L. SCRUGGS.

STOVE AND RANGE.

APPLICATION FILED OCT. 10, 1910.

993,558. Patented May 30, 1911.

Fig. 1.

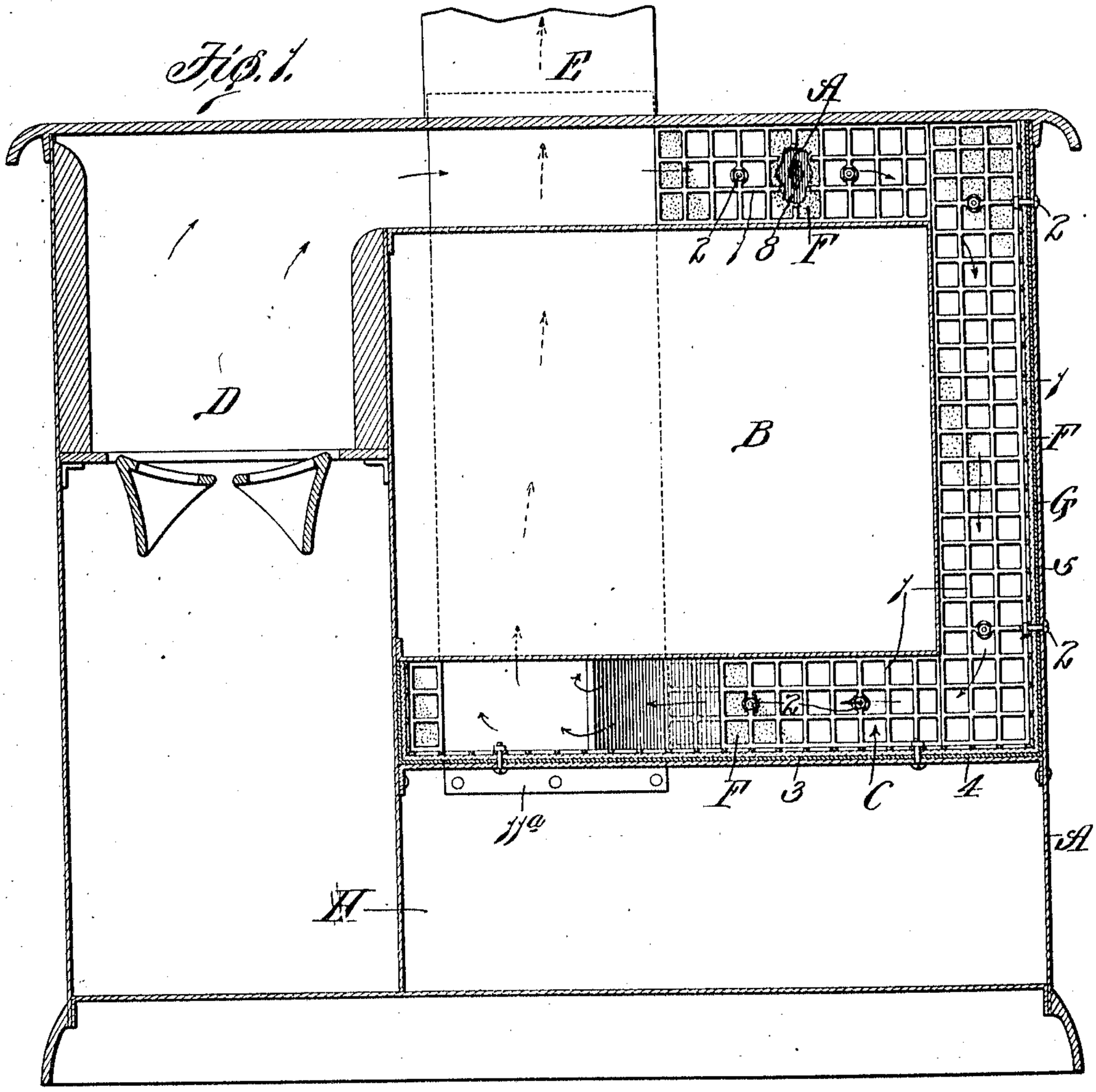
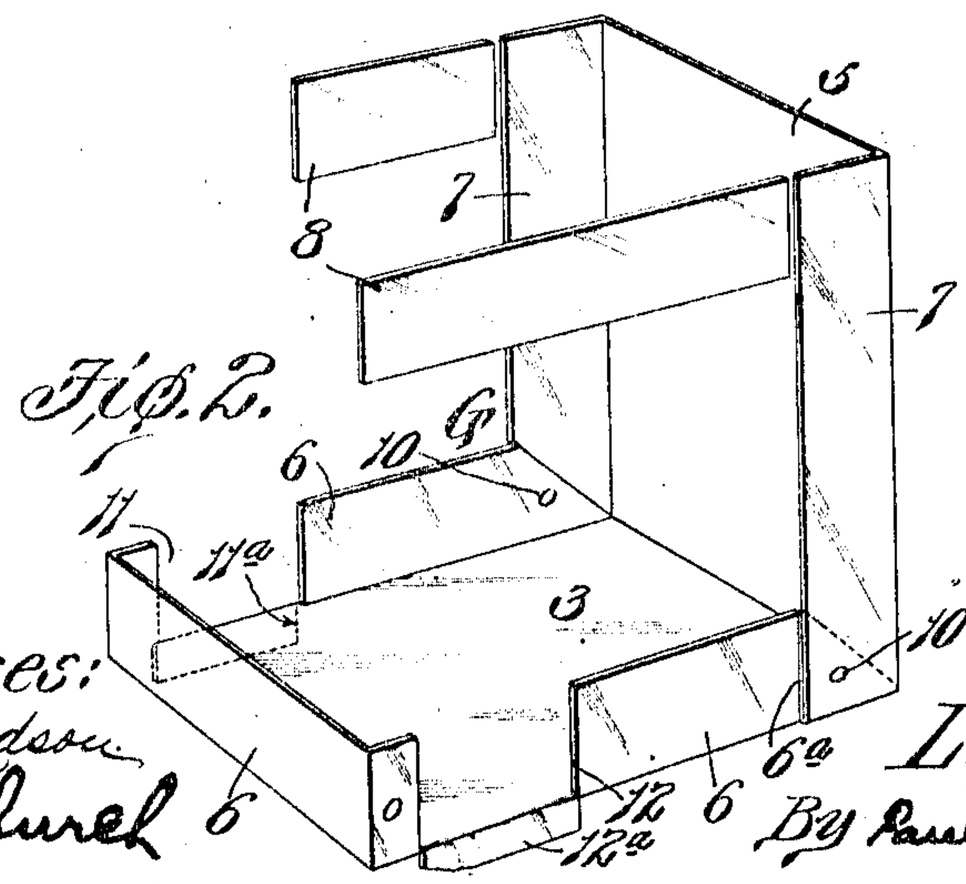


Fig. 2.



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UNITED STATES PATENT OFFICE.

LOYD SCRUGGS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO COPPER CLAD MALLEABLE RANGE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEBRASKA.

STOVE AND RANGE.

993,558. Specification of Letters Patent. Patented May 30, 1911.

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To all whom it may concern:

Be it known that I, LOYD SCRUGGS, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Stoves and Ranges, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to cooking stoves, and particularly to ranges of the type which are provided with a sheet steel or iron outer casing inside of which an asbestos lining is arranged so as to prevent the heat from being absorbed by the portions of the steel casing which form the outer walls of the smoke flue. The ranges of this type which are now in general use have not proven entirely satisfactory because rust forms on the inner surface of the steel casing and in the course of three or four years eats completely through the casing, the rust being caused by the moisture which the asbestos lining absorbs and deposits on the inner surface of the steel casing.

The main object of my invention is to provide a range whose outer casing will not rust out, the range being so constructed that moisture in the insulating material used to line the smoke flue will have absolutely no effect on the inner surface of the outer casing of the range. And another object is to provide a range which is so designed that soot cannot escape from the smoke flue and pass into the warming oven which lies underneath the smoke flue.

Other objects and desirable features of my invention will be hereinafter pointed out.

Figure 1 of the drawings is a vertical sectional view of a range constructed in accordance with my invention; and Fig. 2 is a perspective view of the rust-proof lining which is arranged between the outer casing of the range and the heat-insulating material that lines the smoke flue.

Briefly stated, my invention consists in a range having an outer casing, a heat-insulating lining for the smoke flue, and a layer of rust-proof material arranged between the outer casing and the heat-insulating lining of the smoke flue so as to prevent moisture from collecting on the inner surface of the outer casing and rusting same.

Referring to the drawings which illustrate the preferred form of my invention, A designates the outer casing of the range which is preferably formed from sheet steel, B designates the oven, and C designates the smoke flue which leads from the fire-box D across the top of the oven, then down one side of the oven, and thence under the bottom of the oven to the uptake flue E. A heat-insulating lining F of sheet asbestos or some other suitable material, is arranged in the smoke flue adjacent the portions of the casing A which form the outer walls of said flue so as to hold the heat in the oven and prevent it from being absorbed by said outer casing. A rust-proof lining G formed of sheet copper or some other suitable material, is arranged between the heat-insulating lining F and the outer casing A so as to prevent any moisture in the smoke flue from collecting on the inner surface of the casing A. The heat-insulating lining F can be retained in position in various ways, as for example, by means of a grille or grating 1 which is secured to the outer casing by bolts 2 or other suitable fastening devices, said bolts passing through openings in the heat-insulating lining F, the rust-proof lining G, and the casing A and thus securely clamping all of said elements together.

The rust-proof lining G can be formed in various ways but I prefer to form the major portion of said rust-proof lining from a single sheet of material pressed into the shape shown in Fig. 2, so as to form a wall 3 which covers the bottom wall 4 of the smoke flue, a wall 5 which covers that portion of the casing A which forms the vertical side wall of the flue, an upwardly projecting flange 6 on the wall 3 which covers the portions of the casing A that form the side walls of the lower horizontal portion of the flue, and inwardly projecting flanges 7 on the wall 5 which cover the portions of the casing A that form the front and rear walls of the vertical portion of the flue. Separate pieces of material 8 are preferably used for covering the portions of the casing which form the rear and front walls of the upper horizontal portion of the flue but, if desired, the entire rust-proof lining G could be formed from a single sheet of material pressed into proper shape.

To overcome the possibility of soot escaping from the smoke flue and passing into the warming oven H which is located below the

smoke flue, as shown in Fig. 1, I prefer to form the rust-proof lining G in such a manner that no open joints or cracks occur at the junction of the horizontal and vertical walls of said lining and the flanges on said walls. This can be accomplished in various ways, as for example, by forming folds or plaits 6^a in the flanges 6 adjacent the points where they meet the flanges 7, and inserting one or more fastening devices 10 through the overlapping portions of said flanges so as to securely connect them together. I do not wish it to be understood, however, that my broad idea is limited to this exact construction or, in fact, to a rust-proof lining of any particular shape or design for my invention broadly stated consists in a stove or range having a lining of rust-proof material arranged between the outer casing and the heat-insulating material arranged inside of said casing irrespective of whether said heat-insulating material is used only in the flue or on other portions of the casing.

The flange 6 on the rear edge of the horizontal wall 3 of the rust-proof lining is provided with an opening 11 through which the products of combustion pass into the uptake flue E, as indicated by the arrows in Fig. 1, and the flange at the front edge of said horizontal wall 3 is provided with a clean-out opening 12, said wall 3 being provided with downwardly projecting lips 11^a and 12^a, respectively, at the lower edges of said openings so as to overcome the possibility of soot dropping downwardly into the warming oven H.

The outer casing of a range of the construction above described will last indefinitely for the rust-proof lining G prevents the formation of rust on the inner surface of said casing, and as the portion of said lining which lies above the bottom wall 4 of the lower horizontal portion of the flue is substantially box-shaped it will be impossible for soot to pass into the warming oven through the joints between the casing A and the plate 4 which forms the top of said warming oven and the bottom wall of the horizontal portion of the flue. Still another very desirable feature of such a construction is that air cannot leak through the joints between the plate 4 and the casing and thus cool off the bottom of the oven and retard the free circulation of the products of combustion, the rust-proof lining being so constructed that the smoke flue is practically air-tight.

I, of course, wish it to be understood that my invention is not limited to a stove of the exact construction herein shown, and while I have herein illustrated my invention embodied in that type of cooking stove commonly termed a "range," it will, of course, be understood that any stove could be constructed in this manner, and therefore the term "range" used in the claims should be construed as covering any type of cooking stove.

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

1. A stove having an outer casing formed of material that is liable to rust, a heat-insulating lining arranged inside of said casing, and a metallic rust-proof lining interposed between said heat-insulating lining and casing.

2. A stove having an outer casing formed of metal that is liable to rust, a lining of heat-insulating material in the smoke flue of the range, and a lining of rust-proof metal interposed between said casing and heat-insulating lining.

3. A stove having a sheet steel outer casing which is liable to rust, a heat-insulating lining arranged inside of said casing, and a lining of rust-proof metal arranged between said heat-insulating lining and portions of the inner surface of said casing.

4. A stove having a sheet steel outer casing which is liable to rust, a lining of heat-insulating material arranged in the smoke flue, and a rust-proof metallic lining arranged between the casing and said heat-insulating lining.

5. A range having a sheet steel outer casing, an asbestos lining in the smoke flue, and a copper lining interposed between said asbestos lining and casing.

6. A range having a baking oven and a warming oven arranged under said baking oven, a smoke flue lying between said ovens, the bottom wall of said smoke flue and the top wall of said warming oven being formed by a plate of metal which is connected to the outer casing of the stove, and an independent layer of rust-proof metal arranged above said plate and having upwardly projecting flanges that prevent the soot which accumulates on said layer from escaping from same and entering the warming oven.

7. A stove having an outer casing formed of metal that is liable to rust, a smoke flue whose walls are formed partly by said outer casing, a lining of heat-insulating material arranged in said flue, and a rust-proof lining arranged between said casing and heat-insulating material for preventing rust from forming on the inner surface of said casing, the major portion of said rust-proof lining being formed by a single plate of rust-proof metal that is bent or pressed so as to conform to the shape of said flue.

8. A range having an outer casing formed of material that is liable to rust, a baking oven, a smoke flue that extends across said oven down one side of same and thence under the bottom of the oven, and a rust-proof lining arranged inside of said casing and formed principally by a single sheet of

metal bent to produce a horizontal wall that lines the bottom of the smoke flue, a vertical wall that lines the side of the smoke flue, and flanges on said walls that line the front and rear walls of said flue.

9. A range having a sheet steel outer casing, a baking oven arranged inside of same and spaced away therefrom so as to form a smoke flue which extends across the top of the oven down one side of same and thence under the oven to an up-take flue, a member arranged under the bottom of the oven which forms one wall of the portion of the smoke flue which extends under the oven, a copper lining covering the inner surface of said member and also the inner surfaces of those portions of the outer casing which form walls of said smoke flue, and a layer of asbestos covering said copper lining.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this fifth day of October 1910.

LOYD SCRUGGS.

Witnesses:
WELLS L. CHURCH,
GEORGE BAKEWELL.