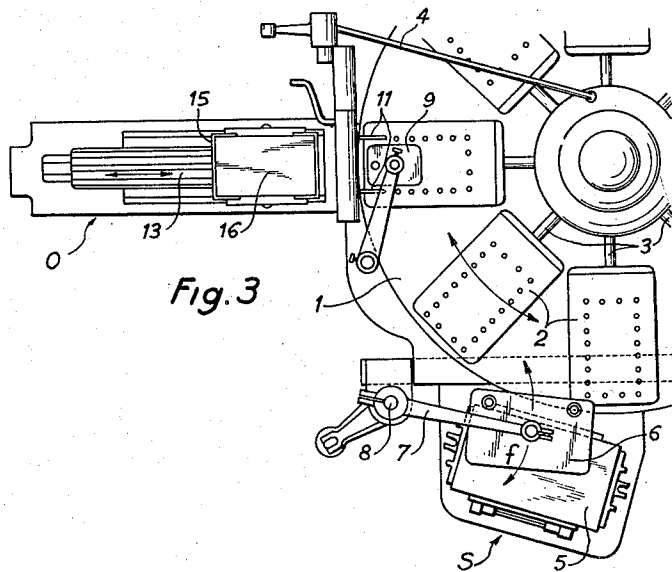
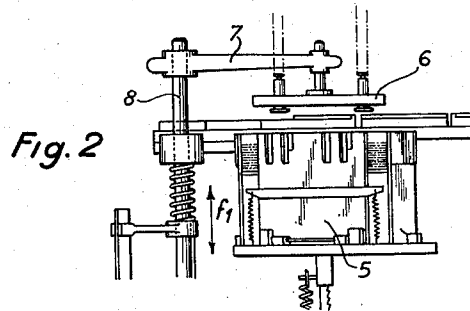
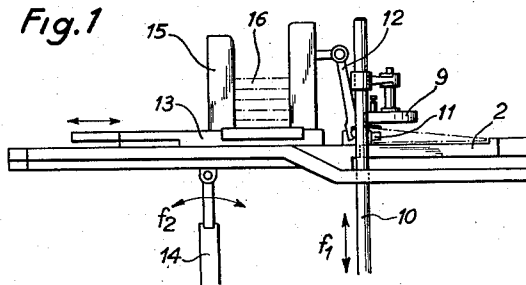


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 APPARATUS FOR INTRODUCING PARALLELOPIPEDIC
 ARTICLES INTO BAGS OF PLASTIC MATERIAL
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APPARATUS FOR INTRODUCING PARALLELO- PIPEDIC ARTICLES INTO BAGS OF PLASTIC MATERIAL

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2 Claims. (Cl. 53—188)

The present invention relates to an apparatus for introducing parallelepipedic articles into bags of plastic material.

The introduction of articles of a parallelepipedic shape into bags of plastic material is a comparatively difficult and tedious operation which has been generally executed by hand hitherto by means of a slide; such operation is consequently slow and expensive.

It is one object of the present invention to provide an apparatus for introducing parallelepipedic articles into bags of plastic material, which provides an increase in the speed of such an operation with a view to making it cheaper by the utilization of an apparatus particularly intended for such purposes and the working of which is particularly easy. This apparatus includes substantially a distributor inside which the bags are stacked, a first suction member, the size of which is equal to that of the bag and which ensures the conveyance of the latter by means of suction into a position over a turret plate provided with suction means holding the bag in position on this plate, a second suction member of a special shape assuming a vertical translational movement with a view to raising and opening the input end of the bag. Two flaps assume a horizontal movement which movement serves the introduction of the article considered into the open bag, while adjusting accurately the breadth of its opening, and lastly a sliding push-member adapted to urge into the bag the lowermost of the articles stacked inside a second distributor, while a mechanism controls synchronously the movements of the various parts to ensure on the one hand their accurate succession within an operative cycle including an operative period and the return of said parts into their original positions and on the other hand, the succession of the same cycles after rotation of the turret plate by predetermined fractions of a revolution.

With these and other objects in view which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawings, in which:

Figure 1 is a front elevation of the section of the apparatus ensuring a thrust of the article into the bag;

Fig. 2 is a front elevation of the section of the apparatus feeding the bag onto the turret plate; and

Fig. 3 is a top plan view of the entire apparatus illustrating the succession of the steps of the operative cycle of the apparatus.

Referring now to the drawing, and in particular to Fig. 3, the apparatus for the introduction of articles of a parallelepipedic shape, such as pieces of gruyere cheese into bags of transparent plastic, material for instance, is constituted chiefly by a turret plate 1 including a plurality of carriers 2, eight in the embodiment illustrated, the carrier 2 being arranged radially and being connected by means of pipes 3 with an annulus distributing compressed air which is fed to said annulus by a feeding pipe 4, and the annulus being provided with means for breaking the

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vacuum produced inside the carrier 2 acting as suction cups.

During the rotation of the turret 1, which rotation includes fractions of a revolution separated by stoppages, each of the carriers 2 registers in succession with the station S for the positioning of a bag on it, with a station O for the introduction of an article into the bag and with a releasing station for releasing the system including the bag and the article inserted inside the latter.

The station S (Fig. 2) rigid with the frame includes a distributor 5 inside which the bags are stacked, a plate 6 forming a suction member, the size of which is the same as that of the bag, a lever 7 carrying said plate, arranged horizontally and fitted to a vertical shaft 8, said lever being controlled vertically in both directions shown by the arrow f_1 and furthermore angularly in both directions shown by the arrow f (Fig. 3).

The suction member 6 has for its object to suck the bag off the upper end of the stack inside the distributor 5 which is provided with means for raising and holding the bags, the suction member 6 conveying the bags adhering thereto into a location over the cooperating sucking cup or carrier 2 on the turret 1 and returning then over the distributor 5.

The further station O, also rigid with the frame (Figs. 1 and 3), includes a suction member 9 carried by a vertical shaft 10 adapted to be shifted vertically in the direction of the arrow f_1 of Fig. 1, a system of two flaps 11 adapted to reciprocate radially of the turret plate under the action of a lever 12, a push member 13 assuming a reciprocating horizontal movement, as shown by the arrow f_2 under the control of the member 14 and lastly a distributor 15 inside which are stacked the articles 16 which drop through gravity and in succession onto the push member 13.

The suction member 9 acts on the edge of the upper wall of the bag, the lower wall of which is held against the cooperating suction member constituted by the carrier 2 on the plate 1 so that said bag opens while the two flaps 11 enter the opening thus obtained in the bag and define its breadth accurately.

The lowermost article 16 of the stack of articles is then dropped onto the push member 13 which urges said article forwardly into the bag which has thus been opened. The vacuum is now broken at 9 and the flaps 11 recede together with the push member 13. The plate 1 revolves then by a fraction of a revolution for a further operation while a further bag is fed at the station S onto the turret plate 1 and the next cycle of operation is started.

Of course, the different movements are synchronized so as to provide for a complete packaging of the article, chiefly when the latter is constituted by a piece of gruyere cheese to be wrapped inside a completely closed bag; the number of sucking cups or carriers on the turret corresponds to the number of operations to be foreseen including the delivery of the packaged article.

Obviously, the arrangement for the introduction of a parallelepipedic article inside a bag is applicable indifferently to any type of article and bag whatever may be the material forming it.

While I have disclosed one embodiment of the present invention, it is to be understood that this embodiment is given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claims.

I claim:

1. An apparatus for packaging parallelepipedic articles into bags of plastic material comprising a rotary turret, at least one bag-feeding station registering with the periphery of the turret, a bag-filling station cooperating with each bag-feeding station and registering with

a point of the turret periphery beyond that registering with the corresponding bag-feeding station, a plurality of suction-operated carriers fitted along the periphery of said turret to register in succession with said respective stations, a bag distributor carried by each bag-feeding station and said bags being stacked in said bag-feeding station in their empty condition, a suction-operated member carried by said bag-feeding station and adapted to move between said distributor and said suction-operated carrier of said turret facing said distributor to shift through transient suction the uppermost bag of said stack onto said last-mentioned carrier, a second suction-operated member at said bag-filling station adapted to assume a vertical translational movement to raise the upper surface of the bag on the suction carrier registering therewith to open said bag wide, a pair of spaced flaps at the bag-filling station adapted to move between an inoperative position outside the location of the open bag on its carrier registering with the bag-filling station and an operative position inside said bag, a second distributor disposed at the bag-filling station, the latter stacking the articles to be packaged inside said bags, a push member slidably engaging said bag in its open condition on said carrier to shift the lowermost of said stacked articles in said second distributor into the open bag between said flaps therein and means synchronously controlling the movements and operation of said suction members, said flaps and said push member to provide for their operation and their return into their inoperative position and for rotating after each operative cycle said turret by a predetermined fraction of a revolution corresponding to the angular distance between two cooperating bag-feeding and bag-filling stations.

2. An apparatus for packaging parallelepipedic articles into bags of plastic material comprising a rotary turret, at least one bag-feeding station registering with the periphery of said turret, a bag-filling station cooperating with each bag-feeding station and registering with a point of the turret periphery beyond that registering with the corresponding bag-feeding station, a plurality of vacuum-operated carriers fitted along the periphery of said turret to register in succession with said respective

stations, a bag distributor carried by each bag-feeding station and said bags being stacked in said bag-feeding station in their empty condition, a vacuum-operated member carried by said bag-feeding station and to move between said distributor and said vacuum-operated carrier of said turret facing said distributor to shift through transient suction the uppermost bag of said stack onto the last-mentioned carrier, a second vacuum-operated member at said bag-filling station adapted to assume a vertical translational movement to raise the upper surface of said bag on said vacuum-operated carrier registering therewith to open said bag wide, a pair of spaced flaps at said bag-filling station adapted to move between an inoperative position outside the location of the open bag on its carrier registering with said bag-filling station and an operative position inside said bag, a second distributor at said bag-filling station, said articles to be packaged inside said bags being stacked in said bag-filling station, a push member slidably engaging said bag in its open condition on said carrier to shift the lowermost article of said stacked articles in said second distributor into the open bag between said flaps therein, and means synchronously controlling the application and breaking of vacuum on said vacuum-operated members and said carriers and the movements and operation of said vacuum-operated members, said flaps and said push member to provide for their operation and their return into their inoperative position and for rotating after each operative cycle said turret by a predetermined fraction of a revolution corresponding to the angular distance between two cooperating bag-feeding and bag-filling stations.

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