

(No Model.)

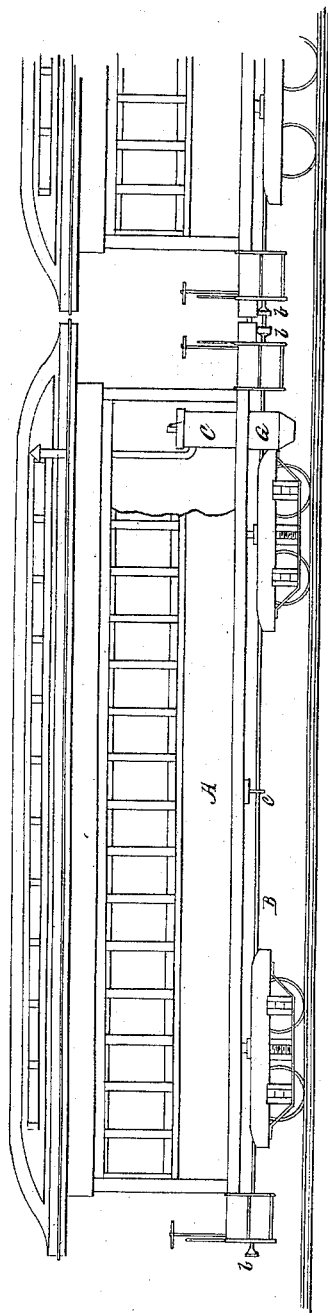
2 Sheets—Sheet 1.

M. F. HELMER.

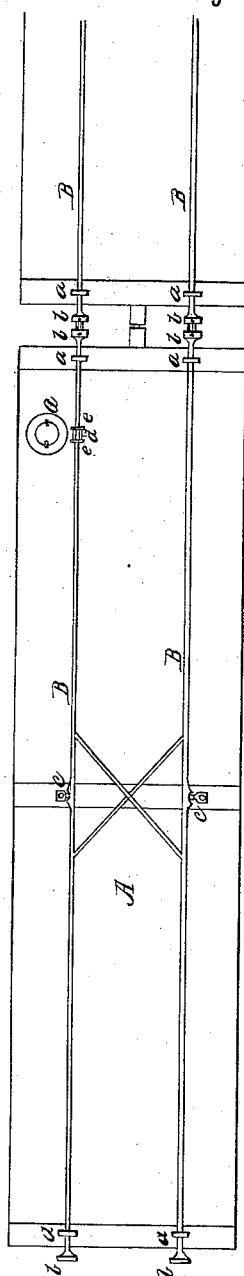
CAR STOVE.

No. 385,555.

Patented July 3, 1888.



*Fig. 1.*



*Fig. 2.*

*Attest.*  
*S. W. Bramerd.*  
*F. Bergstrom.*

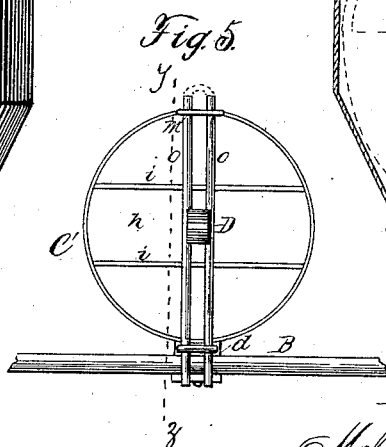
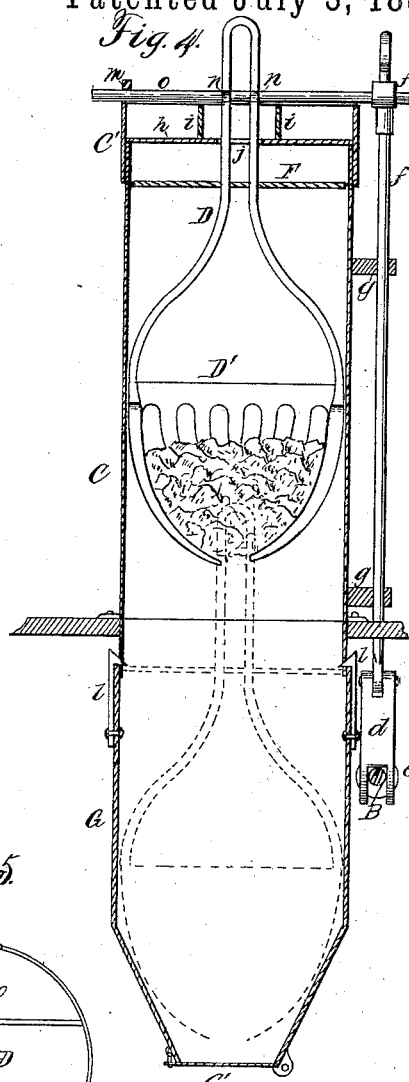
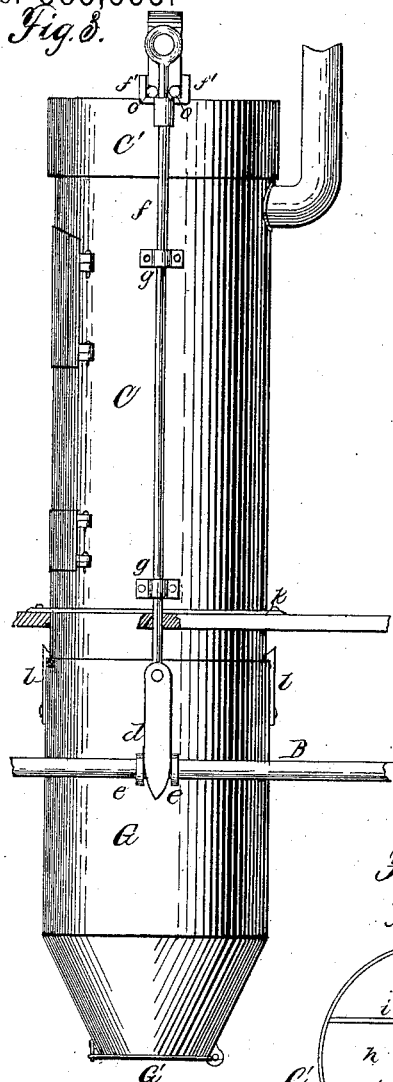
*Inventor.*  
*Melchior F. Helmer*  
*By J. M. St. John*  
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M. F. HELMER.

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*Attest.*  
S. W. Brainerd,  
Druck & Clark

*Indenter.*  
Melchert F. Helmer  
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Atty.

# UNITED STATES PATENT OFFICE.

MELCHERT F. HELMER, OF MECHANICSVILLE, IOWA.

## CAR-STOVE.

SPECIFICATION forming part of Letters Patent No. 385,555, dated July 3, 1888.

Application filed October 4, 1887. Serial No. 251,395. (No model.)

*To all whom it may concern:*

Be it known that I, MELCHERT F. HELMER, a citizen of the United States, residing at Mechanicsville, in the county of Cedar and State of Iowa, have invented certain new and useful Improvements in Car-Stoves, of which the following is a specification.

This invention relates to stoves used in the heating of cars; and my object is to prevent the casualties incident to fire in cases of collisions and the like.

The invention consists in a novel construction and arrangement of the stove and its connected parts, whereby in case of a collision the contents of the stove are automatically dropped out of the bottom thereof into a suitable fire-proof receptacle and inclosed therein, as will be hereinafter fully set forth and claimed.

In the accompanying drawings, embracing two sheets and forming a part of this application, Figure 1 represents a side elevation of a common passenger-coach, with a portion of one end broken away to show the stove inside, and also showing an end of a connected coach and the mechanism for actuating the dumping apparatus of the stove; Fig. 2, a plan view of the bottom of Fig. 1; Fig. 3, a side elevation of the stove and its immediate connections, as seen from the inside of the car; Fig. 4, a vertical section of the same in the line *yz* of Fig. 5, and Fig. 5 a plan view of the stove from above.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A is the car, in the style of the common passenger-coach. To the under side of this car, and preferably on each side thereof, is mounted a rod, B, in suitable bearings, *aa*. The rod is nearly or quite the entire length of the car and provided at each end with buffers *bb*. The rod is adapted to slip endwise in the bearings *aa*, but normally is held in position by a locking device consisting of a fork, *cc*, the limbs of which engage with notches in the sides of the rod B. Near one end this rod is provided with collars *ee*, engaging with the bifurcated end of a toggle-lever, *d*. The upper end of the lever connects with a vertical rod, *f*, extending up into the car and alongside the stove C. The purpose of this rod will be explained hereinafter. For the present it may be said that in

the normal position of the horizontal rod B the vertical rod *f* is at its highest elevation, the lever *d* being then parallel with it. A movement of the rod B in either direction throws out the foot of the lever *d*, and the rod *f*, being loosely mounted in suitable bearings, *gg*, descends of its own gravity.

It will be understood that the rod B is held in its normal position with sufficient force to resist ordinary shake or concussion of the train; but in the case of extraordinary jars, as a collision, the inertia of the rod is sufficient to throw it out of engagement with the fork *c*, and thus allow the rod *f* to drop, as above stated.

The stove C is preferably made with straight sides and of the cylindrical form shown. At the top is a crown-piece, *C'*, made to fit snugly over the body of the stove. A diaphragm, *h*, crosses the crown-piece *C'*, and from this diaphragm to the top of the part *C'* extend two ribs, *ii*. The center of the diaphragm is provided with a hole, *j*, preferably square, to allow for the passage through it of the stirrup D, to which is attached or which forms a part of the fire-pot *D'*. The upper part of this stirrup is contracted, as shown, so as to enter the hole in the diaphragm, and the lower portion expands and joins the top of the fire-pot.

A disk, *F*, of about the same diameter as the fire-pot, is permanently attached to the stirrup, and when the parts are in normal position in the stove the disk should be just above the pipe-hole in the side of the stove. In case it should for any reason be desirable to reduce the height of this disk or to connect the pipe with the top instead of the side of the stove, the disk may be perforated to allow the smoke to escape through it.

The lower end of the stove is provided with a suitable flange, *k*, by means of which it is fastened to the floor of the car. The lower end of the stove extends down through the floor and is entirely open. To the lower end of the stove is attached an ash-receptacle, *G*. The mode of attachment is not of the utmost importance; but the device shown is simple and efficient. It consists in two spring-dogs, *ll*, secured to the opposite sides of the ash-pit and having angular heads at the upper end adapted to hook into holes in the sides of the

lower end of the stove. The inner ends of these angular heads should extend through the sides of the stove for the purpose hereinafter specified. For convenience in disposing of the ashes the bottom of the receptacle should be provided with a hinged door, *G'*, which is so simple as to require no particular description.

The fire-pot is suspended by its stirrup in the stove in the following manner: In opposite sides of the neck of the stirrup are notches *nn*. The rod *f* is bifurcated at or near the upper end, the distance between the forks *f' f'* being substantially the width of the notched portion of the stirrup. This part of the rod *f* when in normal position comes to the top of the stove, as do also the notches in the stirrup. To these notches are fitted two rods, *oo*. At one end the rods are held from spreading by a loop, *m*, on the top of the stove. The other ends are locked by the fork *f' f'*. Instead of being separate rods, they might be connected by a hinged or spring connection at one end, the fork forming a lock at the other in the same manner. These supporting rods or bars *oo* should be so stiff as not to spread apart with the weight of the fire-pot and its contents.

The operation of the invention will now be understood. When a sudden and powerful jar throws the rod *B* out of its normal position, the foot of the toggle-arm *d* is displaced, the rod *f* descends of its own weight, the fork *f' f'* slipping off the ends of the holding-bars *oo*, which instantly spread apart, allowing the fire-pot to drop. The fire-pot and its contents fall into the ash-pit, as indicated by the dotted lines in Fig. 4. In passing down the edges of the disk *F* strike the inclined heads of the dogs *ll*, throwing them back and releasing the ash-pit from the lower end of the combustion-chamber *C*, the whole falling to the ground at the side of the car. The disk *F* serves to close the top of the ash-pit and prevent any scattering of the fire, being held by the dogs *ll* springing back over it. It is evident that, the whole train being provided with the apparatus described, the concussion will cause simultaneous action of all the stoves in the train and prevent the common calamity of fire.

It is not necessary to the operation of the invention that the means for suspending and disengaging the fire-pot and the ash-pit should be of the precise nature shown and described, and the invention is not confined to this. I am aware that many equivalent devices would serve the same purpose, but regard the apparatus shown as perhaps the simplest and best.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-stove, the combination of a bottomless combustion-chamber mounted over a corresponding hole in the floor of the car, an ash-receptacle detachably connected with the bottom of the combustion-chamber, a fire-pot detachably connected to the combustion-chamber, and releasing mechanism, substantially

as described, whereby said fire-pot is adapted to drop with its contents into said ash-receptacle and thence to the ground in case of collision, substantially as specified.

2. In a car-stove, the combination of a bottomless combustion-chamber mounted over a hole in the floor of the car, an ash-receptacle detachably connected with said combustion-chamber, a fire-pot detachably suspended from the top of the combustion-chamber, a disk above and connected with said fire-pot of practically the same diameter, and releasing mechanism, substantially as described, whereby the fire-pot is adapted to fall into the ash-receptacle in case of collision, the disk to close the top of said ash-receptacle, and the said receptacle to drop with its contents to the ground, substantially as described.

3. In combination with a bottomless car-stove having an ash-pit removably attached to the lower end and a fire-pot detachably suspended from the upper end thereof by a stirrup or bail, means, substantially as described, for holding the fire-pot in position normally, consisting of locking bars or rods *oo*, permanently held from spreading at one end and engaging with notches in the sides of the stirrup, and a fork, *f' f'*, adapted to retain the opposite ends of the bars *oo* and to release them as it slips off, substantially as set forth.

4. In combination with a car-stove, substantially as described, means for normally suspending the fire-pot in position inside the stove and for automatically releasing the same in case of collision, consisting of the notched stirrup *D*, transverse bars *oo*, resting on the top of the stove and engaging with the notches in the stirrup, said bars being held permanently at one end, a fork, *f' f'*, adapted to retain the opposite end of the bars *oo*, a vertical rod, *f*, extending from the top of the stove through the floor of the car, a toggle or lever, *d*, and a rod, *B*, extending the length of the car and engaging with said lever *d*, substantially as and for the purpose set forth.

5. In combination with a car-stove having a bottomless combustion-chamber and detachably-suspended fire-pot having the stirrup *D* and ash-pit, substantially as described, the locking-bars *oo*, engaging with notches in the stirrup *D*, the vertically-movable rod *f*, having the fork *f' f'* at its upper end and the toggle lever or arm *d* at the lower end, the rod *B*, having collars *ee*, and the spring-lock *cc*, engaging with notches in the sides of the rod *B*, whereby the rod is held normally in a fixed position, but in case of extraordinary shock is disengaged and thrown endwise, substantially as and for the purpose set forth.

6. In a car-stove, the combination of the fire-pot *D'*, the combustion-chamber *C*, having the crown-piece *C'*, and the stirrup *D*, detachably suspended from the crown-piece, substantially as and for the purpose set forth.

7. In a car-stove, the combination of the

combustion-chamber C C', the ash-pit G, having the dogs 11, engaging with the open lower end of the combustion-chamber and below the floor of the car, the fire-pot D', having the stirrup D, detachably suspended from the top of the stove and supporting the fire-pot D', the disk F, adapted to disengage the dogs 11 in its descent and to close the top of the ash-pit, and means, substantially as described, for au-

tomatically releasing the suspended fire-pot in case of extraordinary shock to the car.

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

MELCHERT F. HELMER.

Witnesses:

S. W. BRAINERD,  
J. M. ST. JOHN.