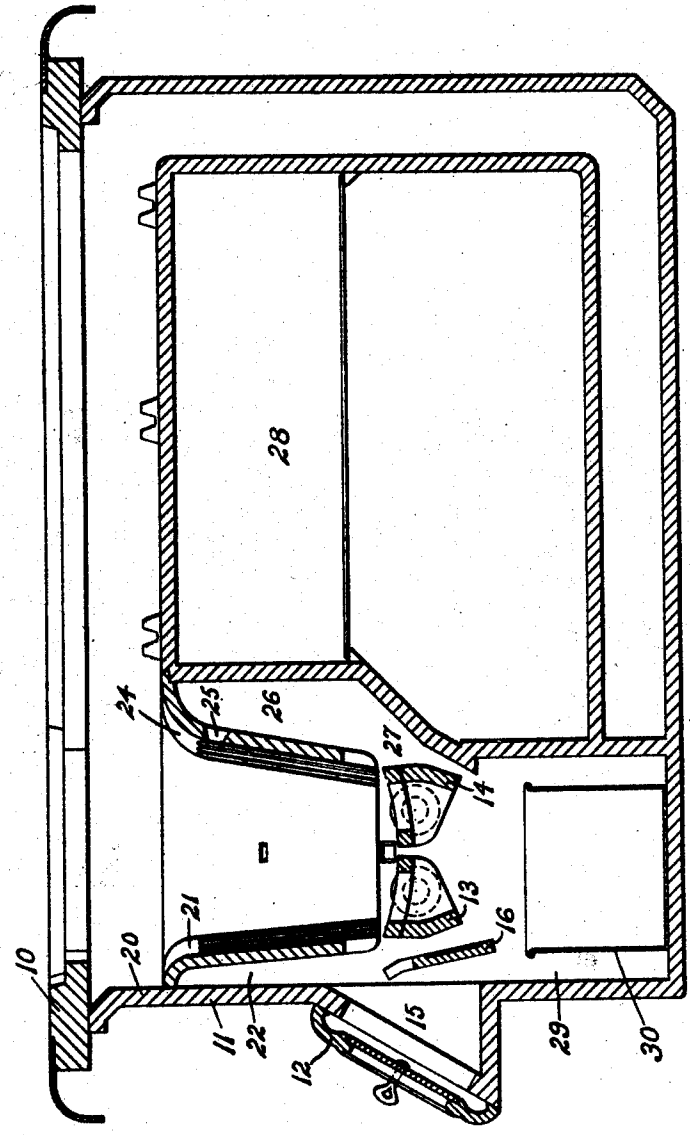
Aug. 18, 1925. 1,549,916

G. HEPWORTH

COOKING RANGE

Filed April 17, 1922



George Hepworth.
INVENTOR

BY Victor J. Evans
ATTORNEY

WITNESS:

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UNITED STATES PATENT OFFICE.

GEORGE HEPWORTH, OF BRISTOL, VIRGINIA; FLORENCE MAY HEPWORTH, EXECUTRIX OF THE SAID GEORGE HEPWORTH, DECEASED, ASSIGNOR TO BRISTOL STOVE & FOUNDRY COMPANY, INC., OF BRISTOL, VIRGINIA, A CORPORATION OF VIRGINIA.

COOKING RANGE.

Application filed April 17, 1922. Serial No. 553,396.

To all whom it may concern:

Be it known that I, GEORGE HEPWORTH, a citizen of the United States, residing at Bristol, in the county of Washington and State of Virginia, have invented new and useful Improvements in Cooking Ranges, of which the following is a specification.

The object of this invention is to provide for an air space between the lining of the fire-box and the permanent wall of a cooking range, or the like, for the circulation of air in an upward direction and through the lining.

A further object is to provide a perforated back lining, so mounted that it will not be over-heated and will therefore remain in good condition for a much greater length of time than would otherwise be the case.

A further object is to provide an increased air supply above the body of fuel on the grate, for the purpose of promoting combustion of the smoke and gases arising from the fuel.

A still further object is to provide for the passage of air through the draft door, thence under and through the grate and into the aforesaid air space in the rear of the fire-back and out through apertures in the upper portion of the back or lining.

With the above and other objects and advantages in view, the invention consists in the novel construction and arrangement of elements described and claimed, it being understood that modifications may be made within the scope of the claim, without departing from the spirit of the invention.

In the drawings, the view is a vertical section longitudinally of a cooking range, showing my improvement applied thereto.

The top of a cooking range is designated 10, the outer wall being shown at 11, and a draft door at 12. The elements of a duplex grate are designated 13 and 14, and opposite the draft opening 15 is the usual grate 16.

The fire-box 20 is provided with a front lining 21, spaced from the wall 11, providing an air chamber 22.

The fire-back, or lining, 24 is formed as shown and is provided with apertures 25 near the upper portion thereof, these apertures being if desired provided with walls flared toward the rear side of the lining. The lining 24 is inclined, the apertures being just below the upper curved portion of the element.

The position of the lining 24, and the inclination thereof provides an air chamber 26 somewhat larger at the bottom than at the upper portion, the entrance to this chamber being designated 27. Air passes through the draft door, thence into the chamber or space in which the grate is mounted, and through entrance 27 to the chamber 26, being discharged through apertures 25 into the fire-box. The air there mixes with the smoke and gases and promotes combustion to a marked degree. An equally important feature is that the lining is kept cool, so that it remains in good condition several times as long as it would otherwise. It will be observed that the space appearing between the grate and lining 24 permits heated air to enter chamber 26 in less volume than the fresh air entering this chamber below the grate, but in sufficient quantity to aid in carrying the fresh air through apertures 25, and facilitate the operation as a whole.

The better combustion afforded aids materially in heating the oven 28, for obvious reasons, and also because there is less accumulation of soot on the upper walls of the oven. The ash chamber 29 contains the usual re-movable pan 30. It will be observed that the construction of the lining is such, in view of the upper curved or offset portion, that the proper placing of the lining in the fire-box produces the air chamber, and that the chamber prevents the overheating of the adjacent wall of the oven, the heat being distributed uniformly as shown by the arrows. An important feature is the adequate heating of the upper part of the oven with a reduced supply of fuel, and in the actual use of a large number of stoves made and sold, it is found that the heated air ejected through apertures 25, from the upper portion of space 26, between the converging elements shown, approaches an air blast, resulting in high temperature. The outside air entering at 15 passes through zones of increasing temperature, is reinforced by fire box temperature from the

upper surface of the grate, and is ejected through the narrowing space 26 and through ports 25.

What is claimed is:

A stove including outer walls, walls spaced from the outer walls and defining an oven, means defining a fire box, said means including a rear lining element spaced from an adjacent wall of the oven, converging with reference thereto, and having apertures near the upper portion of the lining, the outer wall of the stove adjacent to the fire box having a draft opening for the admission of external air below the fire box, an air inlet opening also being provided next to the oven wall and directly opposite the aforesaid draft opening, and a grate positioned between these openings, spaced below the rear lining, and spaced from said oven wall, to permit outside air entering the opening first named to pass transversely of the grate and below the latter and thence behind the rear lining, to be heated directly by fuel on the grate and heated further by radiation through the lining, and then ejected through the lining and above the body of fuel.

In testimony whereof I affix my signature.

GEORGE HEPWORTH.