No. 711,124. Patented Oct. 14, 1902.

C. A. RICHARDSON.

STOVE.

(Application filed Apr. 8, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.

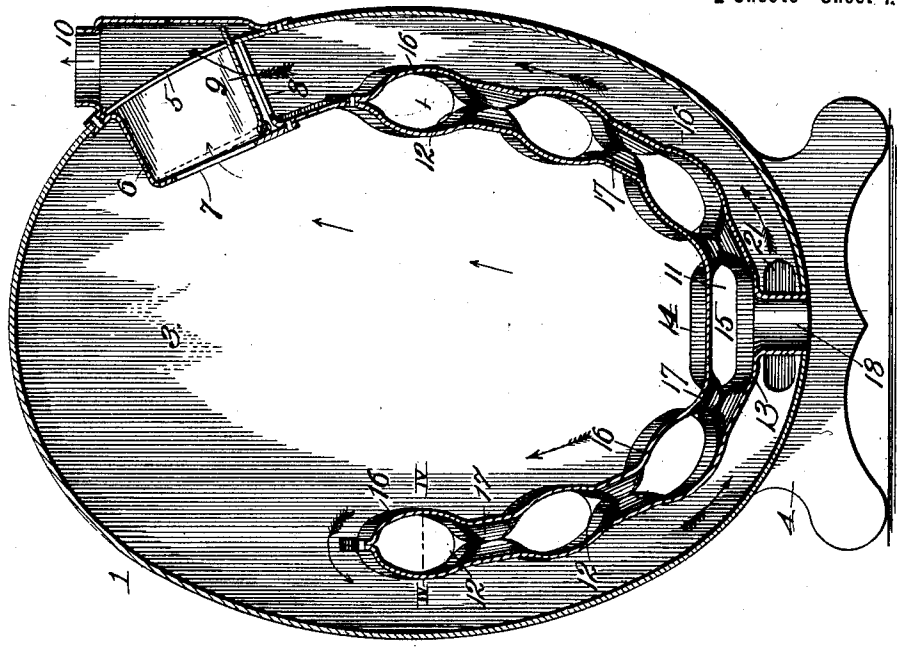
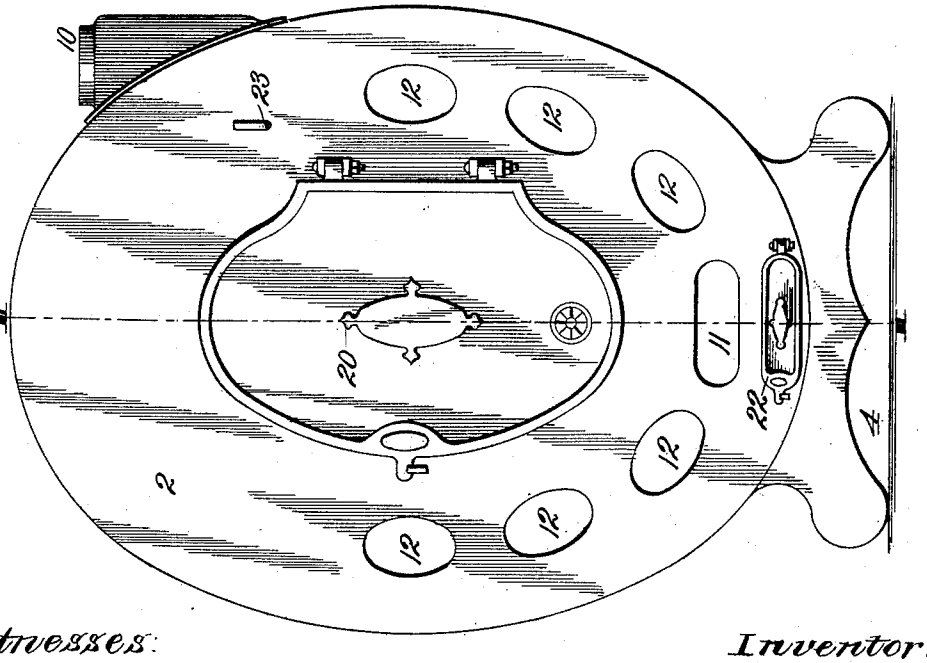


Fig. 1.



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Fig. 3.

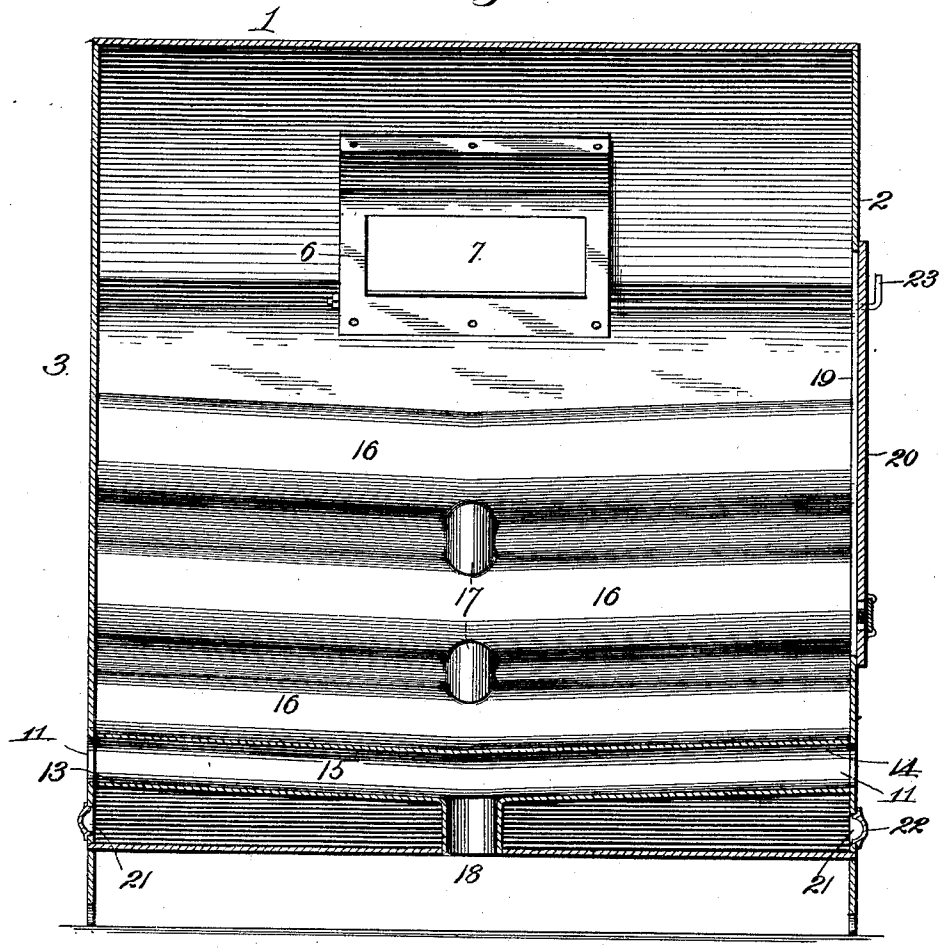
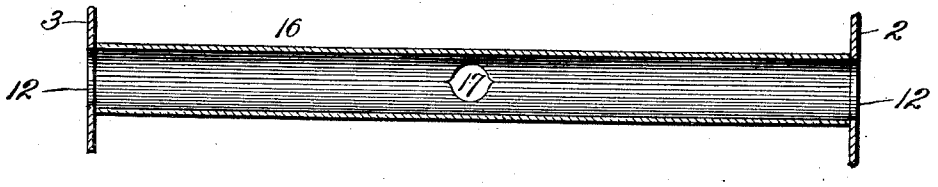


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES A. RICHARDSON, OF KANSAS CITY, MISSOURI.

STOVE.

SPECIFICATION forming part of Letters Patent No. 711,124, dated October 14, 1902.

Application filed April 8, 1902. Serial No. 101,883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. RICHARDSON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

My invention relates to heating-stoves, and more especially to that type possessing triple heat-radiating surfaces for the purpose of utilizing a larger percentage of the heat generated than is utilized with the stoves having less heat-radiating surface; and my object is to produce a stove of this character which is of simple, strong, durable, and cheap construction and from which soot can be conveniently removed.

To this end the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a front view of a stove embodying my invention. Fig. 2 is a central vertical cross-section of the same. Fig. 3 is a section taken on the line III III of Fig. 1. Fig. 4 is a section taken on the line IV IV of Fig. 2.

In the said drawings, 1 designates the body of the stove, the same being of elliptical form and closed at its ends by correspondingly-shaped heads 2 and 3 and mounted upon feet, as at 4, which feet may be a part of the heads 2 and 3 of the stove or may be secured to the body portion.

At a point a suitable distance above its center the body of the stove is provided with an opening 5, and registering with said opening is a flue chamber or box 7, having an opening 7 in its front wall and an opening 8 in its lower wall, and pivoted in the lower front corner of said box is a damper or valve 9, the arrangement being such that it is capable of closing either of said openings. Secured to the outer side of the body of the stove and registering with opening 5 is a permanent flue-section 10, to which the flue or stovepipe (not shown) is adapted to be connected in the usual or any preferred manner.

The heads 2 3 of the stove are provided vertically below their centers with holes 11 and at each side of said holes with holes 12, the latter being arranged on a line approximately parallel with and a suitable distance inward of the edges of the heads. These holes are the exit-points for hot air, and the oppositely-located or corresponding ones are connected together by a corrugated or fluted lining. This lining consists of an outer section 13 and an inner section 14, curved to correspond with the body of the stove and so fluted that when fitted together they form a passage 15 and a series of passages 16 at each side of passage 15, the passages being separated from each other by the contact of the outer and inner sections 13 14 for their full length, except at their middle, at which point the sections are bent outwardly, so as to form tubes 17, which establish communication between all of the passages and through the tube 18, depending centrally from the outer section of the lining, with the external air beneath the stove. The lining formed of sections 13 14 is not only fluted, so as to provide passages between corresponding openings in the heads of the stove, but it is so formed that said passages diverge slightly upward from their points of communication with each other—*i. e.*, tubes 17—and thus serve to facilitate the circulation of air through the room. The front head 2 of the stove is provided with the usual feed-opening 19, controlled by a hinged door 20, and both heads are provided vertically below the openings 11 with openings 21, normally closed by hinged or other covers 22, in order that soot and other accumulations may be withdrawn from the space below the lining.

In practice the fuel is placed in the nest formed by the corrugated lining, and when first ignited damper or valve 9 is thrown to the position shown in Fig. 2 by means of the usual damper-rod 23, upon which said damper or valve is mounted. As thus arranged the draft is directly upward through opening 7 to the flue, as shown by non-feathered arrows in Fig. 2. As soon as the fire attains sufficient headway the damper or valve is thrown to its opposite position, so as to expose opening 8 and cover opening 7. As a result the gases and other products of combustion are compelled to travel in the direction indicated by feathered arrows, Fig. 2—that is, to pass upwardly and over the lining and then between the same and the body of the stove

until they eventually escape through opening 8 into the flue-chamber and into the flue. By thus causing the gases and other products of combustion to follow a tortuous course first above and then below the corrugated lining a greater percentage of the heat is extracted and a triple heat-radiating surface is presented. As a necessary result a circulation of air is quickly established in the room, the air passing up through tube 18 and through the passages 16 of the lining, a portion of the air entering through tube 18 passing sidewise in both directions from passage 15 and entering passages 16, as will be readily understood, and from passages 16 the air is ejected forcibly into the atmosphere of the room, and in this connection it will be noted that this air circulation through said passages prevents the lining from burning out quickly, as would be the case if such passages were simply dead-air chambers.

The soot which will accumulate in the stove between the lining and the body portion will in the main collect at the bottom, because of the elliptical form of the stove, from which point it can be readily removed through the openings 21.

From the above description it will be apparent that I have produced a heating-stove which embodies the features of advantage enumerated as desirable in the statement of invention and in addition thereto is of simple, strong, durable, and cheap construction.

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

1. A heating-stove, provided with a fluted lining forming a nest or fire-box and arranged a suitable distance from the body portion of the stove; said fluted lining forming separate longitudinal passages communicating at their ends with the atmosphere, and having tubular sections establishing communication between said passages, a flue-chamber within the body portion and connected to the flue and to one end of said lining, and provided with an opening communicating directly with the nest or fire-box and with an opening communicating directly with the space between the lining and the body of the stove, and a valve or damper for closing either of said openings at the will of the operator.

2. A heating-stove, provided with a fluted lining forming a nest or fire-box and arranged a suitable distance from the body portion of the stove; said fluted lining forming separate longitudinal passages communicating at their ends with the atmosphere, and depressed at their middle, and having tubular sections establishing communication between said passages, a flue chamber or box within the body portion and connected to the flue and to one end of said lining, and provided with an opening communicating directly with the nest or fire-box and with an opening communicating directly with the space between the lining and the body of the stove, and a valve or damper for closing either of said openings at the will of the operator.

3. A heating-stove, provided with a fluted lining forming a nest or fire-box and arranged a suitable distance from the body portion of the stove; said fluted lining forming separate longitudinal passages communicating at their ends with the atmosphere, and having tubular sections establishing communication between said passages, a flue chamber or box within the body portion and connected to the flue and to one end of said lining, and provided with an opening communicating directly with the nest or fire-box and with an opening communicating directly with the space between the lining and the body of the stove, a valve or damper for closing either of said openings at the will of the operator, and a tube extending across the space between the lining and the bottom of the stove-body and communicating at its upper end with the central lining-passage and at its lower end with the atmosphere.

4. A heating-stove, provided with a fluted lining forming a nest or fire-box and arranged a suitable distance from the body portion of the stove; said fluted lining forming separate longitudinal passages communicating at their ends with the atmosphere, and having tubular sections establishing communication between said passages, a flue chamber or box within the body portion and connected to the flue and to one end of said lining, and provided with an opening communicating directly with the space between the lining and the body of the stove, and with an opening communicating directly with the nest or fire-box, a valve or damper for closing either of said openings at the will of the operator, a tube extending across the space between the lining and the bottom of the stove-body and communicating at its upper end with the central lining-passage and at its lower end with the atmosphere, and door-controlled openings in the ends of the stove and communicating with the space between the lining and the body portion, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES A. RICHARDSON.

Witnesses:

F. G. FISCHER,

H. C. RODGERS.