No. 844,153. PATENTED FEB. 12, 1907.

H. LOESCHER.

# PIGS' FEET DRIER AND SINGEING OVEN.

APPLICATION FILED FEB. 15, 1904.

2 SHEETS—SHEET 1.

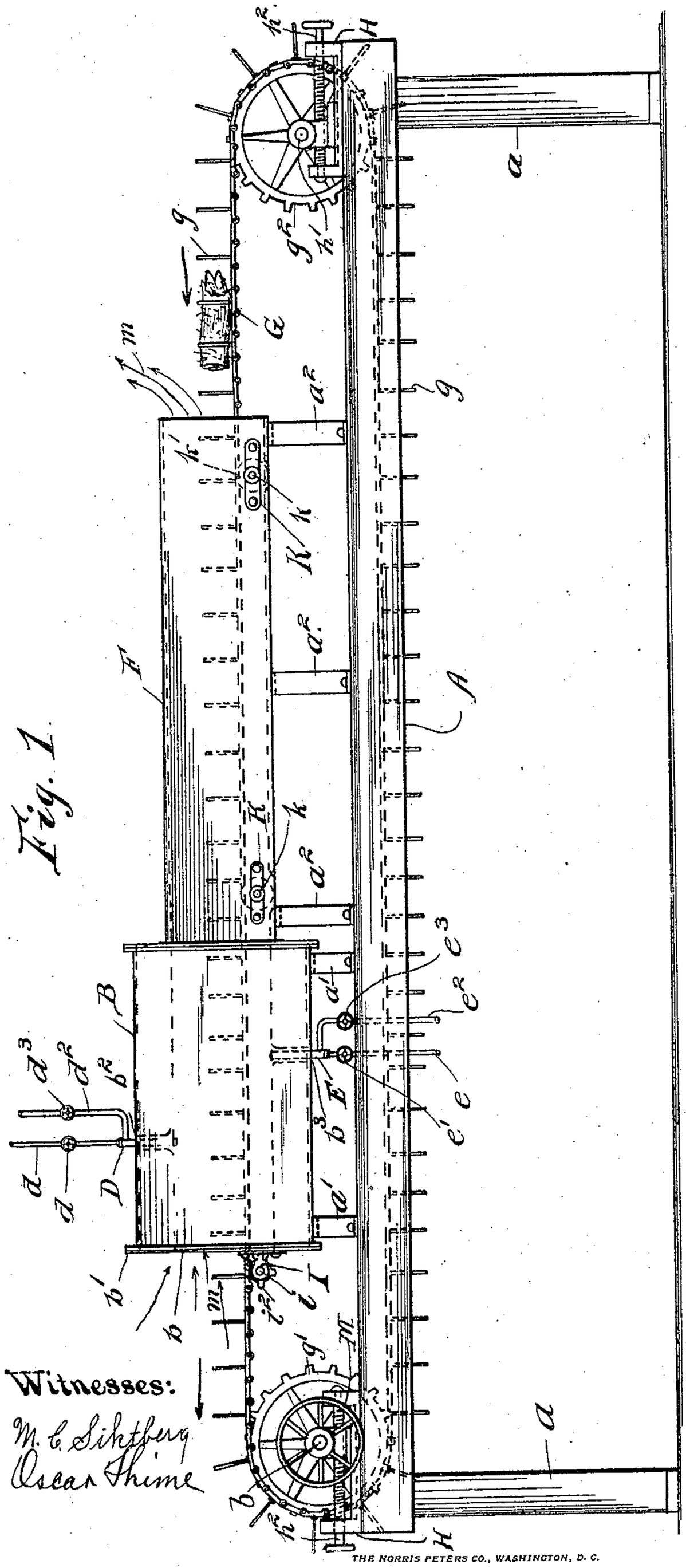

Fig. 1.

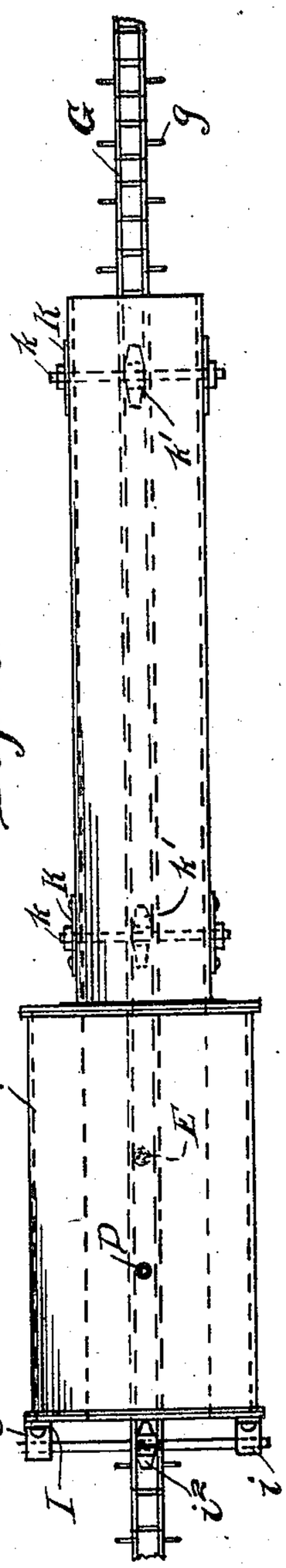

Fig. 2.

Witnesses:
M. C. Sihtberg
Oscar Thime

Inventor,
Henry Loescher,
By Glenn S. Noble
Att'y.

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2 SHEETS—SHEET 2.

Fig. 3

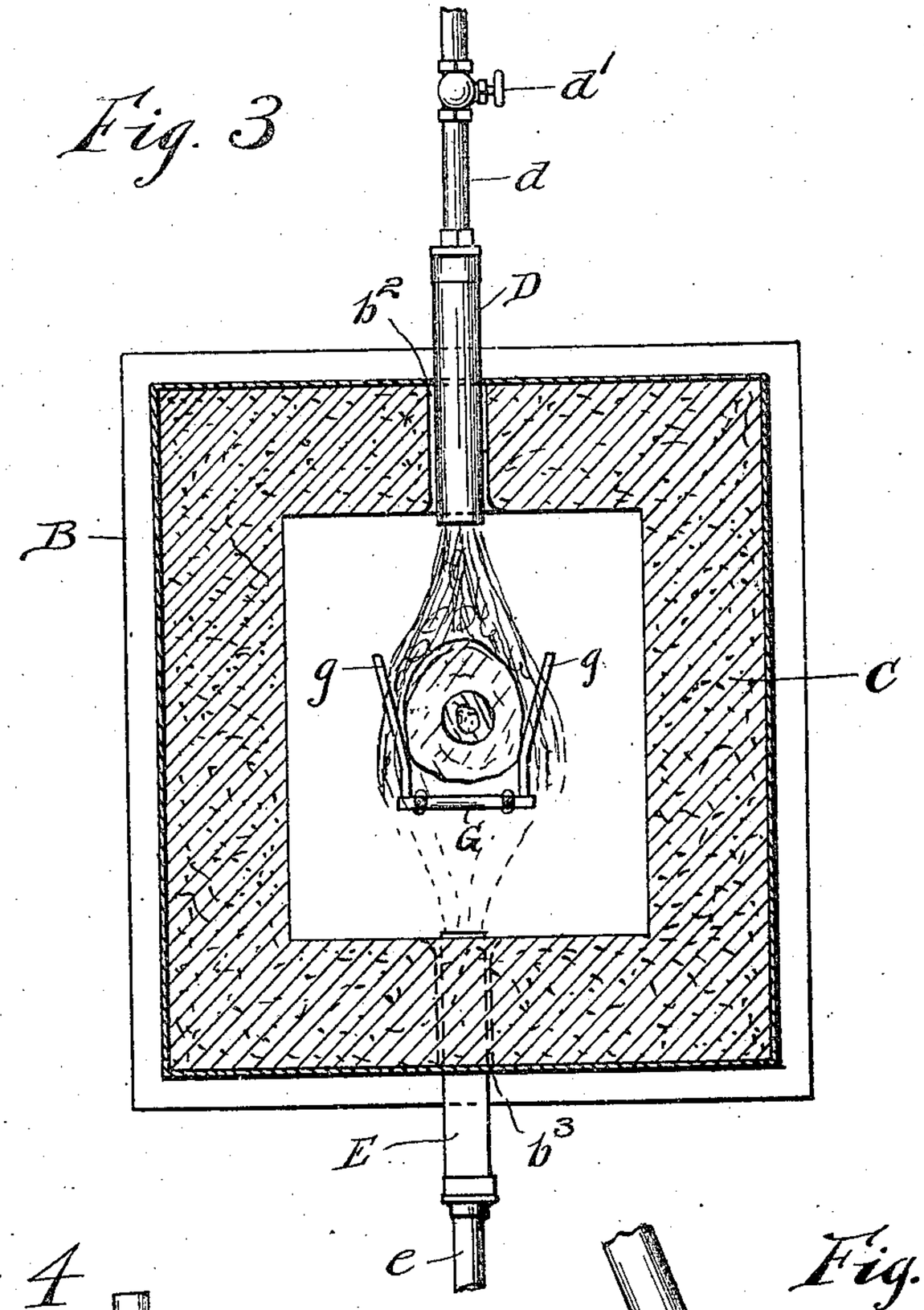



Fig. 4

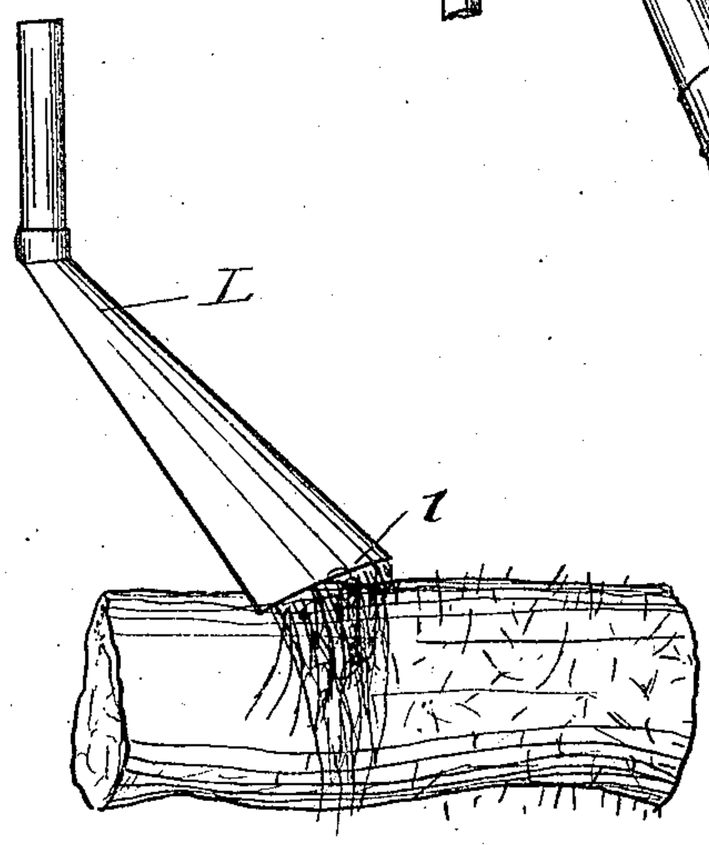
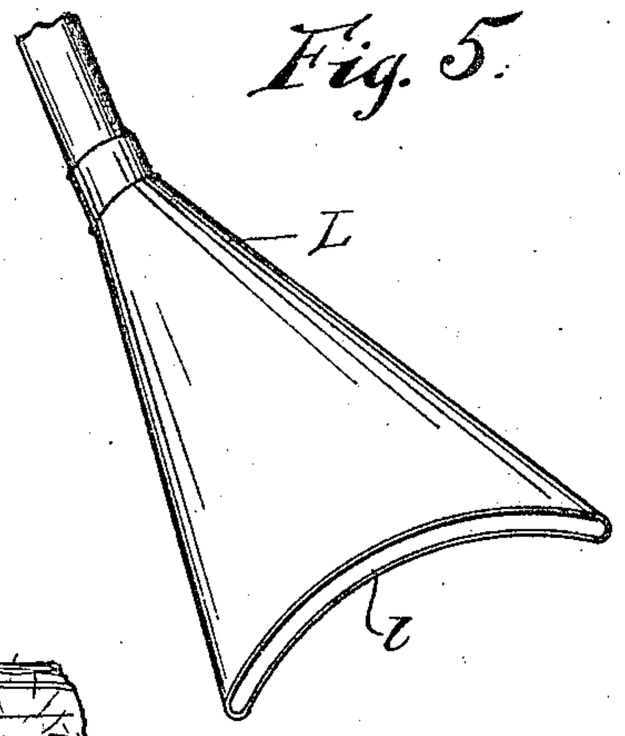



Fig. 5.




Witnesses:

M. C. Siktberg.
Oscar Thieme

Inventor,

Henry Loescher,
By Glenn S. Noble
Att'y

# UNITED STATES PATENT OFFICE.

HENRY LOESCHER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO HENRY RENNPATH, OF CHICAGO, ILLINOIS; JEANNETTE RENNPATH ADMINISTRATRIX OF SAID HENRY RENNPATH, DECEASED.

## PIGS'-FEET DRIER AND SINGEING-OVEN.

No. 844,153. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed February 15, 1904. Serial No. 193,497.

*To all whom it may concern:*

Be it known that I, HENRY LOESCHER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pigs'-Feet Driers and Singeing-Ovens, of which the following is a full and complete specification.

In preparing pigs' feet for consumption it is necessary to first clean the feet and remove all of the hair possible. Then as a final operation the remaining hair is preferably singed off. In order to accomplish this last operation, it is necessary to take the feet while wet or damp and subject them to a sufficient heat to singe off the hair without in any manner burning or scorching the skin. In order to do this, I have found it desirable to first subject the feet to a rapid-drying process in a strong blast in order to dry them and at the same time to loosen or raise up the hair, so that it will be burned when it comes in contact with the flame.

An important feature of this invention is the arrangement of the singeing-flames whereby all parts of the feet will be thoroughly singed and at the same time the danger of scorching is obviated.

I accomplish these results by means of the apparatus shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a drying and singeing apparatus embodying this invention. Fig. 2 is a top plan view of the drier and singeing-oven. Fig. 3 is a sectional view through the singeing-oven, showing the operation of the flames. Fig. 4 is a view showing a modified form of singeing-burner. Fig. 5 is a perspective view of the burner shown in Fig. 4.

As shown in Fig. 1, A represents a frame of any suitable construction having legs *a*. The singeing-oven (designated as a whole by B) is mounted on the frame A by means of supports *a'*. This oven is simply a rectangular box, preferably made of sheet-iron and having openings *b* through the ends *b'*. This box is lined with a suitable non-conducting and non-combustible material C—such as fire brick, clay, or the like—as shown in Fig. 3, the opening through the non-combustible material being of the same size as the openings through the ends.

A downwardly-directed gas-burner D passes through a hole $b^2$ through the upper wall of the oven a short distance back of the front end. A second burner E is directed upwardly through an opening $b^3$ through the bottom wall of the oven a short distance back of the first-mentioned burner. The walls of the oven opposite the respective burners are blank—that is to say, they are devoid of burners and only serve to reverberate the heat from those to which they are immediately opposed. This is to avoid scorching the flesh, of which there is great danger where the burners are arranged directly opposite one another, owing to the intense heat thus generated. The distance between the burners lengthwise of the oven may be varied; but I have found that the best results are obtained if these burners are six inches apart. The burners may be of any well-known form, but are preferably of the Bunsen type, supplied with compressed air. The gas is conducted in through the pipes *d* and *e* and may be controlled by valves *d'* and *e'*, while the air is conducted in through pipes $d^2$ and $e^2$ and may be controlled by valves $d^3$ $e^3$.

An extension or flue F connects with the oven at the rear end and corresponds in size with the opening through the oven. This flue has no burners, receiving heat alone from the singeing-oven. It constitutes the drying portion of the device and may be supported from the frame A by means of supports $a^2$. The heated products of combustion from the singeing-oven are drawn off through this flue, and as the only flames used are of gas abundantly oxygenated, insuring thorough combustion within the oven, there will be no smoke or other deleterious substance in the drying-current thus created. The hot current passing through said drying oven or flue is sufficient to cause thorough drying of the hair on the feet passing therethrough.

The pigs' feet are conducted through the drier and oven by means of a conveyer-chain G, which is provided with projecting tines or forks *g* for holding the feet in place, as shown in Fig. 1. This chain passes around sprocket-wheels *g'* $g^2$ at either end of the frame A. These wheels are mounted on shafts *h* *h'*, which are carried in adjustable boxes in suitable supports H. These boxes may be adjusted by means of the screws $h^2$ to

tighten the chain when desired. The chain is driven from either one of the sprocket-wheels by means of a pulley or equivalent device M, mounted on the shaft *h*. At the forward end of the oven B are two bearing-brackets *i*, which support a shaft I, on which is mounted an idler-wheel $i^2$, which engages with the chain G. Bearing-brackets K are also provided on the sides of the drier F, which also support shafts *k*, having idler-sprockets *k'* thereon also engaging with the chain G. These idlers, which may be replaced by means of rollers or the like, are provided for supporting the chain as it passes through the drier and singeing oven. This is particularly desirable in the singeing oven, as the weight of the feet might otherwise depress the chain where it passes over the lower burner and prevent the effective operation of this burner.

In the burner L (shown in Figs. 4 and 5) the end *l* is spreading and curved in order to direct the flame around the feet as they pass beneath the same. It will also be noted that as the upper surface of the foot passes beneath the burner the flame at the top will be somewhat cut off, and thereby force the flame at the sides more completely around the foot.

The operation of this device will be readily understood from the above description. The feet are fed onto the carrier-chain, as shown at the right-hand end of Fig. 1, with the chain moving in the proper direction to conduct them through the drier and the singeing oven. The draft caused by the extension or flue will be in the direction opposite to the motion of the chain or as shown by the arrows *m*. The direction of the draft is probably due to the fact that the burners are comparatively close to the exit open end of the box, whereby air will enter at this end, and thus create a draft in a direction opposite to the direction of travel of the chain. In any event this draft is a desirable feature in the operation of my apparatus, and I have found that the draft will be in the direction stated. Consequently the gases of combustion and the heated air will rapidly dry the surface of the feet as they pass through the drier. This will cause any hairs remaining thereon to become loosened and raised and in suitable condition for the operation of the burners. When the feet pass over the lower or first burner, the flame thereof will extend up and around the sides of the feet and will burn off any hairs on the corresponding surface. Then as the feet pass beneath the upper burner a like operation takes place, and they pass from the oven in a thoroughly-singed condition, but without any tendency of scorching.

It will be noted that various changes in the details of construction and arrangement may be made without departing from the spirit of this invention, and I do not wish to be limited to the exact construction herein shown. For instance, the burners might be arranged at the sides of the oven, or there might be a larger number of burners; but I have found that the arrangement shown is a preferred form of construction and is economical in operation, requiring but little gas to perform the necessary work. It will also be noted that this apparatus may be used for other purposes wherever found applicable, and I also do not consider it as being limited to the use herein described, said use being given as one for which the apparatus is especially designed.

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

1. In an apparatus of the character herein set forth, the combination of a singeing-oven provided with a plurality of oppositely-directed offsetting burners opposed respectively to blank deflecting-walls of said oven, a drying extension on said oven through which the products of combustion and heated air may pass, and means for conducting the articles to be singed through said extension and oven.

2. In an apparatus for singeing pigs' feet, the combination of a horizontal singeing-oven, burners directed into said oven on opposite sides thereof, at a suitable distance apart, lengthwise of the oven, and opposed respectively to blank deflecting-walls thereof, and means for conveying material through said oven, and through the burner-flames therein.

3. In a singeing apparatus for pigs' feet, the combination of a suitable frame, a horizontal singeing-oven mounted on said frame, two oppositely-disposed burners directed into said oven, one above and one below, a drier connected with one end of said singeing-oven, sprocket-wheels mounted on said frame, a chain passing over said wheels and through said drier and oven, projections on said chain for holding the pigs' feet, and idlers for supporting said chain as it passes through said drier and oven.

4. In an apparatus for drying pigs' feet, the combination of a singeing-box provided with singeing-burners, an extension on said box forming a drying-chamber through which the products of combustion and heated air are drawn, and a conveyer adapted to pass through said extension and through said box, substantially as described.

5. In an apparatus of the character set forth, the combination with a horizontal singeing-box provided with a non-combustible lining and suitable gas-burners for singeing purposes, of an extension at one end of the box corresponding with a longitudinal opening through said box and through which the heated gases arising from the combus-

tion within the box are drawn at a drying temperature, a conveyer-chain passing through said extension and box, and means for supporting said chain above the bottom of the two.

6. In a singeing apparatus for pigs' feet, the combination of a horizontal singeing-oven, oppositely-disposed burners directed into said oven, so arranged that the flames from said oppositely-disposed burners will not meet or be concentrated at any point, a drier connected with one end of said singeing device, and a conveyer for conveying the pig's feet through said drier and oven.

HENRY LOESCHER.

Witnesses:
HENRY RENNPATH,
M. NOBLE.