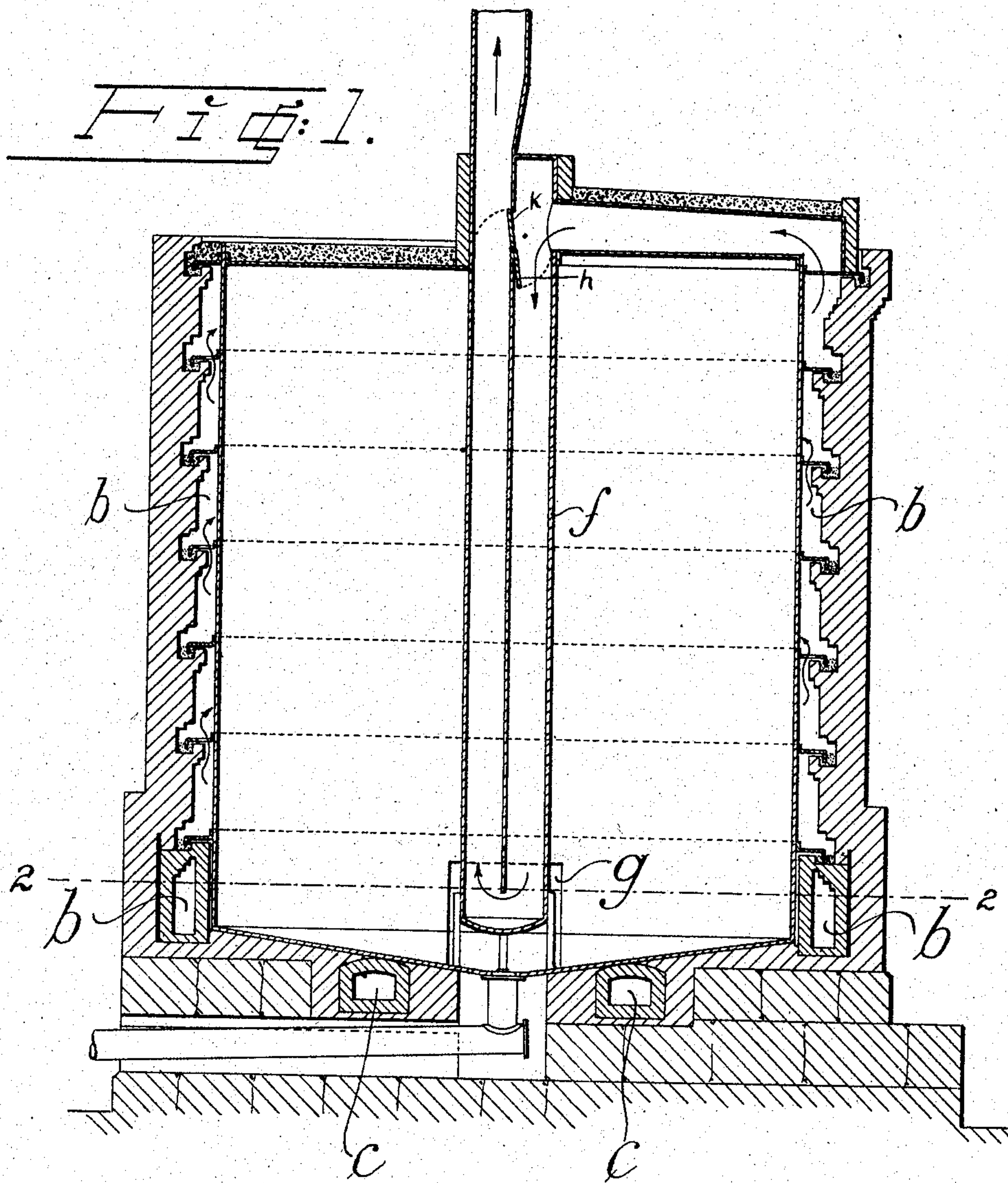


No. 796,103.

PATENTED AUG. 1, 1905.

J. E. ÅSLIN.
CHARRING RETORT.
APPLICATION FILED MAR. 17, 1904.

2 SHEETS—SHEET 1.



Witnesses:
Robert A. A. A.
G. G. Fuss.

Inventor:
Johan Emanuel Åslin,
By his Attorney,
F. H. Richards.

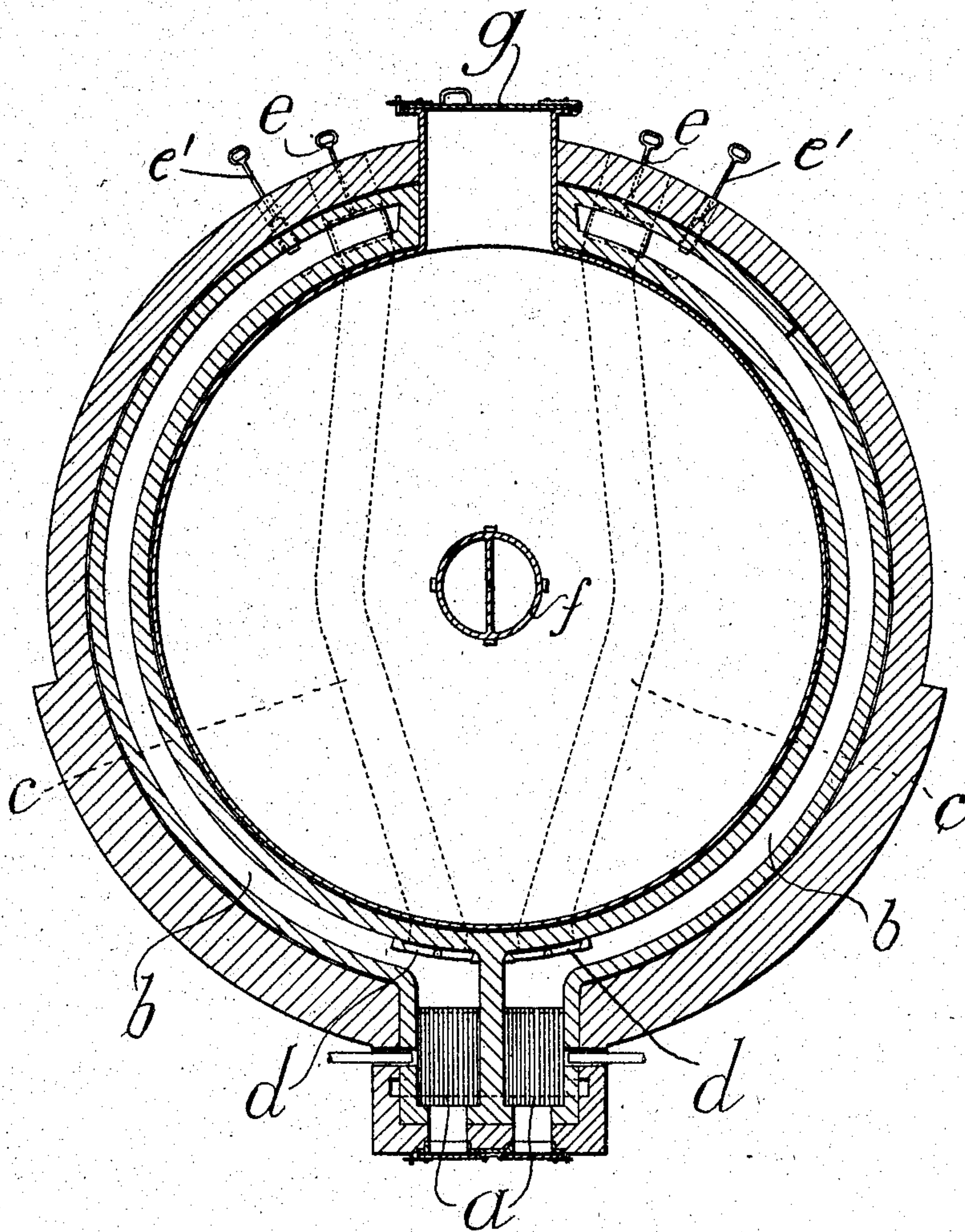
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHAN EMANUEL ÅSLIN, OF STOCKHOLM, SWEDEN.

CHARRING-RETORT.

No. 796,103.

Specification of Letters Patent.

Patented Aug. 1, 1905.

Application filed March 17, 1904. Serial No. 198,611.

To all whom it may concern:

Be it known that I, JOHAN EMANUEL ÅSLIN, merchant, a subject of the King of Sweden and Norway, and a resident of Fleminggatan 5, Stockholm, in the Kingdom of Sweden, have invented certain new and useful Improvements in Charring-Retorts, of which the following is a specification.

This invention relates to charring-kilns, and has for its object to provide means for heating the bottom of the kiln to the same degree as the walls at the end of the charring process for the purpose of procuring a uniform and complete charring of the whole contents of the kiln instead of, as has hitherto been the case, leaving a layer of wood not sufficiently charred on the bottom of the kiln.

In the accompanying drawings, Figure 1 illustrates a central vertical section of a kiln arranged in accordance with the invention, and Fig. 2 a horizontal sectional view of the same on line 2 2 indicated in Fig. 1.

The kiln illustrated belongs to that kind of charring-kilns in which the gases of combustion from a furnace *a* are conducted into a passage *b*, which is in duplicate at its lower part, arranged around the kiln or retort in the wall thereof and along its entire height, to be subsequently passed first down and then upward in the middle portion of the retort through a depending tube *f*, from which the gases are carried away to the chimney. The charcoal is taken away through the door *g*. According to the present invention one, two, or several passages *c* are arranged in the bottom of the kiln, said passages communicating at one end with the furnace (which is shown double in the drawings) or with the beginning of the passages *b*, leading from the furnace and extending transversely beneath the bottom of the kiln and terminating in the corresponding rear portion of the passages *b*. In the present instance one passage *b* leads from each furnace through the side wall to the rear of the furnace. The first-mentioned end of the passages *c* is covered by sliding doors *d*, of fireproof material, and in the passages *b*, between the rear orifices of the passages *c* and the forward part of the passages *b*, leading to the furnace, are arranged dampers *e e'*. During the greater part of the charring process the doors *d*, operated in any suitable manner, are kept closed, so that the gases of combustion from the furnace will not pass there-through, but only through the passages *b*. At

the end of the charring process, however, the doors *d* are to be raised or opened and the dampers *e e'* so placed that the gases from the furnace will flow through the passages *c* and, further, through the rearward parts of the passages *b* on the other side of the dampers without being able to pass through the forward portion of the said passages. By this means the bottom of the kiln will be intensely heated, so that also the wood located at this point will be completely charred.

It is of importance that the bottom passages should be shut off during the greater portion of the charring process and only be open toward the end of the latter, for otherwise the bottom of the kiln will become so hot during the entire charring operation that the oils and tar derived from the wood in said operation and flowing over said bottom will be burned and destroyed. Toward the end of the process, on the other hand, nearly all such oils and the tar have been removed, and for this reason the bottom of the furnace may without inconvenience be sufficiently heated to effect the charring of the wood located thereon. This heating of the bottom of the kiln during the latter part only of the charring process is made possible by providing the bottom, as aforesaid, with passages adapted to be closed by dampers.

The dampers *e e'* may be arranged in various ways. In the drawings they are shown for each passage *b* to consist of two dampers, one, *e*, being horizontal and covering the aperture of the passage *c* in the passage *b*; the other, *e'*, being vertical and making possible the shutting of the passage *b*. During the greater portion of the charring process the horizontal damper *e* remains closed and the other one, *e'*, open; but at the end of the operation the vertical damper is to be closed and the horizontal one to be opened, the corresponding passage *c* then being brought into direct communication with passage *b*, belonging thereto. Damper *h* is arranged at the upper portion of the double pipe *f*, that when in the position shown causes the gases to pass down one side of the pipe *f* and up the other side; but when the damper is turned to a transverse position the gases will pass across through an aperture *k*, that was closed by the damper in the former position, and will have exit through the chimney instead of passing down and up again through the pipe *f*.

Having now particularly described and as-

certained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a device of the character described, the combination with a retort having a flue surrounding the sides thereof, means for supplying heat to the flue, a flue extending across the bottom of the retort and means controlled at will to direct the heat either through such latter flue or through the former one.

2. In a device of the character described, a substantially cylindrical retort having a pair of separate furnaces at the front, a flue leading from each furnace through the outer walls of the retort to the rear portion of the furnace, upwardly-extending passages communicating with the rear portions of said flues, a valve in each said flue adjacent its rear extremity, a flue extending across the bottom of the retort and leading from each said fur-

nace and opening into the rear portion of each said flue, a valve arranged at the portion of each said latter flue adjacent the furnace, and a valve arranged at the other extremity of each said latter flue.

3. In a device of the character described, a substantially cylindrical retort, having a furnace at one side, flues in the outer walls of the retort leading from the furnace to the opposite side, and flues leading from the furnace across the retort and terminating in said flues, and valves in said flues arranged to close either the outer flues, or the other said flues to the passage of the gases from the furnace.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOHAN EMANUEL ÅSLIN.

Witnesses:

JOHAN MARKMAN,

H. TELANDER.