

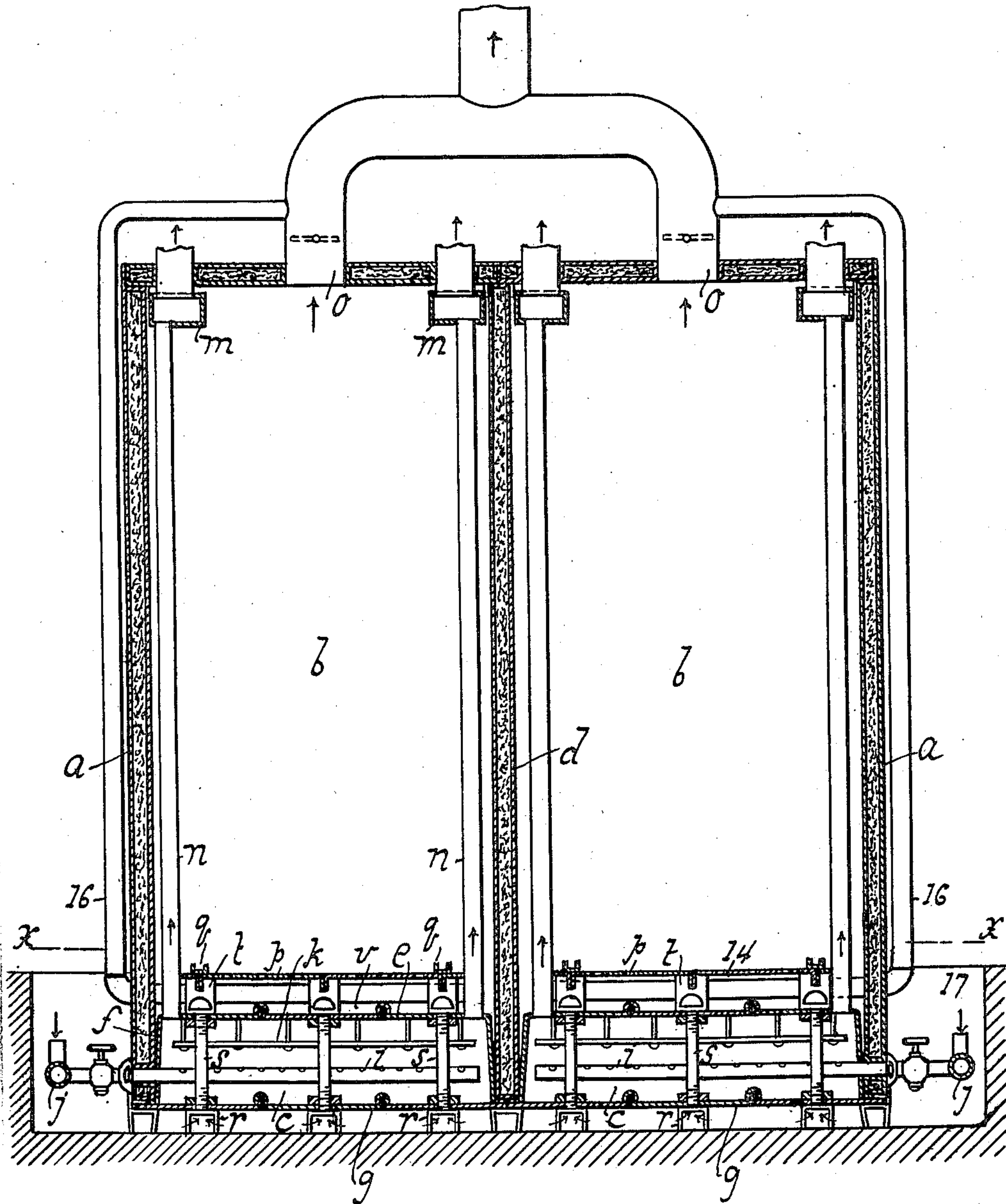
H. GEHRICH.  
PORTABLE SECTIONAL OVEN.  
APPLICATION FILED MAR. 16, 1915.

1,155,145.

Patented Sept. 28, 1915.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:  
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Inventor  
Hermann Gehrich  
By his Attorneys  
Hauff & Barland

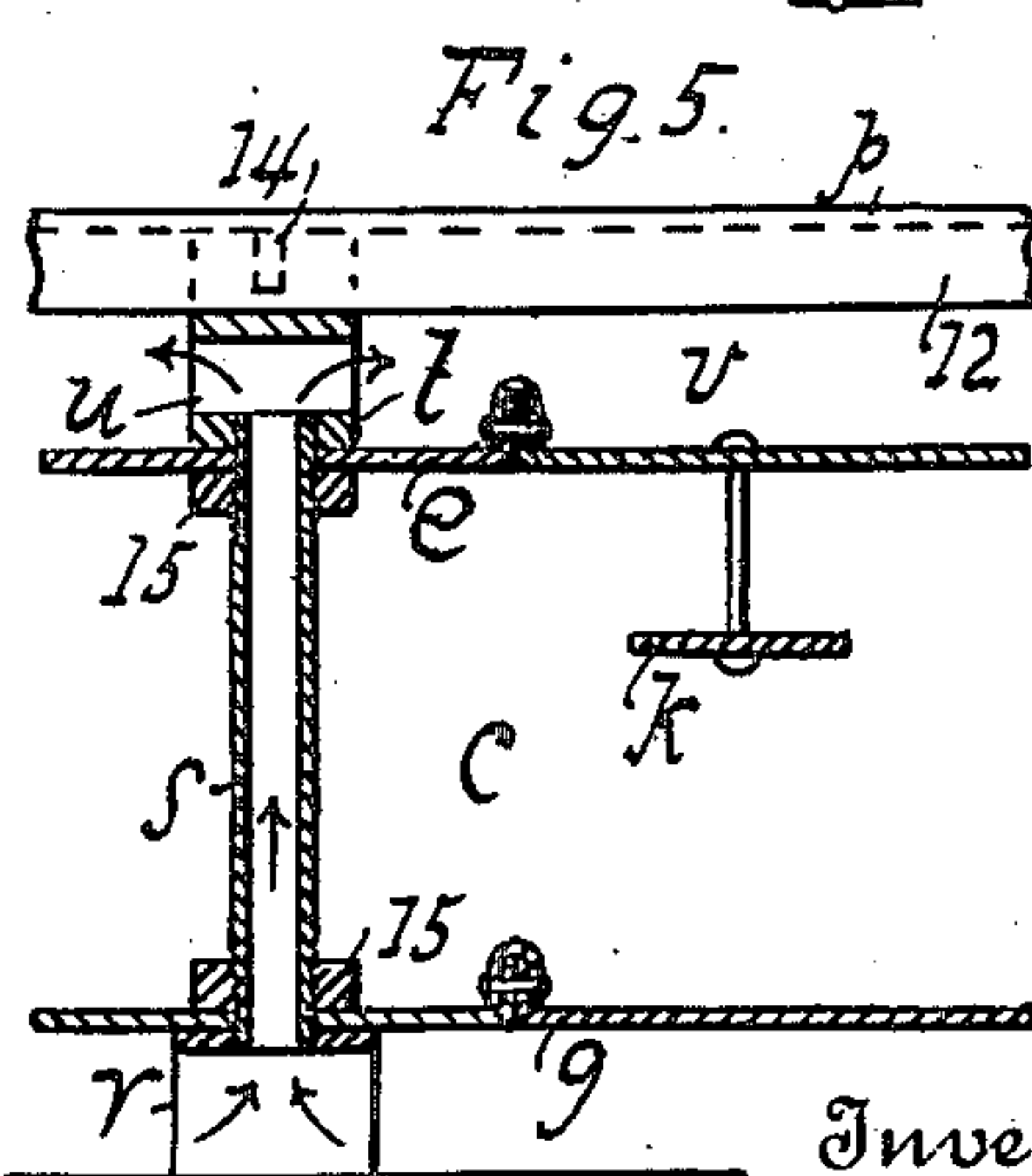
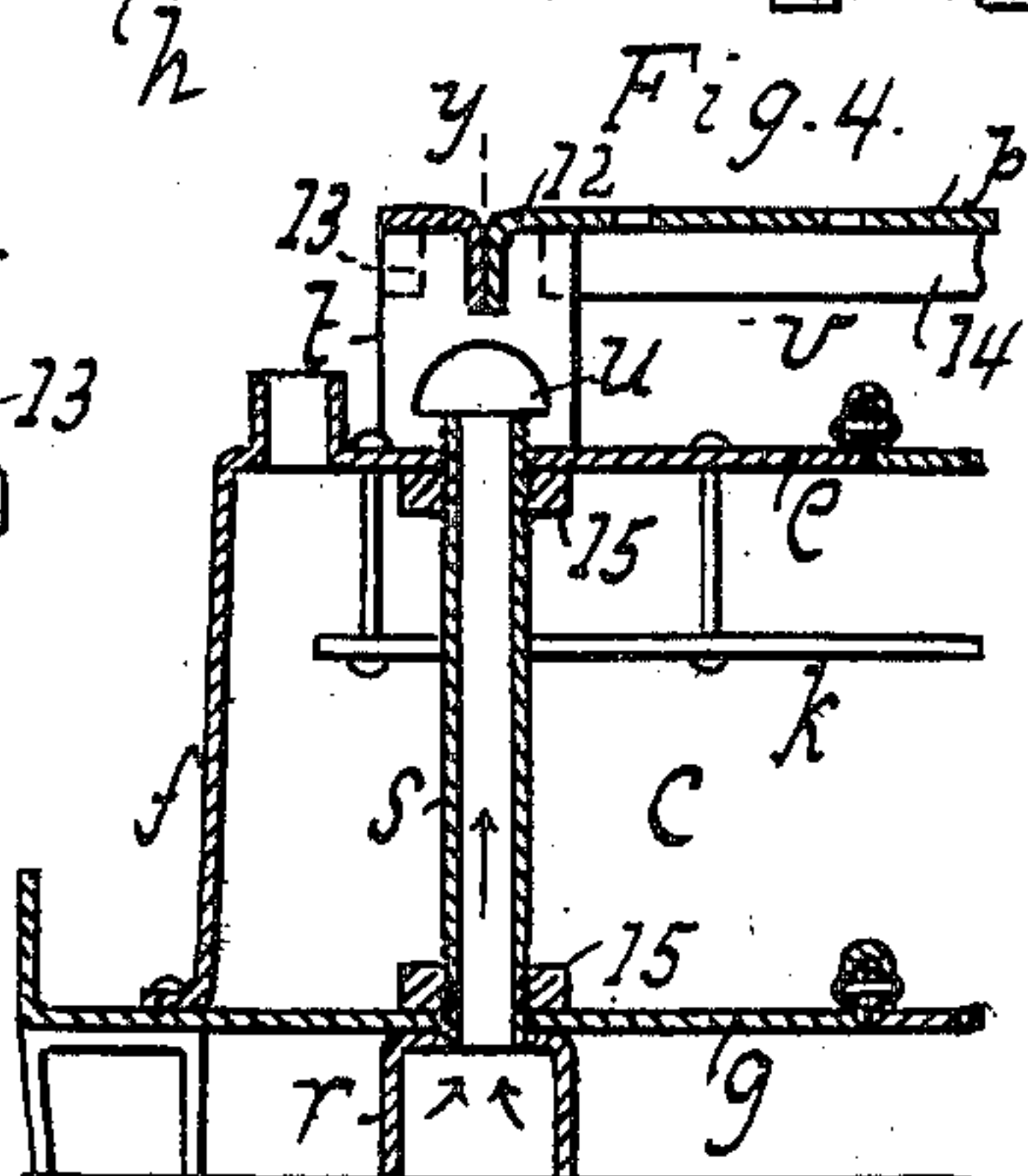
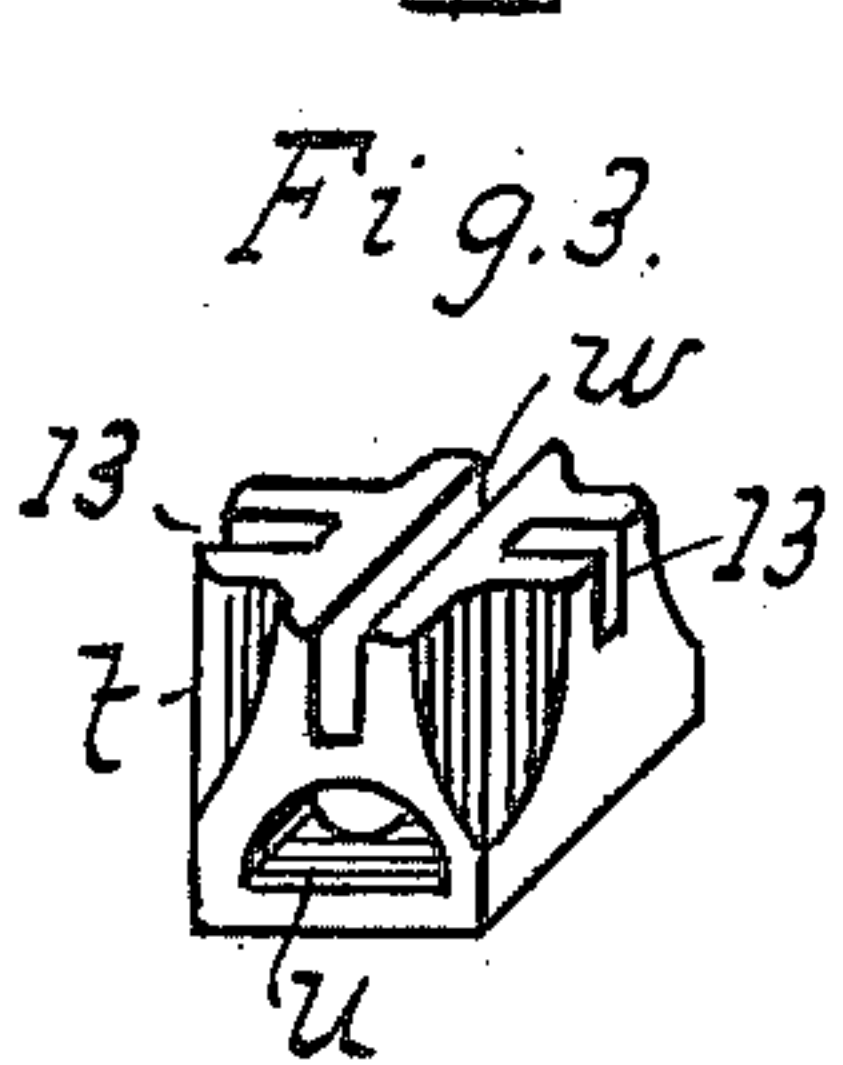
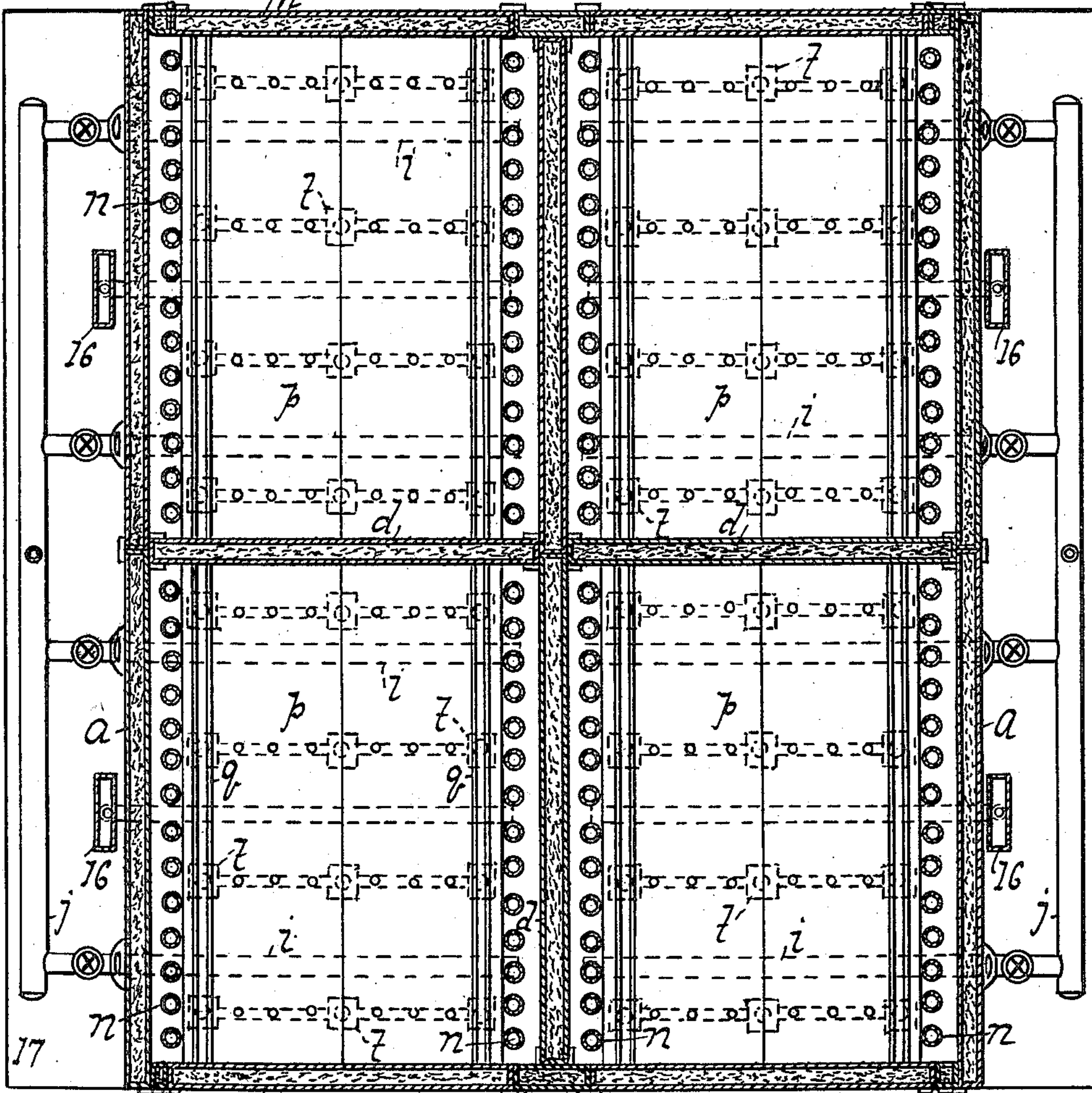
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2 SHEETS—SHEET 2.

Fig. 2.



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# UNITED STATES PATENT OFFICE.

HERMANN GEHNRIK, OF BROOKLYN, NEW YORK.

PORTABLE SECTIONAL OVEN.

1,155,145.

Specification of Letters Patent.

Patented Sept. 28, 1915.

Application filed March 16, 1915. Serial No. 14,875.

*To all whom it may concern:*

Be it known that I, HERMANN GEHNRIK, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented new and useful Improvements in Portable Sectional Ovens, of which the following is a specification.

This invention relates to a sectional portable radiator type of oven which is especially adapted for baking japan, enamel or lacquer on metals and drying all materials emitting combustible vapors. This type of oven permits the employment of a combustible such as gas, the heat therefrom being radiated by means of a plurality of radiator tubes directly into the oven. In this construction where the radiator tubes pass through the bake compartment of the oven, the flame from the combustion compartment will not get into contact with the inflammable or explosive vapors from the coated articles placed in the oven and danger of fire is thus avoided.

The object of the present invention is, to provide a plurality of supports for mounting the floor or platform of the bake compartment, so that it will be strongly braced to carry any excessive weight which may be placed in the compartment. These supports also include air intakes to supply the oven or baking compartment with a constant volume of fresh air, which is preheated before it passes into the bake compartment. The introduction of the preheated air rapidly drives out all the smoke or fumes in the bake compartment; also the heavy vapors of the japans or enamels are carried off by means of bottom flues.

The invention is more fully described in the following specification and claims, and illustrated in the accompanying drawings in which:

Figure 1 represents a vertical transverse section of an oven embodying this invention. Fig. 2 is a horizontal section taken along the line  $x x$  of the same. Fig. 3 is a perspective view showing the head of a support. Fig. 4 is a detail vertical section showing the method of assembling the supports and combustible compartment. Fig. 5 is a section along the line  $y y$  of the same.

In this drawing the letter  $a$  designates a casing which is built up of a number of sections, each section being formed of a double

wall with a packing of asbestos or non-conductor of heat located there-between. The casing incloses an oven or bake compartment  $b$  and it includes a combustion or heat compartment  $c$  located in the lower portion of the oven. As shown in Fig. 2 of the drawing the oven is divided by means of transverse and longitudinal partitions  $d$  into four combustible and bake compartments. Each combustible compartment is divided from the bake compartment by means of a plate  $e$  having feet  $f$  bolted to a plate  $g$  forming the lower part of the casing. The plates  $e$  and  $g$  are built up of a plurality of sections bolted together. Each compartment is fitted with a door  $h$  mounted on the casing for entering the compartment.

The heat generating devices for the combustible compartment  $c$  consists of one or more burner tubes  $i$  projecting from the sides of the casing into the compartment. These tubes are connected together by longitudinal tubes  $j$  on each side of the casing whereby the combustible is drawn from a gas supply to the burner tubes in the compartment. Rectangular baffle plates  $k$  are supported from the plate  $e$  and located over the burner tubes to shield the flames from the plate.

In the upper portion of each bake compartment are located a pair of heat flues  $m$  extending the length of the compartment. These flues are connected to the plate  $e$  by a plurality of radiator tubes  $n$  extending upwardly in rows along the inner sides of the oven. These tubes are spaced from the walls so that the heat from the entire surface of the tubes will radiate into the bake compartment before heating the walls. The heat flues  $m$  as indicated in Fig. 1 can be connected to the main flue or to a chimney whereby the products of combustion are drawn off. Each bake compartment is provided with a main flue  $o$  leading from the upper portion of the compartment to a chimney. Each flue has a damper for controlling the heat and fumes in the bake compartment.

In the lower portion of the bake compartment above the plate  $e$  is arranged a perforated floor or platform  $p$  having tracks adapted for cooperation with a wheeled truck for moving the articles into the oven. In large ovens the floor plate sometimes sup-



ports heavy articles such as safes, and it must be strongly supported, independent of the casing or side walls. The supports include a plurality of stanchions, each having a channel shaped foot  $r$  with open ends for the air to pass through. Mounted on this foot is a tube  $s$  and on the upper end of the tube is fitted a head member  $t$ . Both the head member and the foot are screwed to the threaded ends of the tube. The head member is provided with an arched opening  $u$  for the air sucked into the pipe  $s$  to pass out. This opening communicates with a space  $v$  situated between the floor  $p$  and the top of the combustion compartment. The upper portion of the head has a channel  $w$  for engagement with the bent ends 12, see Fig. 4, of the perforated floor plates. The head is also provided with a pair of grooves 13 for engagement with the ends of the transverse bars or braces 14 located under the floor plate. These bars rest into the grooves and bridge the heads, thus giving strong support to the perforated floor plates and resist downward pressure when the floor is loaded. The tube  $s$  extends up through the lower and upper portions of the combustion compartment, and it is locked in place by nuts 15 in engagement with the upper and lower respective plates of the compartment. All the weight placed on the floor  $p$  is sustained by the stanchions irrespective of any of the plates or compartments.

It will be seen that the air is sucked into the tubes  $s$  and heated by the tubes passing through the combustion compartment, the heated air then issues from the opening  $u$  into the space  $v$  where it mixes with the heavy vapors from the oven or bake compartment. It is then sucked into an intake flue 16 passing through the space  $v$  and connected to the main flue as seen in Fig. 1. The preheated fresh air is thus continually sucked into the space  $v$  by the tubular supports and the noxious air, smoke and moisture driven off through the flues.

As shown in the drawing, the oven is situated in a pit 17 with the perforated floor on a level with the surface of the ground so that a truck with the articles loaded thereon can be readily wheeled onto the floor.

The oven can be made of any size and it will readily be understood, that when it is necessary to bake enamel on an automobile chassis, the transverse partitions can be omitted and the oven converted into two large bake compartments.

I claim:

1. The combination with an oven, of a floor located in the oven, supports for mounting the floor, said supports including means for admitting air into the oven.

2. The combination with an oven, of a floor forming the lower portion of the oven,

supports for mounting the floor, said supports including tubular means for admitting air into the oven.

3. The combination with an oven, of a floor forming the lower portion of the oven, a plurality of supports for mounting the floor, said supports including a tube forming part of each support for admitting air into the oven.

4. The combination with an oven, of a perforated floor forming the lower portion of the oven, a plurality of supports for mounting the floor, said supports including a tube forming part of each support for admitting air into the oven.

5. The combination with an oven and a combustion compartment, of a perforated floor arranged above the compartment, a plurality of supports for mounting the floor, said supports including a tube forming part of each support for admitting air into the oven.

6. The combination with an oven and a combustion compartment located in the lower part of the oven, of a perforated floor arranged in the oven above the compartment, a plurality of supports for mounting the floor, and a tube forming part of each support for admitting air into the oven.

7. The combination with an oven and a combustion compartment located in the lower part of the oven, of a perforated floor arranged in the oven above the compartment, a plurality of supports for mounting the floor, a tube forming part of each support and passing through the combustion compartment for admitting preheated air into the oven.

8. The combination with an oven and a combustion compartment located in the lower part of the oven, of a perforated floor arranged in the oven above the compartment, a plurality of supports for mounting the floor, a tube forming part of each support and passing through the combustion compartment for admitting preheated air into the oven, and exhaust flues located below the floor for drawing off the noxious air.

9. The combination with an oven, and a combustion compartment located in the oven, of a perforated sectional floor arranged in the oven, a plurality of supports for mounting the floor, and means carried by the supports for bracing the floor.

10. The combination with an oven and a combustion compartment located in the lower portion of the oven, of a perforated sectional floor arranged in the oven above the compartment, a plurality of supports for mounting the floor, and means carried by the supports for bracing the floor.

11. The combination with an oven including a combustion compartment located in the lower portion of the oven, of a sectional



5 floor arranged in the oven above the compartment, a plurality of tubular supports passing through the compartment for mounting the floor, and bars carried by the supports for bracing the floor.

10 12. The combination with an oven including a combustion compartment located in the lower portion of the oven, of a sectional floor arranged in the oven above the compartment, a plurality of tubular supports having channeled heads for engagement with the floor, and bars carried by the heads for bracing the floor.

15 13. The combination with an oven including a sectional combustion compartment located

in the lower portion of the oven, of a sectional perforated floor arranged in the oven above the compartment, a plurality of tubular supports, each support having a channeled head for engagement with the bent sides of a floor section, and bars extending from the adjacent sides of each head for bracing the floor. 20

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses. 25

HERMANN GEHRICH.

Witnesses:

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HAZEL V. REIDENBACH.