(12) **United States Patent**
McWilliams

(10) **Patent No.: X9606**
(45) **Date of Patent: Apr. 21, 1836**

(54) **STOVES, FOR CARRIAGES**

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Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same, containing a description in the words of the said Alexander McWilliams himself of his said Improvement in the Stove for Heating carriages and other Travelling Vehicles.

To all whom it may concern be it known that I, Alexander McWilliams, of the City of Washington, in the District of Columbia have invented an improvement in the Stove for Heating Carriages and other Travelling Vehicles, for which Letters Patent of the United States were originally granted to me bearing date the twenty-ninth day of December eighteen hundred and thirty-five. And I do hereby declare that the following is a full and exact description thereof, with my said improvement.

I make a small Stove for containing fuel, preferring Charcoal for this purpose, although Hazelle, or other Coal, may be employed. The Stove may be square cylindrical, or otherwise as may be preferred, and should vary in its dimensions according to the size or closeness of the carriage, or other vehicle, to be warmed. For a close carriage of the ordinary size, when the cylindrical form is preferred, I have found one of Sheet iron, or other metal, five inches in diameter, and five inches in height to be large enough to contain fuel sufficient for the consumption of four hours, producing during the whole time a general warmth.

The cylinder is shown at **B**, fig 1. in the accompanying drawing, it stands vertically on the bottom of the carriage, and, generally in the centre thereof. The bottom of the cylinder is of sheet iron, or other metal, and an air pipe, or tube, C, suggends from it through the bottom

bottom of the carriage to admit a draught to the fire. This pipe or tube may be six inches long, and either round or square; I prefer however, to make it quadrangular, and measuring about three inches by one inch and a half. One of its flat sides is perforated with holes at its lower end to admit air, and this side is turned towards the front of the carriage. For railroad cars, the cylinder B should be about twelve inches high, and ten in diameter. The air pipe, C, six inches long, one inch wide and three deep. The fuel is not to be put immediately into the above described cylinder, but into another cylinder, which for the sized stove first described, should be about four inches and a half in diameter, and four inches high, having mesh bars at its lower end; a space of one fourth of an inch is then left between the two cylinders, and an inch between their lower ends, which prevents the outer cylinder from being overheated. A taper cone is fitted on to the upper end of the stove, which cone, also, I make double, with an air space between the two parts. A smoke or smoke pipe, D, passes through the middle of the top, one of about one and a quarter inch in diameter, in a railroad car. This pipe may be continued up and put through the top of the car, but in carriages it should be bent at right angles, so as to turn down alongside the stove, and put through the bottom of the carriage.

When this stove is made square, as it is represented in the drawings, Fig 2. its dimensions may be reduced from what has been said of its capacity in the cylindrical form. It may be made in the form of a flat box, rising not more than five inches from the bottom of the carriage, so that the feet may be placed upon it. The top may, in this case, be made to slide, or be hinged, and secured down by thumb screws, readily removable when fuel is to be supplied to the fire, or to the air pipe, or tube. B the ash pit, which may be dispensed with, as the air pipe will answer this purpose

C. the body of the stove. D. the door, or cover. E screws for lightening it, and F the smoke, or straight, pipe.

Instead of making the stove of double sheet iron, it may be made single, but then it should be lined with some imperfect conductor of heat; or instead of this the inner cylinder, or case, may be of cast iron. Instead of coal, lamps for burning oil, or any of the suitable petroleum compounds, may be employed, but I do not think them so convenient or so economical as charcoal. Having thus fully described my said invention and the improvement made thereon, I do hereby declare that although I have included in this instrument of writing a description of the machine as originally constructed by me, I have done so for the purpose merely of showing how my present improvement is connected therewith, and that all which I now claim as constituting the said improvement, is the addition to my carriage stove, of a tube, or pipe for discharging the air which has passed through the fire, either under the body of the carriage by securing the said pipe or by carrying it out through the top, or other part of the carriage, substantially in the manner herein set forth.

Witnesses
Chas. Keller
Thomas Ewing

Alex. McWilliams

Ex'r
C.K.J.M

Examiner.

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