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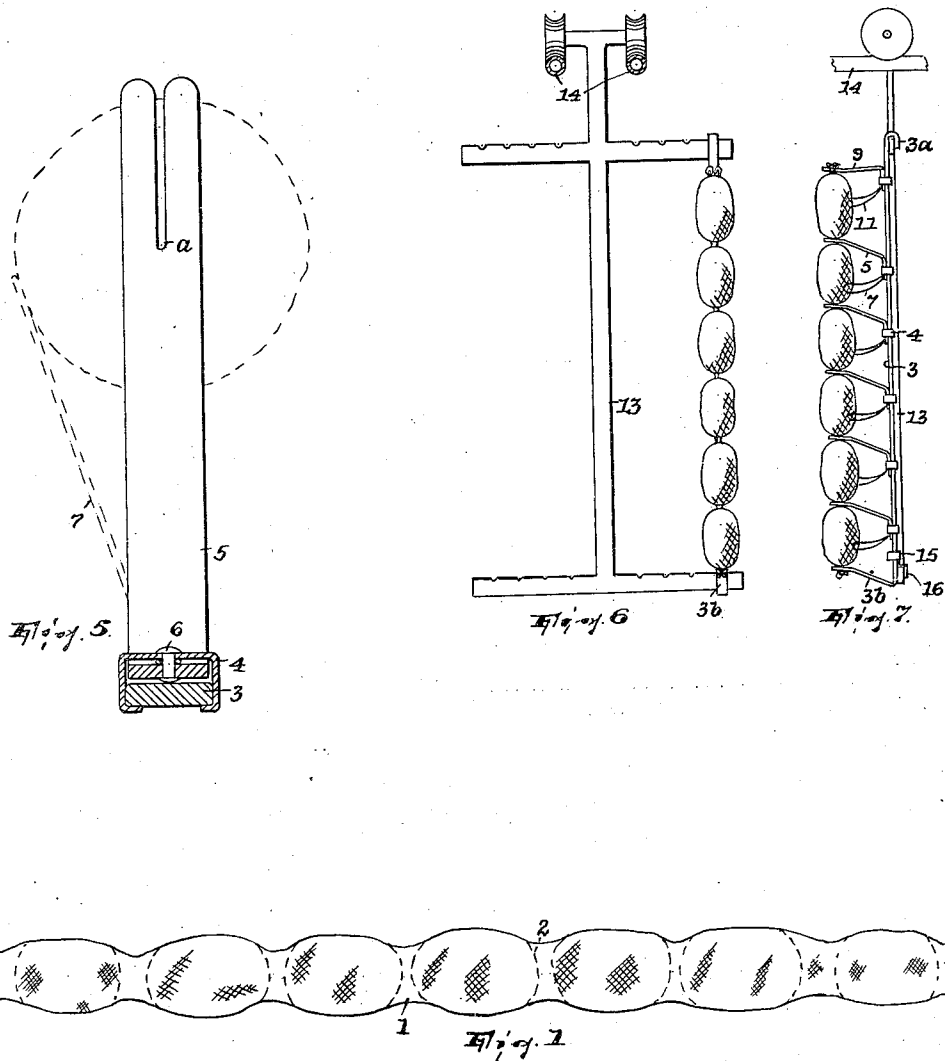
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2,107,166

ART OF PACKING MEAT PRODUCTS

Filed Nov. 22, 1935

2 Sheets-Sheet 1



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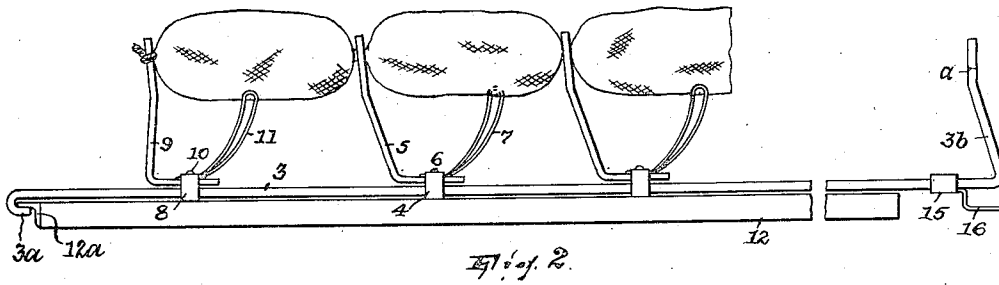
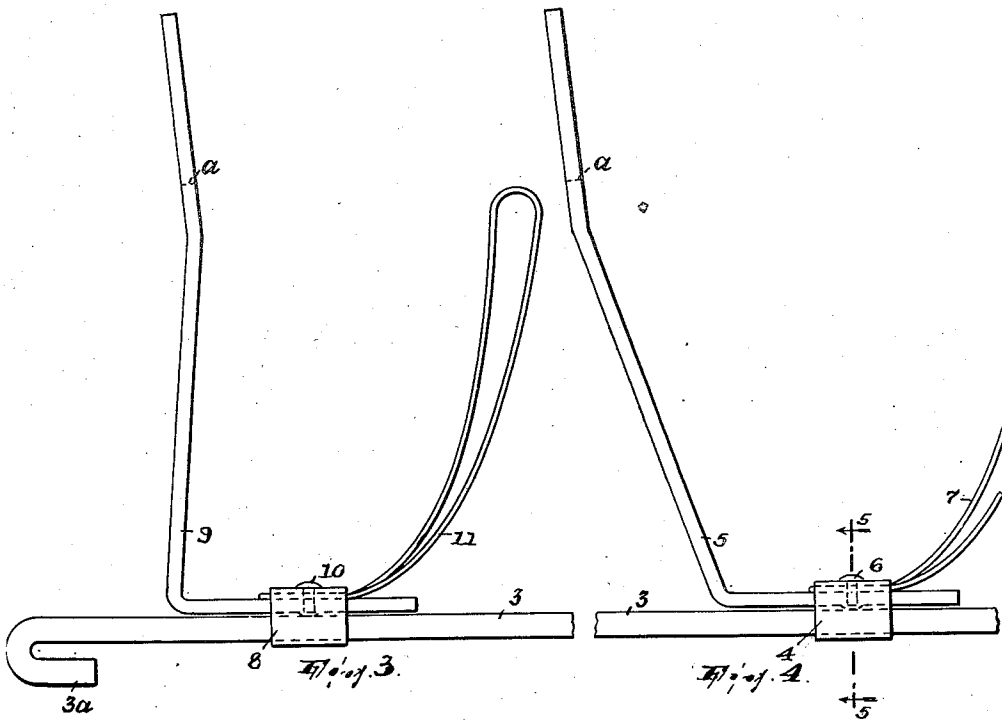
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ART OF PACKING MEAT PRODUCTS

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2 Sheets-Sheet 2



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ART OF PACKING MEAT PRODUCTS

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Application November 22, 1935, Serial No. 51,093

1 Claim. (Cl. 99—174)

Pork-butts, or boneless meat pieces from the shoulders of hogs, are prepared for the market, after curing and soaking, by stuffing them successively into a flexible tubular casing, as a so-called stockinet (an elastic knitted tube) with the aid of a funnel and constricting the casing both sides of each butt and holding it constricted by tying or stapling with the intention of causing the casing to compress the butt and thus give it a smooth and shapely appearance, such tying or stapling being so performed that when the sections of the system so produced are severed between the butts each butt will be enveloped in a portion of the casing closed (by the tying or stapling) at both ends, whereupon the sections are smoked, the incidental drying changing them from their initial plastic to a less plastic or a more or less solid state. But when the casing is thus tied or stapled the desired intention of compressing the butts cannot in practice be accomplished even initially with any degree of uniformity, and in any event it is not adapted to be so far accomplished that the elasticity of the casing remains to maintain the compression until the smoking, with consequent shrinking of the butts, is completed because neither a tying nor a stapling operation can in practice be performed so as adequately to tension the casing in the first instance. Wherefore each encased mass is not as smooth and shapely as is possible according to the present invention and there is a very considerable waste of the casing which this invention avoids.

Given meat butts or equivalent units (by which I mean here to exclude minced meat) in more or less plastic state, the casing according to this invention is flexible, stretchable and elastic and is subjected to twisting to cause compression of each contained unit and stretch the portion of the casing immediately containing such unit and thereupon each encased unit is subjected to a rigidifying treatment, the twist in such casing being positively maintained in substantially the state to which it was developed until the unit is rigidified. In practice I provide an apparatus serving as a support for conveying the encased product and maintaining the twist or twists from untwisting while rigidifying of the encased mass or masses proceeds, in a smoke chamber or otherwise.

My invention also includes a novel method of twisting the casing where successive twists are to be formed therein, this having for its object to facilitate and expedite the forming of the system comprising the casing and a succession of

plastic masses therein; in this connection the masses may be either in the form of said units or minced.

The invention also includes a step whereby the twists formed in the casing are effectually maintained so that the compressing of the contained mass or masses and the stretched state of the casing are in turn effectually maintained while the encased mass or masses is rigidified; in this connection the masses may also be either in the form of said units or minced.

In the drawings,

Fig. 1 is a fragmentary side elevation of stockinet material, stuffed with plastic masses, as pork-butts, from which a portion is to be cut to undergo treatment as hereinafter described;

Fig. 2 is a similar elevation of one such portion or system, the apparatus to receive it, and a support for the assembly formed by such system and apparatus;

Figs. 3 and 4 are side elevations of an end portion and an intermediate portion, respectively, of said apparatus;

Fig. 5 is a section on line 5—5, Fig. 4 and

Fig. 6 is a front elevation and Fig. 7 a side elevation of said assembly, showing the same hung on a carrier for some subsequent treatment of said system, as in a smoke-house.

Stockinet 1, Fig. 1, being stuffed with a succession of uncooked and thus plastic units 2 of meat, as pork-butts, is severed at suitable intervals so that each portion so detached contains, say, six of said units, though there may be any number. Each system, comprising such units and the containing piece of the stockinet or flexible and elastic tubular casing, is treated according to this invention with the use of apparatus constructed in the preferred form as follows:

3 is a long flat metal bar which has one end, 3a, rebent to form a hook and the other end portion, 3b, bent off in the opposite direction and forming a post.

On this bar is arranged a series of brackets to coact with the post in supporting said system, all of which except one are of identical construction, thus described:

Each such bracket includes a strap or slide 4 which embraces and may be slid lengthwise of the bar. Between the strap and the face of the bar from which post 3b projects is arranged one end of an arm 5 formed of strap metal, such end being secured by a rivet 6 to the strap 4. For a purpose to appear said arm extends from its said end and relatively toward the hook end 3a of the bar at a somewhat acute angle with respect to

the bar, its terminal or free end being at an angle to the bar somewhat less acute. Between the strap and the first-named end of the arm is secured an elastic arm 7 which may be a wire loop and which, as will appear, acts as a brake-like detent. If the apparatus is designed to receive a system which will contain six units 2 there will be five of the brackets of this type, or in any case one less than the number of such units.

The remaining bracket also comprises a strap 8, arm 9, rivet 10 and elastic arm 11, thus making it the same as brackets of the class first described excepting that in this case the arm is a reverse substantial counterpart of post 3b. The other brackets are arranged between this bracket and the post.

The post and brackets all extend the same distance from the bar and each has a terminal notch a.

The apparatus is placed on a table or other support 12 with its brackets and post upstanding and the hook 3a engaged with a projection 12a of such support to prevent it from upsetting, as shown in Fig. 2. One end of the casing left projecting beyond the adjacent butt 2, is then clamped in the post 3b by inserting it in the notch a and then it is wrapped alternately around the prongs flanking the notch or otherwise securely fastened. The said system may be regarded as in sections each comprising a unit 2 and so much of the casing as directly contains such unit. Holding, as by hand, the section which is the second from the post against rotation the first section is rotated around the axis of the system, thus twisting the casing between the first unit and the post and between the first and second units and in this way causing the first unit to be compressed by the casing and the latter to be stretched and so tensioned, whereupon the twist in the casing between said first and second units is jammed into and thus clamped in the notch a of the first bracket, the said section being insured against re-rotation by the elastic arm 7 of such bracket, which bears laterally against it. Holding the section which is the third from the post against rotation the second section is rotated, thus twisting the casing between the first and second units and so exerting compression on the second unit and again stretching and tensioning the casing, whereupon the twist in the stockinet between the second and third units is jammed into and thus clamped in the notch of the third bracket and the second section held from re-rotation by the elastic arm 7 of such bracket. Each holding effort is directly applied, by which I mean by direct contact with the part of the casing held. This operation is continued until the twisting has been effected and in the way explained maintained between all the units, whereupon the end of the casing adjoining the last unit is twisted and secured to the arm 9 of the last bracket in the same manner as its other end was secured to the post. Preferably the succession of twistings are performed alternately clockwise and anti-clockwise. The reason for this is as follows: When each section is rotated to form a twist relatively in advance of it a reverse twist also forms relatively behind it when the succeeding section is in any way held from or not responsive to the rotation; if this next section were now rotated in the same direction as the first in order to form an effective twist between the two sections this reverse twist would have to be first untwisted. By rotating the successive sections in alternately opposite

directions the reverse twist is effectively increased and the operation is performed with facility and without loss of time. It will be understood that, since the brackets may be slid along the bar 3, they may be adjusted one by one to the proper spacing during said operation.

It will be obvious that by following the procedure described it is not only possible to obtain a uniformly high degree of compression and hence shape-improvement of the sections of the system without loss of time or the exercise of any particular skill on the part of the operator but that there is a very considerable saving of stockinet as compared with the practice heretofore followed and involving resort to tying or stapling.

After the system has been thus incorporated in the apparatus the whole assembly thus formed is removed from the support and hung by the hook 3a on a carrier 13 arranged to travel on suitable ways 14 in a smoke-house, whereby there occurs as usual the drying and more or less rigidifying of the said system or body comprising the casing and enveloped masses of meat. As an incident of the drying the meat of course shrinks, which is accompanied by a contraction of the casing from the stretched or tensioned state which ensued as an incident of the twisting, wherefore each section retains the smooth and shapely form which was imparted thereto by the twisting. In order to prevent the assembly from undue swaying in the movements of the carrier along the guideway there may be a slide 15 on the bar having a hook 16 to engage the lower bar of the carrier as shown in Figs. 6 and 7.

In practice it is found that, as a result of the smoking and consequent setting or rigidifying of each section, when the twists between sections are severed there is little if any tendency of the ends of the stockinet portion enveloping each butt to untwist and so unduly expose the ends of the butt because the mesh of the casing has become embedded as an incident of the compression in the tissue of the butt.

The change of each section from its initially plastic state to more or less solid or less plastic state may be otherwise effected (for instance, by freezing) than by smoking, having regard to the true essentials of my invention.

Each intermediate bracket is formed so that its arm extends first toward the hook end of bar 3 at an acute angle with respect to the bar so as to act to deflect the drippings from each section toward the bar or away from the section next below, it being understood that when the system comes to the treatment herein described it is still in more or less wet condition.

As indicated my invention may be applied to other substances than meat which are plastic and adapted to be rigidified, by which I mean rendered less plastic.

In the example herein set forth the masses exist initially independently formed or distinct from each other. But in certain aspects of the invention I do not wish the term "masses" as hereinafter used in the claim to be taken to mean that the masses are initially so formed or distinct, since it would obviously be within the invention to twist the system including a flexible tubular casing containing a continuous body of sausage or other minced moldable (i.e., plastic) substance so as to part such body and hence thus separate masses thereof which before such parting were not separately definable.

Having thus fully described my invention what I claim is:

5 The method of molding and smoking irregular pork butts or similar pieces of meat which consists in providing a tubular flexible elastic porous casing, placing separate butts in said casing at intervals longitudinally of the casing, securing one end of the casing in a fixed position, twisting said casing between each butt while exerting sufficient pressure on the butts for uniformly compressing the butts into a compact

smooth and shapely mass, retaining the twisted portions of the casing against unwinding to maintain the compression on said butts, subjecting the encased and compressed butts to a smoking treatment for solidifying the compressed butts 5 and for further contracting the casing.

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