

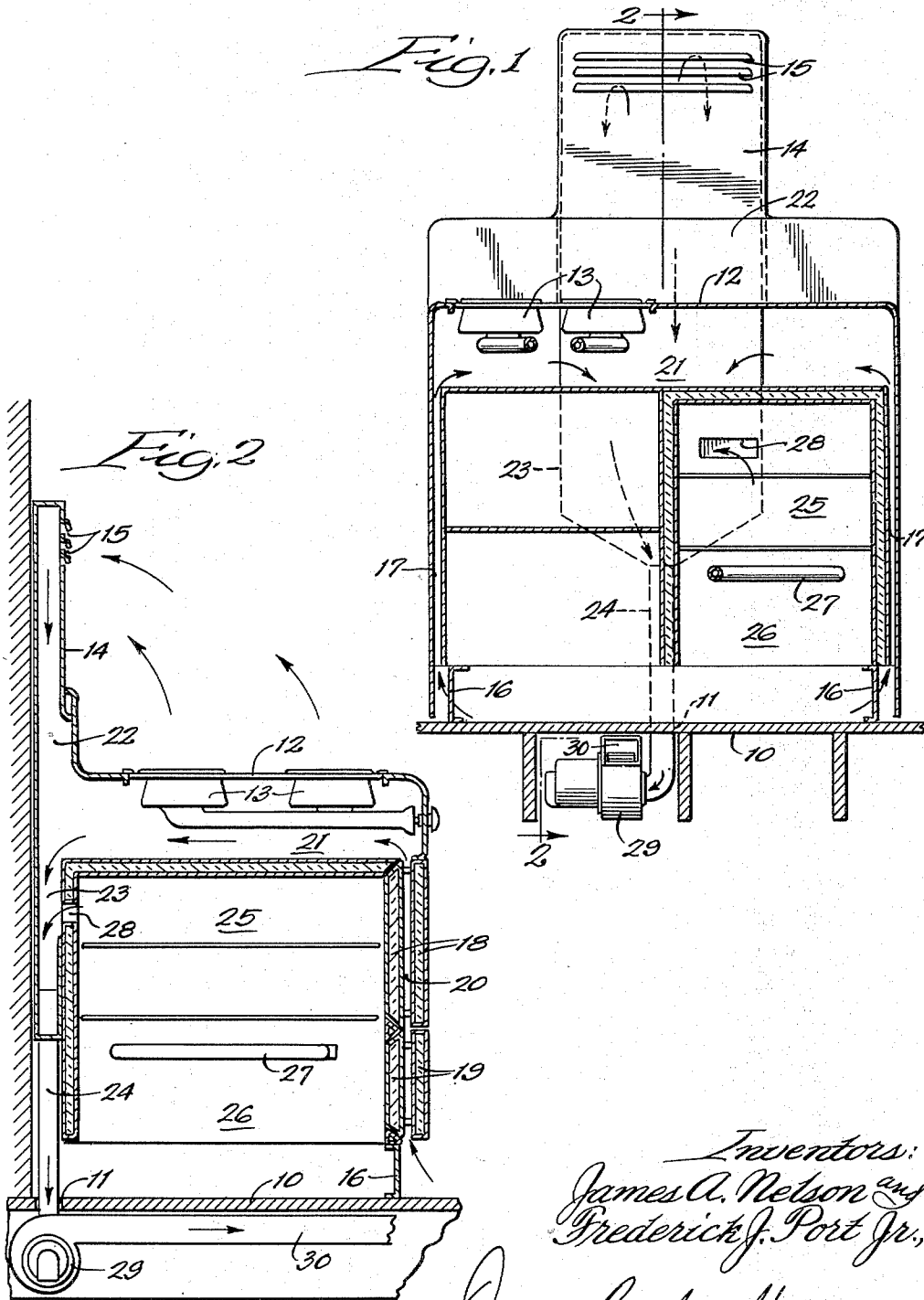
Oct. 10, 1950

J. A. NELSON ET AL

2,525,614

VENTILATED RANGE

Filed June 21, 1947



Inventors:
James A. Nelson and
Frederick J. Port Jr.,

By *Daniel Porth and Spangenberg,*
Attorneys.

UNITED STATES PATENT OFFICE

2,525,614

VENTILATED RANGE

James A. Nelson and Frederick J. Port, Jr., Chicago, Ill., assignors to Cribben and Sexton Company, Chicago, Ill., a corporation of Illinois

Application June 21, 1947, Serial No. 756,132

3 Claims. (Cl. 126—299)

1

This invention relates to a ventilated range. The invention is particularly useful not only in the removal of products of combustion and vapors, etc., but also in cooling the side and top portions of the range. The invention is applicable to gas ranges, electric ranges and to other types of cooking devices.

An object of the invention is to provide a range equipped with means for positively drawing cooling currents of air about the sides of the range. A further object is to provide means associated with the range for drawing cooling currents of air around the front and sides and top of the range, while at the same time removing fumes, vapors and products of combustion from the area above the range top and from the oven. A still further object is to provide a simple and compact mechanism, providing for the balanced withdrawal of air from the rear portion of the range in combination with passages extending about the range to provide a cooling blanket of air for the range and for the removal also of vapor and fume-laden air. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a single embodiment, by the accompanying drawing, in which—

Figure 1 is a vertical sectional view of a range and blower structure embodying our invention; and Fig. 2, a sectional view, the section being taken as indicated at line 2 of Fig. 1.

In the illustration given, 10 designates a floor having a hole 11 formed therein.

The range shown resting upon the floor above the opening 11 may be of any suitable type or construction. In the example given, the range is provided with a top 12 in which burners 13 are mounted and with a back-splasher 14 equipped with intake openings 15 along its upper side.

The range body rests upon a base 16. Immediately above the base 16 and outside of the base are the range casing walls, which provide an air passage 17 on each side of the range, the passage preferably extending for the full width of the range. Similarly, at the front of the range, the doors 18 and 19 are shown formed in two connected panels, with an air passage 20 extending therebetween. It will be noted that the air passage 20 opens outwardly of the base structure 16, and at its top communicates with the chamber 21 provided below the range top 12. The passages 17 communicate with the space inside the base structure.

Chamber 21 communicates at the rear of the range with the vertical passage 22 extending up

2

into the back-splasher and with the vertical passage 23 extending downwardly along the back of the range. The passage 23, at its bottom, converges inwardly and joins a pipe 24, as shown more clearly in Figs. 1 and 2.

The range may be provided with any desired number of compartments, including oven, broiler, and utility compartments. In the specific illustration given, the range is provided with an oven compartment 25. Below the oven compartment 25 is a broiler compartment 26, and a gas-burning burner 27 is shown supported in the broiler compartment. It will be understood that any heating means may be employed. The oven compartment 25 is provided with a short passage 28 connecting the oven with the downwardly extending passage 23 at the back of the range.

While the vent passages 17 and 20, as above described, may be of any desired width covering only a portion of the sides of the range and only a portion of the front of the range, we prefer to have the passages cover substantially the side panels of the range and the front of the range. Further, we prefer to have the air from the front and from the side passages pass inwardly in a blanket over the top of the inner range structure through passage 21 so as to insulate the inner heated portion of the range from the exterior surfaces of the range. The pipe 24 extends downwardly and through the opening 11 in the floor to the intake of the blower 29. The blower discharges the air and vapors, etc. through a pipe 30 leading, preferably, to a point exterior of the building. While we have shown the blower arranged below the floor, this mechanism may, if desired, be supported within a utility compartment of the range itself so as to provide a complete range unit for discharging the air, etc. through suitable exhaust pipes connected with the range.

The passages 17, 20, 21, 22 and 23 are preferably of such dimensions as to provide for the intake of just enough air through the ports 15 as to remove from the room a substantial part of the vapors and products of combustion arising from the top of the range, while at the same time maintaining chamber 21 under sufficiently low pressure as to induce a rapid flow of air through the passages 20 and 17, and while yet not affecting the operation of top burners. The volume of air brought into the downwardly turned passage 23 by the passages just described, serves an important function in carrying through the vapor-laden air from the oven compartment 25 and in enabling such air to be discharged through pipe

23 at a velocity which removes such vapors and foreign materials completely from the passages.

By means of the blower 29 and the connecting passages, we find that a partial vacuum maintained within the chamber 21 is highly effective in keeping the range cool, while at the same time the air, which is heated as it rises along the sides of the range, is useful in balancing the air drawn through the back-splasher inlets and through the oven vent and in carrying the same through to the discharge pipe 30.

The structure may be operated as a mechanically operated air-cooled range or, at the option of the operator, as a gravity-cooled range without mechanical draft in order to use the products of combustion as a room heater. With the same appliance and without change or adjustment, the operator is able to make either gravity or mechanical draft work on the appliance and at his option.

While in the foregoing specification, we have set forth certain specific details, as illustrated, of one embodiment of the invention, it will be understood that such details may be varied widely by those skilled in the art without departing from the spirit of our invention.

We claim:

1. A range comprising rear, side and front walls, and a range top equipped with burners, a casing extending along the back of said rear wall and providing a downwardly-extending exhaust passage, an inner casing providing an oven compartment communicating with said exhaust passage and providing also a plenum chamber between the top of the casing and the range top, said inner casing being spaced from the side walls of said range to provide open passages extending from the bottom of the range and communicating with said plenum chamber, a hollow back splasher extending above the range top and provided with ports on the front side thereof for receiving vapors from the range top, said back splasher communicating at its bottom with said plenum chamber and said exhaust passage, and a blower communicating with said exhaust passage and equipped with means for discharging the material received from said exhaust passage.

2. A range comprising rear, side and front walls, and a range top equipped with burners, a casing extending along the back of said rear wall and providing a downwardly-extending exhaust passage in the space between the said casing and said rear wall, an inner casing providing an oven compartment within said range and spaced from said range top to provide a chamber therebetween, said casing being also spaced from the side walls of said range to provide air-cooling passages therebetween, said oven communicating with said air-cooling pas-

sages, the front wall of said range consisting at least partially of doors and being spaced from said inner casing to provide an air-cooling passage therebetween, a hollow back splasher extending above the range top and having inlet ports opening toward said range top for receiving vapors evolved from material heated by said top, said back splasher communicating at its bottom with said exhaust passage and with said chamber, and an outlet-equipped blower having its intake communicating with said exhaust passage.

3. A range comprising rear, side and front walls, and a range top equipped with burners, a casing extending along the back of said rear wall and above said rear wall, said casing having inwardly-extending side walls secured to said rear wall of the range and providing an exhaust passage extending along the rear of the range, a back splasher extending above the range top, said back splasher having inlet openings on its front side and directed toward said range top, an inner casing providing compartments including an oven compartment within said range, said oven compartment communicating with said exhaust passage, said inner casing being spaced from the range top to provide a chamber therebetween and being spaced also from said side walls to provide air-cooling passages therebetween and communicating with said chamber, a conduit leading from said exhaust passage to a point below said range, and a blower having its intake communicating with said conduit and having an outlet for exhausting material received from said exhaust passage.

JAMES A. NELSON.

FREDERICK J. PORT, Jr.,

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
3,492	Woolley	Mar. 16, 1844
1,649,416	O'Dowd	Nov. 15, 1927
1,710,586	McCrary	Apr. 23, 1929
1,732,315	Ray	Oct. 22, 1929
1,963,281	Rogers	June 19, 1934
1,969,565	Klemme	Aug. 7, 1934
2,068,143	Leonard	Jan. 19, 1937
2,081,640	Petersen	May 25, 1937
2,158,881	McCormick	May 16, 1939
2,182,106	Ames	Dec. 5, 1939
2,222,436	Leonard	Nov. 19, 1940
2,369,972	Meagher	Feb. 20, 1945
2,376,571	Brumbaugh	May 22, 1945
2,438,035	Buhman	Mar. 16, 1948