

FORM 1

REGULATION 9

APPLICATION ACCEPTED AND AMENDMENTS
ALLOWED 15-2-80

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

533271

APPLICATION FOR A STANDARD PATENT

We, FRISCO-FINDUS AG, a Swiss body corporate of Rorschach, Switzerland, hereby apply for the grant of a Standard Patent for an invention entitled:-

"DISTRIBUTING APPARATUS"

which is described in the accompanying Complete Specification.

Details of basic application:-

Number: 87102891.6

Country: The European Patent Office (designating Sweden)

Date: 28th February, 1987

Our address for service is:

SHELSTON WATERS
55 Clarence Street
SYDNEY, N.S.W. 2000.

DATED this 12th day of February, 1988

FRISCO-FINDUS AG

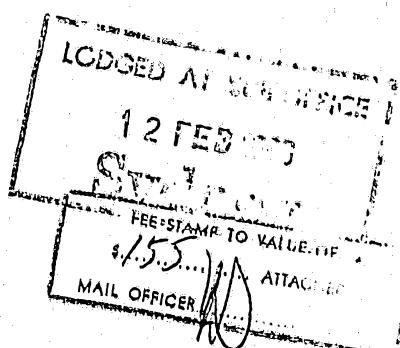
by

Fellow Institute of Patent Attorneys of Australia
of SHELSTON WATERS

To: The Commissioner of Patents
WODEN A.C.T. 2606

File: 150E

Fee: \$155.00



CONVENTION APPLICATION BY A COMPANY

FORM 8 - REGULATION 12 (2)

AUSTRALIA PATENTS ACT 1952

DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT

In support of the Convention Application made by.....

(a) Here Insert (in full)
Name of Company.

(a) FRISCO-FINDUS AG

(hereinafter referred to as "Applicant") for a patent for an Invention entitled:

(b) Here Insert Title of
Invention.

(b) "DISTRIBUTING APPARATUS"

(c) and (d) Here Insert
Full Name and Address
of Company Official
authorised to make
declaration.

(c) Andrzej Ledzion
of (d) En La Priauraz, 1807 Blonay, Switzerland

do solemnly and sincerely declare as follows:

1. I am authorised by Applicant to make this declaration on its behalf.

(e) Here Insert Basic
Country followed by date
of Basic Application.

2. The basic Application(s) as defined by section 141 of the Act was / were made
The European Patent Office 28th February, 1987
In (e) (Designating..... on the day of
Sweden) by (f) FRISCO-FINDUS AG

(f) Here Insert Full
Name(s) of Applicant(s)
in Basic Country.

In on the day of 19
by
In on the day of 19
by
In on the day of 19
by
In on the day of 19
by

(g) Here Insert (in full)
Name and Address of
actual Inventor or
Inventors.

3. (g) Gerd KARLSSON of Sjoevaegen 2, 59095 Loftahammar,
Sweden and Kurt WIEBE, of Muraregatan 5, 26700 Bjuv,
Sweden

..... is/are
the actual Inventor(s) of the Invention and the facts upon which Applicant is entitled to make the
Application are as follows:

See reverse side of this
form for guidance in
completing this part.

Applicant is the Assignee of the said Inventors

4. The basic Application(s) referred to in paragraph 2 of this Declaration was/were the first
Application(s) made in a Convention country in respect of the Invention, the subject of the
Application.

DECLARED at Rorschach, Switzerland

this 8th day of APRIL 1988

(h) Personal Signature
of Declarant (c) (no seal,
witness or legalisation).

(12) PATENT ABRIDGMENT (11) Document No. AU-B-11687/88
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 596271

(54) Title

DISTRIBUTING APPARATUS

International Patent Classification(s)

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(71) Applicant(s)

FRISCO-FINDUS A.G.

(72) Inventor(s)

GERD KARLSSON; KURT WIEBE

(74) Attorney or Agent

SHELSTON WATERS

(56) Prior Art Documents

US 2741999

US 3135225

(57) Claim

1. An apparatus for distributing quasi-spherical objects on to a food product characterised in that it comprises :

a) a trough for receiving said objects provided with at least one discharge opening in a wall;

b) situated below the trough, a horizontal strip of flexible material having at least one aperture which may be stationary or adapted to reciprocate vertically;

c) positioned above an aperture in the horizontal strip of flexible material, a pusher which may be stationary or adapted to reciprocate vertically;

d) extending from the trough to the horizontal strip of flexible material, a chute positioned with its upper

opening facing a discharge opening in the wall of the trough and its lower opening above an aperture in the strip of flexible material;

- e) positioned adjacent to and inside the wall of the trough, a plate provided with at least one aperture and adapted to rotate so that an aperture in the plate comes into alignment with a discharge opening in the wall of the trough and the upper opening of the chute, enabling one of the said objects to pass through the discharge opening of the trough into the chute and fall through the lower opening to lie on the border of an aperture of the strip of flexible material;
- f) positioned at a constant distance beneath the strip of flexible material a horizontal table which may be stationary or adapted to reciprocate vertically and
- g) means for feeding a food product onto the horizontal table provided that one or both of the pusher and the horizontal table are adapted to reciprocate vertically converging firstly so causing a said object lying on the border of an aperture in the strip of flexible material to be forced by the pusher through the aperture onto the food product and then diverging.

5. A process for distributing quasi-spherical objects on to a food product characterised in that the said objects are placed in a trough provided with at least one discharge opening in a side wall and, positioned adjacent to and inside the side wall, a plate provided with at least one aperture and adapted to rotate so that when the aperture in the plate comes into alignment with the discharge opening, an object passes through the aperture and discharge opening into a chute through which it falls and

(11) AU-B-11687/88
(10) 596271

-3-

emerges from the lower opening to lie on the border of an aperture in a horizontal strip of flexible material, above which aperture is a pusher, a food product is fed onto a horizontal table positioned at a constant distance beneath the strip of flexible material so that it lies beneath an aperture in the strip whereupon one or both of the pusher and the horizontal table reciprocate vertically converging firstly to cause the pusher to force a said object lying on the border of an aperture in the strip of flexible material through the aperture onto the upper surface of the food product and then diverging to separate the food product with the quasi-spherical object pressed on its upper surface, from the horizontal strip of flexible material.

COMMONWEALTH OF AUSTRALIA

FORM 10

PATENTS ACT 1952

COMPLETE SPECIFICATION

FOR OFFICE USE:

Application Number: **Class** **Int.Class**
Lodged:

Complete Specification Lodged:
Accepted:
Published:

596271

Priority:

Related Art:

Name of Applicant: FRISCO-FINDUS AG

Address of Applicant: Rorschach, Switzerland

Actual Inventor: Gerd Karlsson and Kurt Wiebe

Address for Service: SHELSTON WATERS, 55 Clarence Street, Sydney

Complete Specification for the Invention entitled:

"DISTRIBUTING APPARATUS"

The following statement is a full description of this invention, including the best method of performing it known to me/us:-

Distributing apparatus

This invention relates to a distributor for spherical or quasi-spherical objects which is intended in particular for the application of cherries, pralines, nuts or other similar articles used to enhance the taste and appearance of, and/or to decorate, food products such as confectionery articles, biscuits or ice creams.

Of the known distributors for quasi-spherical objects, the most widely used are of the pneumatic or mechanical type. Pneumatic distributors comprise either means for randomly withdrawing one of the quasi-spherical objects by suction from a pile or, by contrast, means for pulsing said objects by means of compressed air from cavities into which they have previously been introduced and, in either case, for projecting said object onto the receiving product. Mechanical distributors which are very widely used include versions in which needles take up the objects to be placed on the receiving product from a reserve and subsequently transfer them from this reserve to the product and deposit them thereon.

These known distributors, whether of one type or the other, are attended by the disadvantage of generally poor reliability in operation. In addition, mechanical distributors equipped with needles involve a real danger so far as the food products are concerned in that needles or fragments of needles can break or become detached and remain in the product without any possibility of detection at the moment the incident occurs, making the end product particularly dangerous to eat. In view of these disadvantages, distribution is still generally done by hand but this involves considerable labour costs.

The present invention obviates these disadvantages by providing an apparatus, for distributing quasi-spherical objects, such as cherries, nuts or pralines, preferably not sticky, and applying them to food products, which is 5 both simple and reliable.

Accordingly, the present invention provides an apparatus for distributing quasi-spherical objects on to a food product characterised in that it comprises :

10

- a) a trough for receiving said objects provided with at least one discharge opening in a wall;
- b) situated below the trough, a horizontal strip of 15 flexible material having at least one aperture which may be stationary or adapted to reciprocate vertically;
- c) positioned above an aperture in the horizontal strip 20 of flexible material, a pusher which may be stationary or adapted to reciprocate vertically;
- d) extending from the trough to the horizontal strip of 25 flexible material, a chute positioned with its upper opening facing a discharge opening in the wall of the trough and its lower opening above an aperture in the strip of flexible material;
- e) positioned adjacent to and inside the wall of the 30 trough, a plate provided with at least one aperture and adapted to rotate so that an aperture in the plate comes into alignment with a discharge opening in the wall of the trough and the upper opening of the chute, enabling one of the said objects to pass through the 35 discharge opening of the trough into the chute and

fall through the lower opening to lie on the border of an aperture of the strip of flexible material;

5 f) positioned at a constant distance beneath the strip of flexible material a horizontal table which may be stationary or adapted to reciprocate vertically and

10 g) means for feeding a food product onto the horizontal table provided that one or both of the pusher and the horizontal table are adapted to reciprocate vertically converging firstly so causing a said object lying on the border of an aperture in the strip of flexible material to be forced by the pusher through the aperture onto the food product and then diverging.

15 Since the horizontal table is positioned at a constant distance beneath the strip of flexible material, the latter reciprocates when the horizontal table reciprocates and is stationary when the horizontal table is stationary.

20 Preferably the trough is elongated with a plurality of discharge openings on each side wall.

25 Desirably, a means for agitating the quasi-spherical objects is present in the trough, for example a longitudinally reciprocating plate provided with upstanding projections positioned on the base of the trough.

30 The strip of flexible material is conveniently made of rubber or soft plastics material, and preferably it is provided with a plurality of apertures, conveniently the same number of apertures as discharge openings of the trough. It will be understood that the size of the apertures in the flexible strip is such that they are too 35 small to allow the quasi-spherical objects to fall.

through under gravity but large enough to enable the objects to be forced through under pressure, for instance, by a pusher.

5 The plate is preferably positioned inside the side wall of the trough provided with at least one discharge opening, and is preferably provided with a plurality of apertures arranged in a circle. Advantageously, the plate, itself, is substantially circular.

10 The lower end of the chute may comprise a hopper, the lower opening of which lies above an aperture in the strip of flexible material and which serves to guide the quasi-spherical objects towards the aperture. The hopper 15 may be movable so that it may reciprocate when the horizontal table and the strip of flexible material reciprocate.

20 The food product may conveniently be fed onto and discharged from the horizontal table by means of a chain. The food product may be a confectionery product such as a biscuit, cake or ice-cream.

25 The present invention also provides a process for distributing quasi-spherical objects on to a food product characterised in that the said objects are placed in a trough provided with at least one discharge opening in a side wall and, positioned adjacent to and inside the side wall, a plate provided with at least one aperture and adapted to rotate so that when the aperture in the plate 30 comes into alignment with the discharge opening, an object passes through the aperture into a chute through which it falls and emerges from the lower opening to lie on the border of an aperture in a horizontal strip 35 of flexible material, above which aperture is a pusher, a

food product is fed onto a horizontal table positioned at a constant distance beneath the strip of flexible material so that it lies beneath an aperture in the strip whereupon one or both of the pusher and the horizontal table 5 reciprocate vertically, converging firstly to cause the pusher to force a said object lying on the border of an aperture in the strip of flexible material through the aperture onto the upper surface of the food product and then diverging to separate the food product with the 10 quasi-spherical object pressed on its upper surface, from the horizontal strip of flexible material.

Preferably, the operations are synchronised so that when 15 a quasi-spherical object has fallen on the border of an aperture in the strip of flexible material and a food product has been fed onto the horizontal table, the pusher and the horizontal table converge to press the said object onto the food product and then diverge. The food product may then be removed by automatic means and 20 the cycle is then repeated. Conveniently a plurality of quasi-spherical objects are pressed onto a corresponding number of food products in each cycle.

The quasi-spherical object is usually pressed firmly onto 25 the food product and may be partially embedded in the food product.

The present invention will now be further illustrated by way of example with reference to the accompanying drawings 30 in which

Figure 1 is a diagrammatic transverse section of the apparatus showing a nut lying on the border of an aperture in a horizontal strip of flexible material;

Figures 2 and 3 are diagrammatic transverse sections of the lower part of the apparatus each showing a nut partially embedded in a biscuit;

5 Figure 4 is a diagrammatic side view of part of the apparatus;

Figure 5 is a diagrammatic view looking in the direction A-A of Figure 4; and

10 15 Figure 6 is a diagrammatic view looking in the direction B-B of Figure 4.

Referring to the drawings, the apparatus comprises a trough 10 having side walls 11 with discharge openings 12, circular plates 13 having apertures 14, a reciprocating plate 15 provided with upstanding lugs 16, chutes 17 having inlet openings 18 and outlet openings 19, a stainless sheet metal hopper 20 having a lower opening 21, guides 22, pusher 23, a rubber strip 24 with apertures 25, and a horizontal table 26. Also shown in the drawings are nuts 27 and biscuits 28.

25 30 35 In operation, the trough 10 is filled with nuts 27 which are vibrated by the plate 15 reciprocating in the direction of the arrows X-X in Figures 4 and 5 and the circular plate 13 rotates. When the apertures 14 of the circular plates come into alignment with respective adjacent discharge openings 12 and inlet openings 18, nuts are discharged from the trough, one nut through each discharge opening, pass through the respective inlet openings 18 into the chutes 17, fall by gravity through the outlet openings 19 and through the hopper 20 from which they fall through the lower opening 21 whereupon they are guided by the guides 22 so that they come to rest on the borders of

the apertures 25, one for each aperture. The biscuits 28 are fed onto the horizontal table 26 (from left to right in Figures 2 and 3) by means of an intermittently moving chain (not shown) so that they lie below the rubber strip 24, one biscuit immediately beneath an aperture 25 respectively.

In the embodiment illustrated in Figure 2, the horizontal table 26 and the rubber strip 24 are stationary and when a nut 27 has come to rest on an aperture 25 and a biscuit 28 has come to lie immediately beneath the aperture, the chain stops and the pusher 23, driven by a step motor (not shown) then descends to press against the nut and force it through the aperture 25 in the rubber strip 24 and to embed it in the upper surface of the biscuit 28. The pusher then ascends to release the biscuit with the nut embedded therein, which is then transported away by the chain.

In the embodiment illustrated in Figure 3, the horizontal table 26 reciprocates with the rubber strip and hopper and the pusher 23 is stationary. When the horizontal table is in its lower position a biscuit 28 is fed onto it. When a nut 27 has come to rest on an aperture 25 of the rubber strip which is also in its lower position and a biscuit has come to lie immediately beneath the aperture, the chain stops and the horizontal table together with the rubber strip and hopper ascend to their upper positions causing the nut to be forced by the stationary pusher through the aperture 25 in the rubber strip 24 and become embedded in the upper surface of the biscuit. The horizontal table, rubber strip and hopper then descend to their lower positions, the horizontal table carrying with it the biscuit with the nut embedded therein, which is then transported away by the chain.

All the operations are synchronised by conventional means.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. An apparatus for distributing quasi-spherical objects
5 on to a food product characterised in that it comprises :
 - a) a trough for receiving said objects provided with at least one discharge opening in a wall;
 - 10 b) situated below the trough, a horizontal strip of flexible material having at least one aperture which may be stationary or adapted to reciprocate vertically;
 - 15 c) positioned above an aperture in the horizontal strip of flexible material, a pusher which may be stationary or adapted to reciprocate vertically;
 - 20 d) extending from the trough to the horizontal strip of flexible material, a chute positioned with its upper opening facing a discharge opening in the wall of the trough and its lower opening above an aperture in the strip of flexible material;
 - 25 e) positioned adjacent to and inside the wall of the trough, a plate provided with at least one aperture and adapted to rotate so that an aperture in the plate comes into alignment with a discharge opening in the wall of the trough and the upper opening of the chute, enabling one of the said objects to pass through the discharge opening of the trough into the chute and fall through the lower opening to lie on the border of an aperture of the strip of flexible material;
 - 35 f) positioned at a constant distance beneath the strip of

flexible material a horizontal table which may be stationary or adapted to reciprocate vertically and

5 g) means for feeding a food product onto the horizontal table provided that one or both of the pusher and the horizontal table are adapted to reciprocate vertically converging firstly so causing a said object lying on the border of an aperture in the strip of flexible material to be forced by the pusher through the 10 aperture onto the food product and then diverging.

15 2. An apparatus according to claim 1 characterised in that the trough is elongated with a plurality of discharge openings on each side wall.

20 15 3. An apparatus according to claim 1 characterised in that the horizontal strip of flexible material is provided with the same number of apertures as discharge openings of the trough.

25 20 4. An apparatus according to claim 1 characterised in that the plate is positioned inside the side wall of the trough provided with at least one discharge opening and is provided with a plurality of apertures arranged in a circle.

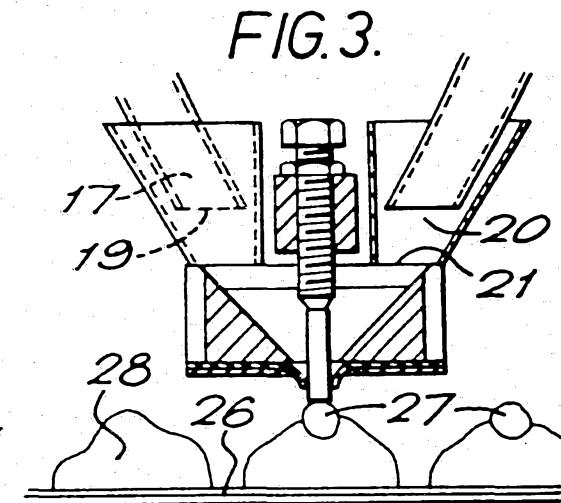
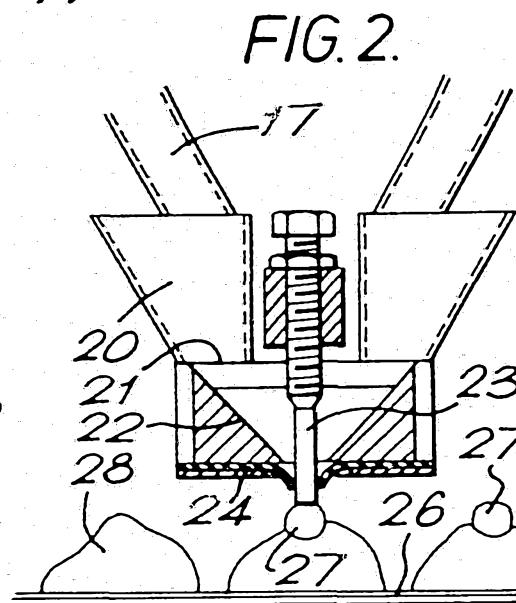
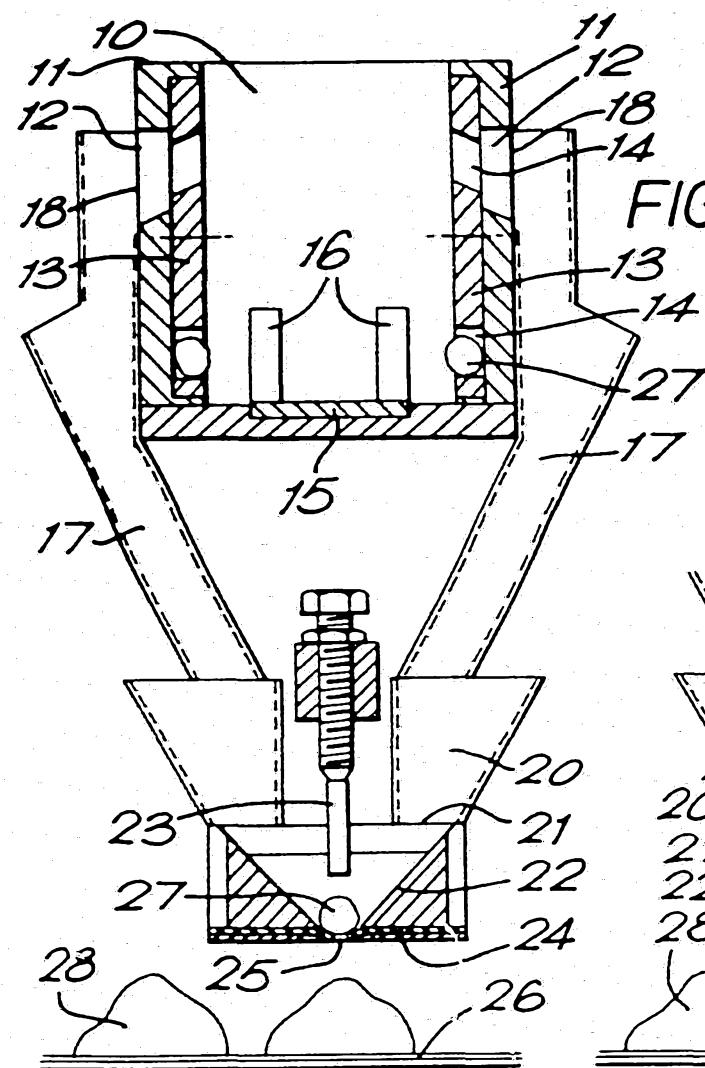
30 35 5. A process for distributing quasi-spherical objects on to a food product characterised in that the said objects are placed in a trough provided with at least one discharge opening in a side wall and, positioned adjacent to and inside the side wall, a plate provided with at least one aperture and adapted to rotate so that when the aperture in the plate comes into alignment with the discharge opening, an object passes through the aperture and discharge opening into a chute through which it falls and

emerges from the lower opening to lie on the border of an aperture in a horizontal strip of flexible material, above which aperture is a pusher, a food product is fed onto a horizontal table positioned at a constant distance beneath the strip of flexible material so that it lies beneath an aperture in the strip whereupon one or both of the pusher and the horizontal table reciprocate vertically converging firstly to cause the pusher to force a said object lying on the border of an aperture in the strip of flexible material through the aperture onto the upper surface of the food product and then diverging to separate the food product with the quasi-spherical object pressed on its upper surface, from the horizontal strip of flexible material.

DATED this 12th day of February, 1988

FRISCO-FINDUS AG

Attorney: WILLIAM S. LLOYD
Fellow Institute of Patent Attorneys of Australia
of SHILLSTON WATERS



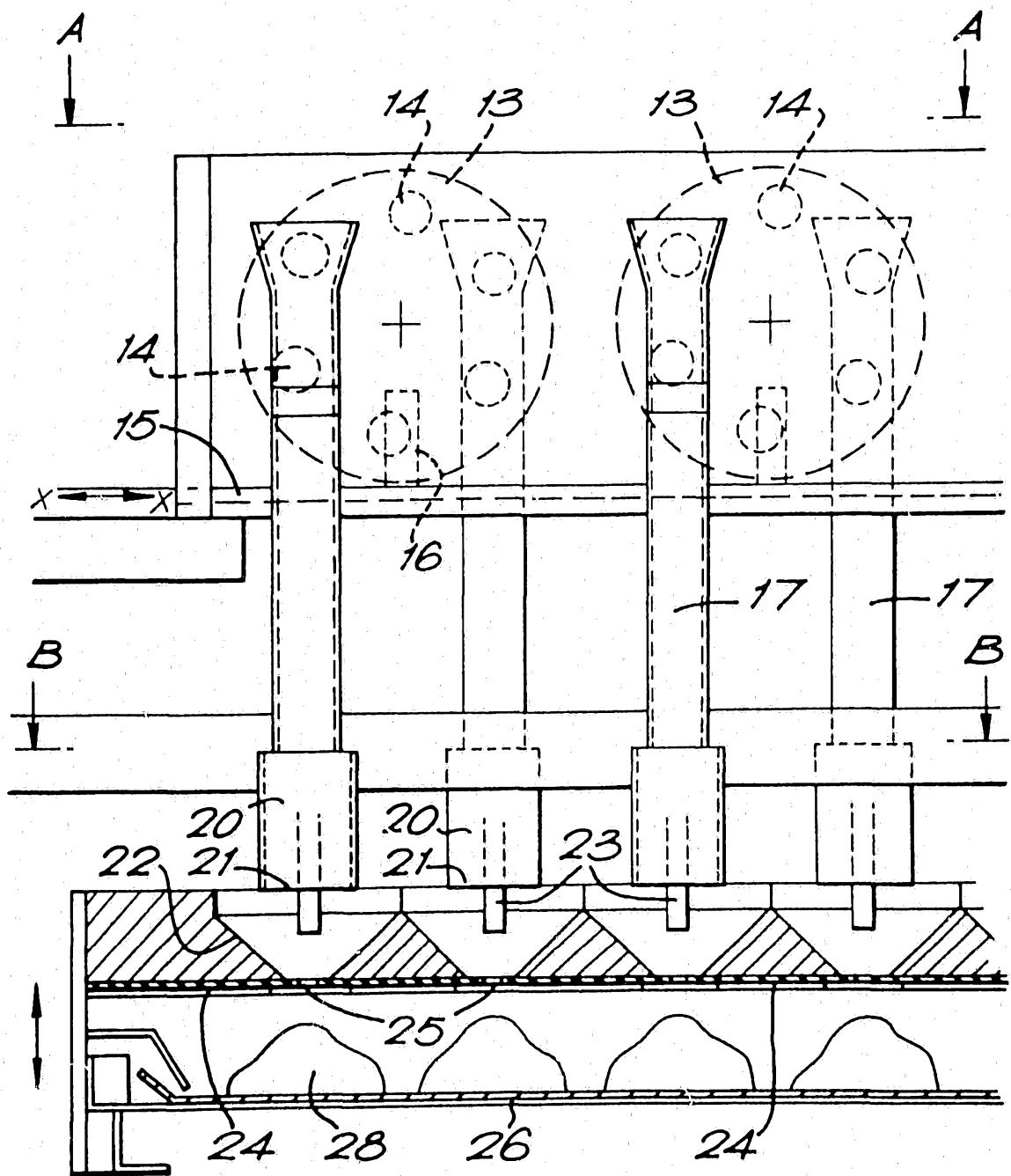


FIG. 4.

FIG.5.

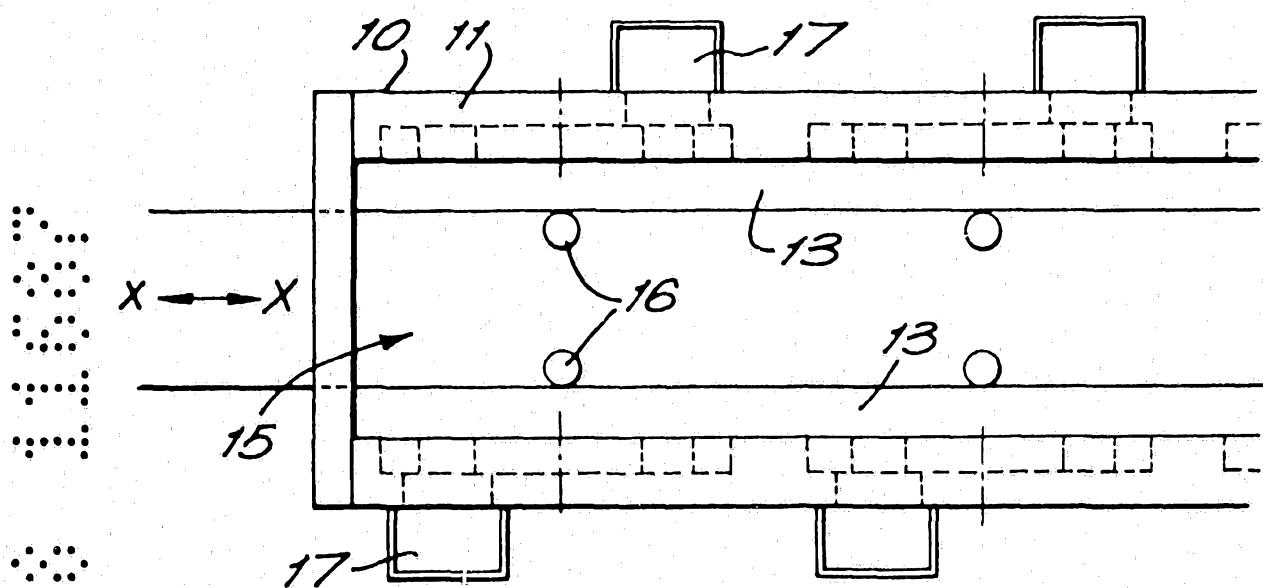


FIG.6.

