(No Model.)

C. T. McCARROLL.

SHEET METAL STOVE.

No. 597,427. Patented Jan. 18, 1898.

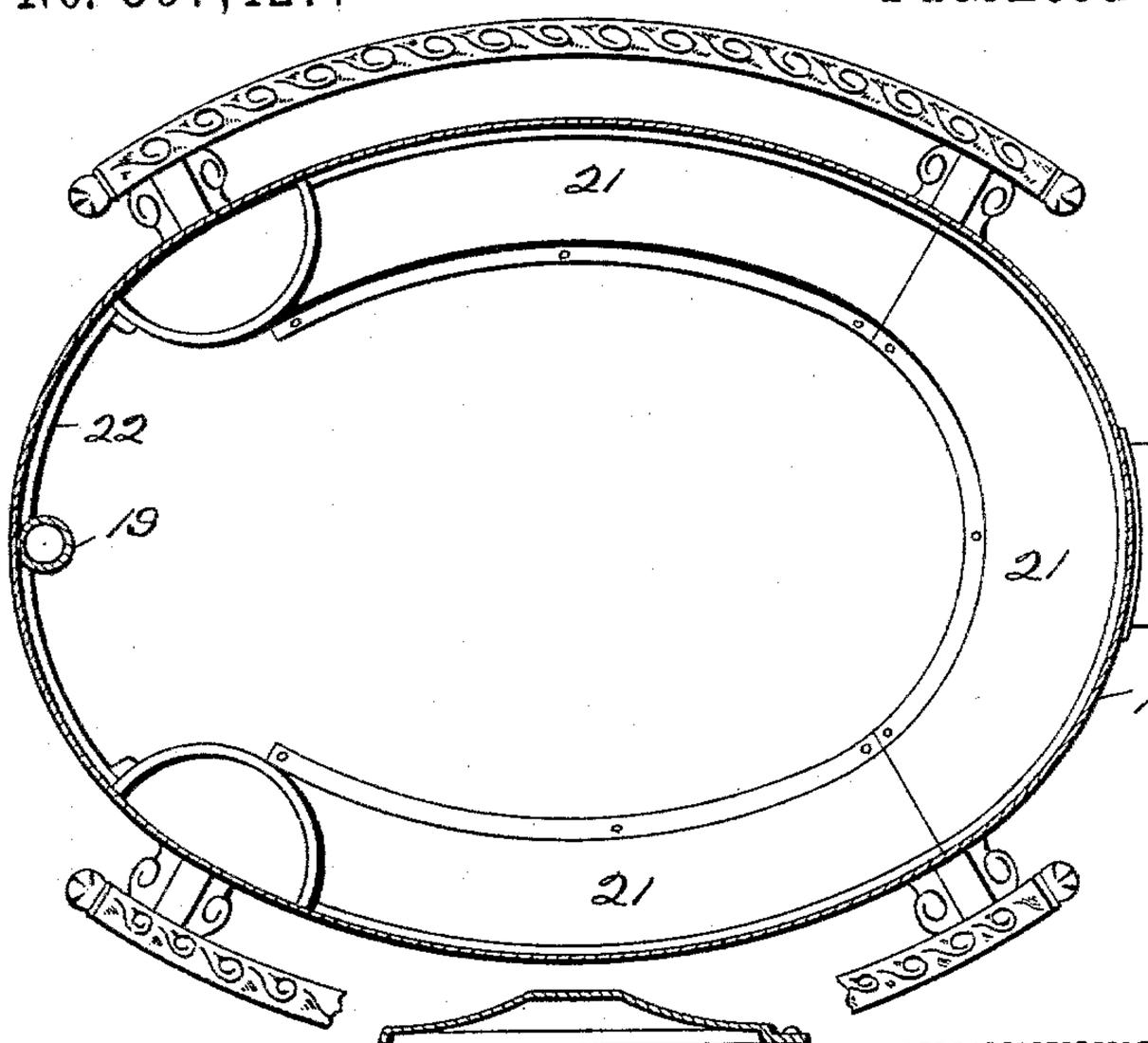
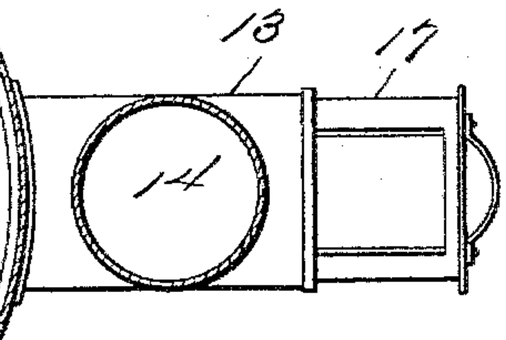


Fig. 1.



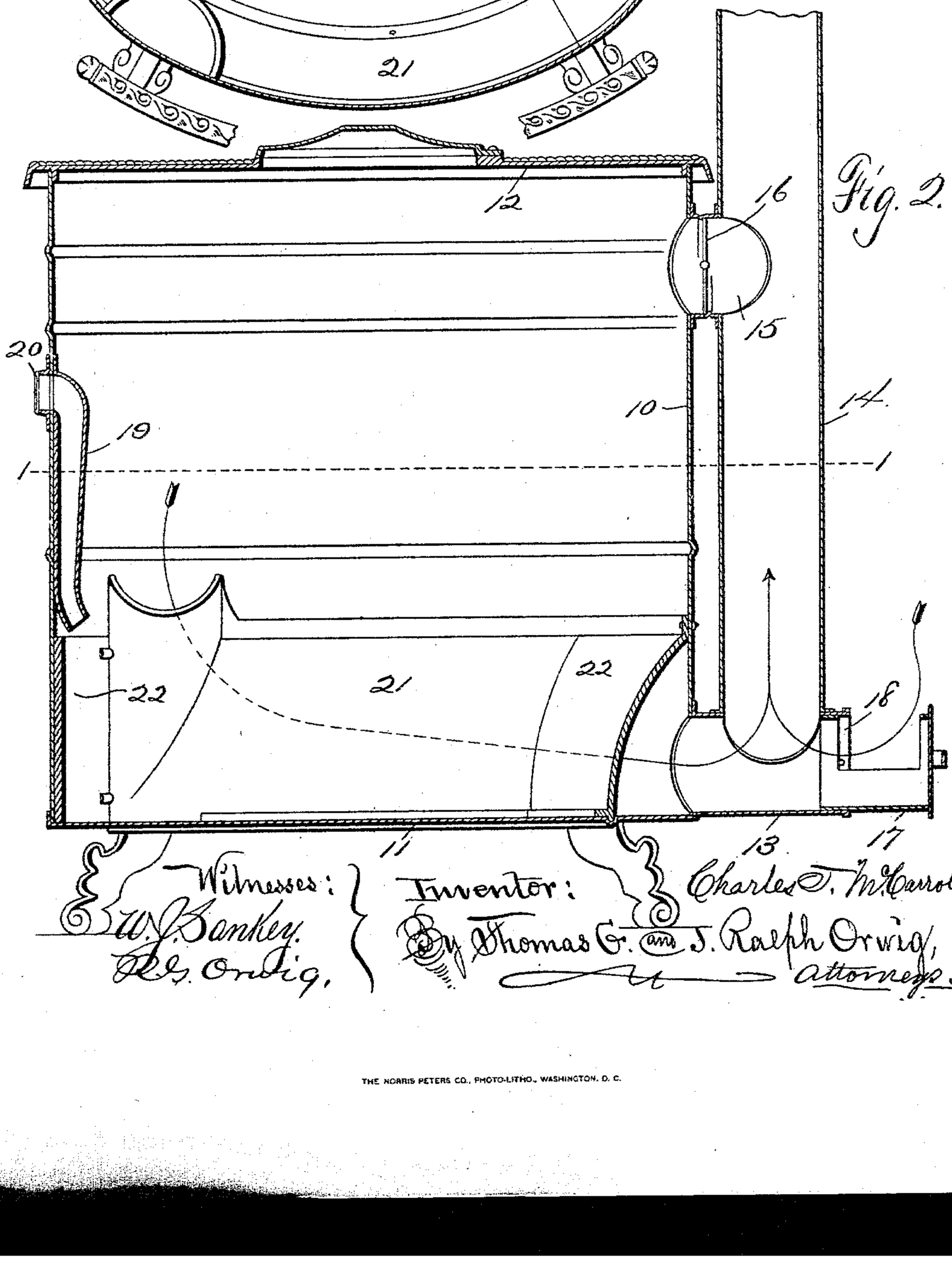


Fig. 2.

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UNITED STATES PATENT OFFICE.

CHARLES T. McCARROLL, OF OTTUMWA, IOWA.

SHEET-METAL STOVE.

SPECIFICATION forming part of Letters Patent No. 597,427, dated January 18, 1898.

Application filed June 17, 1897. Serial No. 641,083. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. McCARROLL, a citizen of the United States, residing at Ottumwa, in the county of Wapello and State of Iowa, have invented a new and useful Improvement in Sheet-Metal Stoves, of which the following is a specification.

My object in this invention is to provide a sheet-metal wood-burning stove of simple, strong, durable, and inexpensive construction of the class in which either a direct or an indirect draft may be had; and my object is, further and more specifically, to provide a stove of this class in which, when an accumulation of ashes has become lodged on the bottom of the stove, there will be no direct radiation of heat downwardly from the bottom, and yet the radiation of heat from the sides near the bottom will not be interfered with nor will the supply of air from the bottom upwardly be interfered with.

My object is, further, to provide a plate designed to rest against the sides and base of the stove and utilize a portion of said sides and base to form, with the plate, a conduit, to the end that cheapness and simplicity of construction may be attained.

My invention consists, essentially, in the construction, arrangement, and combination, with a sheet-metal stove, of a combined air-conduit and ash-fender, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a central horizontal section of the complete stove, and Fig. 2 shows a central vertical section of the complete stove.

Referring to the accompanying drawings, the reference-numeral 10 is used to indicate the stove-body, which is preferably made of sheet metal, oval in horizontal section, and provided with a flat sheet-metal bottom 11 and a flat top 12, which is detachably placed thereon. Through this top fuel is placed within the body.

At one end of the stove, near its bottom, is an air-supply pipe 13, communicating with the interior of the stove and connected with a vertical pipe 14, which leads to the flue. A second pipe 15 communicates between the upper end of the stove-body and the said pipe 14, and a damper 16 is placed in this pipe 15. At the outer end of the pipe 13 is a tubular extension 17, and in this extension is a rotatable slide 18, having an opening therein so arranged that when the pipe 18 is rotated the opening may be made to coincide with an opening in the pipe 17 or be turned so that they will not coincide. The valve in the extension 17 serves the function usual to check-valves of this kind, and when the damper 16 is closed a downdraft will be produced in the stove that will pass outwardly through the pipe 13 and then up through the flue 14, while when the damper 16 is open the products of combustion arising from the fuel will pass straight through the pipe 15 to the flue.

The reference-numeral 19 is used to indicate an air-feeding pipe having a valve 20 at its upper end to communicate with the outside atmosphere and having its lower end extended downwardly parallel with the side of the stove to discharge into the interior of the stove near its bottom. This pipe is also of ordinary construction.

The reference-numeral 21 is used to indicate a cast-metal plate designed to extend around the interior of the stove, except for a small space at the front of the stove, and to have its lower edge rested upon the bottom of the stove and its upper edge against the side of the stove. It is preferably bowed outwardly, so that the passage for air may be had between it and the interior of the stove. To thereby form with the sides and bottom of the stove a combined smoke-passage and ash-fender at its ends, this plate is bent upwardly to open into the interior of the stove. A curved plate 22 is provided to engage the ends of said plate 21 to continue the lining of the stove at its lower edge and also to hold the plate 21 in place. Said plate 21 may be cast in sections, so that it may be more readily handled, and the sections may, if desired, be independently secured by bolts or rivets to the sides or bottom of the sheet-metal stove.

In use the bottom of sheet-metal stoves usually have a layer of ashes resting thereon, and these ashes serve to prevent the direct radiation of heat from the bottom downwardly, which direct radiation would obviously be objectionable. However, they also lie against the sides of the furnace and thereby prevent the radiation of heat through

the sides. Furthermore, when this body of ashes is lying upon the bottom of the stove it has been found impossible heretofore to produce a downdraft through the stove, for the reason that the ashes would immediately fill any opening at or near the bottom of the stove. By the use of my combined smoke-conduit and ash-fender I have provided a means whereby the direct radiation of heat may be had from the sides of the stove down to its bottom, even though the stove has a thick layer of ashes on the bottom, and have also provided for a downdraft when the stove is thus filled with ashes. Assuming that a fire were burning within the stove and the damper 16 closed, it is obvious that the products of combustion must pass downwardly through the smoke-conduit and ash-fender before entering the flue and that the products of combustion must pass in direct contact with the sides of the stove at its bottom to thereby provide a direct radiation therefrom. Furthermore, the accumulation of ashes within the interior of the stove cannot in any way interfere with this draft until it reaches the top of the openings in the smoke-conduit and ash-fender.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States therefor, is—

1. In a sheet-metal stove having smoke-discharge openings therein, the combination of a plate within the stove resting upon the bottom and engaging the sides thereof and having draft-openings therein, and forming with the sides and bottom a combined smoke-conduit and ash-fender, for the purposes stated.

2. In a sheet-metal stove having smoke-discharge openings therein at its rear end, the combination of a plate 21 to extend around the interior of the stove and resting upon the bottom and engaging the sides of the stove and having draft-openings therein near the front of the stove, and forming with the sides and bottom a combined smoke-conduit and ash-fender for conducting the products of combustion through the said draft-openings in the plates, then rearwardly through the conduit formed by the plates and stove, to the smoke-discharge opening at the rear of the stove.

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