(No Model.)

A. W. HERR.

SAFETY CASE FOR HEATING STOVES.

No. 261,924. Patented Aug. 1, 1882.

Fig. 1.

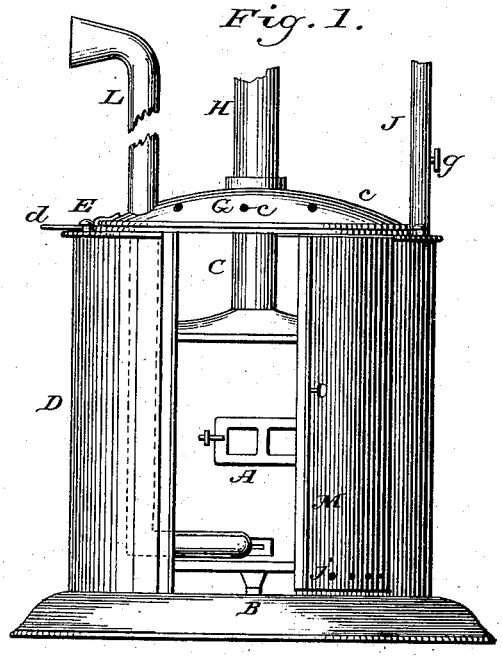


Fig. 3.

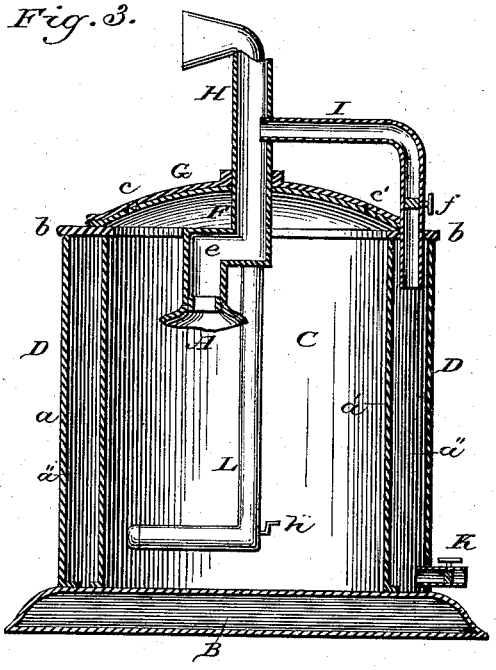


Fig. 4.

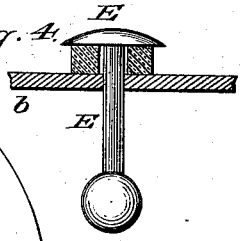
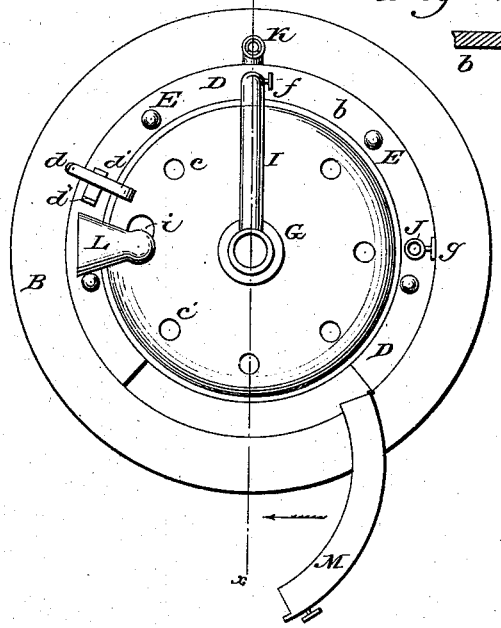


Fig. 2



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UNITED STATES PATENT OFFICE.

AUGUST W. HERR, OF CHICAGO, ILLINOIS.

SAFETY-CASE FOR HEATING-STOVES.

SPECIFICATION forming part of Letters Patent No. 261,924, dated August 1, 1882.

Application filed March 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, AUGUST W. HERR, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Safety-Cases for Heating-Stoves, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a front elevation of a safety-case embodying my invention. Fig. 2 is a top or plan view of the same. Fig. 3 is a section in the plane of the line *x x* of Fig. 2, viewed in the direction indicated by the arrow there shown; and Fig. 4 is a detail in section of one of the escape-valves.

My invention is especially adapted for preventing accidental fires from stoves in railway-cars, churches, school-houses, and other public places, in which accident might result in the ignition of the building, car, or other place in which the stove may be located, thus not only endangering property, but the lives of those exposed.

My object is to make provision for flooding such fires with water automatically while they are in their incipient state, or to prevent the originating of such fires; and to that end my invention consists in the means, substantially as herein described and set forth, which I employ for the purpose of accomplishing the object referred to.

A represents a stove adapted to be used for heating purposes. This stove may be constructed in any well-known or approved way, rendering it suitable as a heater for public places like those heretofore mentioned.

B is a base or platform on which the stove is located. This base or platform should be firmly bolted or otherwise secured to the floor, especially when my improvements are applied to use in railway-cars, and in such cases the stove should also be bolted or otherwise firmly fastened to the base B.

C is a chamber surrounding the stove, and D D are the walls which inclose the chamber C.

In Fig. 3 I have shown the stove as nearly all broken away, in order to the better represent the interior of the casing.

The walls of the chamber C are double, *a* representing the outer portion of the wall, *a'* the inner portion, and *a''* the intervening space. The top of the space *a''* is covered or sealed, as shown at *b*, and the said space or annular chamber is, with the exceptions hereinafter mentioned, intended to be water-tight, air-tight, and steam-tight. The wal's of the chamber C stand on the base B, as shown.

E E are valves located in the top of the chamber *a''*. These valves are adapted to be held closed by means of weights or springs thereon, and to open outwardly by the steam-pressure exerted from within.

F is the roof of the chamber C, in which are ports *c c*. This roof I make dome-shaped, by preference.

G is a supplemental roof or covering, located upon the roof F, and *c' c'* are ports therein, located to register with the ports *c c*. The roof or covering G is rotary, and *d* is a handle attached thereto, by means of which it may be rotated with facility.

d' d' are fixed lugs or stops, between which the handle *d* extends, thus limiting the extent of rotation, but permitting sufficient rotation to carry the ports *c' c'* away from the ports *c c*, thereby allowing all the ports in the roof to be alternately opened and closed, as may be either desirable or necessary.

H is the smoke stack or flue. This flue enters the top of the chamber C, and is connected to the stove; but between the stove and the roof is an elbow, *e*, as is clearly shown in Fig. 3.

I is an escape-flue entering the top of the chamber *a''* and passing over the roof into the smoke-flue, and *f* is a cock or valve in the pipe I, and located for convenience of access outside of the case surrounding the stove, and already described.

J is a filling-tube entering the chamber *a''*, and *g* is a shut-off or cock in the said tube.

K is a draw-off, also containing a shut-off or cock, and entering the lower part of the chamber *a''*.

L is an air-duct entering the roof of the chamber C, and extending down near the inner wall thereof to a point somewhat above the floor of the said chamber, and extending into the draft of the stove, as shown in Fig. 3; and *h* is a regulator in the duct L. The upper end of the duct L is arranged horizontally and made flaring or funnel-shaped, as shown.

The cover G is slotted, as shown at *i*, so that

the pipe L will not prevent the said cover from being rotated in the manner described.

M is the door of the casing, which I make either double or single, and *j j* are ports in the said door, near the bottom.

In reducing my invention to practice I pour a quantity of water through the pipe J into the chamber *a''*, first closing the cock K. This water of course becomes more or less heated, and may become sufficiently hot to generate steam. The outer case, therefore, will radiate heat into the car. In case it may be expedient to allow some of the steam to escape, I open the cock *f* sufficiently for that purpose, when the steam will pass out through the pipe I into the smoke-flue. It is also obvious that the chamber C will be heated to a high degree by the stove. The heated air is permitted to escape in a greater or less volume through the ports *c* and *c'*, the cover G being turned, as described, so as to permit such escape, and these parts may be wholly closed in order to confine the heated air in the chamber C. The outer or fresh air enters the chamber C through the duct L, and thereby finds its way into the stove and supports combustion. This supply may be regulated by means of the damper *h*, and when that damper is closed sufficient air for the support of combustion will enter through the ports *j j*.

It will be perceived from the foregoing description and from reference to the drawings that a large radiating-surface is well utilized, and that the case is small in proportion to that surface. It will also be perceived that means are provided for controlling the heat with facility, and for regulating the supply of air for supporting combustion. Economy of space and fuel results from this construction.

It is also obvious that in case of accident—such as the overturning of the car—the water in the water-jacket will escape through the valves E E, and thus dampen and put out the fire and flood the floor or other parts exposed to danger; also, an accident which would result in the puncturing of the water-jacket would result in the escape of the water, while the jacket at the same time would protect or shield the stove from injury, and the damage by water would obviously be less than the danger from scattered incandescent fuel.

An outer case or jacket having a single wall may be used with advantage as a shield or protector in combination with stoves used for drying purposes, such as drying lumber, tobacco, &c.

When a double wall is used the water-space therein may contain a liquid disinfectant, the vapor from which may be allowed to escape either by raising one or more of the valves E E or by means of one or more conducting-tubes entering the chamber *a''*, and carried to the place where the disinfectant vapor may be needed, it being understood that this vapor be produced either by locating a stove in the chamber C or by means of a steam-heater connected with the said chamber. Such an apparatus, as is obvious, would be very desirable in buildings or rooms in which the air is liable to be tainted and in rooms and hospitals where there are invalids to whom medicated vapors would be beneficial.

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

1. A safety-case to heating-stoves, consisting of the base B, the water-reservoir formed by the chamber *a''*, and having therein a chamber, C, door M, provided with ports *j j*, valves E E, roof F, having therein the ports *c c*, rotary cover G, having therein the ports *c' c'*, air-tube L, escape-tube I, filling-tube J, and draw-off K, substantially as shown and described.

2. The combination, with a heating-stove, A, of the base B, water-reservoir formed by the chamber *a''*, and having therein a chamber, C, door M, provided with ports *j j*, valves E E, roof F, having therein ports *c c*, rotary cover G, having therein the ports *c' c'*, air-tube L, escape-tube I, filling-tube J, smoke-flue H, and draw-off K, substantially as shown and described.

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