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Method and device for producing sausages

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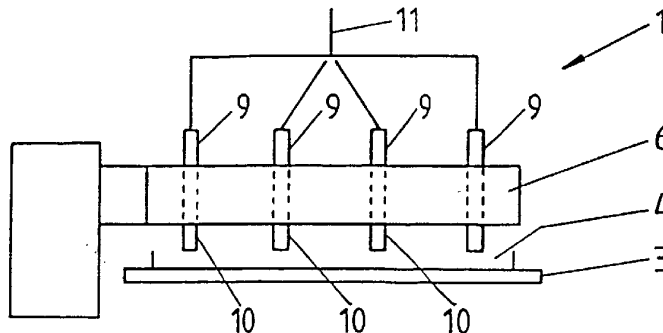
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(54) Title: METHOD AND DEVICE FOR PRODUCING SAUSAGES ~~AND DEVICE FOR PRODUCING SAUSAGES~~

(54) Bezeichnung: VERFAHREN SOWIE VORRICHTUNG ZUM HERSTELLEN VON ESSWÜRSTEN SOWIE AUF EINE UNTER VERWENDUNG EINER SOLCHEN WURST HERGESTELLTEN BACKWARE



(57) Abstract

The present invention relates to a new method for producing sausages, mainly sausages made from an adequate sausage-mass preparation.

(57) Zusammenfassung

Die Erfindung bezieht sich auf ein neuartiges Verfahren zur Herstellung von Eßwürsten, insbesondere von Eßwürsten aus einer Wurstmasse.

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Editorial Note

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Method and Device for producing Sausages

The invention pertains to a method and to a device for
producing sausages consisting of a sausage mass containing
5 meat and protein.

There are known roasting or grill sausages of different
kinds (German utility model 91 05 242.4), in particular
also grill sausages in snail and/or spiral form, with
10 which an elongated sausage with the outside sausage skin
formed by an animal gut or separate skin is rolled up to a
snail or a spiral and is fixed by a wooden spit. This
well-known sausage is not suitable for production in
larger numbers of items and can be produced only in
15 expensive machines, since fixing the sausage with the
wooden spits requires a complicated procedure.

An aim of the invention is to present a process and an
apparatus by which an effective production with high
20 capacity is possible in an especially simple and
economical embodiment.

Accordingly, in a first aspect, the present invention
provides Process for the manufacture of sausages made from
25 a sausage mass containing meat and protein, characterized
in that the sausage mass is delivered in sausage lengths
without animal gut or separate skin, the sausage mass
being delivered by several discharge openings provided for
on a sustainer and is deposited on a tray located beneath
30 the discharge openings, and the sustainer and the tray are
moved relatively to each other so that the sausage lengths
are deposited on the tray in a form where sections of each
length are touching or overlapping, and that by modifying

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the sausage mass through the effect of heat treatment an inherent skin is built, which interconnects the touching or overlapping sections of each sausage length.

- 5 Preferably, heat treatment is by scalding in hot or boiling water or in steam.

Preferably, the sausage lengths are deposited into a snail or a spiral or a pretzelform.

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In a further aspect, the present invention provides an apparatus for the manufacture of sausages made from a sausage mass containing meat and protein, the apparatus comprising:

- 15 • several discharge openings provided for on a sustainer for delivering the sausage mass as sausage lengths without animal gut or separate skin,
- a tray located beneath the discharge openings for receiving the sausage lengths made of the sausage mass,
- 20 • a driving device for moving the sustainer and the tray relatively to each other in at least two axis directions (A, B) that extend perpendicular to each other and that lie in a plane parallel to the
- 25 tray so that the apparatus is operable to deposit the sausage lengths on the tray with sections of each length touching or overlapping, and
- a transporter with an upper, horizontal surface for moving the trays through a station for heat
- 30 treatment of the deposited sausage length for forming an inherent skin which interconnects the touching or overlapping sections of each sausage length.

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Preferably, discharge openings on the sustainer are arranged in several groups, whereby each group possesses at least two, preferably more than two discharge openings.

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Preferably, the discharge openings of the groups are arranged in an axis direction parallel to the conveyance direction of the transporter.

10 The invention is described below in a sample embodiment based on the figures, which depict:

Fig. 1 in simplified representation and in side view, an apparatus according to a preferred embodiment of the invention;

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Fig. 2 a top view of the apparatus of Figure 1;

Fig. 3 in simplified representation and in top view, a skinless sausage in the shape of a coil manufactured with the apparatus of Fig. 1 and 2;

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Fig. 4 a cross-section of the sausage of Fig. 3.

25 The apparatus that is schematically represented in Figures 1 and 2 and generally designated 1 is used for the manufacture or shaping of sausages 2 in spiral or coil form. The sausages are formed from a sausage mass containing protein and/or meat by extrusion without a skin as spiral- or coil-shaped sausage lengths and then subjected to heat treatment, for example by steam, for modification of the sausage on the outer surface for the formation of an inherent skin and also for connection of

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the winding of the coil or spiral form, i.e. for fixing of this form.

The apparatus 1 consists essentially of a transporter 3
5 formed by a belt or other suitable element, forming an upper, horizontal surface for trays 4 or other suitable deposit surfaces on which a number of sausages 2 can be formed and on which these sausages 2 are moved by means of further movement of the transporter 3 through a station
10 for heat treatment generally designated 5 in Figure 2.

A sustainer 6 is located above the transport level of the transporter 3, at a distance from and essentially parallel to the horizontal top side of the transporter 3 and
15 therefore also at a certain distance above the respective tray 4. The sustainer 6, which is designed as a frame in the depicted embodiment, is moveable in an oscillating manner by means of a drive 7 corresponding to the double arrow A both in the direction of transport of the
20 transporter 3 and in the opposite direction of this transport direction and corresponding to the double arrow B in a horizontal direction and crossways to the transport direction of the transporter 3, controlled by an electronic control device 8 or by a program located in
25 said control device.

Several hoses 9 are each fastened to the sustainer 6 with the open end in such a manner that each open end 10 is opposite the top of the transporter 3, with the axis of
30 its opening perpendicular or approximately perpendicular to the top of the transporter 3 and at a certain distance from this top or from the top of the trays 4 located on the transporter 3. In the depicted embodiment the hoses 9

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are arranged with their ends on the sustainer 6 in such a manner that they form several groups crossways to the transport direction of the transporter 3, in the depicted embodiment a total of four groups, whereby each group in the depicted embodiment possesses a total of three hoses or hose ends 10, which are then arranged in each group in the transport direction of the transporter 3. In the depicted embodiment therefore, a total of 12 hoses 9 or hose ends 10 are provided for on the sustainer 6. The hoses 10 are each connected to the output 11 of a sausage machine not depicted, which delivers the sausage mass under a certain pressure into the hoses 9, so that this sausage mass then is emitted from each hose end 10 and can be placed as a sausage length on a tray 4 located under the sustainer 6. During this process, the sustainer 6 is moved by a drive 7 in such a manner that each sausage length that is deposited forms a coil- or spiral- shaped sausage 2.

In this way, several sausages 2, i.e. in the depicted embodiment a total of 12 sausages, can be formed on the waiting trays 4 in one processing step. Of course, the number of rows and groups of hose ends 10 or the number of hoses 9 can be considerably larger, particularly depending on the size of the trays 4 used, so that the entire tray 4 is covered with sausages 2 in one processing step.

It is also evident that the sausage machine is controlled intermittently, i.e. after forming the sausages 2 on a tray 4, the further supply of sausage mass to the hoses 9 is interrupted, until a new tray 4 has been moved by the transporter 3 under the sustainer 6. It is also evident that the transporter 3 is actuated intermittently or

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cyclically, i.e. the transporter is switched off during the forming of the sausages 2. As soon as the process is completed, i.e. sausages 2 have been placed on the tray 4 in the form of a coil or spiral, the transporter 3 is
5 switched on and moved at least until a new tray 4 is located under the sustainer 6.

Figures 3 and 4 depict another sausage 2 that was manufactured as a skinless sausage from a sausage mass or
10 filling with a meat base. Skinless according to the present invention means that the outer covering or skin 103 of the sausage 2 is formed neither by a natural skin nor by an artificial skin, but rather that this outer skin 103 is produced from the mass 102 by appropriate
15 modification of the sausage mass, i.e. by scalding in hot or boiling water or in steam, whereby in particular the protein of the mass 102 on the outer surface of the sausage 2 forms the skin 103 that holds the sausage or the mass together. Suitable for the manufacture of the mass
20 are the varieties of meat normally used for sausages, such as beef and pork. Moreover, the mass 102 receives the usual additives and spices.

As described above, the grill sausage 2 is formed in the
25 shape of a coil or spiral, i.e. it consists of an extended sausage length that is rolled together into a coil, whereby the connection 104 between adjacent windings of the coil is also produced by the modification of the mass 102 that forms the skin 3, i.e. by scalding in hot or
30 boiling water and/or in steam.

The invention was described above using sample embodiments. Of course, numerous modifications and

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adaptations are possible without abandoning the underlying inventive idea of the invention.

Thus it is possible, for example, to arrange the hose ends
5 10 on a slide that is guided on the sustainer or frame 6
for example in the direction of the double arrow B and
moved by a drive, while the drive of the sustainer 6 is
moved in the horizontal axis direction extending
perpendicular to this movement, for example in the
10 direction of the double arrow A. Both drives are then
controlled by the control device 8.

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List of reference Symbols

5		1	apparatus
		2	sausage length
		3	transporter
		4	tray
10		5	station for heat treatment
		6	sustainer
		7	drive
		8	control device
		9	hose
15		10	end of hose
		11	sausage machine connection
		102	sausage mass
		103	sausage skin
		104	connecting area

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Claims defining the invention are as follows:

1. Process for the manufacture of sausages made from a sausage mass containing meat and protein, characterized in that the sausage mass is delivered in sausage lengths without animal gut or separate skin, the sausage mass being delivered by several discharge openings provided for on a sustainer and is deposited on a tray located beneath the discharge openings, and the sustainer and the tray are moved relatively to each other so that the sausage lengths are deposited on the tray in a form where sections of each length are touching or overlapping, and that by modifying the sausage mass through the effect of heat treatment an inherent skin is built, which interconnects the touching or overlapping sections of each sausage length.
2. Process according to claim 1, characterized in that the heat treatment is by scalding in hot or boiling water or in steam.
3. Process according to claim 1 or 2, characterized in that the sausage mass is manufactured on a meat base, for example using pork or beef.
4. Process according to one of the claims 1 to 3, characterized in that each sausage length has a diameter in the range between 0.1 and 2.0 cm.
5. Process according to any one of claims 1 to 4, wherein the sausage lengths are deposited in a snail or spiral or pretzel form.

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6. Apparatus for the manufacture of sausages made from a sausage mass containing meat and protein, the apparatus comprising:

- 5 • several discharge openings provided for on a sustainer for delivering the sausage mass as sausage lengths without animal gut or separate skin,
- a tray located beneath the discharge openings for receiving the sausage lengths made of the sausage mass,
- 10 • a driving device for moving the sustainer and the tray relatively to each other in at least two axis directions (A, B) that extend perpendicular to each other and that lie in a plane parallel to the tray so that the apparatus is operable to deposit the
- 15 sausage lengths on the tray with sections of each length touching or overlapping, and
- a transporter with an upper, horizontal surface for moving the trays through a station for heat treatment of the deposited sausage length for
- 20 forming an inherent skin which interconnects the touching or overlapping sections of each sausage length.

7. Apparatus according to claim 6, characterized in that
25 the tray is integrally formed as part of the transporter.

8. Apparatus according to claim 6, characterised in that
the tray is formed from tray elements located on said transporter.

30 9. Apparatus according to any one of claims 6 to 8, characterized in that the discharge openings on the sustainer are arranged in several groups, whereby each

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group possesses at least two, preferably more than two discharge openings.

10. Apparatus according to claim 9, characterized in that
5 the discharge openings of the groups are arranged in an axis direction parallel to the conveyance direction of the transporter.

11. Apparatus according to one of the claims 6 to 10,
10 characterized in that the discharge openings are each formed by the open end of a flexible feed channel.

12. Apparatus according to one of the claims 6 to 11,
15 characterized in that the discharge openings are each connected to an output of a sausage machine.

13. Apparatus according to claim 12, characterised in that
the sausage machine is controlled cyclically so that the
sausage mass is delivered intermittently to the discharge
20 openings.

14. Apparatus according to one of the claims 6 to 12,
characterized in that the transporter is driven cyclically
and is operative to be stationary whilst the sausage
25 lengths are deposited on the tray.

15. Process for the manufacture of sausages substantially
as herein described with reference to the accompanying
drawings.

30 16. Apparatus for the manufacture of sausages substantially
as herein described with reference to the accompanying
drawings.

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Dated this 13th day of August 2003
BREUKO GMBH FLEISCH-UND WURSTWARENVERTRIEB
By their Patent Attorney
GRIFFITH HACK

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Fig.1

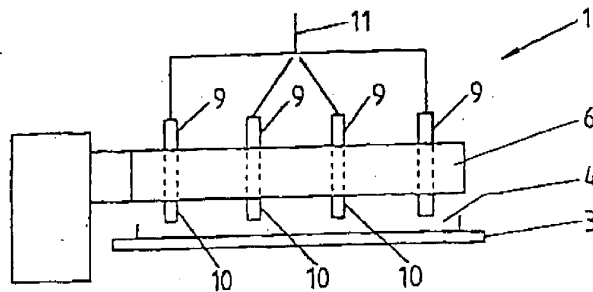
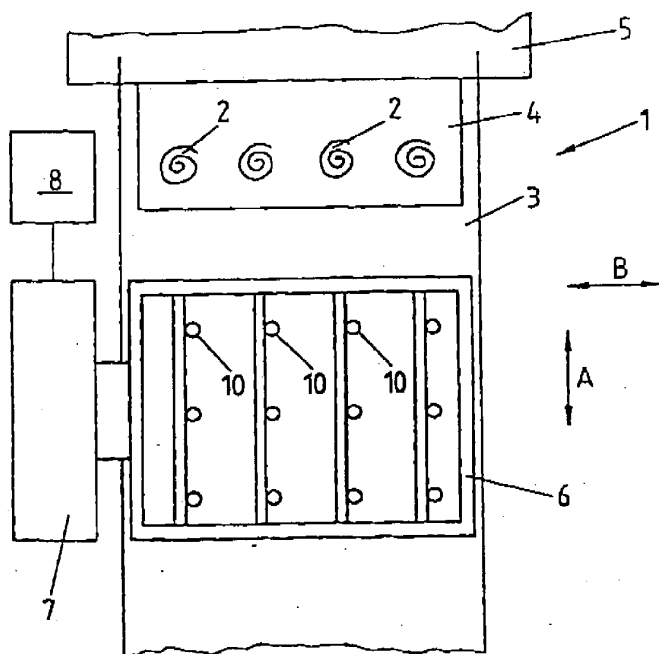


Fig.2



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Fig. 4

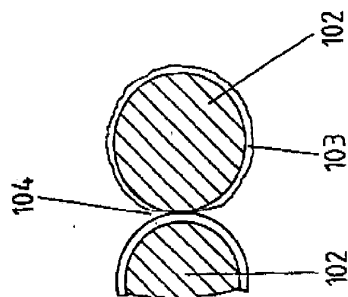
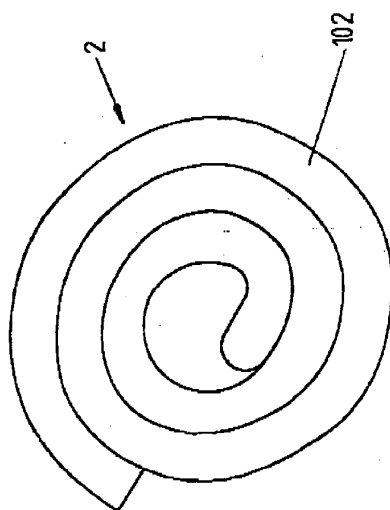


Fig. 3



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