A. M. MILLER.

MEAT SMOKING APPARATUS.

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1,399,362. Patented Dec. 6, 1921.

Fig. 1.

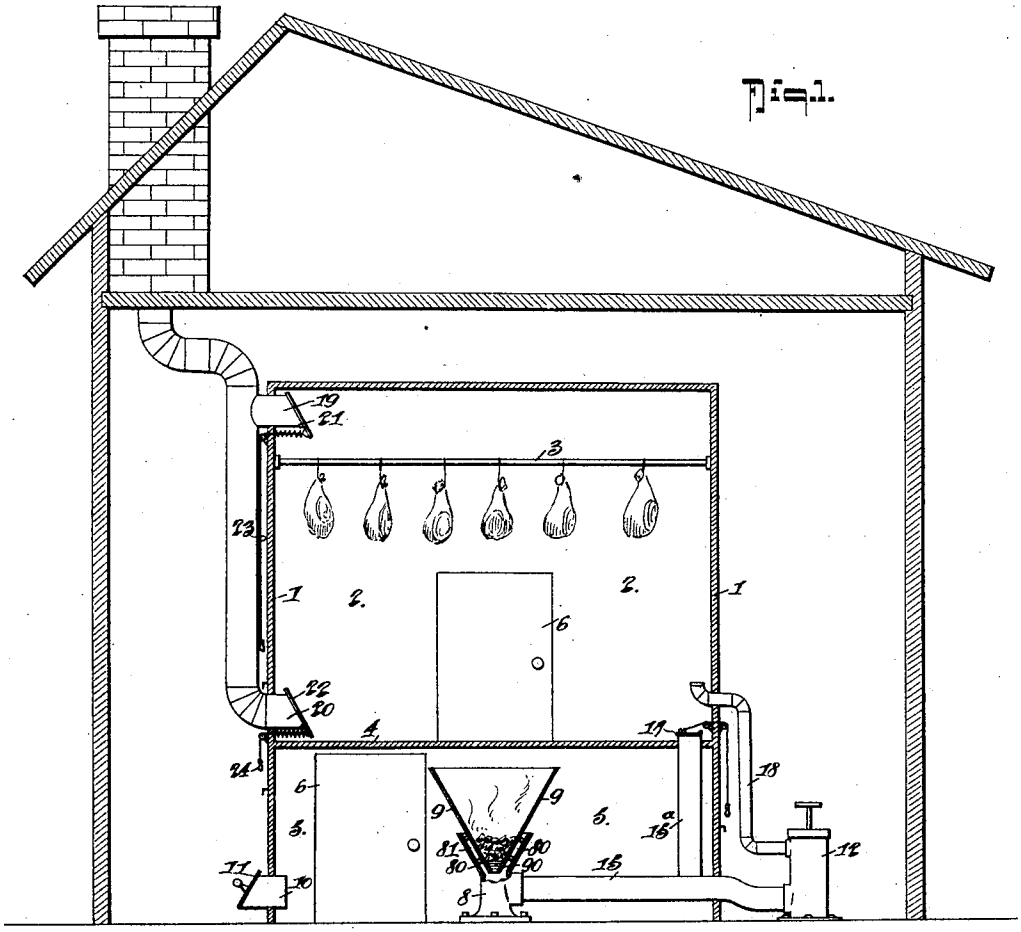
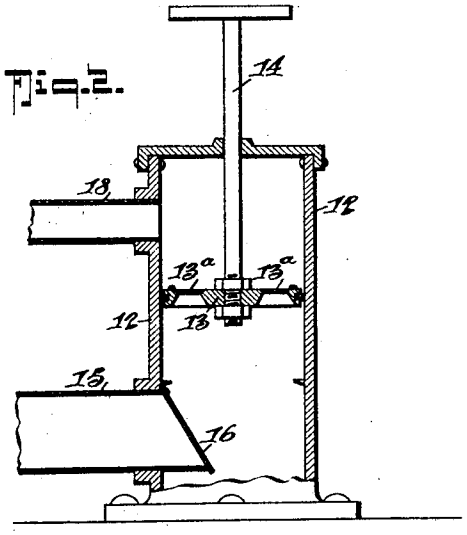


Fig. 2.



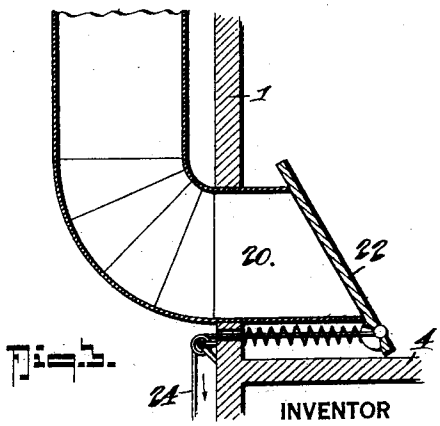


Fig. 3.

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MEAT-SMOKING APPARATUS.

1,399,362. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed October 20, 1920. Serial No. 418,211.

To all whom it may concern:

Be it known that I, AUGUST M. MILLER, a citizen of the United States, residing at Mankato, in the county of Blue Earth and State of Minnesota, have invented certain new and useful Improvements in Meat-Smoking Apparatus, of which the following is a specification.

My present invention, which generally has for its purpose the provision of certain new and useful improvements in apparatus for curing and smoking meats, more specifically has reference to an improved construction and arrangement of the meat smoking apparatus disclosed in my Patent No. 800,863, dated October 3, 1905, and primarily my present invention has for its object to provide an improved meat smoking means of the general type disclosed in my patent mentioned of a relatively simple and economical construction, in which the parts are coöperatively arranged for easy control and adjustment and which effectively serve their intended purposes.

In my patented meat smoking apparatus mentioned the meat smoking or curing chamber, smoke generator and the pumping devices for drawing the smoke from the generator for quickly feeding it into the smoking or curing chamber are so arranged that the smoke can get through the generator a number of times which deteriorates its meat curing or smoking quality. The ashes or soot in my patented form at times mixes with the smoke and thereby come in contact with the meat or fish hung in the curing or smoking compartment.

My present invention embodies an improved construction of the curing or smoking compartment or chamber and the placement and arrangement of the generator, whereby to overcome danger of the smoke being used over, the ash dust and soot prevented from passing into the curing or smoking compartment and whereby the operation of smoking or curing the meat or fish can be accomplished in a more efficacious and rapid manner than is possible in the practical use of my patented arrangement of smoking apparatus.

With other objects in view that will hereinafter be apparent, as the detailed description of the structural features is stated, my present invention embodies, in a meat smoking apparatus of the character stated, the peculiar arrangement and novel combination of parts, fully explained in the following description, specifically brought out in the appended claims and as illustrated in the accompanying drawing in which:—

Figure 1 is a longitudinal section of a meat house with my invention operatively assembled therein.

Fig. 2 is an enlarged detail section of the pump mechanism used in connection with the smoke generator, for directing the smoke, under forced pressure, into the smoke chamber or compartment.

Fig. 3 is a detail section, on an enlarged scale, of one of the control valves for the chimney or offtake pipe.

In my present arrangement of smoking house or apparatus, the smoke producing and controlling means, as also the smoke compartment, are located within the meat house, which may have the same general shape as shown in my patent, before mentioned.

In my present construction the meat smoking chamber 1 comprises an upper compartment 2 in which the meat, fish, or other products to be smoked are suspended in the usual way, for example, on over-head cross rods 3 from which the meat packages are suspended, as shown. 4 designates a horizontal partition within the chamber 1 that divides the said chamber into an upper meat smoking compartment and a bottom compartment or space 5 in which the smoke generating means are located.

As is clearly shown in Fig. 1, the top and bottom compartments 1 and 5, each have an access door 6, and the said doors are air-tight fitted in the same manner as is shown in my patented smoke house structure mentioned.

The smoke generator, in my present invention, is located in the bottom space 5 of the chamber 1 and it consists of a base that is adapted for being bolted or otherwise made fast to the smoke house floor and it includes a tubular neck 8 that terminates at the top in a hopper-like portion 80 into which the generator casing 9, which is also hopper shaped, is suitably supported and in such manner that an air space 81 is formed around the bottom or grate equipped end 90 of the generator casing, as shown.

10 designates a draft opening through the side of the chamber 1 that leads into the space 2 for supplying air to the generator,

and it is equipped with a drop valve 11 that normally closes the said opening 10, as shown.

12 designates the force pump and it is shown located outside of the chamber 1, but it may be located inside of the smoke house, if desired. 13 designates the pump piston which has the usual type of valves 13^a—13^a and 14 the plunger handle by which the pump is manipulated, it being understood a motor driven pump may be used, if desired.

The suction chamber of the pump communicates, through a pipe connection 15, with the tubular neck of the generator below the grate, which connection 15 also communicates with an upwardly extending lateral 15^a that discharges through the partition 4 into the meat smoking compartment, the reason for which will presently more fully appear.

The outlet end of the pipe 15 is normally closed by a drop valve 16 that opens on the up stroke of the pump piston and the outlet or upper end of the pipe 15^a is likewise normally closed by a drop valve 17 that is, in practice, manually opened from the outside of the chamber in any suitable manner.

18 designates a smoke pipe that leads from the top of the pump into the smoke compartment, preferably just above the partition 4, as shown.

19 and 20 are respectively an upper and a lower outlet from the smoking compartment to the smoke pipe or stack and 21 and 22 are drop valves attached to the said outlets and which automatically fall over and close the said outlets and which are provided with lever connections 23 and 24 that extend outside of the chamber 1 and in position for being conveniently manipulated for opening either of the said valves from the outside of the chamber 1 as conditions may make necessary.

From the foregoing description taken in connection with the drawing, the complete construction, the manner in which my present meat smoking apparatus may be adjusted for effecting the desired results and the advantages of such construction will be readily apparent to those familiar with the use of smoking apparatus of the kind mentioned.

In starting the apparatus, the meat is placed within the chamber 1, the door thereto is tightly closed, the valves for the outlets to the chimney being also closed.

The smoke generator hopper is then filled with suitable fuel which is lighted, the air inlet 10 to the generator being now open and the valves on the smoke outlet pipes 15 and 15^a from the generator being closed.

To quickly fill the meat smoking compartment 1 the pump is used which takes the smoke rapidly from the generator through the pipe 15 and discharges it through the pipe connection 18 from the top of the pump into the smoking compartment.

When a slow action is desired, the pump is not used and the valve over the top of the pipe 15^a is open, thus leading the smoke directly from the generator into the pipe 15, up through the lateral 15^a and into the smoking compartment above it.

When the meat smoking chamber gets too warm, either of the outlets or both of the outlets 20 and 21 are opened, the valves for the said outlets being, as before mentioned, closed when a quick smoking of the meat chamber is desired.

What I claim is:

1. In a smoking apparatus of the character described, a housing having a solid horizontal partition whereby upper and lower compartments are provided, means in the upper compartment for suspending the articles to be smoked, a smoke stack, the latter having a connection which extends into the upper end and a connection which extends into the lower end of the upper compartment of the housing, automatically closing valves engaging the intakes of the said upper and lower connections to the smoke stack, each of the said valves having attached means for operating them extending to the outside of the smoke house, the lower compartment of the housing having an air intake, an automatically closing valve located on the intake end of the said air inlet, a smoke generator located in the lower compartment of the housing, the said generator including a smoke outlet having a branch that extends up through the horizontal partition for leading the smoke directly into the upper or smoking compartment, an automatically closing valve for the said smoke outlet, and means for opening the valve at times operable from the outside of the housing.

2. In a smoking apparatus of the character stated, a housing having a solid horizontal partition whereby upper and lower compartments are provided, means in the upper compartment for suspending the articles to be smoked, the said compartment having a normally valved closed outlet to the smoke stack, the lower compartment having an air intake, a smoke generator located within the lower compartment and having a smoke offtake that extends outside the compartment and which includes a branch within the housing that extends up through the horizontal partition to thereby lead the smoke from the generator rapidly and directly into the upper compartment, a force pump located outside of the housing within which the outer end of the said smoke offtake from the generator extends, that end of the smoke offtake which extends within the force pump having a back check valve, a

pipe lead from the force pump that extends into the upper compartment, the branch smoke pipe which leads the smoke directly from the generator into the upper compartment having an automatically closing valve whereby to provide for feeding the same from the generator, under slow action, through the force pump and into the upper or smoking compartment and means operable from the outside of the housing for opening the last named closing valve whereby to provide for a quick supply of smoke directly from the generator into the smoking compartment.

3. In a smoking apparatus of the character stated, a housing having upper and lower separated compartments, the upper compartment constituting the meat holding and smoking compartment, a smoke stack, a normally closed valved outlet from the smoke compartment to the stack, means operable externally from the housing for holding said outlet valve open, a smoke generator located in the lower compartment of the housing, the said lower compartment having a valved controlled inlet for feeding air to the generator, valved controlled means connecting the generator and the smoke chamber for leading the smoke fumes into the said smoke chamber, the said means including a main passage for leading the smoke directly from the generator to the smoke chamber and a supplemental passage for leading the smoke indirectly to the smoke chamber and a pumping device in connection with the supplemental passage for feeding a forced supply of smoke to the smoke chamber from the generator, as set forth.

4. In a smoking apparatus of the character described, a housing having a floor dividing it into an upper and lower chamber, a smoke stack in communication with the upper chamber and valve connections operative from the outside of the housing for opening the stack to the smoking compartment at times, a smoke generator located in the lower compartment and comprising an open top base, a fuel receiving hopper mounted over the base and having its lower end spaced from the base whereby a surrounding air intake is provided, a smoke offtake pipe that connects with the generator base and said offtake pipe including a portion that extends outside of the housing and a portion within the housing which extends up through the floor and discharges into the upper compartment, both outlet ends of the smoke offtake pipe having an automatically closing valve, means operable from without the housing for opening the valve for the smoke offtake pipe that discharges directly into the upper or smoking compartment, a force pump that joins with the valved outer end of the smoke offtake with the housing and an offtake for the force pump that discharges into the upper or smoking compartment and adapted for delivering the smoke under forced action and indirectly from the smoke generator to the smoking compartment.

AUGUST M. MILLER.