No. 693,423. Patented Feb. 18, 1902.

J. R. McCOY.

HEAT RADIATING AND TEMPERING SCREEN DRUM FOR STOVES.

(Application filed Aug. 18, 1900.)

(No Model.)

Fig. 2.

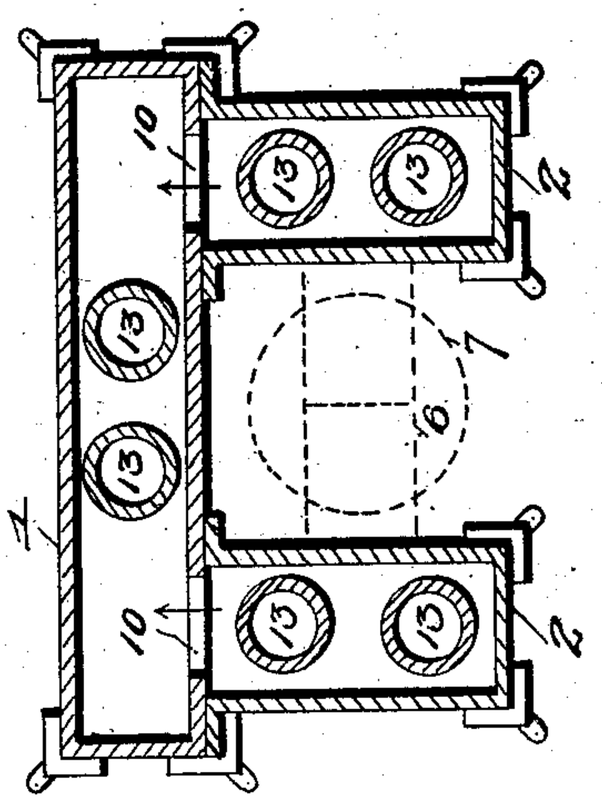


Fig. 3.

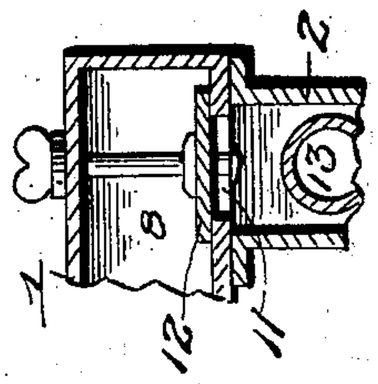
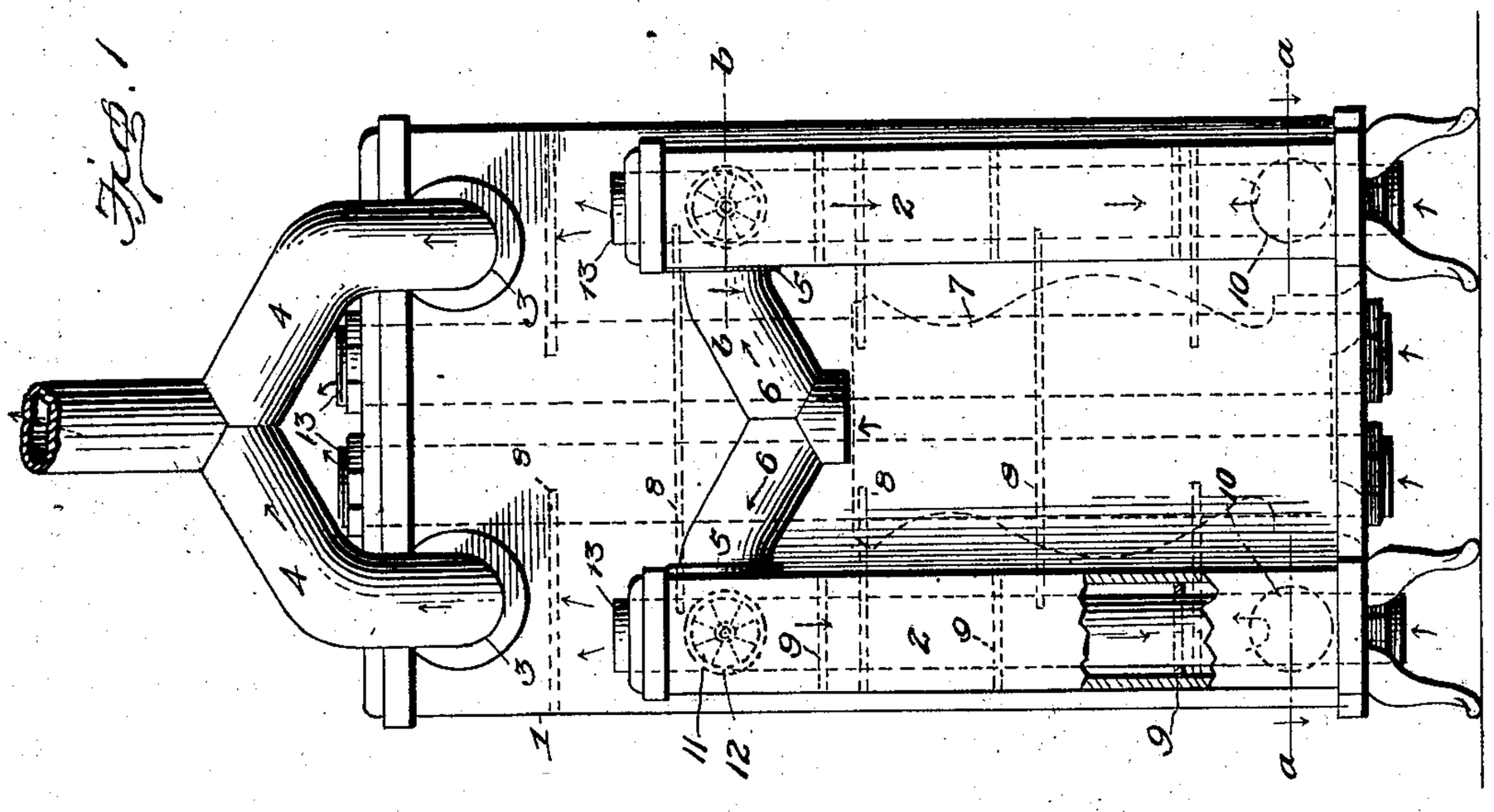


Fig. 1.



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UNITED STATES PATENT OFFICE.

JOSIAH R. McCOY, OF MARSHALLTOWN, IOWA.

HEAT RADIATING AND TEMPERING SCREEN-DRUM FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 693,423, dated February 18, 1902.

Application filed August 18, 1900. Serial No. 27,312. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH R. McCOY, a citizen of the United States, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented a new and useful Heat Radiating and Tempering Screen-Drum for Stoves, of which the following is a specification.

My invention is an improved heat radiating and tempering screen-drum for stoves.

The object of my invention is to provide an improved heat radiating and tempering drum which is adapted to be disposed on one side of and out of contact with a heating-stove to utilize the smoke, heated air, and gases from the stove, which usually pass directly into the chimney-flue, for heating purposes, thereby effecting an economy of the fuel and increasing the heating capacity of the stove.

A further object of my invention is to provide a heat-radiating drum which tempers the heat and serves as a screen, which is adapted to be placed near the stove and may either partially or entirely surround the stove and serves to intercept the heat radiated directly from the stove and temper the heat in the immediate vicinity of the stove, thereby adapting the stove to be located in close proximity to a wall, partition, or mantle without danger of injuring or igniting the same, and thereby so tempering the heat in the immediate vicinity of the stove that the same is not uncomfortable to persons near the stove.

A further object of my invention is to provide an improved heat radiating and tempering screen-drum by means of which the space occupied by a stove and the area of unduly-heated air in the immediate vicinity thereof are contracted, thus economizing space and distributing the heated air uniformly, which are matters of special importance in school-rooms, stores, halls, offices, and other apartments.

My invention consists in the peculiar construction and combination of devices hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of a heat radiating and tempering screen-drum constructed in accordance with my invention. Fig. 2 is a horizontal sectional view of the same, taken on the line *a a* of Fig. 1. Fig. 3 is a detail sectional view of the same, taken on the line *b b* of Fig. 1.

Referring now to the embodiment of my invention shown in the drawings, my improved heat radiating and tempering screen-drum comprises the main back section 1, which is vertically disposed, and the lateral wings or sections 2, which are connected thereto and project forward from the face thereof. It will be observed by reference to the drawings that the sections of the heat radiating and tempering drum are narrow, being in practice only of the width of about four inches. The said sections are of any desired size and superficial area. The back or main section 1 of the drum is provided near its top on its front side with openings 3, with which connect smoke-pipes 4, that lead to the chimney or smoke-flue. The lateral sections 2 are provided on their insides near their tops with induction-openings 5, with which communicate pipes 6, that lead from the combustion-chamber of a stove, which is located between the lateral wings or sections 2 and in front of the main or back section 1 and out of contact with the said sections, the location of the stove being indicated in dotted lines at 7 in Figs. 1 and 2.

It will be understood from the foregoing and by reference to Figs. 1 and 2 of the drawings that the radiating and tempering drum partially surrounds the stove and is out of contact therewith at all points. It will be further understood that the smoke, heated air, gases, and other products of combustion pass from the stove through the communicating sections of the drum before reaching the smoke-flue or chimney. The sections 1 2 of the drum are provided with horizontally-disposed baffle-plates 8 9, respectively, which form tortuous continuous communicating interior flues in the said sections through which the hot smoke, heated air, gases, and other products of combustion from the stove pass on their way to the smoke-flue or chimney, as indicated by the arrows in the drawings, and thereby the said flues and the exterior surfaces of the drum-sections are heated and caused to radiate heat into the room, thereby greatly enhancing the heating capacity of the stove and correspondingly effecting an economy of the fuel burned therein.

It will be understood from the foregoing and by reference to the drawings, especially Fig. 2 thereof, that the heated smoke, air, gases, and products of combustion pass first directly from the stove into the upper portions of the side or laterally-disposed wings or sections 2 and in passing through the radiating-flues therein descend to the bottoms thereof and from thence pass rearward into the lower side of the main back section 1 through the openings 10, and in passing through the radiating-flues formed by the baffles in the main back section rise in the latter, finally escaping therefrom through the pipe 4 into the smoke-flue or chimney. By thus interposing the side or lateral connecting-sections between the stove and the main or back section and establishing communication between the stove and said side or lateral section the latter, which are the more directly exposed in the room, are heated to a greater extent than the main or back section, thereby radiating the heat at the sides of the stove, where it is most needed, and it will be furthermore understood that by thus partially surrounding the stove with the sections of the radiating-drum the latter serves to intercept the heat radiated directly from the sides of the stove and to temper the heat radiated therefrom, so that the immediate vicinity of the stove is only temperately and not immoderately heated. It will be further understood that the main or back section of the heating-drum by thus cutting off direct radiation of heat from the rear side of the stove enables the latter to be located near a wall, partition, mantle, or an article of furniture or other object, the rear section of the drum being interposed between the stove and the same without danger of injuring or igniting the same, and hence the danger of fires from this cause is entirely obviated by the use of my invention.

Openings 11 establish communication between the upper portions of the side or lateral sections 2 of the drum and the back section 1 thereof, and in the said openings are suitable valves or dampers 12, by which said openings may be uncovered to any desired extent or entirely cut off. Hence communication may be established between the said upper portions of said lateral or side sections 2 of the drum and the main or back section thereof at will. When communication through the openings 11 is cut off, the smoke, heated air, and gases from the combustion-chamber of the stove pass through the radiating-flues in the side or lateral sections 2 in the manner hereinbefore described before reaching the main or back section 1, thereby heating the sections 2 and all portions of the back section 1 and causing the same to radiate heat; but when more heat is thus radiated than is desirable the said side or lateral sections 2 and the lower portion of the back or main section 1 may be thrown out of action as heat-radiators by opening the openings 11, and thus establishing communication between the upper portions of the sections 1 2, and thereby preventing the heated products of combustion, air, and gases from passing downward through the sections 2 and upward in the lower portion of the back section 1.

To increase the efficiency of the heat-radiating drum, I provide the same with vertical flues 13, which are located in the sections of the drum, communicate at their lower and outer ends with the outer air, and while passing through do not communicate with the interior heat-radiating flues in the sections of the drum. It will be understood that cold air near the floor is sucked into the lower ends of said flues 13 and in rising through the same is heated before being discharged back into the room.

My invention is especially designed for use in schools, halls, stores, offices, and large apartments, and it will be understood that by the use of the same the heating capacity of the stove is very materially enhanced, and, moreover, that the drum-sections serve to temper while radiating the heat at the immediate vicinity of the stove, and thereby the stove may be located in the center of an aisle or other portion of the room and persons in the immediate vicinity thereof will not be unduly warmed.

Having thus described my invention, I claim—

1. A heat tempering and radiating screen-drum comprising a vertically-disposed main section and vertically-disposed laterally-extending wings joined thereto, said main section and wings having communicating, continuous flues, said wings having inlet connections, for the combustion-chamber of a stove, and said main section having an outlet connection for a flue or chimney, whereby the smoke, heated air and products of combustion pass from the stove through the communicating radiating-flues in said main section and wings of said heat radiating and tempering screen-drum before being discharged into the chimney or flue, said screen-drum having valved openings between the upper portions of the main and wing sections thereof to confine the draft between the stove and flue or chimney through the upper portions of the said screen-sections, substantially as described.

2. A heat tempering and radiating screen-drum comprising a vertically-disposed main section and vertically-disposed laterally-extending wings joined thereto, said main section and wings having communicating, continuous flues, said wings having inlet connections, for the combustion-chamber of a stove, and said main section having an outlet connection for a flue or chimney whereby the smoke, heated air and products of combustion pass from the stove through the communicating, radiating flues in said main section and wings of said heat radiating and tempering

screen-drum before being discharged into the chimney or flue, said screen-drum having valved openings between the upper portions of the main and wing sections thereof, to confine the draft between the stove and flue or chimney through the upper portions of the screen-sections, and said main section and lateral wing-sections being further provided with air-flues communicating with the outer air, to conduct air through said flues and heat the same by internal radiation, the said air-flues not communicating with the interior of said screen-drum, or with the draft-flues therein, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSIAH R. McCOY.

Witnesses:
J. W. GARNER,
MAILAND C. GLADMOND.