Oct. 28, 1930. H. F. TAYLOR 1,779,453

SMOKE PRODUCER

Filed Aug. 30, 1928

Fig. 1.

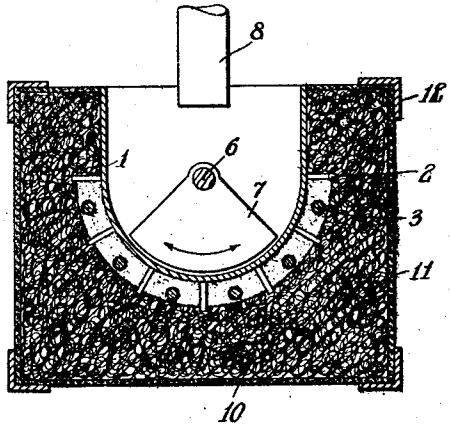


Fig. 4.

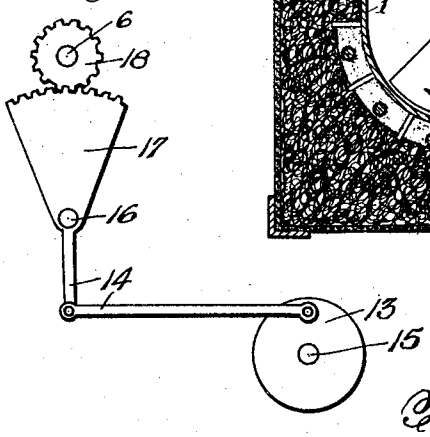


Fig. 2.

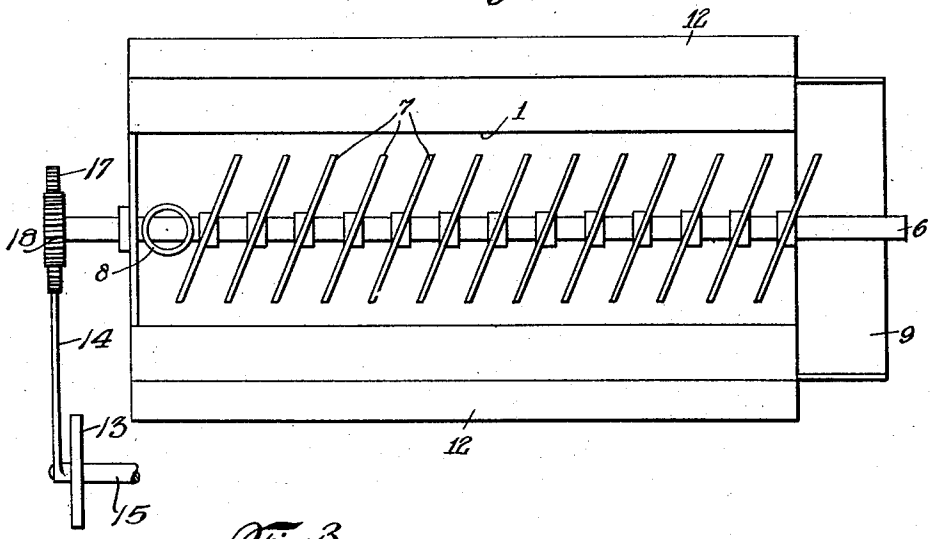
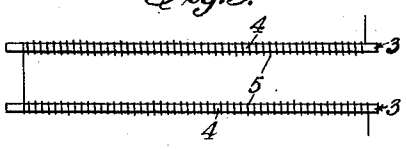


Fig. 3.



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By his Attorney

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1,779,453

UNITED STATES PATENT OFFICE

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SMOKE PRODUCER

Application filed August 30, 1928. Serial No. 303,002.

This invention relates to a smoke producer, and more particularly to a smoke producer adapted to be used in the smoking of comestibles, such as fish, meat and the like.

In the art of smoking comestibles smoke is generated by maintaining a fuel, such as saw-dust, in a smoldering state. In the apparatus used prior to this invention the fuel was maintained in substantially the same position in the burner during the production of the smoke. Occasionally the fuel was raked in order to present different portions of the fuel, whereby a more complete decomposition of the fuel was attained. This procedure, it is obvious, was highly unsatisfactory and greatly inefficient.

I have found that I can overcome the above mentioned disadvantages and defects by producing smoke in a relatively simple and inexpensive apparatus in which the fuel is constantly agitated and progressively advanced through the apparatus.

It is therefore an object of this invention to provide a smoke producer which is simple in construction and inexpensive.

Another object of this invention is a smoke producer in which the fuel is agitated and progressively advanced through the apparatus while being decomposed.

Another object of this invention is to provide a smoke producer comprising a trough having fins on the outer surface thereof, heating means disposed between said fins and means disposed on the interior of said trough to agitate and progressively advance the fuel through the trough.

Further objects will appear from the following description, appended claims and accompanying drawings forming part of this specification and in which

Figure 1 is a sectional view of the apparatus constituting the invention,

Figure 2 is a top plan view of the apparatus.

Figure 3 is a detail illustrating the heating means.

Figure 4 is a detail of one driving mechanism which may be used.

Referring now to the drawings in which like reference numerals designate like parts, the reference numeral 1 designates a trough preferably made of a metal having a high conductivity of heat, such as aluminum, brass and the like. The outer surface of the trough 1 is provided or formed with integral projecting fins or vanes 2 whereby the heating surface of the trough is increased. Disposed between the fins or vanes 2 are heating elements 3. Various heating means may be used. I, however, prefer to use electrical heating means which comprises quartz rods 4 extending longitudinally between the fins or vanes 2 and having ribbons or resistance wires 5 wound thereon and connected in series, as clearly illustrated in Fig. 3. The ribbons or resistance wires are connected to some suitable source of supply (not shown) and are adapted to be heated to approximately 1200° F.

Extending through the interior of the trough there is a shaft 6 carrying deflector blades 7. The deflector blades 7 are shaped in the form of segments of a circle and are so pitched that during operation they will not only constantly stir or rake the fuel, but will progressively advance it through the trough. Means 8 is disposed at one end of the trough, whereby predetermined quantities of the saw-dust or other fuel may be introduced into the trough. At the other end of the trough 1 there is provided a chute 9 leading to a receptacle whereby the residue of the fuel may be deposited after its travel through the trough.

In operation, the deflector blades 7 are given an oscillatory movement. To attain this result, the shaft 6 is given an oscillatory movement. Any of the various means well known in the art may be used to attain this result and one of such mechanisms is illustrated in Figure 4. This mechanism comprises a crank mechanism including a crank disc 13 and crank levers 14 actuated by means of a shaft 15 continuously driven in any suitable manner. The crank movement is transmitted to the shaft 16 on which there is fixedly mounted a segmental gear 17 cooperating with a gear 18 secured to the shaft 6.

The trough 1 may be mounted in any suitable manner. I prefer to surround the trough

1 on its exterior with a heat retaining material whereby the heat generated will be prevented from being dissipated or radiated into the surrounding atmosphere and the trough cooled. Specifically, I surround the trough 1 on its exterior with asbestos fibers 10 or other heat retaining materials. The heat retaining material is maintained in position by means of sheets of asbestos lumber 11 secured in any suitable manner as to angle irons 12.

In operation, the fuel is intermittently or continuously fed through the feeding means 8 into the trough which has been heated to smoke producing temperature by means of the heating elements. The deflector blades 7, through the shaft 6, are oscillated whereby the fuel is constantly stirred and progressively advanced through the apparatus.

The motion imparted to the deflector blades 7 is so regulated that at the end of its travel through the trough, the saw-dust or fuel has been as completely consumed or decomposed as possible. Upon reaching the end of the trough 1, the residue is pushed into a chute 9 leading to a receptacle which may be removed when desired.

It is obvious that various modifications may be made in the details of construction above described without departing from the nature of the invention, and I do not intend to limit myself to the exact and specific details above set forth, except as defined in the appended claims.

I claim:—

1. A smoke producer comprising a trough, means to heat said trough, means to introduce fuel into said trough, and means to agitate and progressively advance said fuel, said means comprising a shaft, deflector blades mounted thereon, and means to oscillate said shaft.

2. A smoke producer comprising a trough, means to heat said trough, means to introduce fuel into said trough, and means to agitate and progressively advance said fuel, said means comprising a shaft, V-shaped deflector blades mounted thereon, and means to oscillate said shaft.

3. A smoke producer comprising a metal trough, fins on the outer surface of said trough, heating elements disposed between said fins, means to introduce fuel into said trough and means to agitate and progressively advance said fuel through said trough, said means comprising a shaft, deflector blades mounted on said shaft and means to oscillate said shaft.

4. A smoke producer comprising a metal trough, fins on the outer surface of said trough, electrical heating elements comprising ribbons wound on quartz rods disposed between said fins, means to introduce fuel into said trough, and means to agitate and progressively advance said fuel through said trough, said means comprising a shaft, deflector blades mounted on said shaft and means to oscillate said shaft.

In testimony whereof, I have affixed my signature to this specification.

HARDEN F. TAYLOR.