E. P. COLE.

CAR HEATER.

APPLICATION FILED DEC. 2, 1914.

1,292,435.

Patented Jan. 28, 1919.

2 SHEETS—SHEET 1.

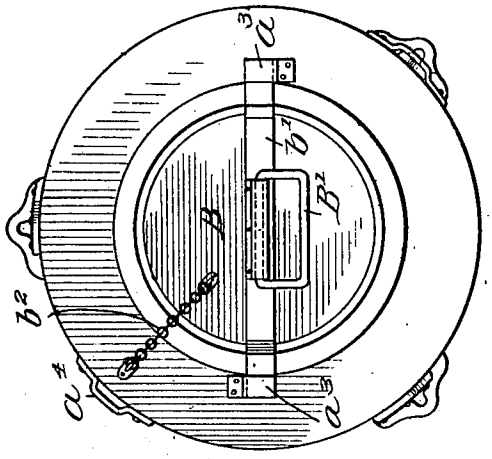


Fig. 2.

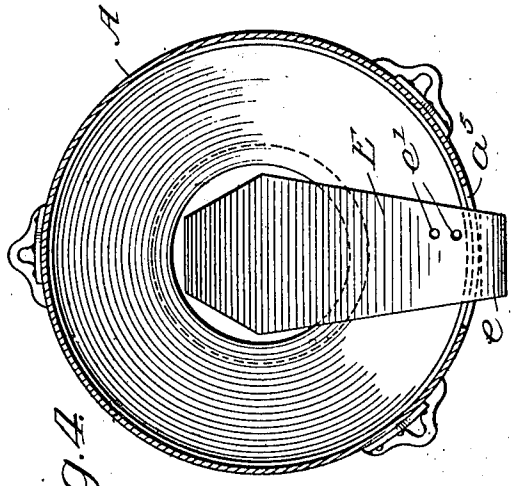


Fig. 4.

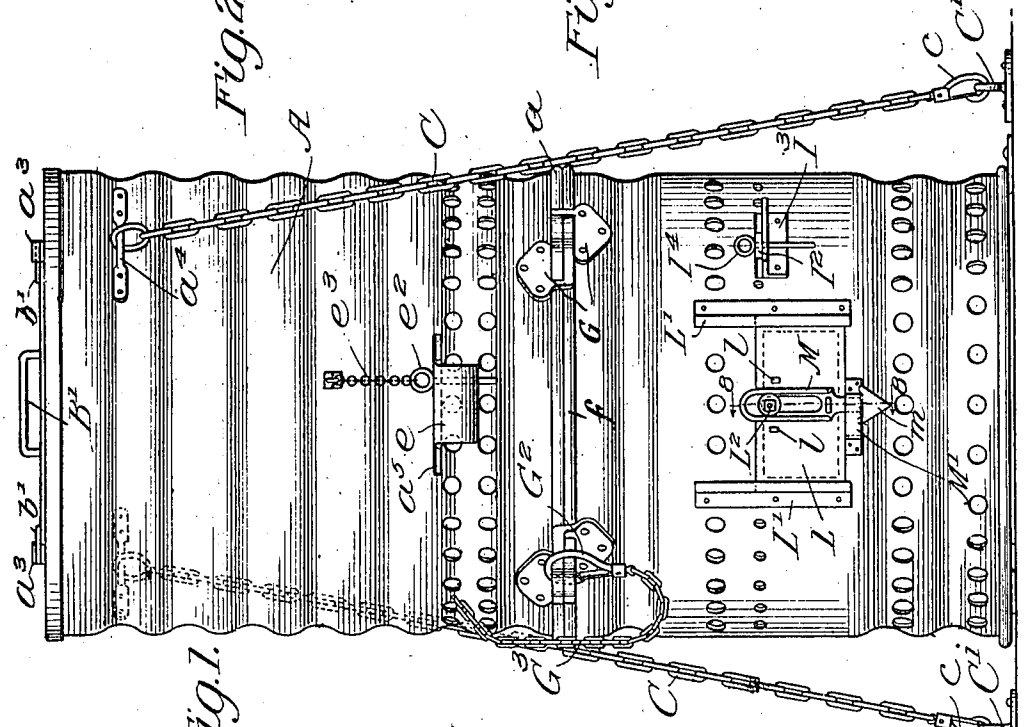


Fig. 1.

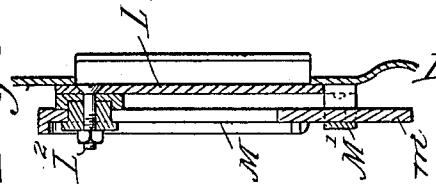


Fig. 6.

WITNESSES

S. E. Wade

Myron G. Mears

INVENTOR

Edward P. Cole

BY Munn & Co.

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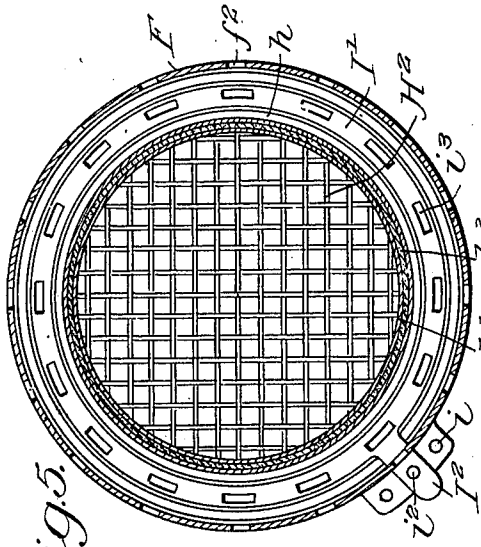


Fig. 5.

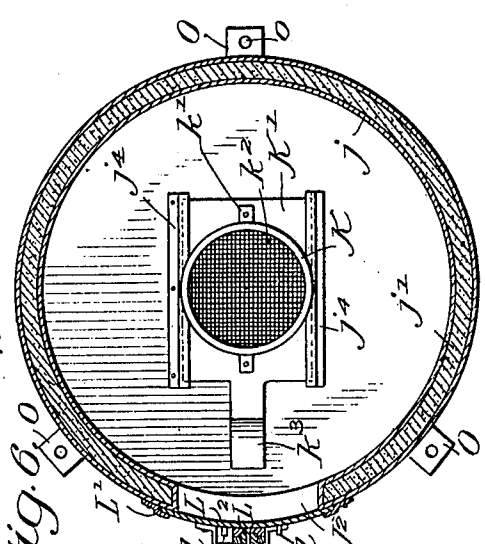


Fig. 6.

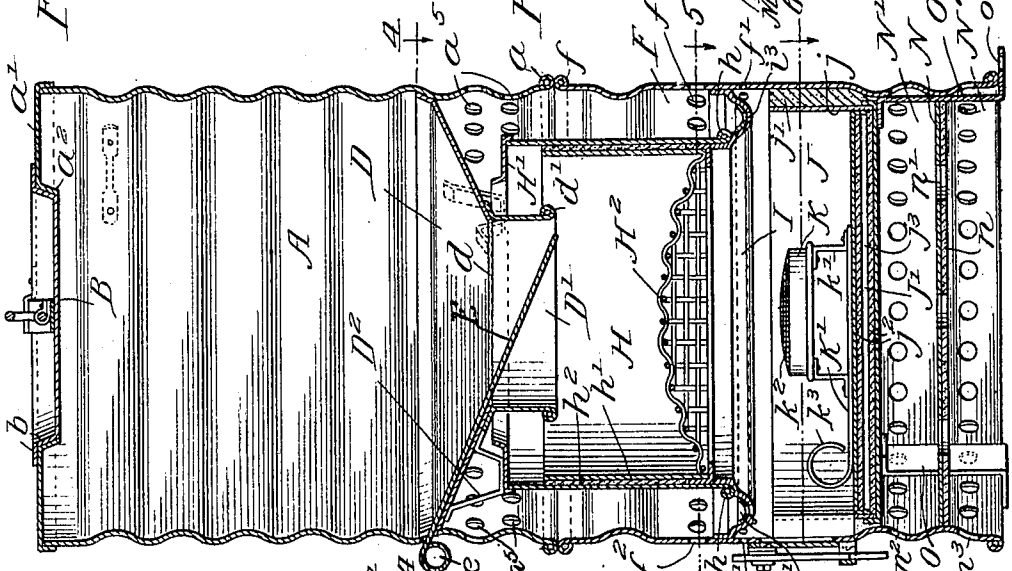


Fig. 3.

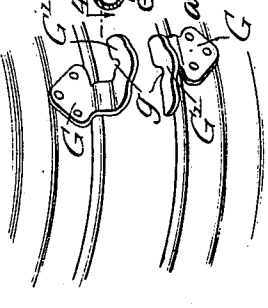


Fig. 7.

WITNESSES

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UNITED STATES PATENT OFFICE.

EDWARD PENN COLE, OF CHICAGO, ILLINOIS, ASSIGNOR TO COLE MANUFACTURING CO., OF CHICAGO, ILLINOIS.

CAR-HEATER.

1,292,435. Specification of Letters Patent. Patented Jan. 28, 1919.

Application filed December 2, 1914. Serial No. 875,134.

To all whom it may concern:

Be it known that I, EDWARD P. COLE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented an Improvement in Car-Heaters, of which the following is a specification.

My present invention relates particularly to car heaters and is designed to provide a stove adapted to use either charcoal or a prepared briquet fuel, which requires no smoke pipe and which is adapted to give a uniform temperature over a period of at least two or three days without attention, and at the same time be fire proof itself and capable of use without the emission of sparks even to the upsetting of the stove itself or the upsetting or wrecking of the car in which it is used.

In the accompanying drawings which illustrate my invention,

Figure 1 is a side elevation illustrating the complete stove set up in operative position.

Fig. 2 is a top plan view thereof.

Fig. 3 is a central vertical section taken therethrough.

Fig. 4 is a horizontal section taken substantially on line 4—4 of Fig. 3.

Fig. 5 is a similar view taken substantially on line 5—5 of Fig. 3.

Fig. 6 is another similar view taken substantially on line 6—6 of Fig. 3.

Fig. 7 is a detail perspective view illustrating certain of the relatively engaging connecting members of the upper and lower stove sections, and

Fig. 8 is a detail vertical section through the ash pit door and its locking device and taken substantially on line 8—8 of Fig. 1.

Referring now to these figures it will be generally seen that I provide a car heater in the form of an upright cylinder, the wall of which is constructed for the most part of corrugated metal. This stove is in two sections of which the upper section A is the magazine and has a rolled edge a surrounding its lower open end and a top a' having a central opening and a depending inclined flange a^2 around the said opening. By reference particularly to Figs. 1, 2 and 3 it will be seen that a central lid B generally circular in form is provided with angular flanges b extending therearound to fit within the opening of the top a' and against the flange a^2 thereof to normally close the feed opening in the top of the magazine thus constructed, the said top a' having cleats a^3 upon diametrically opposite sides of its opening and beneath which the extended ends of a transverse strap b' of the lid B may engage, by a relative rotative movement of the said lid after being seated in the top opening, said strap being intermediately riveted to the lid, or otherwise connected along with the handle B' whereby the lid may be raised, lowered and turned. This lid is connected by a chain b^2 or other flexible fastening means to the magazine top a' in order to prevent its loss.

The wall of the magazine section A is also provided adjacent its top with exterior straps a^4 which serve as connections for the upper ends of anchoring chains C, the opposite ends of these chains being provided with snap hooks c for engagement with floor eyes C' and the like, as best seen in Fig. 1, to prevent the stove from turning over in transit.

Adjacent its lower end the magazine section A is provided with an internal hopper D, this hopper having a central opening and being generally in the form of an inverted frustum of a cone, and provided with a circular vertical wall D' depending around its opening d and having a lower curled edge d'.

Slidably adjustable upon the upper inclined surface of the hopper D, is a controlling plate E, the outer end of which projects through a slot A^5 in the wall of the section A and is curled to form a handle e by which the plate may be moved inwardly and outwardly. In its inner position as shown clearly in Figs. 3 and 4, the controlling plate E has its enlarged inner end disposed within the circular depending wall D' in such manner as to cut off feed from the magazine section A through its hopper opening d. The adjusting plate E also has one or more apertures e' which in the adjusted position of the plate to permit limited feed, may extend beyond the wall of the magazine section in order to receive a locking pin e^2 which is connected by a chain or flexible member e^3 to the wall of the magazine section to prevent its loss. In this manner the slide may be prevented from accidental movement when in outwardly adjusted position, which might otherwise result in cutting off the feed when such action is not desired.

The rolled edge *a* of the magazine section A rests upon the rolled edge *f* surrounding the upper open end of the fire box section F and these contacting edges of said sections are provided with relatively engaging lugs G, the flanges G′ of which are adapted to lap one another and to be brought into operative engagement by a relative rotary movement of the upper or magazine section A with respect to the lower or fire box section F as best seen by reference to Figs. 1 and 7. the said flanges G′ having a recess *g* at their inner edge adapted to aline with one another in the connected position of the parts whereby to receive locking pins and the like in the form for instance of the snap hook G² as seen in Fig. 1, which is preferably connected by a flexible connection in the form of a chain G³, to the upper section A to prevent loss thereof.

The magazine section A also rests, by means of small brackets D², secured to the lower surface of its hopper D, upon the top H′ of the removable cylindrical fire pot H, the circular wall of which is provided with a lower rolled edge *h* and with an inner lining strip *h′* whereby to support an intermediate layer *h²* of asbestos and the like. The said top H′ has a central opening through which the circular wall D′ depends as clearly shown in Fig. 3 and the base of the removable fire pot H is reticulated, being formed of a heavy wire mesh as indicated at H² and best seen in Figs. 3 and 5.

The lower rolled edge *h* of the fire pot H, as best seen in Fig. 3, rests upon the inner flanged portion of a stationary draft ring I secured around the interior of the fire box section F at an intermediate point and in substantially the shape of a trough whereby to support therein a movable draft ring I′, best seen in Figs. 3 and 5. This movable draft ring is provided with a handle I² extending outwardly through a slot in the wall of the fire box section F, as best seen in Figs. 1 and 5, the said wall slot being horizontal whereby the ring I′ may be permitted a limited circular movement. A bracket I³ is secured exteriorly of the fire box section, as best seen in the figures last-mentioned, and is provided with a plurality of apertures *i* into registry with each of which an aperture *i′* of the handle I² may be brought whereby to receive a locking pin I⁴ for the purpose of securing the movable and stationary draft rings in selected adjustment. These movable and stationary draft rings are provided with slotted apertures *i³* which are thus brought more or less into registry by the adjustment of the movable draft ring I′ for a purpose to be hereinafter described.

Below the draft ring I and below the removable fire pot H is formed an ash pit J having an inner wall *j* spaced from the wall of the fire box section F to provide for the reception of asbestos and the like *j′*, the base J′ of the ash pit also consisting of spaced walls with opposing spaced layers of asbestos *j²* forming an air chamber *j³* therebetween.

The wall of the fire box section F has a door opening J² leading into the ash pit J and the base J′ of the ash pit is provided with spaced guides *j⁴* upon its upper surface to provide for the engagement of the base plate K′ of an oil lighter K elevated above the said base plate upon legs *k′* and having a gauze covering *k²*, the base plate K′ having a handle *k³* whereby it may be readily disposed within and removed from the guides *j⁴* in the ash pit, this relatively engaging structure of the ash pit and the lighter preventing accidental loss of the latter when the ashes are removed.

The door opening J² is normally covered by a door L vertically slidable exteriorly of the fire box section F in guides L, and this door is provided with a longitudinally slotted locking member M the slot of which is disposed on a pivot bolt L² of the door so as to permit the said locking member to move freely and swing between lugs *l*. The lower end of the locking member M has a spear-shaped extremity *m* engageable with one side of a strap or bracket M′ secured to the exterior of the fire box section below the door L whereby to thus form an automatic locking device which will hold the fire box door L in lower closed position in case it drops down in the guides L′ for any reason such as the overturning of the stove or sudden excessive jarring of the car in which the stove is erected, as in case of wreck.

Below the ash pit J the fire box section F is provided with a ventilated base divided by a horizontal transverse plate N into upper and lower chambers N′ and N², the said plate N having a lower layer of asbestos *n* and openings *n′*. The wall of the fire box section F is also provided with annular series of openings *n²* and *n³* respectively above and below the plate N so that this ventilated base, with the double wall base J′ of the fire pot itself, effectively prevents the communication of excessive heat to the floor of the car upon which the stove is secured.

The lower angular ends of uprights O secured within the ventilated base of the stove section F, are provided with apertures *o* for the reception of nails, screws or other fastening members whereby the said stove section may be securely fastened to the floor of the car within which it is used and thus with the chains C securely fastened as shown in Fig. 1, the entire stove is effectively prevented from overturning.

Air enters the fire box section F through an annular series of small apertures *f′* below the draft ring I, and the movable ring I′ being properly adjusted, more or less of this air

is permitted to pass up through the openings i^3, and the remainder passes up through the fire pot H. The draft of the fire pot is thus effectively controlled.

Air to be heated also passes into the space around the fire pot wall through an annular series of openings f^2 in the lower section above the draft ring I and circles around the space, finding its way out through an annular series of openings a^5 in the lower portion of the wall of the magazine section A below the hopper D.

Thus with the part in position, as shown in Fig. 3, all danger of the emission of sparks from the stove is guarded against, and in addition, the particular construction, as before described, prevents overturning of the stove except in case the car in which it is used is wrecked or overturned, and even in this case the emission of hot coals or sparks is guarded against. Even with the ash pit door in elevated position to permit maximum draft, any sudden jolt or jar sufficient to permit the same to descend in its guides, will cause automatic engagement of the member M and will result in locking the said door in lower closed position.

It will be noted that by removing the magazine section A, the fire pot H′ may be readily withdrawn as a whole, carrying the reticulated base H^2, which forms a grate, therewith, and by this means ready access may be had to all parts of the ash pit J for any purpose whatsoever.

I claim:—

1. A car heater comprising upper and lower cylindrical sections having relatively engaging and overlapping lugs at their contacting edges, certain of which lugs are provided with recesses adapted to aline in lapped position, and a locking pin for engagement through the alined recesses whereby to lock the sections together.

2. A car heater including an upright cylindrical shell in upper and lower sections having lugs at their contacting edges adapted to lap one another in engaged relation by relative rotary movement of the said sections in opposite directions, certain of said lugs having recesses adapted to aline in engaged position, and means engageable through the alined recesses for locking the sections together.

3. A car heater including an upright cylindrical shell in upper and lower sections, means for locking the sections together, and means carried by both of said sections whereby they may be independently secured to portions of a car within which the stove is used, the connections of the upper section also assisting to hold the lower section.

4. A car heater comprising an upright cylindrical shell, an internal trough-like draft ring, a fire pot having means at its base removably engaging the draft ring, and means for controlling the draft through the ring.

5. A car heater having an ash pit, a stationary draft ring surrounding the interior of the heater above the ash pit, a fire pot above the draft ring, and a movable draft ring disposed upon and around the stationary draft ring and having an exteriorly projecting adjusting handle, said movable and stationary draft rings having slotted apertures adapted to be brought more or less into registry by adjustment of the movable ring.

6. A car heater having an apertured draft ring extending within and around the same above its ash pit, a fire pot removably supported at its base upon the said draft ring, and a magazine removably supported upon the fire pot, whereby the magazine and fire pot may be successively removed in order that ready access may be had to the ash pit.

7. A car heater including an upright cylindrical shell in upper and lower sections having lugs at their contacting edges provided with offset flanges adapted to lap one another in vertical directions, the flanges of the lugs of the lower section being above the flanges of the lugs of the upper section, and means for securing the lugs in lapped position to prevent accidental displacement of the sections of the shell with respect to one another.

8. A car heater including an upright cylindrical shell in upper and lower sections, means for securing the lower section to the floor of a car in which the heater is utilized, means for detachably connecting the upper and lower sections at their contiguous ends, and means including chains depending from the upper section for securing the same to the floor of the car independent of the connections between the sections and the connections of the lower section to the floor of the car, whereby to obviate danger of overturning of the heater in use.

EDWARD PENN COLE.

Witnesses:
H. A. Cole,
E. E. Smith.