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⑤④ METHOD AND PLANT FOR PACKING POULTRY INDIVIDUALLY IN BAGS.

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Description

The background of the present invention is a widespread desire and even direct provisions to the effect that the weight or category of weight of packed poultry should be indicated on the packing.

The invention relates to a method and plant for packing poultry bodies individually in bags, comprising the steps of: advancing the poultry bodies suspended by their legs individually along a conveyor path at a certain distance from each other, weighing each body individually, and placing the bodies in bags bearing an indication of weight or a category of weight, according to the preambles respectively of claims 1 and 2.

According to a known method of the said kind the poultry bodies are advanced along a conveyor path past a weighing device and thereafter released so as to fall down — according to the ascertained weight — into one of a number of open trays. When a suitable stock of bodies has been collected in a tray, the bodies are removed therefrom and are introduced into a packing device provided with bags on which the weight or the category of weight ascertained for the bodies in the tray in question is indicated and by means of the device the body is placed in the bag which is sealed. The said removal from the tray and the introduction into the packing device are carried out manually. Such known method and plant appears from US—A—4 021 336.

Broilers are for instance divided into categories of weight shifting by 100 grams from class to class. Thus, the category of weight for a broiler of 1000 grams ranges from 950 to 1050 grams, for a broiler of 1100 grams from 1050 to 1150 grams, and for a broiler of 1200 grams from 1150 to 1250 grams.

Partly in order to cover all of the current spectrum of weight and partly to secure continuous packing corresponding to the number of arriving poultry bodies, which in big slaughterhouses may amount to 4000 bodies or more per hour per conveyor path, it should be taken into account that, when use is made of the known method, 6 to 8 packing devices, one packing device for for instance 4 trays are required. Each tray can hold about 100 bodies and according to the degree of filling the operator of the packing device moves the packing device from tray to tray and — after having provided the device manually with a stock of the type of bag applicable for the pertinent bag, he introduces one by one the bodies collected in the tray into the device.

Said method has various drawbacks. When falling down into a tray the bag with its contents of plucks which beforehand have been placed into the poultry body runs the risk of falling out. The operator has to seize each individual poultry body, lift it free from the tray and introduce it into the packing device before packing can take place. Thus, each packing device needs its own operator.

A further drawback is the risk of a critical loss of

weight. Poultry which after it has been killed and cleaned comes from the refrigeration tank soon loses weight due to loss of liquid when coming into contact with the atmosphere. Notoriously, a loss of weight of 10 to 20 grams in the course of 10 minutes may be experienced. The known method involves that as a consequence of their necessary stay in the trays, many of the weighed bodies will remain for rather a long time in contact with the atmosphere and some of them longer than others before they are packed. In order not to risk that the packed bodies will have a weight inferior to that originally ascertained and indicated on the packing, it may in practice be necessary voluntarily to increase the limits of weight in the figures stated above, such as by 20 grams at each end so that for instance a broiler of 1000 grams voluntarily is weighed out with 970 to 1070 grams, a broiler of 1100 grams with 1070 to 1170 grams, and a broiler of 1200 grams with 1170 to 1270 grams, i.e. with a relative loss in the form of a general excess of weight of 20 grams per broiler since the selling price is based on the prescribed categories of weight. Already for one single transmission box containing 10 broilers this means a loss of income of up to 200 grams and possibly more.

It is the object of the invention to avoid said drawbacks and according to the invention this is achieved by gathering a predetermined number of poultry bodies, aligned on the conveyor path and removing said group of bodies thus gathered, as a whole, from the conveyor path and transferring the same, as a whole, to a position opposite an individual packing device for each body; placing a bag at each packing device with each bag carrying an indication of the weight determined in said weighing step for the respective body; and mechanically placing the bodies in their respective bag.

The invention also relates to a plant for packing poultry bodies in individual bags comprising: a conveyor path for poultry bodies suspended individually by their legs, and a weighing apparatus associated with the conveyor path, for weighing the bodies individually.

Said plant further comprises means for gathering a predetermined number of poultry bodies aligned in a group at a delivery end of said conveyor path; a plurality of packing devices placed near said delivery end; transfer means having seizing members for seizing said bodies of said group and for removing the same, as a whole, from the delivery end, and transfer members for transmitting the same from the seizing member to a position opposite said packing devices; bag magazine means for advancing to each packing device a bag having an indication thereon of the weight of the respective body weighed by said weighing apparatus; means for mechanically introducing the respective poultry body in the respective bag; said packing devices being adapted to simultaneously packing the bodies in their individual bags.

By the above mentioned measures is achieved

that the whole conveying of the poultry bodies starting with a removal from the conveyor path and ending with an introduction into the correct bag is controlled by machinery, the grasp of the poultry body not being released until after removal from the conveyor path the body is completely packed in its bag. Collection of the bodies in a group on the conveyor path and removal of said group in the lump therefrom for joint packing involve that the total packing procedure comprising conveying from cooling, weighing and packing in bags assumed the character of a continuous process. Practically all of the bodies will require the same time for their packing. The time during which the bodies are in touch with the atmosphere is essentially reduced, which reduces the risk of critical loss of weight. The distribution of the bodies to the packing devices is rationalized and there is no more question of manually providing each packing device with stocks of different types of bags. In addition, it is possible without difficulty to incorporate the plant into a packing centre in which the bodies packed in bags and arriving from the packing devices are sorted out according to their weight and placed in corresponding shipping boxes of e.g. 10 bodies. Moreover, due to its structure the plant including a possible packing centre is well suited for electronic control in that the compulsorily operated conveying of the body allows the use of electronic watching during the entire process described above.

According to the invention the transfer aggregate may be provided with a displacement path on which the seizing devices are movable along the path, the displacement path extending along the delivery end of the conveyor path where the seizing members may grasp their individual piece of poultry, and up to a position in front of a row of packing devices, the seizing members being adapted so as by a movement along the displacement path to take up a position opposite their individual packing device for transfer of the removed body to the device.

Further, the transfer elements may according to the invention be adapted so as to transfer the bodies removed by the seizing members from a hanging to a lying position and to introduce the bodies in the last mentioned position into their particular packing device. The said embodiment of the plant may without difficulty and in a space saving manner be combined with the other transport systems serving for transfer of the poultry bodies from the refrigeration tank and the weighing device and for removal of the packed bodies. In a particularly compact embodiment of the inventive plant the transfer aggregate is provided with a rail body bearing the seizing members movably mounted along the rail, and the transfer elements are co-swingably mounted on oscillation arms in such a manner that from an upright position in which the elements are opposite their particular seizing member they are swingable into a lowered position in which they are opposite the reception end of a number of packing devices

placed in a row at a level lower than the delivery end of the conveyor path for introduction of the poultry bodies retained by the transfer elements into their particular packing device, and the transfer elements are provided with retaining means adapted to retain the poultry bodies during the swinging substantially in a relative position in relation to the elements corresponding to the relative position in which the bodies are removed from the seizing members.

According to the invention the retaining means may be arranged so as to retain the poultry bodies until they are pushed into a bag by a piston member while being stowed whereby, in addition to a well-managed introduction of the body into the device, a uniform stowing of the bodies during the packing may be achieved.

According to the invention a removal device may be mounted at the delivery end of each packing device, said removal device being adapted to jointly remove the filled bags from the packing devices and deliver them to their particular sealing aggregate which, after the filled bag having been sealed, delivers it to its particular removal device. Also this part of the packing process may consequently take place concurrently with the other operational steps in such a manner that the grasp of the product is not released until it has been completely packed for delivery and sorting out in shipping boxes.

In the following the invention will be explained in more detail, reference being made to the drawing on which

Figure 1 A—D is a schematic representation of an embodiment of a plant according to the invention having a conveyor path, a transfer aggregate and a number of packing devices,

Figure 2 A—F is a side view of the same embodiment of the packed product, and

Figure 3 is a schematic representation on a larger scale of a detail of the transfer aggregate of the plant.

The plant shown has a conveyor path 1 for poultry bodies 2 being suspended by their legs 3 in retaining means 4 which are movable along the conveyor path 1. A weighing apparatus 5 is coupled to the conveyor path and is arranged so as to register the weight of each poultry body 2 passing each single apparatus and to transmit a corresponding signal to a bag magazine 6 adapted to contain a number of bags 7 divided into categories of weight and marked accordingly.

In Fig. 1 section A shows on a schematic scale the part of the conveyor path having relation to the present invention. The poultry bodies 2 arrive along said conveyor path from a refrigeration tank in which they are cooled after having been killed and cleaned. Thus, the conveyor path may start already in a cleaning station so that a continuous conveyor system from cleaning via cooling to the final packing is provided.

Section B shows in Fig. 1 the delivery end 8 of the conveyor path. Said end is adapted for collecting a predetermined number of poultry bodies aligned in a row. In the following description the

invention will be explained in connection with an embodiment in which the distance between the bodies 2 at said delivery end 8 is substantially less than the distance "a" between the bodies 2 during the preceding feeding. As explained later on, the invention may also be performed in a way in which the distance between the bodies 2 at the delivery end 8 is the same as during the preceding feeding. To save space, the present example shows a closely picked-up group of four bodies 2 only. In practice a group of eight bodies has for instance proved to be a practical unity of operation.

Close by the delivery end 8 a number of packing devices 9 corresponding to the number of bodies of the group are mounted, viz. four in the present example.

In section D of Fig. 1 the packing devices are indicated schematically and in the example they are of the known kind in which the poultry bodies in order to be introduced into a bag 7 shown schematically are forced through a resilient funnel 10 which causes the bodies to be stowed. The packing devices are located with a mutual distance between their sides corresponding to the distance "a" between the bodies suspended on the conveyor path 1. The distance may, however, also deviate from "a".

To the plant belongs in addition thereto a transfer aggregate schematically indicated in sections B and C of Fig. 1. The transfer aggregate is provided with a distribution element in the form of a rail body 11 on which particular seizing members 12 are mounted displaceably along the body, one seizing member per poultry body 2 in the gathered group of bodies at the delivery end 8. Thus, in the present example four seizing members 12 are mounted. Each seizing member has a pair of prehensile claws 13 for each of the legs 3 of the poultry bodies.

The rail body extends along the delivery end 8 of the conveyor path up to in front of the row of packing devices 9 placed at a level lower than the delivery end 8.

In a manner not shown in detail the seizing members 12 are adapted so that from a position opposite its particular poultry body on the delivery end 8 the seizing member takes up a position opposite its packing device 9 by a movement along the rail body 11. Moreover, the rail body 11 is movable towards the poultry bodies 2 suspended on the delivery end 8 in a direction perpendicular to the plane of the paper so that the seizing members 12 will grasp the legs of the individual bodies and again at some distance back from the delivery end 8 in order to pull the bodies 2 free from the retaining means in which they were suspended.

Moreover, the transfer aggregate is also provided with transfer elements 15, one transfer element per packing apparatus 9. Each transfer element 15 consists of retaining means in the form of bars 16a, 16b, 16c, confer Fig. 3, constituting oblong supporting elements.

In a manner not shown in detail but schemati-

cally indicated by a swinging arm in Fig. 3 the elements are swingable jointly from a position in which the supporting members 16 are located opposite the seizing members 12 to a position in which they introduce the poultry bodies removed from the seizing members 12 into the packing devices 9.

In addition to being swingable as indicated by an arrow 18, the transfer elements 15 are movable in the direction of the axis of oscillation and the bars 16a, 16b and 16c extend in the same direction. The length of the bars 16 corresponds at least to the outer distance between the legs 3 of a suspended poultry. The bars 16 constitute together a seizing member being open in the displacement direction to the right, the bar 16 in Fig. 3 being destined to be pushed forward behind the legs 3 of the poultry bodies while the bars 16b and 16c are pushed forward in front of the legs. When the seizing members 12 thereafter release their hold of the legs 3 so that the body 2 with the legs 3 now is suspended in the element 15, and the element is lowered to the right in Fig. 3, the bars 16 will together during the swinging movement retain the poultry body in a position in relation to the element 15 corresponding to the relative position in which the body is removed from the seizing members 12. By said procedure the poultry body changes from a hanging to a lying position and in the latter position it is introduced into its packing device 9. The supporting members 16 are further in a manner not shown in detail adapted so as to retain the poultry bodies in the packing devices 9 until by means of a piston member 19 the bodies while being stowed are pushed into a bag 7.

For each packing device 9 there is provided a removal member 21 and all these members are adapted to jointly remove the bags 7 in which a poultry body has been placed, away from the packing device 9 and to deliver the filled bags 7 to their respective sealing aggregate 22 which will seal the open end of the bags 7 whereafter the bags with the poultry bodies are released and delivered each to its respective conveyor bowl 23 for further sorting out in categories of weight and introduction into corresponding shipping boxes.

Concurrently with said packing process the bag magazine receives from the weighing apparatus 5 an impulse having as a consequence that from the weighing apparatus 5 a bag 7 carrying an indication of weight corresponding to the weight of the piece of poultry in question ascertained in the weighing apparatus 5 will be advanced to the packing device 9 in which the weighed poultry body in question is to be packed. This operation is indicated schematically by an arrow 23'.

The whole cycle of operation of the plant shown is as follows:

The poultry bodies are advanced individually suspended by their legs along the conveyor path 1 with a mutual distance "a" which in practice is depending partly on a mutual distance between said bodies necessary for the operation of suspending the bodies and partly on the desire of

conveying each body along the conveyor path 1 and past the weighing apparatus 5 undisturbed by one of the neighbouring bodies. Upon weighing by the weighing apparatus 5 a predetermined number of poultry bodies 2 are gathered in alignment at the delivery end 8 of the conveyor path 1 where the distance between the bodies 2 is substantially less than during the preceding conveying. Said group of bodies is removed in the lump by the seizing members 12, distributed by the latter to a position each opposite its packing device, transferred by means of the transfer elements 15 in the lump from the seizing members 12 to its particular packing device 8 and into the latter, introduced each into its own bag 7 which in the meantime by impulse from the weighing apparatus 5 has been advanced from the magazine 6 with the weight ascertained for each one indicated thereon, and delivered in the lump from the packing devices 9 for sorting out and introduction into shipping boxes. The working rhythm may be adapted so that the total work from cooling to weighing, to packing into bags and to delivery of the bags assumes the character of a continuous operational process. During this entire work each individual poultry body is positively handled which makes it possible to exactly control the velocity and the operational steps of the single phases of the process and to quickly completing the whole working process described so that the contact of the individual poultry bodies with the atmosphere will be as short as possible.

The system functions even if a poultry body falls out from the conveyor path 1 during its advancement. If the body falls out before the weighing procedure, no bag will be advanced for the retaining means 4 which passes in empty condition past the weighing apparatus 5, and the same is the case for the corresponding packing device 9. If the body falls out after the weighing procedure, the bag in question remains in the empty condition in front of the packing device in question and should be removed before the next group of bodies arrives to the packing devices.

The system also allows a sorting out by qualities, for instance in quality I and II, respectively. If a II quality is ascertained to be present on the conveyor path 1 before the weighing apparatus 5, said ascertainment can be communicated to the weighing apparatus 5, e.g. by providing the retaining means 4 with a particular indication member such as a displacement pin 24 which will be pushed out, e.g. manually, for the ascertained quality II so that by means of the pin 24 the weighing apparatus 5 will indicate a quality II, a corresponding impulse being sent to the bag magazine 6 to transfer a bag 7 marked quality II. The said body II will thereafter be packed in said bag concurrently with the other bodies. Thus, it is not necessary to remove the body II from the conveyor system and to collect and pack such bodies separately.

The system also allows a specific sorting out by weight, such as a specific packing of so-called grill broilers, i.e. a broiler of 1200 grams without its

contents of plucks. This means that during the conveying step no such plucks will have to be introduced into the broiler.

If the weighing apparatus 5 shows a broiler of 1200 grams it can inform the plucks station not to introduce plucks into the body in question and also instruct the magazine 6 to advance a specific bag marked to be for a grill broiler. Also said sorting out can consequently be carried out in the system without requiring the body in question to be removed from the conveyor system and to collect and pack such bodies separately.

In an alternative embodiment not shown the poultry bodies will remain at a mutual distance "a" also at the delivery end 8 of the conveyor path, the seizing members 12 being arranged at the same mutual distance when being in their operational position indicated in Fig. 1B. For delivering the bodies into the packing devices 9, the members 12 can be spread along the rail 11 seeing that the packing devices 9 may be so broad — seen in the longitudinal direction of the rail 11 — that a spreading of the bodies as mentioned is advisable or necessary.

Claims

1. A method of packing poultry bodies (2) individually in bags (7), comprising the steps of: advancing the poultry bodies suspended by their legs individually along a conveyor path (1) at a certain distance from each other, weighing each body individually, and placing the bodies in bags bearing an indication of weight or a category of weight, characterized by gathering a predetermined number of poultry bodies, aligned (8) on the conveyor path and removing (11, 12) said group of bodies thus gathered, as a whole, from the conveyor path and transferring (15) the same, as a whole, to a position opposite an individual packing device (9) for each body; placing a bag (7) at each packing device (9) with each bag carrying an indication of the weight determined in said weighing step for the respective body; and mechanically placing the bodies in their respective bag (7).

2. A plant for packing poultry bodies in individual bags comprising: a conveyor path (1) for poultry bodies (2) suspended individually by their legs, and a weighing apparatus (5) associated with the conveyor path (1), for weighing the bodies individually, characterized by means for gathering a predetermined number of poultry bodies aligned in a group at a delivery end (8) of said conveyor path; a plurality of packing devices (9) placed near said delivery end; transfer means (11, 15) having seizing members (12) for seizing said bodies of said group and for removing the same, as a whole, from the delivery end, and transfer members for transmitting the same from the seizing member to a position opposite said packing devices (9); bag magazine means (6) for advancing to each packing device (9) a bag (7) having an indication thereon of the weight of the respective body weighed by said weighing

apparatus (5); means for mechanically introducing the respective poultry body in the respective bag; said packing devices (9) being adapted to simultaneously packing the bodies in their individual bags (7).

3. Plant according to claim 2, characterized in that the transfer aggregate is provided with a displacement path (11) on which the seizing members (12) are movable along the path, that the displacement path (11) extends along the delivery end (8) of the conveyor path where the seizing members (12) may grasp their individual piece of poultry (2), and up to a position in front of a row of packing devices (9), and that the seizing members (12) are adapted so as by a movement along the displacement path (11) to take up a position opposite their individual packing device (9) for transfer of the removed body (2) to the device (9).

4. Plant according to claim 3, characterized in that an individual delivery member is arranged for each packing device (9), and that all these delivery members are arranged so as to receive in the lump all the packed bodies from the packing devices and to jointly deliver the bodies to a delivery station.

5. Apparatus according to claim 2, characterized in that the transfer elements (15) are adapted to transfer the bodies (2) removed by the seizing members (12) from a hanging to a lying position and to introduce the bodies (2) in the last mentioned position into their particular packing device (9).

6. Plant according to claims 3 and 5, characterized in that the transfer aggregate has a rail body (11) bearing the seizing members (12) positioned movably along the rail, and that the transfer elements (15) are positioned co-swingably on oscillation arms in such a manner that from an upright position in which the elements (15) are opposite their particular seizing member (12) they are swingable to a lowered position in which they are positioned opposite the reception end of a number of packing devices (9) placed in a row at a level lower than the delivery end of the conveyor path for introduction of the poultry bodies (2) retained by the transfer elements into their particular packing device (9), and the transfer elements (15) are provided with retaining means (16a, 16b, 16c) adapted to retain the poultry bodies (2) during the swinging substantially in a relative position in relation to the elements (15) corresponding to the relative position in which the bodies are removed from the seizing members (12).

7. Plant according to claim 6, characterized in that the retaining means (16a, 16b, 16c) are adapted so as to retain the poultry bodies (2) until by means of a piston member (19) they are pushed into a bag (7) while being stowed.

8. Plant according to any one of the claims 5 to 7, characterized in that for the delivery end of each packing device (9) there is a removal member (21) adapted to jointly remove the filled bags (7) from the packing devices (9) and deliver them to their particular sealing aggregate (22)

which after the filled bags having been sealed delivers it to its particular removal member (23).

9. Plant according to claim 6, characterized in that each of the transfer elements (15) consists of oblong supporting members (16a, 16b, 16c), e.g. bars, the length of which corresponds at least to the outer distance between the legs of a suspended poultry body and which are so adapted that by a displacement movement transverse to the swinging level (18) of the transfer elements they will from a position aside to a body suspended by the seizing members (12) be advanced past the legs (3) of said body to a position facing the opposite sides of said legs so as to retain the legs (3) between the supporting members (16a, 16b, 16c).

Patentansprüche

1. Verfahren zur Einzelverpackung von Geflügelkörpern in Beutel, bestehend aus den Stufen: Transport der einzeln an ihren Beinen entlang eines Transportbandes in bestimmten Abstand voneinander aufgehängten Geflügelkörper, Wiegen der einzelnen Körper und Anbringen der Körper in mit Gewichtsangabe oder Angabe der Gewichtsklasse versehenen Beuteln, dadurch gekennzeichnet, dass eine im voraus festgelegte Anzahl von Geflügelkörpern, die sich auf der Transportbahn in einer Linie (8) befinden, gesammelt werden, und dass die derart gesammelte Gruppe von Körpern en bloc von der Transportbahn abgenommen wird (11, 12) und dass diese en bloc in eine Stellung vor je ihren Verpackungsapparat (9) geführt werden, dass ein Beutel (7) bei jedem Verpackungsapparat (9) angebracht wird, wobei jeder Beutel eine Angabe des in der Wiegestufe für den jeweiligen Körper bestimmten Gewichts trägt, und dass die Körper mechanisch in ihren jeweiligen Beutel (7) angebracht werden.

2. Anlage zur Verpackung von Geflügelkörpern in Einzelbeutel, bestehend aus: einer Transportbahn (1) für einzeln an ihren Beinen aufgehängte Geflügelkörper (2) und einer mit der Transportbahn (1) verbundenen Wiegevorrichtung (5) zum Abwiegen der einzelnen Körper, gekennzeichnet durch Mittel zum Sammeln einer vorbestimmten Anzahl von Geflügelkörpern in einer Linie in einer Gruppe an einem Auslieferungsende (8) des genannten Transportbandes, eine Vielzahl von nahe diesem Auslieferungsende angebrachten Verpackungsapparaten (9), Überführungsmitteln (11, 15), die mit Greiforganen (12) versehen sind, um die genannten Körper aus genannter Gruppe zu greifen und en bloc von dem Auslieferungsende abzunehmen, und Überführungsorgane, um diese von den Greiforganen zu einer Stellung vor den genannten Verpackungsapparaten (9) zu befördern, Beutelmagazinemittel (6), um zu jedem Verpackungsapparat (9) einen Beutel (7) transportieren, der eine Angabe des Gewichts des entsprechenden Körpers trägt, das mit genannter Wiegevorrichtung (5) gewogen wurde, Mittel zur mechanischen Eingabe des jeweiligen Geflügel-

körpers in den jeweiligen Beutel, wobei die genannten Verpackungsapparate (9) so eingerichtet sind, dass sie die Körper gleichzeitig in ihre einzelnen Beutel (7) packen.

3. Anlage gemäss Anspruch 2, dadurch gekennzeichnet, dass das Überführungsaggregat mit einer Verschiebebahn (11) ausgestattet ist, entlang welcher die Greifer (12) beweglich sind, dass die Verschiebebahn (11) sich entlang dem Auslieferungsende (8) der Transportbahn, wo die Greifer (12) je ihren Geflügelkörper fassen können, und bis zu einer Position vor einer Reihe von Verpackungsapparaten (9) erstreckt, und dass die Greifer (12) dazu eingerichtet sind infolge einer Bewegung entlang der Verschiebebahn (11) eine Stellung vor jeweils einem Verpackungsapparat zwecks Überführung des abgenommenen Körpers zum Verpackungsapparat einzunehmen.

4. Anlage gemäss Anspruch 3, dadurch gekennzeichnet, dass für jeden Verpackungsapparat (9) ein Auslieferungsorgan vorgesehen ist, wobei sämtliche Auslieferungsorgane zu einer en-bloc-Entgegennahme der verpackten Körper von den Verpackungsapparaten, und einer gemeinsamen Auslieferung der Körper an eine Auslieferungsstation eingerichtet sind.

5. Anlage gemäss Anspruch 2, dadurch gekennzeichnet, dass die Überführungselemente (15) zu einer Überführung der von den Greifern (12) abgenommenen Körper (2) von einer hängenden Stellung in eine liegende Stellung, und zur Einlage der Körper (2) in letztgenannter Stellung in je ihren Verpackungsapparat (9) eingerichtet sind.

6. Anlage gemäss den Ansprüchen 3 und 5, dadurch gekennzeichnet, dass das Überführungsaggregat einen Schienenkörper (11) aufweist, der die verschiebbar entlang der Schiene gelagerten Greifer (12) trägt, und dass die Überführungselemente (15) dergestalt gemeinsam schwenkbar auf Schwenkarmen gelagert sind, dass sie von einer aufrechten Stellung, in welcher die Elemente (15) sich vor je ihrem Greifer (12) befinden, in eine abgesenkte Stellung schwenkbar sind, in der sie sich vor dem Einführungsende einer Anzahl in einer niedrigeren Ebene als dem Auslieferungsende der Transportbahn in einer Reihe angebrachter Verpackungsapparate (9) zur Einbringung der durch sie festgehaltenen Geflügelkörper (2) in je einen Verpackungsapparat (9) befinden, wobei die Überführungselemente (15) mit Halteorganen (16a, 16b, 16c) ausgestattet sind, die zum Festhalten der Geflügelkörper (2) während der Schwenkperiode im Wesentlichen in einer Relativstellung zu den Elementen (15), die der Relativstellung entspricht, in der die Körper von den Greifern (12) abgenommen werden, eingerichtet sind.

7. Anlage gemäss Anspruch 6, dadurch gekennzeichnet, dass die Halteorgane (16a, 16b, 16c) dazu eingerichtet sind die Geflügelkörper (2) festzuhalten, bis dieselben mittels eines Stössels (19) unter gleichzeitigem Zusammenstauen in einen Beutel (7) eingeschoben werden.

8. Anlage gemäss einem jeden der Ansprüche 5—7, dadurch gekennzeichnet, dass für das

Abgabeende eines jeden Verpackungsapparats (9) ein Entfernungsorgan (21) vorgesehen ist, wobei die Entfernungsorgane zur gemeinsamen Entfernung der gefüllten Beutel (7) von den Verpackungsapparaten (9) und zu ihrer Auslieferung an je ihr Verschlussaggregat (22) eingerichtet sind, wobei die Verschlussaggregate nach Verschliessen des gefüllten Beutels denselben an je sein Abtransportorgan (23) abliefern.

9. Anlage gemäss Anspruch 6, dadurch gekennzeichnet, dass die Überführungselemente (15) je aus länglichen Stützorganen (16a, 16b, 16c), beispielsweise Stangen bestehen, deren Länge mindestens dem äusseren Abstand zwischen den Beinen eines aufgehängten Geflügelkörpers entspricht, und die dazu eingerichtet sind durch eine Verschiebungsbewegung quer zur Schwenkebene (18) der Überführungselemente (15) von einer Stellung seitlich neben einem in den Greiforganen (12) aufgehängten Körper über dessen Beine hin zu einer Stellung gegenüber entgegengesetzten Seiten derselben geführt zu werden zwecks Festhaltens der Beine (3) zwischen den Stützelementen (16a, 16b, 16c).

Revendications

1. Procédé pour emballer des volailles individuellement dans des sacs, selon lequel on fait avancer des carcasses de volailles suspendues par leurs pattes individuellement et à une certaine distance les unes des autres sur un chemin de transport, on pèse chaque carcasse individuellement puis on les introduit dans des sacs sur lesquels est indiqué le poids ou la catégorie de poids, caractérisé en ce que l'on rassemble un nombre prédéterminé de carcasses en un lot de carcasses alignées (8) sur le chemin de transport, on enlève ce lot de carcasses en bloc (11, 12) du chemin de transport et on les transfère (15), en bloc, jusque devant un appareil d'emballage (9) particulier pour chaque carcasse du lot, on amène à chaque appareil d'emballage (9) un sac (7) portant l'indication du poids — déterminé dans l'opération de pesage — de la volaille concernée puis on introduit les carcasses mécaniquement dans leurs sacs individuels (7).

2. Installation pour emballer des volailles dans des sacs individuels, comprenant un chemin de transport (1) pour des carcasses de volailles (2) suspendues individuellement par leurs pattes, un appareil de pesage (5) associé au chemin de transport (1) et servant à peser les carcasses individuellement, caractérisée par des moyens pour le rassemblement d'un nombre prédéterminé de carcasses en un lot de carcasses alignées à l'extrémité de sortie (8) du chemin de transport, des appareils d'emballage (9) disposés près de cette extrémité de sortie, de moyens de transfert (11, 15) pourvus de préhenseurs (12) pour saisir les carcasses du lot et pour les enlever en bloc (11, 12) de l'extrémité de sortie (8), ainsi que d'éléments de transfert pour transférer les carcasses des préhenseurs jusque devant les appareils d'emballage (9), un magasin de sacs (6) qui

amène à chaque appareil d'emballage (9) un sac (7) portant une indication de poids qui correspond au poids déterminé dans l'appareil de pesage (5) pour la volaille concernée, de même que des moyens pour introduire les carcasses mécaniquement dans les sacs correspondants, les appareils d'emballage (9) étant conçus pour emballer les carcasses simultanément dans leurs sacs (7) respectifs.

3. Installation selon la revendication 2, caractérisée en ce que le mécanisme de transfert possède un chemin de positionnement (11) sur lequel sont disposés mobiles les préhenseurs (12), que ce chemin de positionnement (11) longe l'extrémité de sortie (8) du chemin de transport, où les préhenseurs (12) peuvent saisir chacun la carcasse de volaille (2) qui leur est attribuée, et s'étend jusque devant une rangée d'appareils d'emballage (9), et que les préhenseurs (12) sont agencés pour amener les carcasses (2) par leurs déplacements sur le chemin de positionnement (11) jusque devant leurs appareils d'emballage (9) individuels en vue du transfert de la carcasse (2) enlevée à l'appareil d'emballage (9).

4. Installation selon la revendication 3, caractérisée en ce qu'un organe de décharge individuel est prévu pour chaque appareil d'emballage (9) et que tous ces organes de décharge sont agencés pour recevoir en bloc toutes les carcasses de volailles emballées des appareils d'emballage et pour les délivrer conjointement à un poste de décharge.

5. Installation selon la revendication 2, caractérisée en ce que les éléments de transfert (15) sont agencés pour amener les carcasses (2) enlevées par les préhenseurs (12) d'une position suspendue à une position couchée et pour introduire les carcasses (2) en cette dernière position dans leur appareil d'emballage (9) particulier.

6. Installation selon les revendications 3 et 5, caractérisée en ce que le mécanisme de transfert comporte un rail (11) supportant les préhenseurs (12), disposés mobiles sur le rail, et que les éléments de transfert (15) sont disposés oscillants conjointement sur des bras oscillants, entre une

position relevée où les éléments de transfert (15) se trouvent devant leur préhenseur (12) particulier et une position abaissée où ils se trouvent devant l'extrémité réceptrice d'une rangée d'appareils d'emballage (9) placés à un niveau plus bas que l'extrémité de sortie du chemin de transport, en vue de l'introduction des carcasses (2) tenues par les éléments de transfert dans leur appareil d'emballage (9) particulier, les éléments de transfert (15) étant pourvus de moyens de maintien (16a, 16b, 16c) pour tenir les carcasses (2) pendant le mouvement d'oscillation, au cours duquel les carcasses conservent sensiblement la position par rapport aux éléments de transfert (15) à laquelle elles sont enlevées des préhenseurs (12).

7. Installation selon la revendication 6, caractérisée en ce que les moyens de maintien (16a, 16b, 16c) maintiennent les carcasses (2) jusqu'à ce qu'un piston (19) les pousse dans un sac (7) en réduisant leur encombrement.

8. Installation selon l'une quelconque des revendications 5 à 7, caractérisée en ce qu'un organe d'enlèvement (21) est prévu pour l'extrémité de sortie de chaque appareil d'emballage (9), en vue de l'enlèvement collectif des sacs (7) remplis des appareils d'emballage (9) et de leur délivrance à leur mécanisme de fermeture (22) particulier, lequel délivre le sac rempli et fermé à son organe d'enlèvement particulier (23).

9. Installation selon la revendication 6, caractérisée en ce que chaque élément de transfert (15) est constitué de supports oblongs (16a, 16b, 16c), sous forme de tiges par exemple, dont la longueur correspond au moins à l'écartement hors tout des pattes d'une carcasse de volaille suspendue et qui sont agencés de manière que, par un mouvement transversal au plan (18) d'oscillation des éléments de transfert, depuis une position à côté d'une carcasse suspendue à un préhenseur (12), ils soient avancés autour et au-delà des pattes (3) de la carcasse, de façon que les pattes (3) soient prises et maintenues fermement dans les supports oblongs (16a, 16b, 16c).

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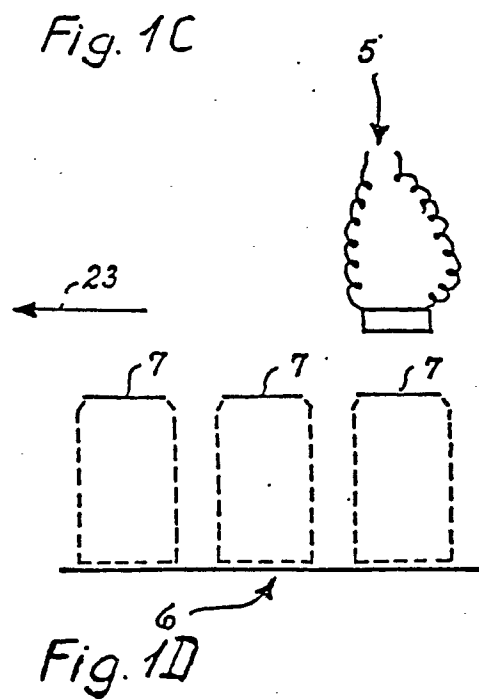
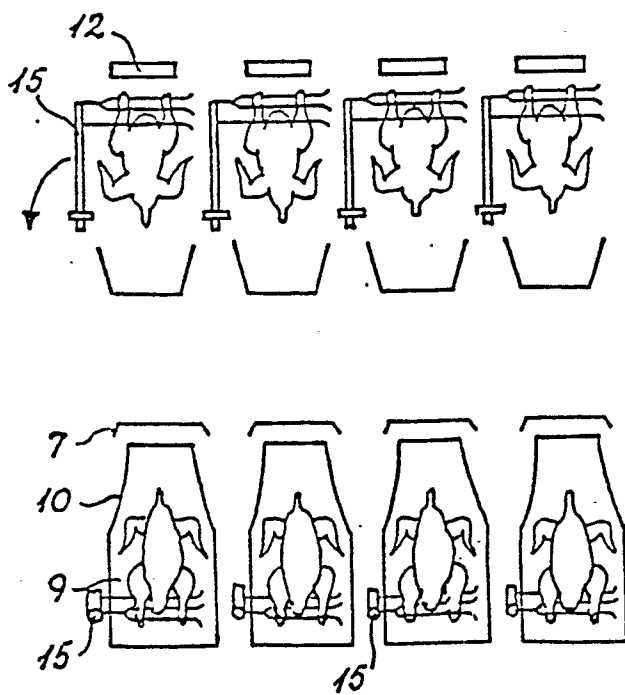
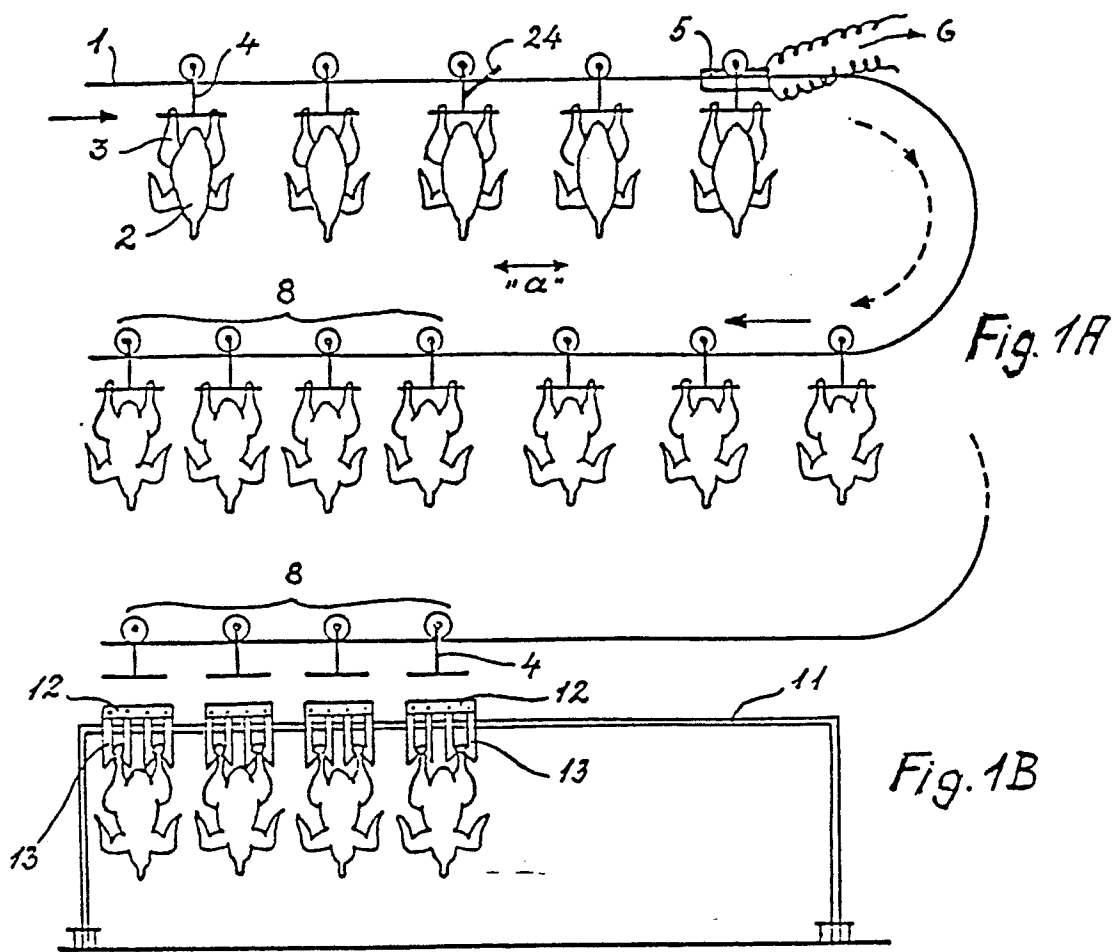
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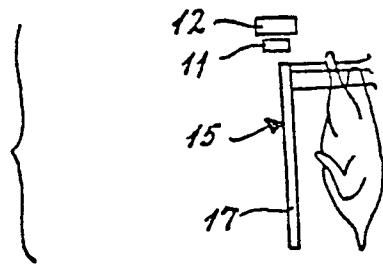


Fig. 2A

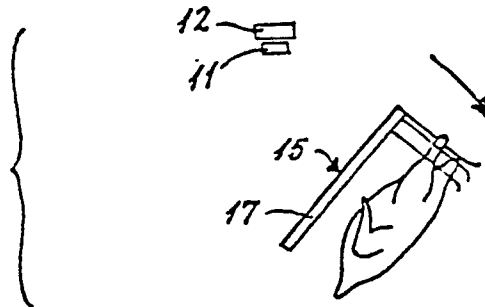


Fig. 2B

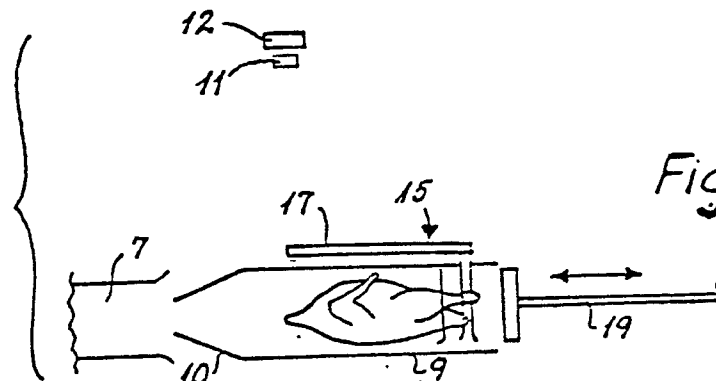


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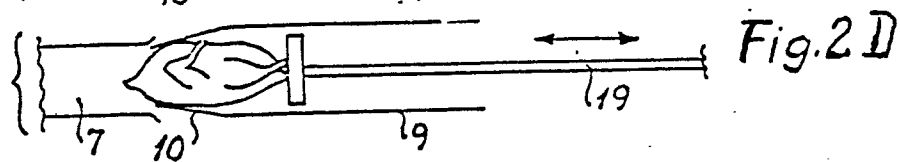


Fig. 2D

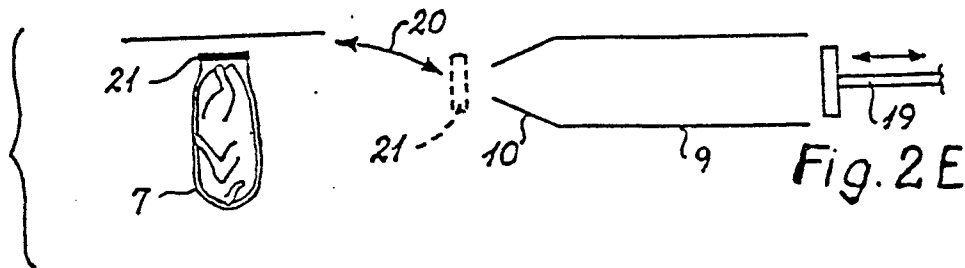


Fig. 2E

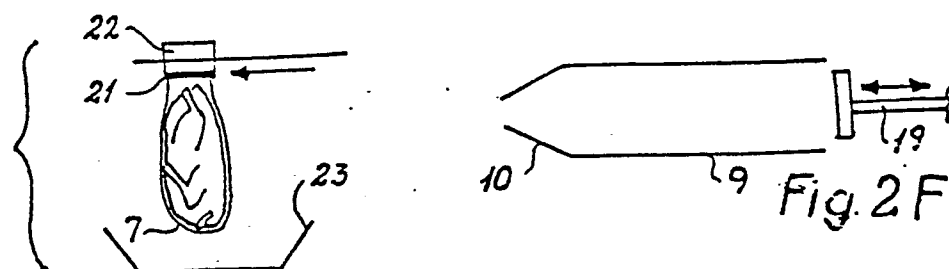


Fig. 2F

Fig. 3

