurality of strap members extending upwardly and across at the sides of a chimney and above a tank, a fuel-tank on the frame, a burner on the tank, a tubular metal chimney

hinged on the burner, the chimney being closed at the top and having holes in its sides near the top, and a deflector resting detachably on the straps above the burner and about the chimney above some holes in its sides.

7. In a car-heater, a liquid-fuel tank, a tubular burner in and projecting above the tank, a pedestal on the tank about the medial portion of the burner, a tubular chimney on the pedestal about the upper portion of the burner, and an annular guard in the chimney adjacent to the pedestal and at a uniform distance from the wall of the chimney around inside the chimney, and a flange securing the guard at its top to the chimney.

8. In a car-heater, a supporting-frame, winged brackets on the frame, rods with eyes in their upper ends movable vertically through the wings in the brackets, pins through the rods above the lower wings, stop-pins through the rods below the lower wings, springs coiled about the rods above and bearing against the upper pins and below and bearing against the upper wings, and hangers attached to and supporting the rods.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD KLAUSMAN.

Witnesses:

C. T. BENEDICT,
A. L. MORSELL.