(No Model.)

G. R. MOON.

STOVE.

No. 560,274. Patented May 19, 1896.

Fig. 1.

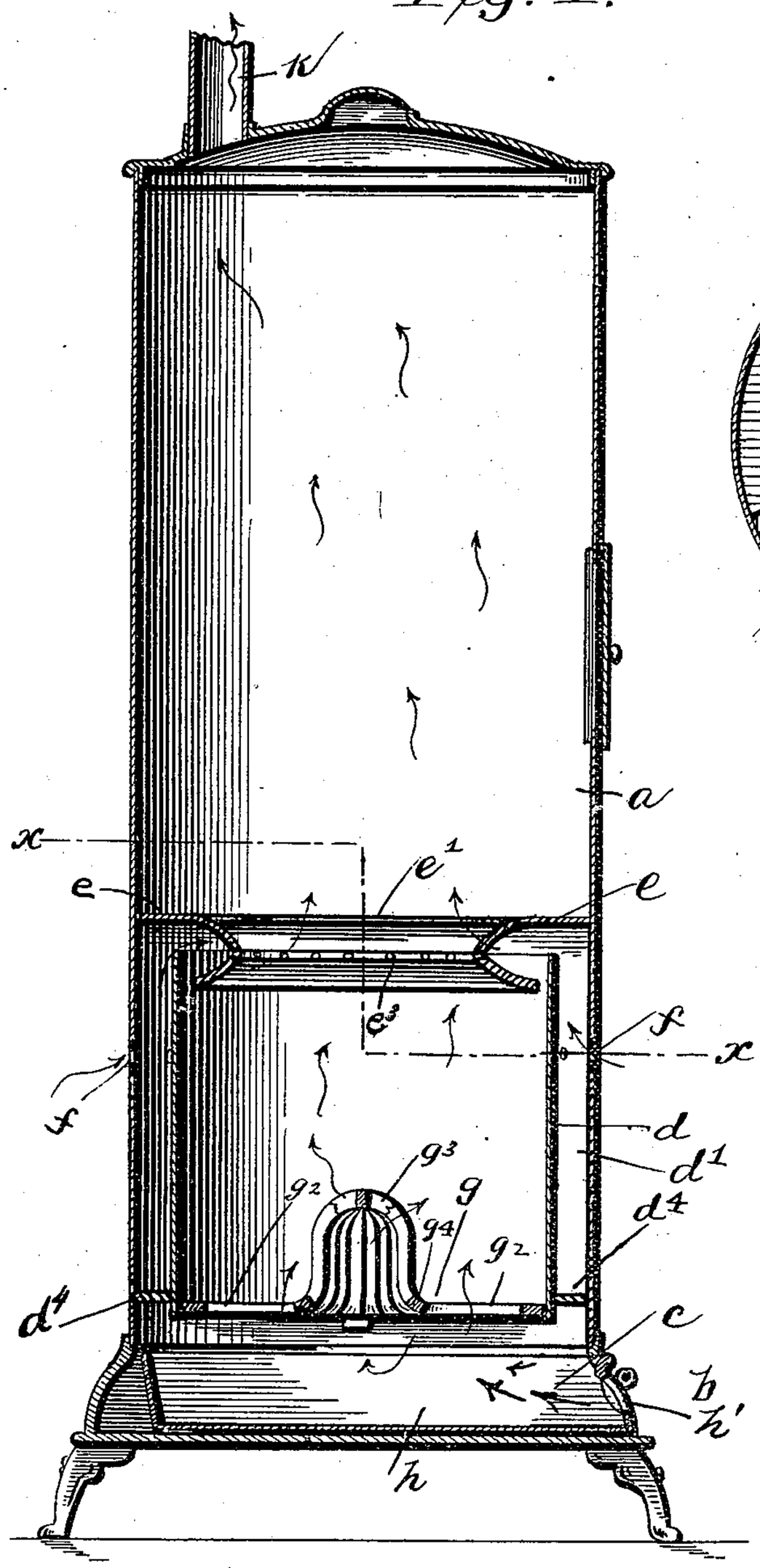


Fig. 2.

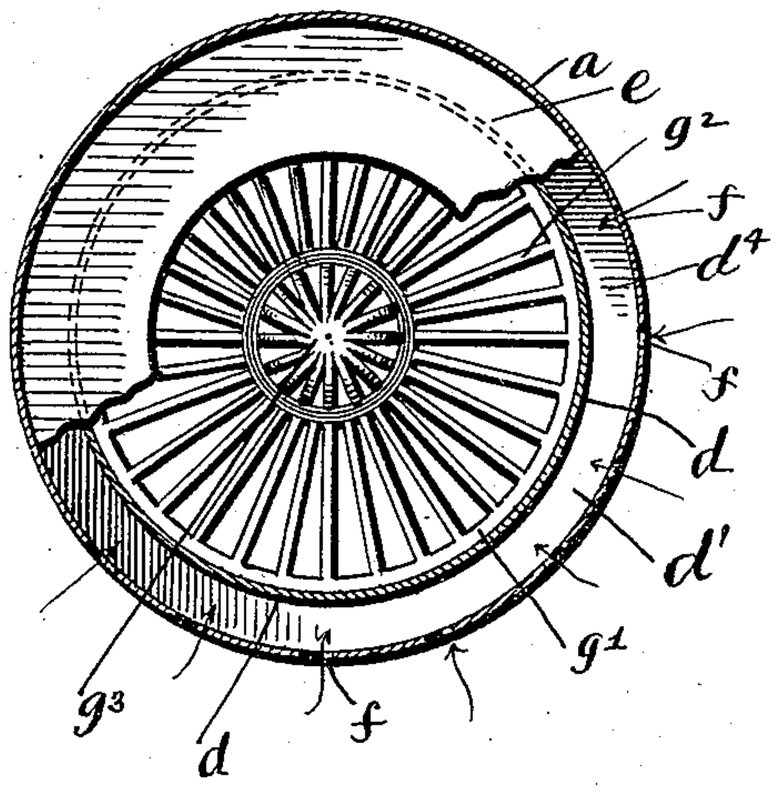
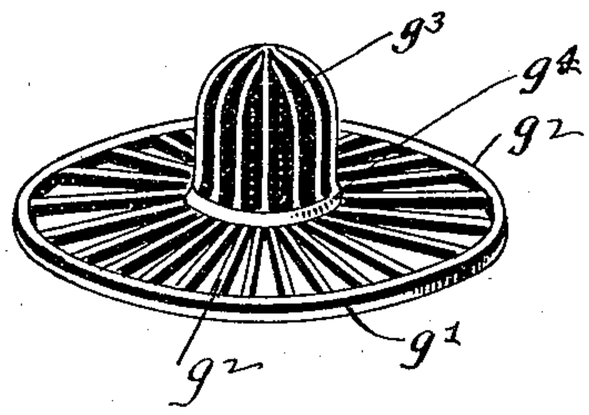


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE R. MOON, OF COLUMBUS, OHIO.

STOVE.

SPECIFICATION forming part of Letters Patent No. 560,274, dated May 19, 1896.

Application filed September 1, 1894. Serial No. 521,966. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. MOON, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to smoke-consuming stoves; and the objects of my invention are to provide a stove of this class in which the greater portion of the smoke will be consumed and in which means are provided for utilizing all or the greater portion of the heat generated; and my invention further consists in details of construction and operation which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section of my improved stove. Fig. 2 is a transverse section taken on two planes, as indicated by the dotted lines $x\,x$ in Fig. 1 of the drawings; and Fig. 3 is a detail view in perspective of the grate-bar frame which I employ.

Similar letters refer to similar parts throughout the several views.

a represents the body or external casing of my improved stove, and b the base thereof.

Within the lower portion of the stove-casing and above the ash-pan c I support an internal cylindrical casing d, the latter being of somewhat less circumference than the casing a and resulting in the formation of an annular chamber or space d' between the two casings. This chamber d' is closed in its lower portion by means of an annular ring-plate, which extends between the inner and outer casing and also serves to support the former.

A short distance above the inner casing I provide within the external casing a horizontally-arranged plate e, which is provided with a central opening e' of less diameter than the upper open end of said inner casing. About this opening e' the plate e is provided with a downwardly-extending neck e^2, the upper and lower halves of which converge, resulting in the formation, as shown, of a substantially concaved periphery. The lower and downwardly-flaring portion of this neck projects, as shown, within the upper end portion of the inner cylinder or fire-pot d. At the center of its height and in the smaller portion of the neck e^2 are formed a number of comparatively small openings e^3. In the walls of the stove-body or outer casing are provided a series of openings f, which communicate with the chamber d'. In the front side of the ash-pan c I provide a suitable doorway or grating h', which may be provided with the usual sliding door.

Within the lower end portion of the inner casing I support, as shown in the drawings, a grate-bar frame g. This grate-bar frame consists, as shown, of an outer rim portion g', from which extend inward-converging grate-bars g^2, said grate-bars being at the central portion of the frame bent upward and inward to form the substantially barred dome g^3. (Shown in Fig. 3 of the drawings.) As indicated at g^4, the bars may be made to intersect a frame-ring at the base of said dome.

The inner casing d is designed to be utilized as a fire-pot, and, as will readily be seen, the air which enters the ash-pan-door openings will follow the direction of the arrows and pass upward not only through the horizontal grate-bars, but through the dome-bars g^3. Owing to the fact that the dome portion of the grate-frame is embedded or surrounded by burning coals it is evident that the air which passes through said grate and its dome will be subjected to an intense heat, and the air thus heated will serve to consume the carbon and other smoke elements before the same escape through the usual smoke-outlet pipe k. It will also be seen that the currents of air which enter the upper portion of the annular chamber d' through the openings f will be intensely heated, and by passing through the openings e^3 in the forms of air-jets will become mingled with the hot-air currents from the fire-pot and greatly assist in consuming the smoke elements. It will be observed that the internal plate e will act as a deflector for the air-currents which enter the openings f and result in both of the air-currents being finally directed through the comparatively small opening in the plate e as one current.

From the construction and operation which

I have described it will be seen that an increased heat-radiating surface is provided within the stove and that a high degree of heat may therefore be obtained by the consumption of a comparatively small amount of fuel.

Although my improvements are shown and described in connection with an ordinary heating-stove, it is evident that the same may be applied to any character of heating-stove or furnace.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In a heating-stove the combination with the body or external casing, of an internal cylinder-casing supported in the lower portion of said body, an annular chamber between said cylinders having its lower portion closed, a grate-bar frame detachably supported in the lower portion of said internal casing and a plate *e* arranged as described above said fire-pot, said plate having a central opening and a downwardly-extending neck portion provided with central perforations said neck portion being provided with an upper and lower flaring portion, said lower flaring portion projecting within the inner cylinder, substantially as and for the purpose specified.

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

GEORGE R. MOON.

Witnesses:

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