(12) **United States Patent**
Varden

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(54) **WARMING ROOMS, & MANAGEMENT OF HEAT**

(76) Inventor: **Robert B. Varden**

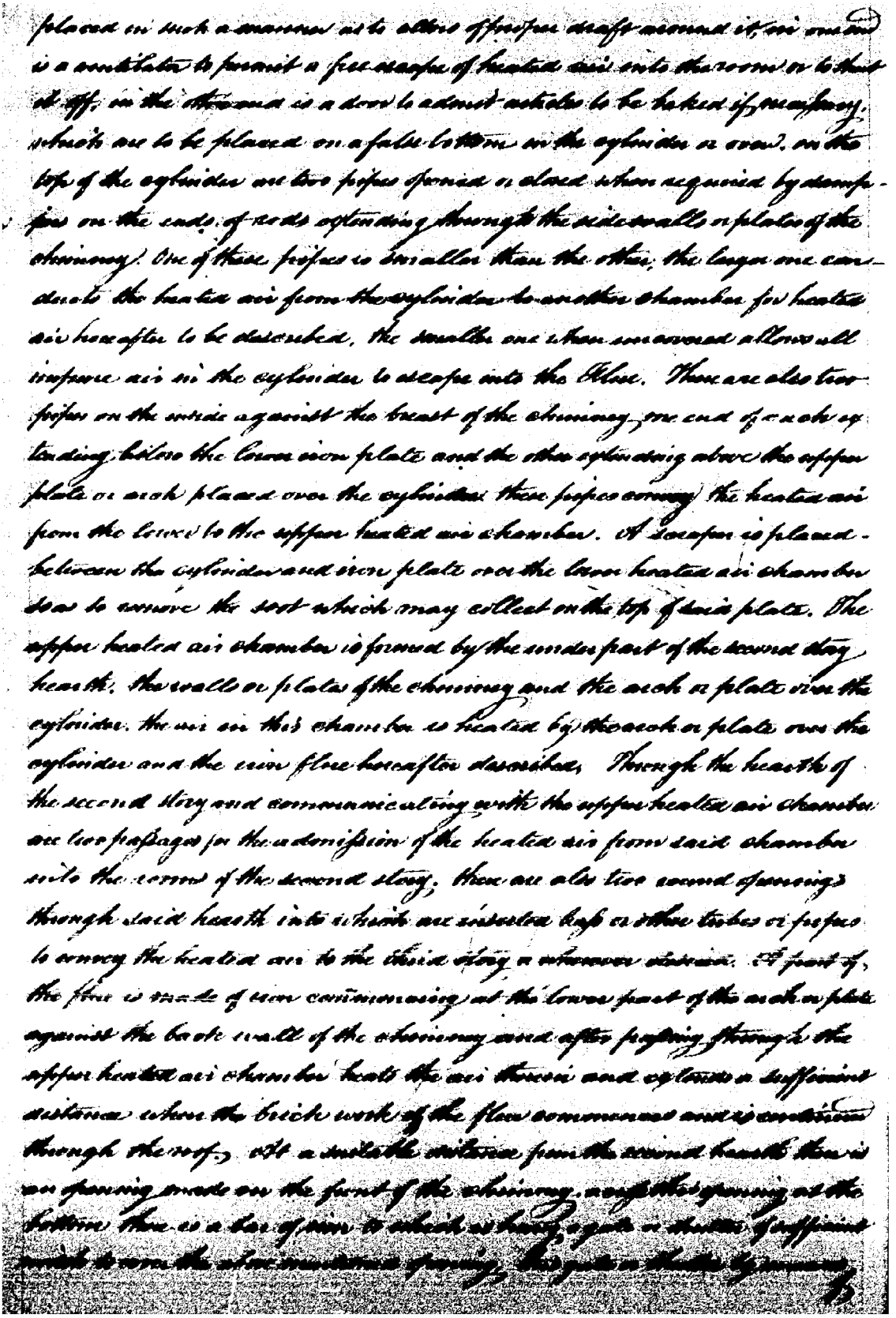
Robert B. Carden.

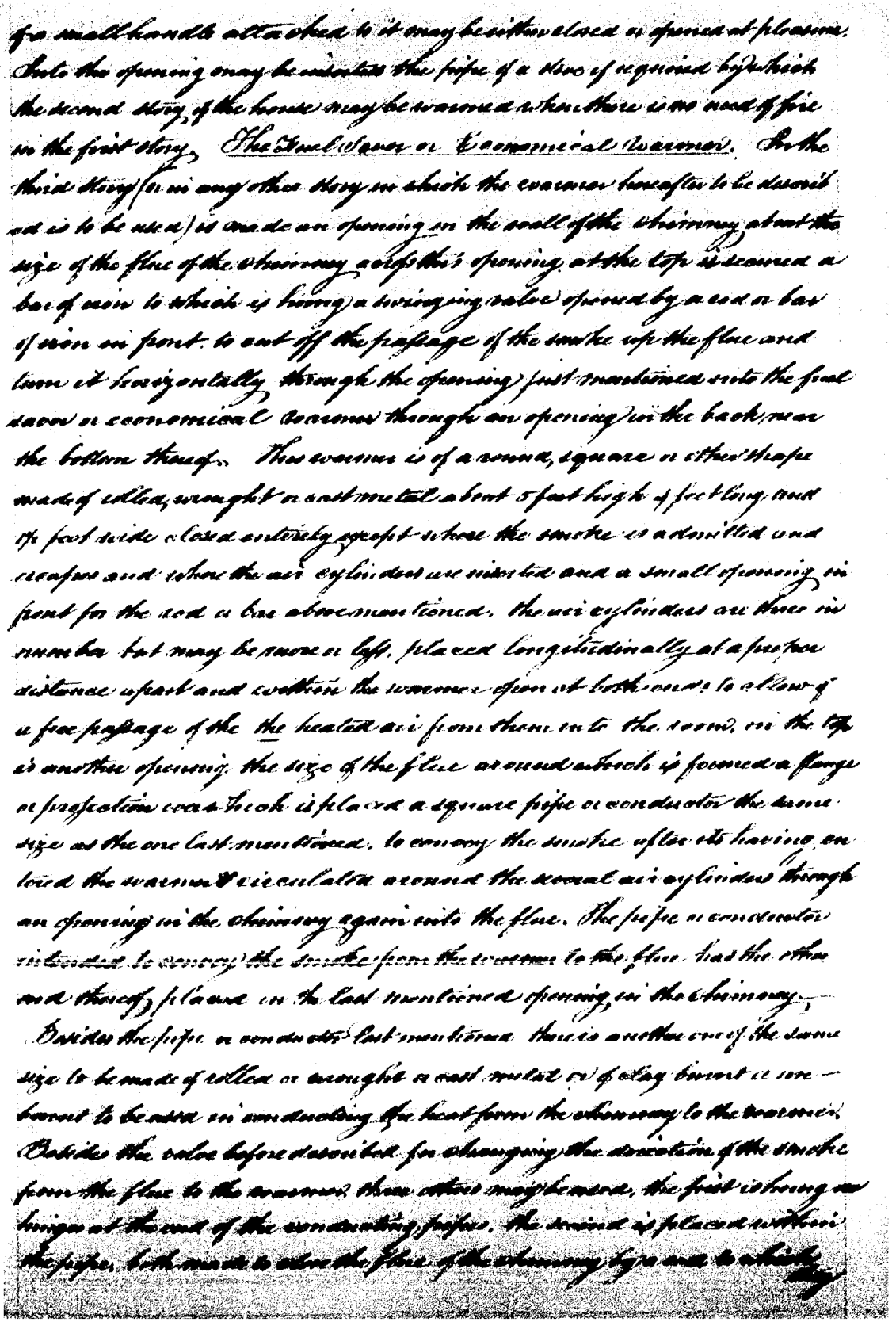
Letters Patent

The schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Robert B. Carden himself of his improvement in the management of heat for warming rooms called "the Heat saver or Economical Horse warmer."

Be it known that Robert B. Carden of Baltimore in the County of Baltimore and State of Maryland have made a new and useful improvement in the management of heat for warming rooms called "The Heat Saver or Economical Horse warmer" which is described as following —

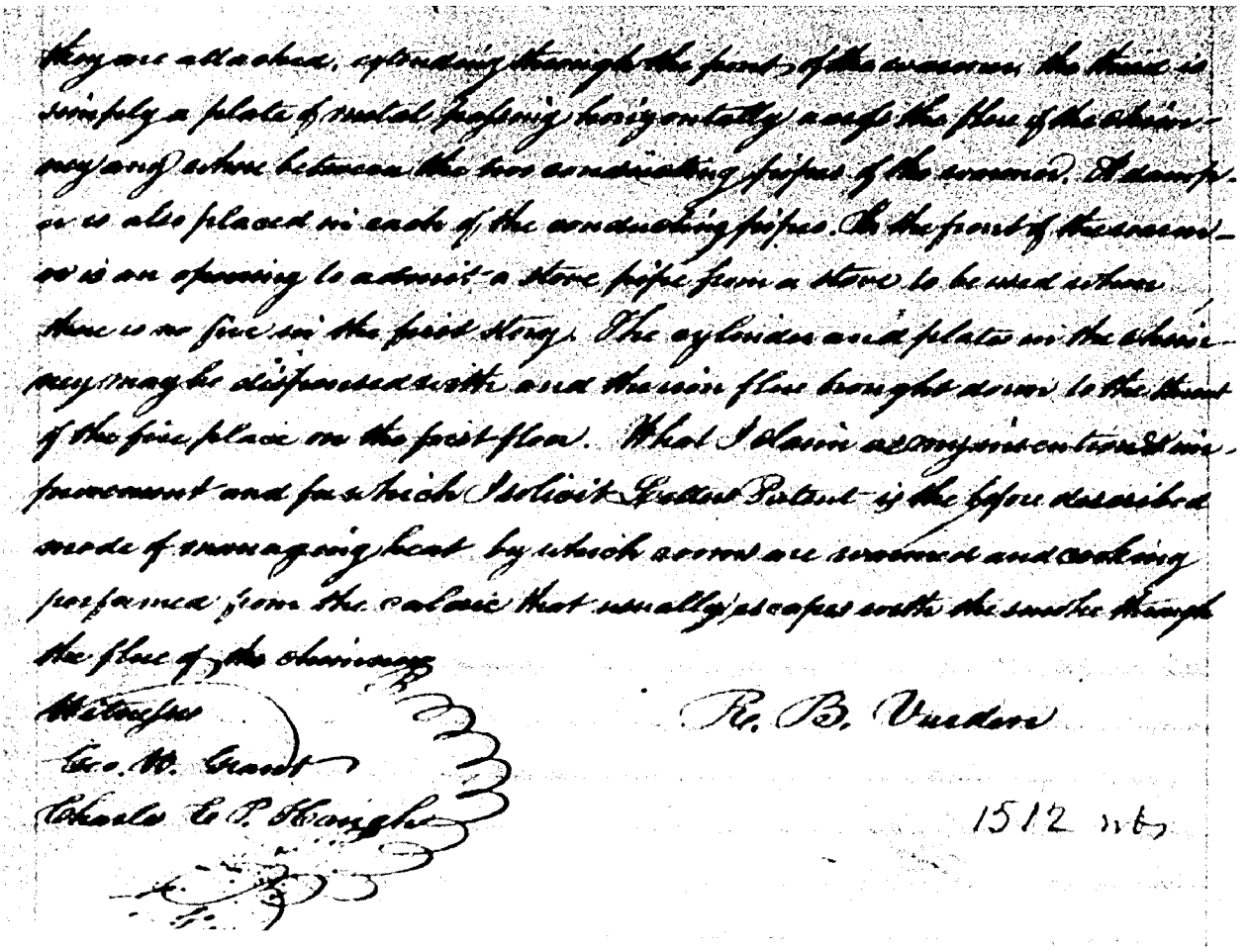
The chimney is constructed by erecting four walls of brick stone or cast iron or both on a proper foundation leaving suitable openings for the fire place, flues, air chambers, cut lets and air lets for eglestons pipes and other necessary apparatus hereafter described. The fire place of the first story is made of cast iron in one piece and let into the brick work of the chimney on each side and over the top in front and resting on the hearth is placed a metallic frame containing cells air admitting from the cellar or elsewhere through apertures in the hearth to create a draft in the fire place the air having access to the fire place through small apertures in the sides of the metallic hollow frame. In the centre of the hearth is another passage for the admission of cold air from the cellar or elsewhere to the fire place. This passage is covered by a metallic base having small apertures through the top and side except the front to admit the air to the fire. The air chamber is constructed behind the cast iron fire place covered at top by an iron plate cutting off the smoke from it. The air in said chamber being heated by the sides & back of the fire place and by the passage of the smoke & flame over the plate just mentioned the heated air is admitted into the room from said chamber through openings in the sides thereof. A cylinder to contain heated air is placed above the iron plate of the air chamber and extends across the chimney the ends being made tight in openings made in the side walls a plate to receive them, the said





for a small handle attached to it may be either closed or opened at pleasure. Into the opening may be inserted the joint of a hose of required length which the second story of the house may be warmed when there is no need of fire in the first story. The Flue Saver or Economical Warmer. In the third story or in any other story in which the evaporator hereafter to be described is to be used is to be made an opening in the wall of the chimney about the size of the flue of the chimney and in this opening at the top is secured a bar of iron to which is hung a swinging valve opened by a rod or bar of iron in front to cut off the passage of the smoke up the flue and turn it horizontally through the opening just mentioned into the flue saver or economical Warmer through an opening in the back near the bottom thereof. The warmer is of a round, square or other shape made of tiles, wrought or cast metal about 5 feet high of sufficient size the four sides closed entirely except where the smoke is admitted and escapes and where the air cylinders are inserted and a small opening in front for the rod or bar above mentioned. The air cylinders are three in number but may be more or less, placed longitudinally at a suitable distance apart and within the warmer open at both ends to allow a free passage of the the heated air from them into the room, on the top is another opening the size of the flue around which is formed a flange or projection over which is placed a square pipe or conductor the same size as the one last mentioned, to convey the smoke after it having entered the warmer & circulated around the several air cylinders through an opening in the chimney again into the flue. The pipe or conductor intended to convey the smoke from the warmer to the flue had the other end thereof placed in the last mentioned opening in the chimney.

Besides the pipe or conductor last mentioned there is another one of the same size to be made of tiles or wrought or cast metal or of any convenient size necessary to be used in conducting the heat from the chimney to the warmer. Besides the valve before described for changing the direction of the smoke from the flue to the warmer there other may be used, the first is hung on hinges at the end of the conducting pipes. The second is placed within the pipe, both must be above the flue of the chimney by one and a quarter



they are attached, extending through the front of the evaporator, the flame is simply a plate of metal perforated, having centrally a rectangular flue of the chimney passing between the two conducting pipes of the evaporator. A damper is also placed in each of the conducting pipes. In the front of the evaporator is an opening to admit a stove pipe from a stove to be used when there is no fire in the fixed stove. The cylinders and plates in the chimney may be dispensed with and the main flue brought down to the front of the fire place on the first floor. What I claim as my invention and improvement and for which I solicit Letters Patent is the before described mode of managing heat by which ovens are rendered and cooking performed from the caloric that usually escapes with the smoke through the flue of the chimneys

Witnesses
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