No. 666,130. Patented Jan. 15, 1901.

E. C. COLE.

HEATING STOVE.

(Application filed Nov. 1, 1899.)

(No Model.)

Fig. 2

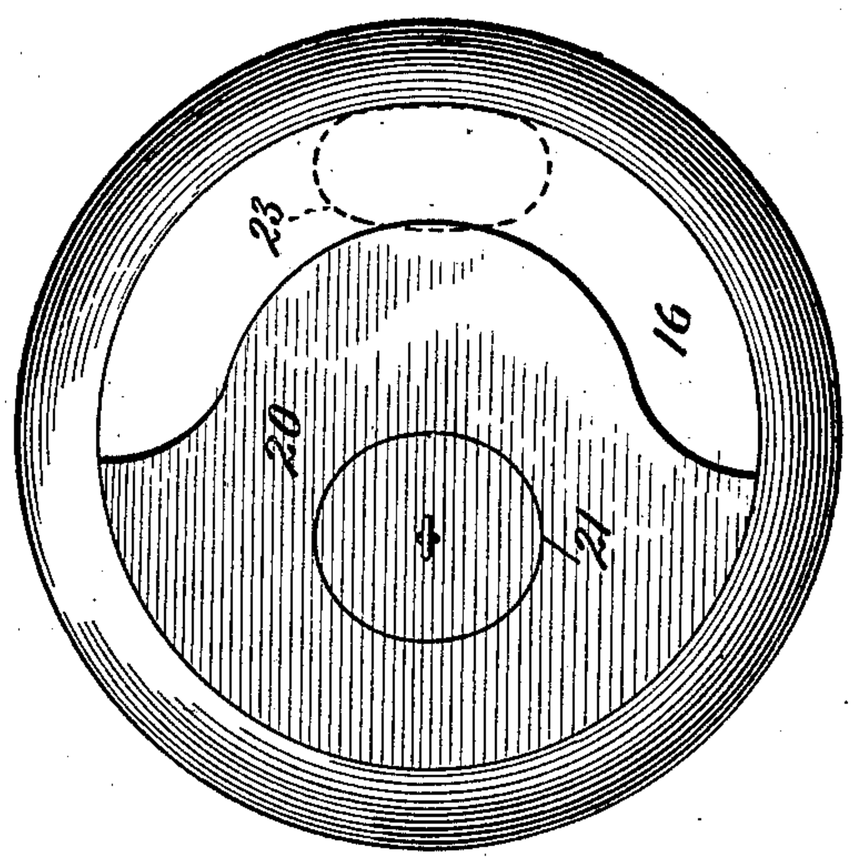
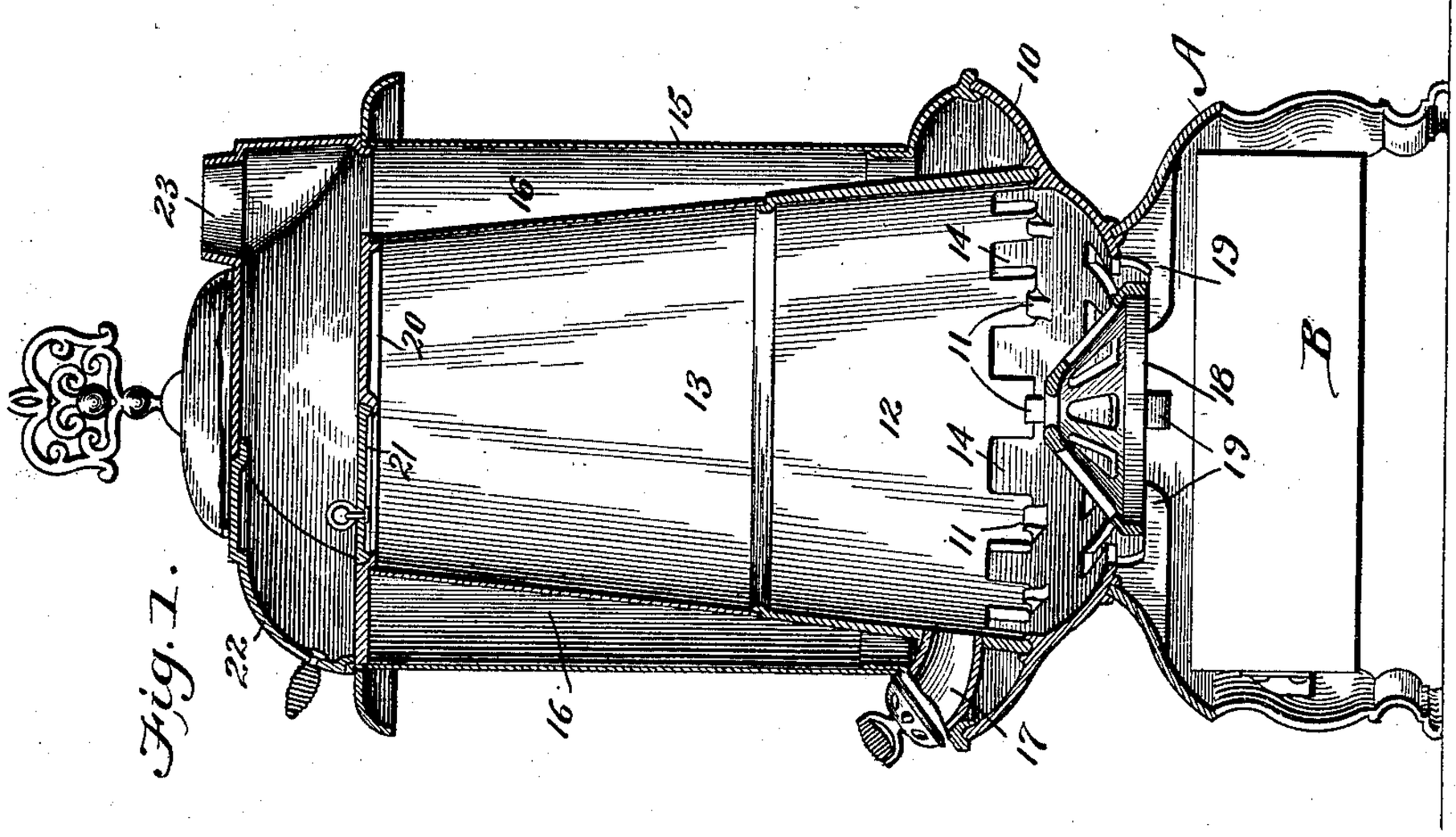


Fig. 1.



WITNESSES:

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ERNEST CHAPIN COLE, OF CHICAGO, ILLINOIS.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 666,130, dated January 15, 1901.

Application filed November 1, 1899. Serial No. 735,489. (No model.)

To all whom it may concern:

Be it known that I, ERNEST CHAPIN COLE, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Heating-Stoves, of which the following is a specification.

My invention relates to heating-stoves, and particularly to that class of such stoves in which soft coal or other gaseous fuels are used. A difficulty with ordinary stoves of this character is that a large mass of fuel is put into the combustion-chamber and ignited, with the result that a larger volume of volatile gas and other volatile matter is set free than can be controlled or disposed of without overheating the stove. In order to check the heat, the oxygen is cut off, causing the fire to smother and the flues to fill with soot and imperfectly-consumed elements of combustion.

It is the object of this invention to provide a stove in which a perfect combustion of the fuel is obtained, whereby to avoid the difficulty mentioned above; and to this end the invention consists principally in a stove in which the combustion-chamber has a series of openings at its bottom communicating with a surrounding chamber, whereby the products of combustion can find exit only through such openings, and thus through the burning fuel, which is amply supplied with oxygen by means of a blast-draft above the openings and by means also of a grate below the said openings.

The invention further consists in certain details of construction and combination of the parts, which I shall first describe and then point out in the appendant claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a vertical transverse section of my improved stove; and Fig. 2 is a top plan view thereof with the parts above the ornamental flange or rim removed.

A designates the base of the stove, supported on suitable legs and having an ash-pit B, of ordinary construction. On the top edge of the base A rests the fire-pot 10, which bulges out considerably and is provided at a point about midway of its height with a number of spaced-apart inwardly-projecting lugs 11, adapted to be engaged by and to hold the bottom edge of the conical combustion-chamber 12, which latter supports the fuel-magazine 13. The lower edge of the combustion-chamber 12 is cut out between the lugs 11, whereby to form openings 14, establishing communication between the interior of the combustion-chamber at its bottom and the surrounding cylindrical casing 15, supported on the fire-pot 10 and forming the hot-air chamber 16. A draft-opening 17, controlled by a suitable damper, enters the combustion-chamber 12 just above its lower cut-out edge, and by this means the products of the combustion of the fuel at the bottom of the combustion-chamber 12 and in the fire-pot 10 have the needed amount of oxygen supplied to them, and at the same time all gases generated in the combustion-chamber are caused to pass through the openings 14, and thus through the burning fuel. Oxygen is further supplied through the openings in the shaking-grate, supported on brackets 19, such grate being of conical form, so as to admit the oxygen to the center of the burning fuel.

A diaphragm 20, having a fuel-feed opening 21, extends over the upper edge of the fuel-magazine 13 and over that portion of the hot-air chamber 16 which is adjacent the outside feed-opening 22, so as to prevent the fuel from falling into the hot-air chamber when the stove is being filled.

In practical construction the area of all the openings 14 is equal to or less than the area of the offtake 23, for the reason that as the suction of the chimney is limited to the size of the offtake the latter can draw, in connection with the openings 14, all the oxygen that could possibly pass through such openings, thus most perfectly oxidizing the products of combustion.

It will be seen by reference to the above description of the construction of my stove that the combustion of the fuel is a bottom-surface combustion which does not pass through the body of fuel, as in heating-stoves of ordinary construction.

It will be noticed that the fire-pot is inclined or flared upwardly from its center, so the fuel will, as it is consumed, drop to the center and the tendency to clog or become foul will be greatly reduced. The lugs 11 are formed on this inclined surface, and while they efficiently secure the lower end of the fuel-

magazine they offer no material obstruction to the ready cleaning of soot or other accumulation. The fire-pot extends laterally beyond the lugs 11 and base of the fire-pot, forming an annular chamber or swelled portion surrounding the base of the fuel-chamber, which operates to increase the heating effect of the products of combustion as they pass to the offtake 23.

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

1. A stove comprising the body, the fuel-chamber having at its lower end lugs spaced apart forming passages for the smoke, &c., and the fire-pot inclined or flared upwardly from its center and provided on its inclined surface with lugs spaced apart and forming rests for the lugs of the fuel-magazine, the fire-pot being extended or swelled outwardly beyond the said lugs forming a chamber in which the products of combustion circulate in their passage to the offtake substantially as described.

2. The stove herein described, consisting of the fuel-chamber having its upper side inclined or flared upwardly from its center and provided on its inclined surface with lugs spaced apart, such chamber or fire-pot being extended or swelled outwardly beyond the said lugs forming a chamber in which the products of combustion circulate in their passage to the offtake the stove-body and the fuel-magazine enlarging gradually toward its lower end and having at such end spaced-apart lugs resting upon those of the fire-pot, all substantially as described, whereby the form of the fuel-magazine insures the proper discharge of the fuel, the area of the fire-surface is increased, and space is provided for the circulation and passage of the products of combustion from the fire-surface to the offtake without unduly enlarging the body of the stove, substantially as and for the purpose set forth.

ERNEST CHAPIN COLE.

Witnesses:
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