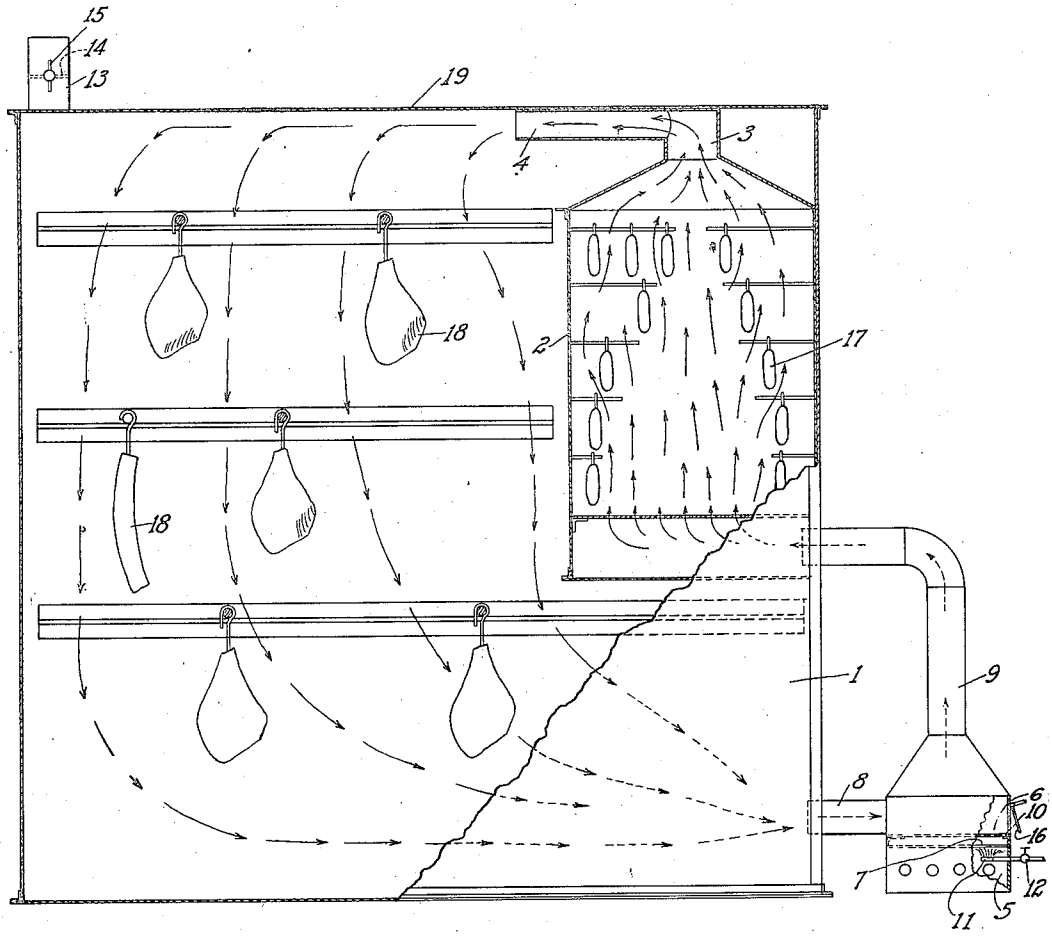
A. C. LEGG.

METHOD OF CURING MEATS.

APPLICATION FILED MAR. 8, 1915.

1,280,772. Patented Oct. 8, 1918.



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UNITED STATES PATENT OFFICE.

ANDREW C. LEGG, OF BIRMINGHAM, ALABAMA, ASSIGNOR TO LEGG MEAT CURING COMPANY, INC., A CORPORATION OF ALABAMA.

METHOD OF CURING MEATS.

1,280,772. Specification of Letters Patent. Patented Oct. 8, 1918.

Application filed March 8, 1915. Serial No. 13,062.

To all whom it may concern:

Be it known that I, ANDREW C. LEGG, a citizen of the United States of America, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Methods of Curing Meats, of which the following is a specification.

My invention relates to a novel method or process for the production of smoke cured meats such as hams, sides, sausages and the like, and the object of my invention is to obtain in a simple and inexpensive manner a thorough curing of the meats without the customary attendant loss or shrinkage due to the drippings from the curing meat.

According to the present process of smoke curing meats by smoke, hot smoke is used for all meats and those which will cure best with cool smoke are cured in the presence of heat which causes a material shrinkage. This result is unavoidable because the furnace is located in the smoke house; a considerable fire is employed and its products of combustion pass directly with the hot smoke through the meat to a stack or flue. This old process uses the smoke but once and then while at maximum temperature; it does not use the smoke alone but along with it a large volume of hot products of combustion and gases from a fire of considerable intensity; a large quantity of expensive hickory wood or sawdust is required for a cure; it is not possible to obtain a cool pure smoke for curing; and the danger from setting fire to the meat under treatment is always so imminent and serious that not only are day and night watchmen required but the insurance risk is so high that it is expensive to cure in city packing plants or butcher shops.

The important features of my present process are the use of a relatively cool smoke delivered in small quantity continuously to a smoke house; the full utilization of the generated smoke by causing it to circulate continuously through the meat in the smoke house, thereby making possible the curing of large quantities of meat with a small quantity of smoke generated from the negligible quantity of fuel; the generation of this smoke without the smoke house to minimize the danger of fire; the use of an external source of heat for igniting the smoke generating fuel in the generator so that it is delivered in a pure condition and free from any products of combustion except such as result from its own smoldering fire; the regulating of the heat of the smoke by an external fire or burner; the provision of connected curing compartments, one to contain meat which should be cured with a hot smoke, and the other to contain meat which should be cured with a cold smoke, and passing the smoke from the generator through the hot compartment into the cold compartment so that it reaches the different meats at the best curing temperature therefor; the continuous circulation of the smoke from the generator through a closed smoke house and back to the generator, thus inducing a positive circulation; and the reheating of the circulating smoke when it is passed successively through hot and cold smoke curing compartments or houses so as to deliver it in heated condition to the hot compartment.

As a means of illustrating my process, I have shown in the accompanying drawings a smoke house 1 and in the upper portion thereof I have subdivided off an internal or hot smoke compartment 2 which communicates with the smoke house 1 only through top discharge pipes 3 and 4. I provide a smoke generating furnace comprising a bottom fire chamber 5 and an upper smoke generating chamber 6, which parts are maintained separate by a partition 7. The smoke chamber 6 communicates by a return pipe 8 with the lower portion of the smoke house 1 and by an outlet pipe 9 with the lower portion of the hot smoke compartment 2. The smoke producing medium is introduced into the smoke chamber 6 under a smothering plate 10 and after it has been heated and brought to smoldering condition by the fuel burner 11 in the fire chamber 5, the flame of the latter is lowered or cut off by its control valve 12. The smoke house is provided with an outlet flue or stack having a damper valve 14 therein controllable by a handle 15. I provide the smoke chamber 6 of the generator with a door 16 for admitting fuel and supply a regulable quantity of air to the smoldering combustion of the smoke generating fuel therein.

In operation, the warm smoke generated in the smoke chamber 6 will be discharged by the pipe 9 into the bottom of the hot smoke compartment 2 through which it will rise and pass through meats 17 which should be cured in a warm smoke, such as sausage and like meats. In passing upwardly

through the hot smoke compartment 2, the smoke becomes chilled and is delivered in a relatively cool condition through the pipes 3 and 4 into the upper portion of the smoke house 1 and the damper valve 14 being closed, it is caused to sink down through the hams and sides 18 and to return through the pipe 8 to the smoke chamber 6, thus maintaining a continuous circulation. If the smoke is being generated too rapidly and tends to force its way out of the generator, the damper valve 14 can be set to permit the gradual withdrawal of smoke sufficient to restore the balance in the circulation. The curing in a closed chamber to an extent automatically regulates the air admission to the generator and consequently the generation of smoke. In fact it is desirable to so regulate the circulation as to bank the smoke in the smoke house until it even has a slight pressure that will expedite its curing action on the meat.

Where it is undesirable to use the hot smoke compartment, I cause a circulation of the smoke in the smoke house by delivering the smoke directly thereinto through the pipe 9 and disconnecting the return pipe 8 so that a small quantity of cool air entering will flow inwardly along the bottom and divert upwardly the smoke which is moving toward it, causing the smoke to whirl in the box with a helical line of travel; or the return pipe 8 may be used and the smoke returned as a continuous circulation through the smoke generator. I obtain a better circulation by making the top wall 19 of the smoke box 1 of thin metal which will more readily chill the smoke when it reaches it and more positively induce the down flow thereof through the meats.

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

1. The hereindescribed process for the smoke curing of meats, which consists in delivering a preservative smoke into the upper portion of the meat curing chamber, wherein it chills and condenses as it settles down through the meats, and drawing off the chilled smoke from the lower portion of the chamber.

2. The hereindescribed process for the smoke curing of meats, which consists in generating the preservative smoke, delivering the smoke, before it becomes chilled to the point of substantial condensation, into the upper portion of the meat curing chamber, and drawing off the smoke from the lower portion of the chamber after it has passed downwardly through the meats.

3. The hereindescribed process for the smoke curing of meats, which consists in delivering a preservative smoke into the upper portion of a meat curing chamber wherein it chills and settles downwardly through the meats, reheating the chilled smoke drawn off from the lower part of the curing chamber and returning such reheated smoke with fresh smoke into the upper portion of the chamber.

4. The herein described process for the smoke curing of meat, which consists in generating a preservative agent by means of heat, introducing said agent into the curing chamber by its natural draft, and utilizing said natural draft to draw off the preservative agent from the curing chamber and return it thereto, thereby inducing a continuous circulation of the preservative agent through the chamber.

5. The hereindescribed process for the smoke curing meats, which consists in generating a preservative smoke from which the products of active combustion are excluded, causing the preservative smoke to flow by its own natural draft and at a moderate temperature from the generator into the upper portion of a meat curing chamber, and utilizing the draft created by a heater to draw out the chilled preservative smoke from the lower portion of the curing chamber.

6. The hereindescribed process for the smoke curing of meats, which consists in generating a preservative smoke from which the products of active combustion are excluded, delivering the smoke by its natural draft into the upper portion of the smoke curing chamber, utilizing the heat of smoke generation to draw out the chilled smoke from the lower portion of the curing chamber and return it with fresh smoke to the upper portion of the curing chamber, and controlling the rate of flow of the circulating smoke proportionally with the rate of generation of fresh smoke.

7. The hereindescribed process for the smoke curing of meats which consists in generating a preservative smoke, passing this smoke previous to any substantial condensation taking place therein and at a temperature only a few degrees above that of the curing chamber into such smoke curing chamber, causing the smoke to condense in the curing chamber and deposit the curative agents in suspense therein on the meats as it settles through them, and drawing out the chilled smoke from the lower portion of the chamber.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW C. LEGG.

Witnesses:
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