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(54) Title: APPARATUS AND METHOD FOR PLACING A SCOOP IN A CONTAINER

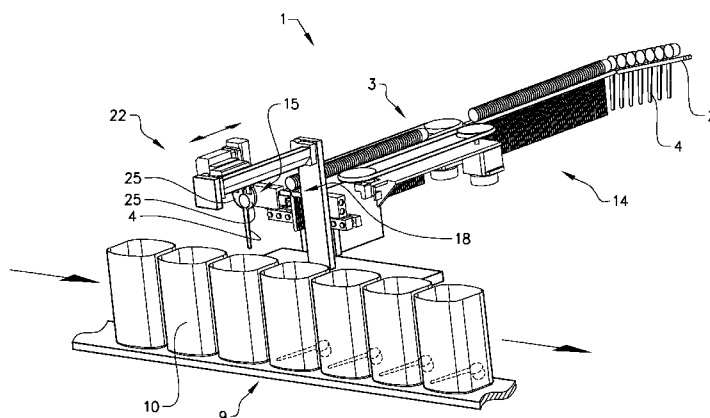


FIG. 1

(57) Abstract: The invention concerns an apparatus for automatically placing a scoop in a container, where the apparatus comprises a scoop supply unit adapted to supply scoops to a release position of the scoop supply unit in a hanging manner, a first gripping device configured to grip an individual scoop at the release position of the supply unit and to move the scoop to a delivery position where the scoop is released from the gripping device in order to place the scoop in a container, where the supply unit comprises two sets of reciprocating holding fingers adapted to release one scoop at a time in the release position, where the gripping device comprises two gripping fingers having a semi-circular shape corresponding to the shape of the scoop, such that the inner sides of the gripping fingers bears on the rim of the scoop. The invention also concerns a method for automatically placing a scoop in a container. The advantage of the inventive apparatus is that one scoop at the time can be picked up and placed in a container in a secure way.



TITLE

Apparatus and method for placing a scoop in a container

TECHNICAL FIELD

- 5 This invention relates to an apparatus and method for placing a scoop in a container before a lid is attached to the container.

BACKGROUND OF THE INVENTION

Today, there exist various solutions of automatically providing an individual
10 additional item such as a scoop to a container and then applying a lid to the container.

In a known solution of automatically providing individual additional items to containers and then applying lids to these containers, the individual additional
15 item is first placed within a container by dropping it into the container at a first manufacturing process step and thereafter the lid is applied to the container at a second manufacturing step, wherein each container is supplied to and from the first and second manufacturing step by means of a conveyor, e.g. a conveyor belt or conveyor chain. An important issue in this context is the
20 production rate, i.e. the number of containers per a time period that can be supplied with both the individual additional item and the lid. To be commercially successful, the apparatus used for applying the individual additional item and the lid must allow for a high production rate. A problem when trying to increase the production rate when using this known solution is
25 that due to the relatively high supply speed of the containers, the individual additional item may miss the opening of the container when it is dropped, which may cause the additional item to rest across the edges of the container or to end up outside of the container before the lid is applied the container. This in turn will result in no individual additional item within the sealed
30 container or a damaged individual additional item and possibly a damaged lid and/or a damaged container. It is thus important that the additional item can be placed in the container in a fast and reliable way. The additional item can

be placed directly in the container, i.e. in the content of the container, or can be placed on an inner lid, e.g. a sealing foil.

5 In another known method for applying an additional item, e.g. a spoon, to a container, the spoon is glued to the lid of the container before the lid is attached to the container. In this method, the spoon is glued to the lid in a separate production stage by using hot melt glue. The use of hot melt glue requires a separate production since the glue must cool off some before the lid can be applied to the container. When the container is provided with a
10 separate, inner lid, usually a thin foil that conceals the inner of the container in an air tight way, it is also possible to glue the spoon to the inner lid. The glue could however loosen from the foil when the container is opened and could thus fall into the container and contaminate the product in the container.

15

It would also be possible to attach the additional item to the lid when the lid is produced, and to apply the lid with the additional item in the same stage, when the lid is applied. The stacking of the lids will however be difficult, especially when the additional item is e.g. a scoop that extends out from the
20 underside of the lid.

JP11314618 discloses a device in which an indication description and a spoon are placed on an internal lid of a can. The device comprises a spoon suction part and an indication-description suction part. In this way, the
25 description can be bent by the spoon, and the spoon and the description are integrated and placed on an internal lid, which allows for a more efficient device.

EP0358617 discloses a method and apparatus for applying glue on separate
30 lids and attaching said lids to containers. The lid is collected in a first stage, glue is applied to the edge of the lid by rotating the lid in a second stage and the lid is applied to the container opening in a final mounting stage.

These solutions may work fine in some systems. There is however still room for an improved apparatus and method for placing a scoop in a container.

5 SUMMARY OF THE INVENTION

An object of the invention is therefore to provide an improved apparatus for placing a scoop in a container. A further object of the invention is to provide an improved method for placing a scoop in a container.

10 The solution to the problem according to the invention is described in the characterizing part of claim 1 for the apparatus and in claim 12 for the method. The other claims contain advantageous further developments of the inventive method and apparatus.

15 In an apparatus for automatically placing a scoop in a container, where said apparatus comprises a scoop supply unit adapted to supply scoops to a release position of the scoop supply unit, a first moveable gripping device configured to grip an individual scoop at the release position of the supply unit and to move the scoop to a delivery position where the scoop is released
20 from the gripping device in order to place the scoop in a container, the object of the invention is achieved in that the supply unit comprises two rails spaced apart such that the scoop can be forwarded on the rails in a hanging manner with the handle of the scoop pointing downwards, that the supply unit comprises two sets of reciprocating holding fingers adapted to release one
25 scoop at a time in the release position, that the gripping device comprises two gripping fingers adapted to grip the scoop, where each gripping finger is provided with a semi-circular shape corresponding to the shape of the cup-shaped part of the scoop, such that the inner sides of the gripping fingers bears on the rim of the scoop.

30

By this first embodiment of the inventive apparatus, a scoop can be placed in a container before the lid is attached to the container. One advantage of the

apparatus is that the apparatus ensures that only one scoop at the time is picked up by the gripping device. The gripping device will then move the scoop to a delivery position in which the scoop can be placed in the container in a secure and reliable way. In this way, a high throughput can be realized.

- 5 The scoop can be placed in the container before the container reaches the lid attachment station, or can be placed in the container at the lid attachment station. This improves the efficiency, reliability and the production rate for placing a scoop in a container. By placing the scoop directly in the container, there is no need to attach the scoop to the lid before or after the lid is
- 10 attached to the container. Handling of the lids, since the lids can be stored in a regular way, without any additional items attached to the lids during storage of the lids. This simplifies the storage and handling of the lids.

- In an advantageous development of the inventive apparatus, the inner sides
- 15 of the gripping fingers are provided with an inclination such that the diameter of the semi-circular shape at the front side is smaller than the diameter at the rear side. The scoop will thus be clamped between the gripping fingers at the front part of the gripping fingers. By providing the gripping fingers with a larger diameter at the rear, a funnel shape is provided which helps to guide
- 20 the scoop into the gripping device. By holding the scoop only at the front part of the rim, scoops with differently inclined and shaped walls of the cup-shaped part can be held by the same gripping fingers without damaging the outside of the scoop.

- 25 In an advantageous development of the inventive apparatus, the outer ends of the gripping fingers are provided with a cut-out between a front flange and a rear flange, adapted to hold the upper region of the handle of the scoop. In this way, the scoop can be held both by the rim and by the handle, which gives a more secure holding of the scoop. The handle will fit between the
- 30 flanges of the cut-out which provides a secure holding of the scoop in a forward and backward way, such that the scoop cannot escape the gripping fingers. This allows for an accurate positioning of the scoop in the container.

The front flange and the rear flange may also be adapted to fit corresponding recesses in the handle of the scoop. In this way, the gripping fingers must not be wider than the handle of the scoop. Further, different scoops can be held by the same gripping fingers as long as the handles are provided with
5 recesses adapted for the cut-out.

In an advantageous development of the inventive apparatus, the first gripping device is configured to transfer the scoop in a substantially horizontal manner before the scoop is released. In this way, the gripping device will grip the
10 scoop at a position on the side of the container conveyor and will move the scoop to a position above the container opening, where the spoon is released. This allows for a simple and reliable placing of scoops in containers.

15 In an advantageous development of the inventive apparatus, the first gripping device is configured to transfer the scoop also in a substantially vertical manner before the scoop is released. In this way, the gripping device can grip the scoop at a position on the side of and above the container conveyor and can move the scoop down to the container opening, where the scoop
20 can be released in a reliable way.

In an advantageous development of the inventive apparatus, the apparatus further comprises a second gripping device, which is configured to grip the scoop from the first gripping device and to transfer the scoop to the opening
25 of the container. In this way, a scoop can be placed in a container in a reliable and secure way.

In an advantageous development of the inventive apparatus, the second gripping device transfers the scoop downwards along a vertical shaft to the
30 container. In this way, the scoop supply unit can be positioned above the container conveyor. This further allows for a compact apparatus.

In an advantageous development of the inventive apparatus, the second gripping device is configured to grip the scoop at the delivery position facing the first gripping device and to rotate the scoop to a second position facing the container. In this way, the scoop can be placed on an inner lid of the container. By rotating the scoop to the position in which it is to be placed on the inner lid, the scoop can be placed on the inner lid in a reliable and secure manner. There is thus no risk of the scoop falling off or being misaligned during the placing of the scoop.

10 In an advantageous development of the inventive apparatus, the second movable gripping device comprises a suction device configured to hold the individual additional item. In this way, the additional item is held in a secure way by the gripping device.

15 In a method for automatically placing a scoop in a container, the steps of feeding a scoop by a scoop supply unit to a release position of the scoop, where the scoop is positioned in a hanging manner with the handle pointing downwards, releasing one scoop by the use of two sets of reciprocating holding fingers provided in the scoop supply unit, gripping the scoop around the rim of the scoop by a first gripping device, and moving the scoop to a delivery position, where the scoop is released from the gripping device in order to place the scoop in a container are disclosed.

25 By this first embodiment of the method for placing a scoop in a container, the scoop is placed in the container in a reliable manner. The advantage of this is that the scoop is not misplaced or misaligned during the placing in the container.

In an advantageous development of the inventive method, the steps of transferring the scoop from the first gripping device to a second gripping device, moving the scoop by the second gripping device to the container, and

releasing the scoop from the second gripping device are disclosed. This allows for a flexible production process.

In an advantageous development of the inventive method, the steps of
5 rotating the scoop such that the open side of the cup-shaped part of the scoop is horizontal and placing the scoop on an inner lid of the container are disclosed. This allows for a reliable placing of scoops on containers having an inner lid.

10 Any of the advantageous features of the present invention above may be combined in any suitable way.

BRIEF DESCRIPTION OF DRAWINGS

The invention will be described in greater detail in the following, with
15 reference to the attached drawings, in which

Fig. 1 schematically shows in perspective view a pictorial representation of an apparatus for automatic placing of scoops in containers according to the invention,

20 Fig. 2 shows the gripping device in the pick-up position of an apparatus according to the invention,

Fig. 3 shows the gripping device in a first delivery position of an apparatus according to the invention,

Fig. 4a- 4c shows the second gripping device of an apparatus according to the invention, and

25 Fig. 5 shows a cut view of a gripping device in the pick-up position of an apparatus according to the invention.

DESCRIPTION OF EXAMPLE EMBODIMENTS OF THE INVENTION

The embodiments of the invention with further developments described in the following are to be regarded only as examples and are in no way to limit the scope of the protection provided by the patent claims.

5 The following examples of the present invention relate, in general, to the field of applying lids to containers and in particular, to an apparatus and method for an automatic application of individual additional items to lids in the same manufacturing process step as when applying the lids to containers.

10 Examples of the present invention will be described more fully hereinafter with reference to the accompanying drawings, in which examples of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the examples set forth herein. Rather, these examples are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to
15 those skilled in the art. Like reference signs refer to like elements throughout.

Figure 1 show an inventive apparatus for automatic placing of scoops 4 in containers 10, where a scoop is placed in the container prior to attaching the lid to the container. The apparatus 1 comprises a scoop supply unit 14. The
20 scoops 4 are forwarded by guiding rails 2 and a feeding device 3 to a pick-up position 18, where a hold and release mechanism ensures that only one scoop at a time is released. Fig. 2 shows the pick-up position with the gripping device 15 gripping a scoop. In this position, the gripping device 15 is in one of its end positions, where it will grip a scoop from the scoop supply
25 unit. The hold and release mechanism comprises two sets of reciprocating holding fingers, an upper set of holding fingers 27 and a lower set of holding fingers 28, which ensures that only one scoop at a time is release. When a scoop is in the pick-up position, it bears on the upper set of holding fingers 27. In this way, the pick-up position ensures that the scoop is in a well
30 defined delivery position.

The gripping device 15 grips a scoop 4 by the rim 32. The scoop comprises a cup-shaped part 30 with the rim 32 and an elongated handle 31. The gripping device comprises two gripping fingers 25 which are provided with a shape that corresponds to the shape of the scoop. In this example, the gripping
5 fingers are shaped such that each gripping finger is provided with a semi-circular shape, such that the inner sides 26 of the gripping fingers bears on the rim of the scoop when the gripping fingers grip the scoop. The inner sides 26 of the gripping fingers may be provided with an inclination such that the diameter of the semi-circular shape at the front side 5 of the gripping fingers
10 is smaller than the diameter at the rear side 6 of the gripping fingers, which can be seen in Fig. 5. The inclination may extend over the complete inner surface or over a circumferential part of the inner surface.

The hold and release mechanism releases the scoop from the pick-up
15 position and the gripping device 15 moves to a first delivery position 19, which is shown in Fig. 3. The first delivery position is in a first example positioned just above a container opening, such that the scoop will fall down into the container when the gripping device is opened in the first delivery position. In this way, the handle will first enter into the container and,
20 depending on the content in the container, will enter into the content or will lay on the content. It is also possible to let the gripping device move downwards, such that the handle of the scoop will be pushed into the content of the container. In this way, the scoop can be reliably placed also in a container that is relatively full with e.g. a powdery content. It is also possible
25 to place the scoop in a container prior to the filling of the container.

Each gripping finger 25 may further be provided with a cut out 29 at the outer ends 7 of each finger, as shown in Fig. 4a. On each side of the cut out, a front flange 11 and a rear flange 12 extends. The cut out is adapted to the
30 shape of the handle of the scoop in the region closest to the cup-shaped part, such that the gripping fingers 25 will also grip the scoop at the handle. In this way, the gripping fingers will hold the scoop in a secure way with the flanges

supporting the handle at the front and rear side of the scoop. The flanges will secure that the scoop does not move forwards or rearwards in the gripping device, which allows for a more secure hold of the scoop than when the scoop is held only by the rim. By providing the scoop with recesses 13
5 corresponding to the flanges, the gripping fingers do not have to be wider than the handle. By providing the handle with recesses, differently sized handles can be gripped with the same gripping device.

In a development of the apparatus, a second gripping device 16 is
10 comprised. The second gripping device is adapted to grip the scoop from the first gripping device 15 in the first release position 19 and to move the scoop to a second release position 20 where the scoop is placed in the container. When the scoop is held in the first release position by the gripping device 15, the second gripping device moves to a position next to the first gripping
15 device and thus next to the scoop, where it will pick up the scoop from the first gripping device, as shown in Fig. 4a. The scoop is at the same time released from the first gripping device. The second gripping device is provided with a suction device 24 which holds the scoop. The scoop may be provided with one or more small holes that will allow even packed powder to
20 release from the scoop, such that an under pressure is avoided in the scoop when a powdery product is to be released. The suction pressure of the suction device is preferably adapted to the area of the release holes and to the weight of the scoop.

25 The second gripping device can be adapted to place the scoop in the container in different positions. In a first example, the second gripping device moves the scoop downwards along a vertical shaft 17 and releases the scoop in a container with the handle down, such that the handle enters the container first. In another example, the second gripping device tilts the scoop
30 by 90 degrees such that the opening of the scoop is directed downwards, towards the container. At the same time, the second gripping device may also rotate the scoop such that the position corresponds to a desired placing

position on an inner lid of the container, as is shown in Fig. 4b. When the scoop is in the proper position, the second gripping device will move downwards along the vertical shaft towards the container, to a second release position 20 where the second gripping device will place the scoop on
5 the inner lid of the container in a reliable manner by releasing the suction pressure of the suction device, which is shown in Fig. 4c. The second gripping device may return to an idle position or may move upwards directly to pick up the next scoop from the first gripping device.

- 10 When the scoop is placed in the container, either in the container or on an inner lid of the container, the container is moved forwards by the conveyor 9 to a subsequent production station, e.g. a lid attachment station.

The invention is not to be regarded as being limited to the embodiments
15 described above, a number of additional variants and modifications being possible within the scope of the subsequent patent claims.

REFERENCE SIGNS

	1:	Apparatus for automatically placing a scoop in a container
	2:	Rail
5	3:	Feeding device
	4:	Scoop
	5:	Front side of gripping finger
	6:	Rear side of gripping finger
	7:	Outer end
10	9:	Conveyor
	10:	Container
	11:	Front flange
	12:	Rear flange
	13:	Recess
15	14:	Scoop supply unit
	15:	First gripping device
	16:	Second gripping device
	17:	Vertical shaft
	18:	Pick-up position
20	19:	First delivery position
	20:	Second delivery position
	24:	Suction device
	25:	Gripping finger
	26:	Inner side
25	27:	Upper reciprocating holding fingers
	28:	Lower reciprocating holding fingers
	29:	Cut out
	30:	Cup-shaped part
	31:	Elongated handle
30	32:	Rim

CLAIMS

1. Apparatus (12) for automatically placing a scoop (4) in a container, where the scoop (4) comprises a cup-shaped part (30) and a handle (31), characterized in that said apparatus (12) comprises

- 5 - a scoop supply unit (14) adapted to supply scoops (4) to a pick-up position (18) of the scoop supply unit (14),
- a first moveable gripping device (15) configured to grip an individual scoop (4) at the pick-up position of the supply unit (14) and to move the scoop to a first delivery position (19) where the scoop is released from the gripping device in order to place
10 the scoop in a container,
- where the supply unit (14) comprises two rails (2) spaced apart such that the scoop can be forwarded on the rails in a hanging manner with the handle (31) of the scoop pointing downwards,
- where the supply unit comprises two sets of reciprocating holding fingers (27, 28)
15 adapted to release one scoop at a time in the pick-up position, and
- where the gripping device (15) comprises two gripping fingers (25) adapted to grip the scoop, where each gripping finger (25) is provided with a semi-circular shape corresponding to the shape of the cup-shaped part (30) of the scoop (4), such that the inner sides (26) of the gripping fingers bears on the rim (32) of the scoop (4).

20

2. Apparatus according to claim 1, characterized in that the inner sides (26) of the gripping fingers are provided with an inclination such that the diameter of the semi-circular shape at the front side (5) is smaller than the diameter at the rear side (6).

25

3. Apparatus according to any of claim 1 or 2, characterized in that the outer ends (7) of the gripping fingers (25) are provided with a cut-out (29) between a front flange (11) and a rear flange (12) adapted to hold the upper region of the handle (31) of the scoop (4).

30

4. Apparatus according to claim 3, characterized in that the front flange (11) and the rear flange (12) are adapted to fit corresponding recesses (13) in the handle (31) of the scoop (4).

5. Apparatus according to any of the claims 1 to 4, characterized in that the first gripping device (15) is configured to transfer the scoop (4) in a substantially horizontal manner before the scoop is released.

5 6. Apparatus according to any of the claim 5, characterized in that the first gripping device (15) is configured to transfer the scoop (4) also in a substantially vertical manner before the scoop is released.

10 7. Apparatus according to any of claims 1 to 5, characterized in that the apparatus further comprises a second, lower gripping device (16), wherein the second gripping device (16) is configured to collect the scoop (13) at the first delivery position (19) of the first gripping device (15) and to move the scoop (4) to a second delivery position (20) where the scoop is transferred to the container (10).

15 8. Apparatus according to claim 7, characterized in that the second gripping device (16) moves the scoop (4) downwards along a vertical shaft (17) to the container (10).

20 9. Apparatus according to any of claims 7 or 8, characterized in that the second gripping device (16) is configured to grip the scoop (4) at the first delivery position facing the first gripping device (15) and to rotate the scoop to a second position facing the container (10).

25 10. Apparatus according to any of claims 7 to 9, characterized in that the second gripping device (16) comprises a suction device (24) configured to hold the scoop (4).

30 11. Scoop comprising a cup-shaped part (30) and an elongated handle (31), characterized in that the handle (31) of the scoop (4) is provided with recesses (13) in the upper region of the handle, where the recesses corresponds to flanges (11, 12) of a gripping device (15).

12. Method for automatically placing a scoop (4) in a container (10), comprising the steps of:

- feeding a scoop by a scoop supply unit (14) to a pick-up position (18) of the scoop, where the scoop is positioned in a hanging manner with the handle pointing downwards;

- releasing one scoop by the use of two sets of reciprocating holding fingers (27, 28)

5 provided in the scoop supply unit;

- gripping the scoop around the rim of the scoop by a first gripping device (15);

- moving the scoop to a first delivery position, where the scoop is released from the gripping device in order to place the scoop in a container.

10 13. Method according to claim 12, wherein the method further comprises the steps of:

- transferring the scoop from the first gripping device to a second gripping device;

- moving the scoop by the second gripping device to a second delivery position;

- releasing the scoop from the second gripping device in order to place the scoop in the container.

15

14. Method according to claim 13, wherein the method further comprises the steps of:

- rotating the scoop such that the open side of the cup-shaped part of the scoop is horizontal, pointing towards the container; and

- placing the scoop on an inner lid of the container.

20

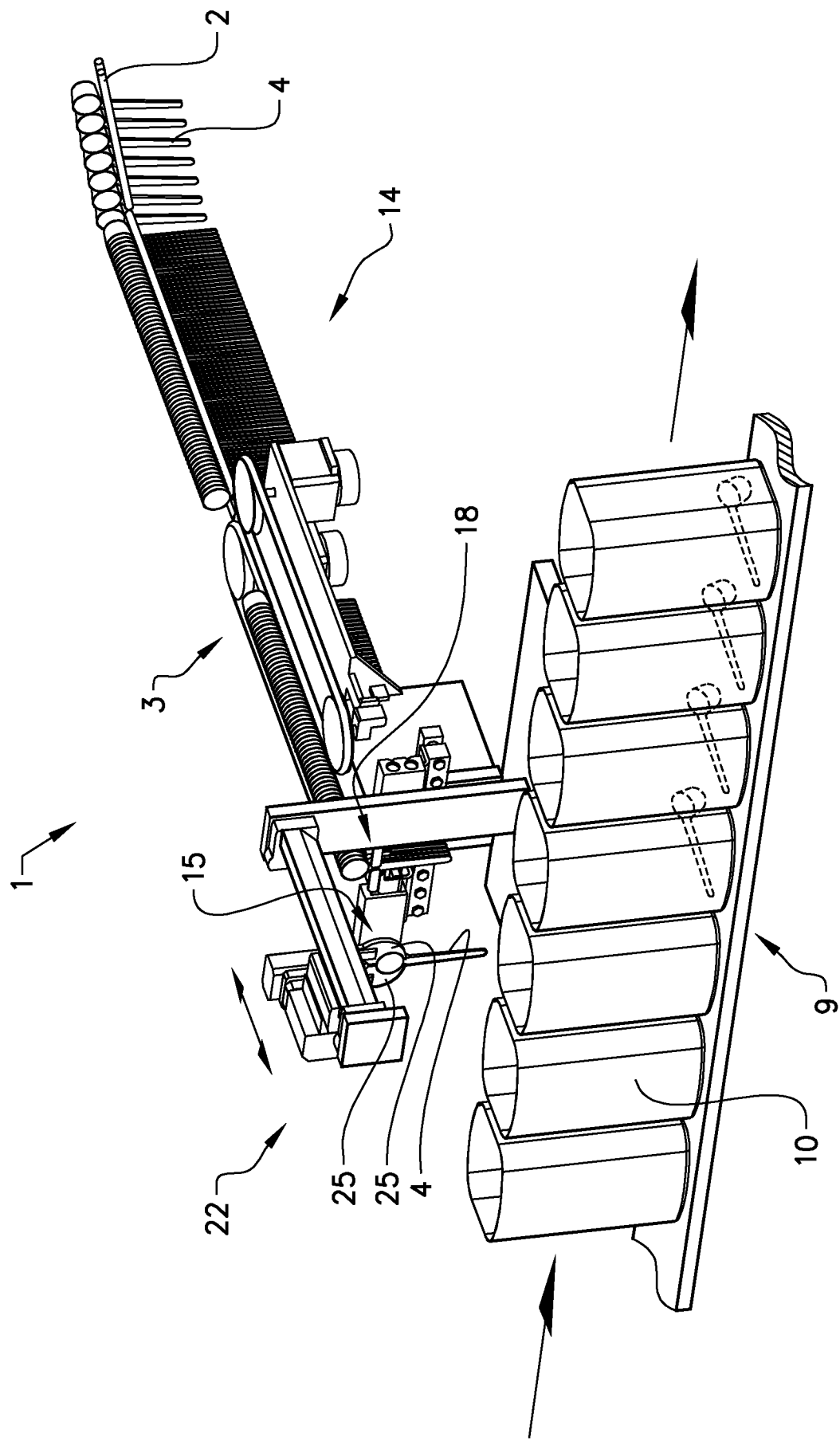


FIG. 1

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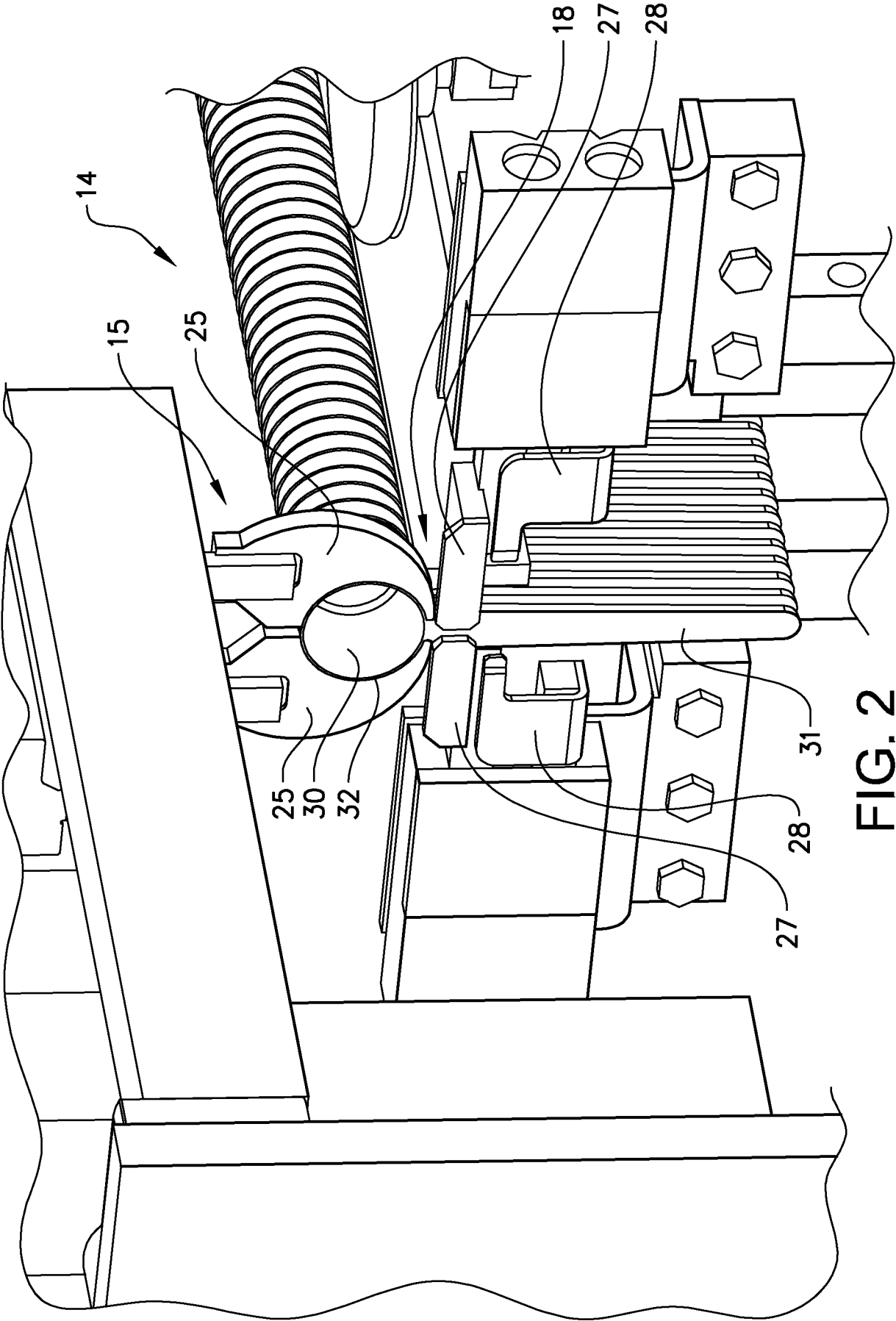


FIG. 2

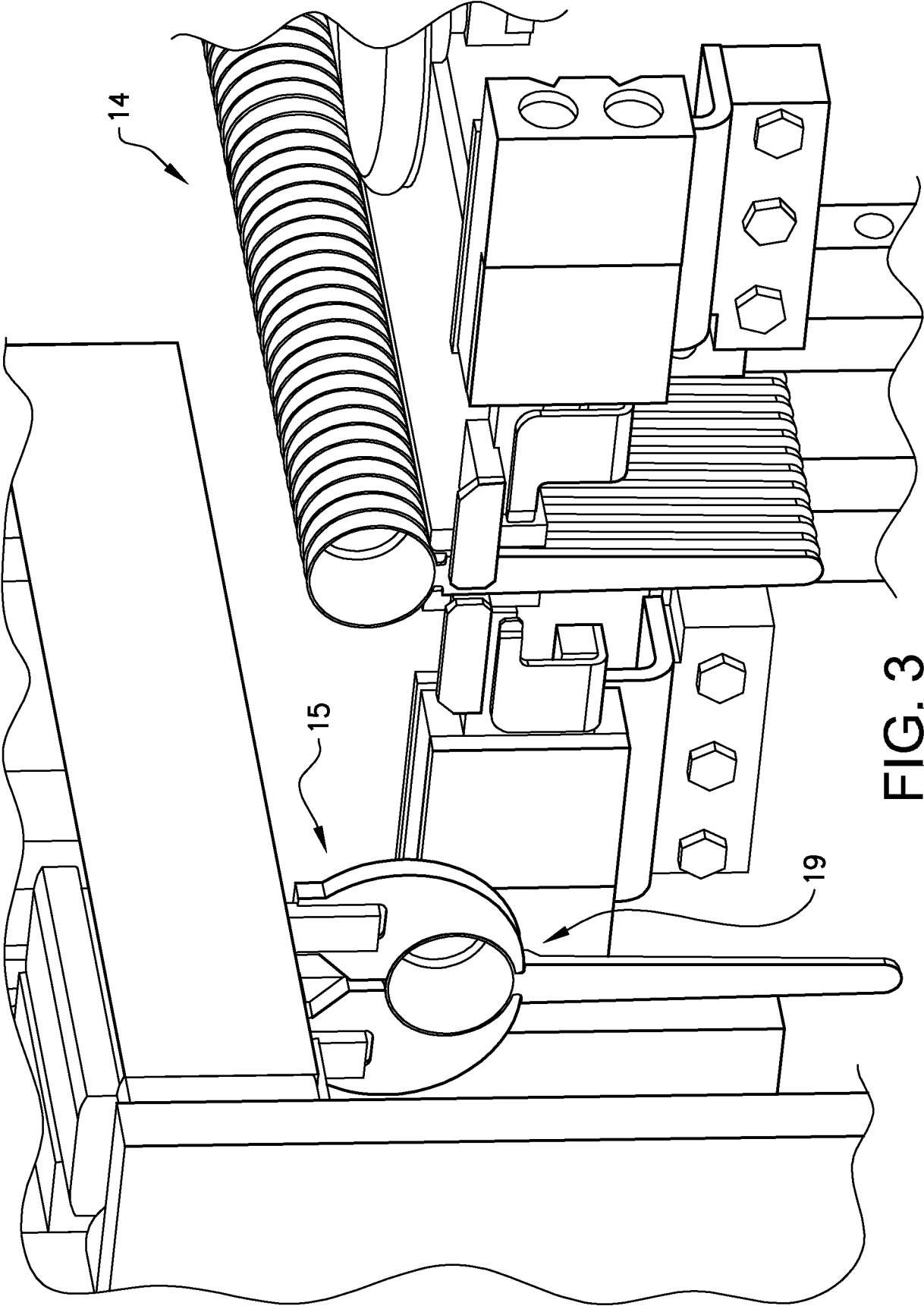


FIG. 3

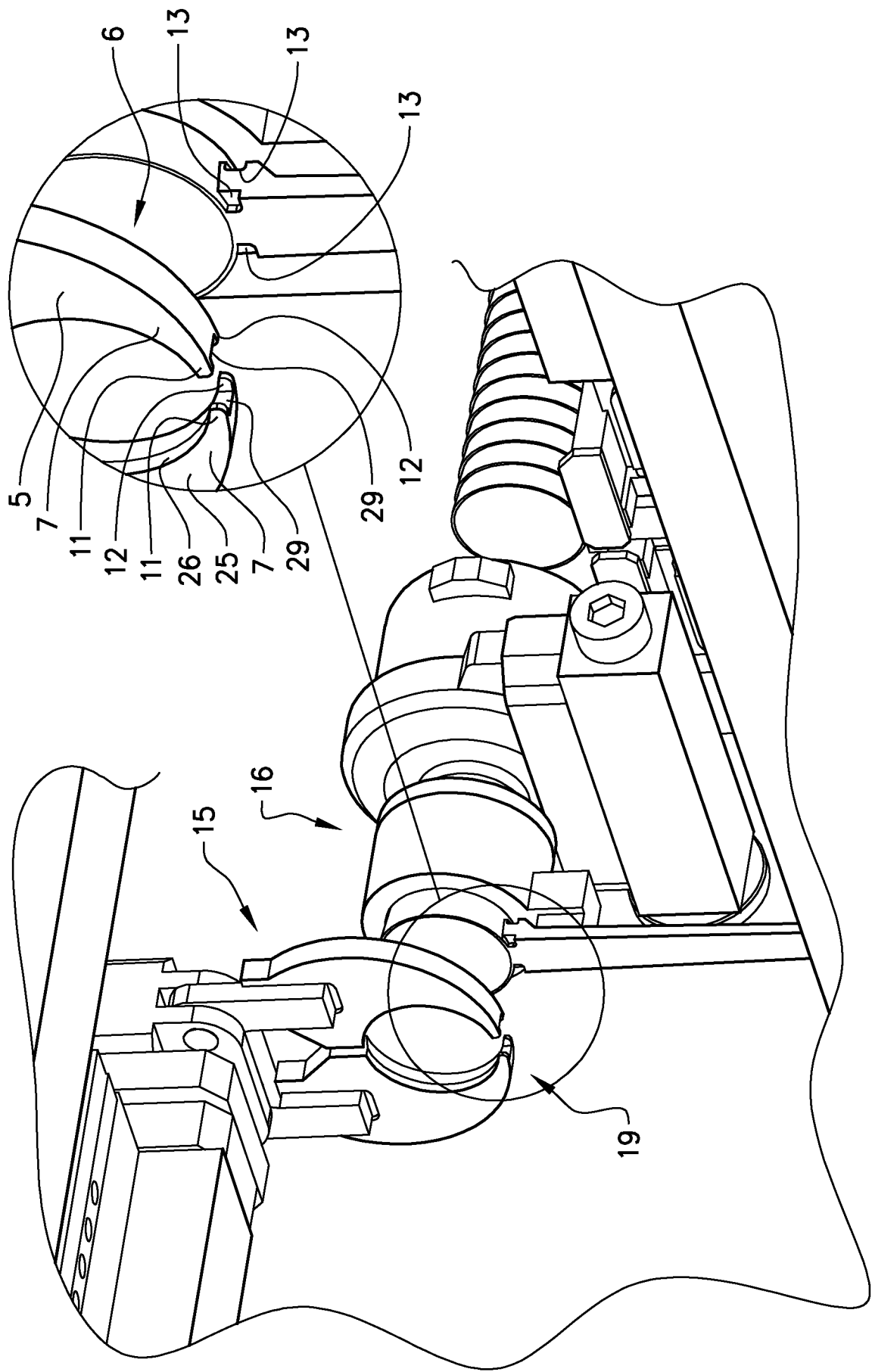


FIG. 4a

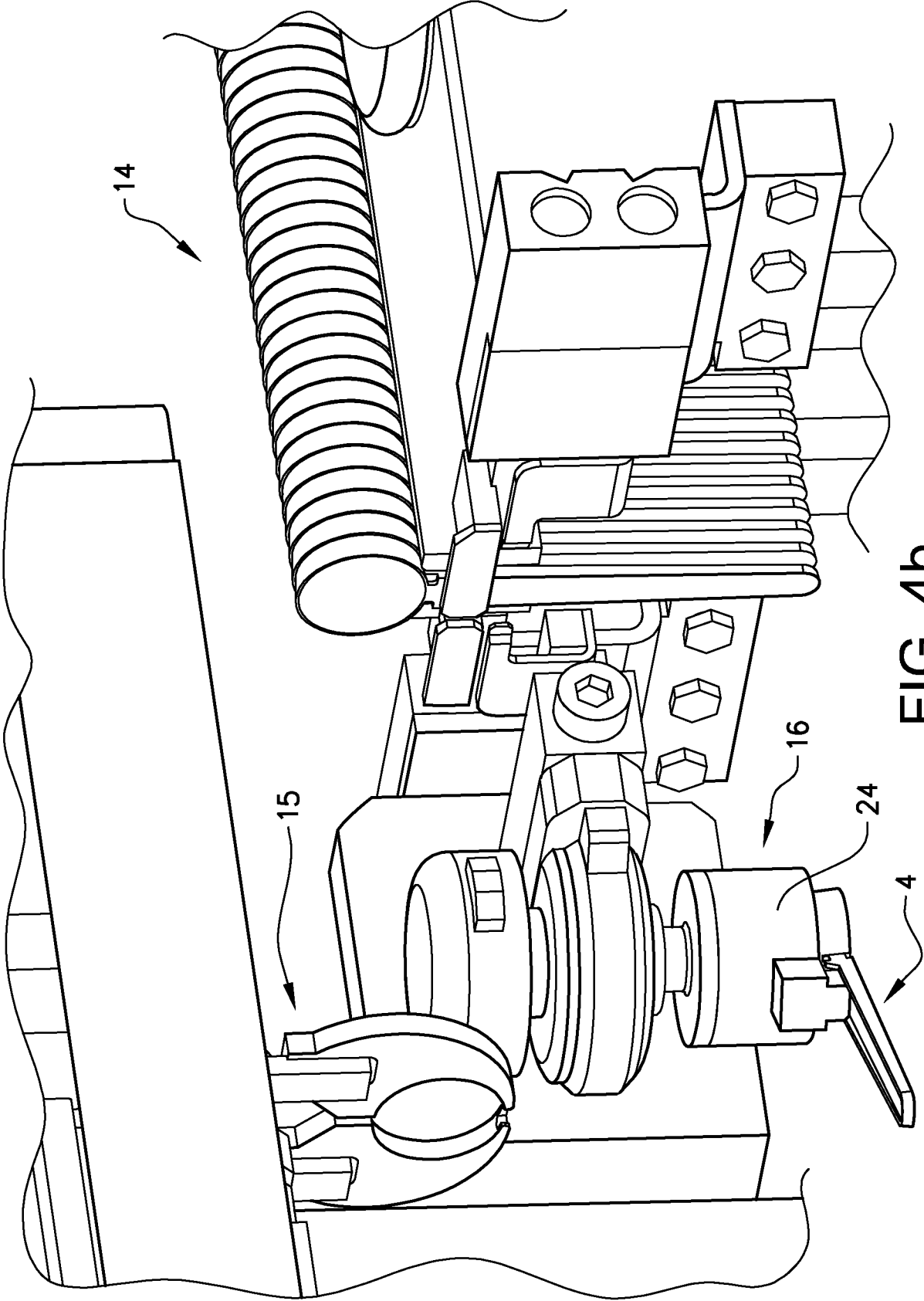
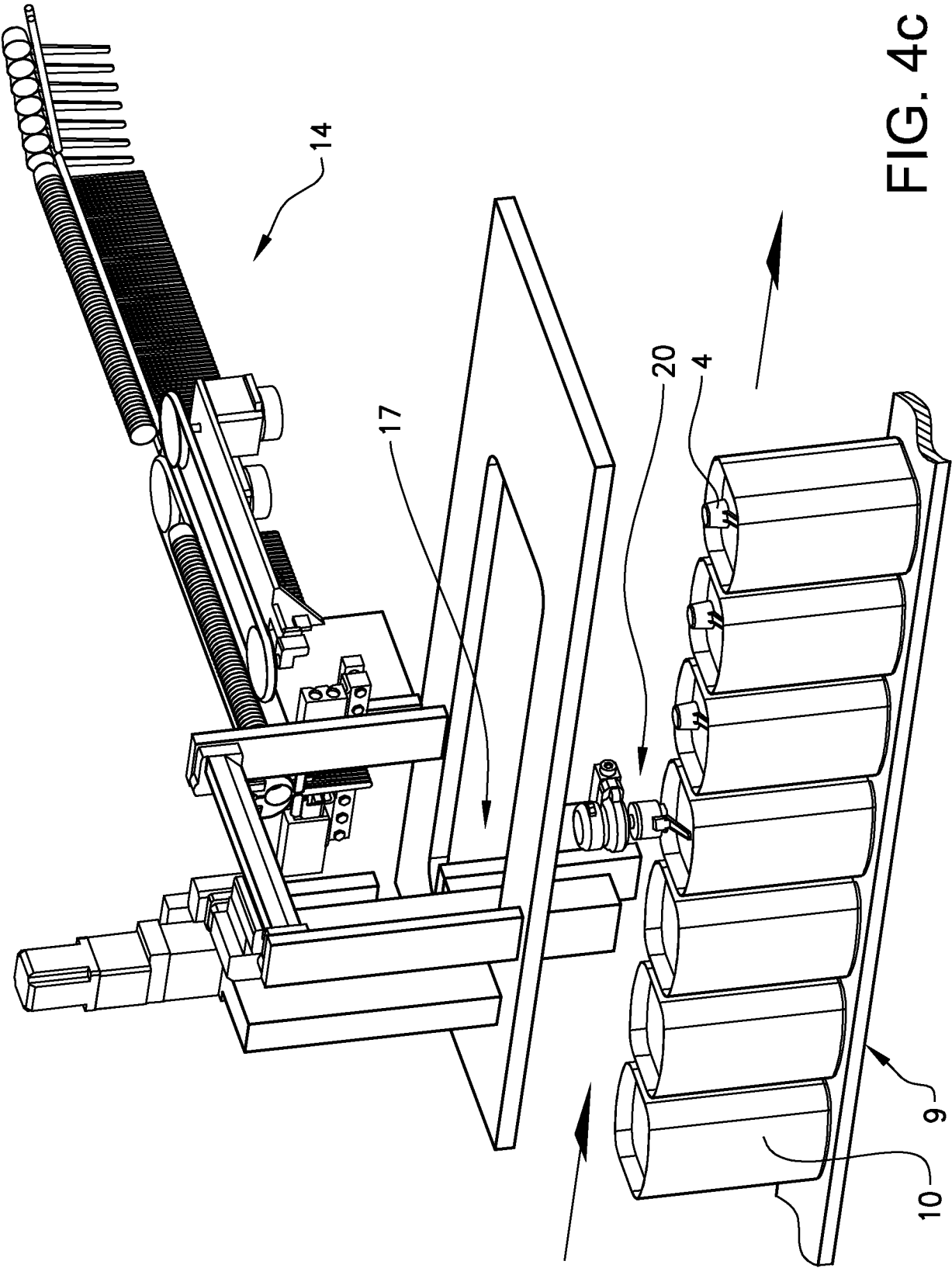


FIG. 4b



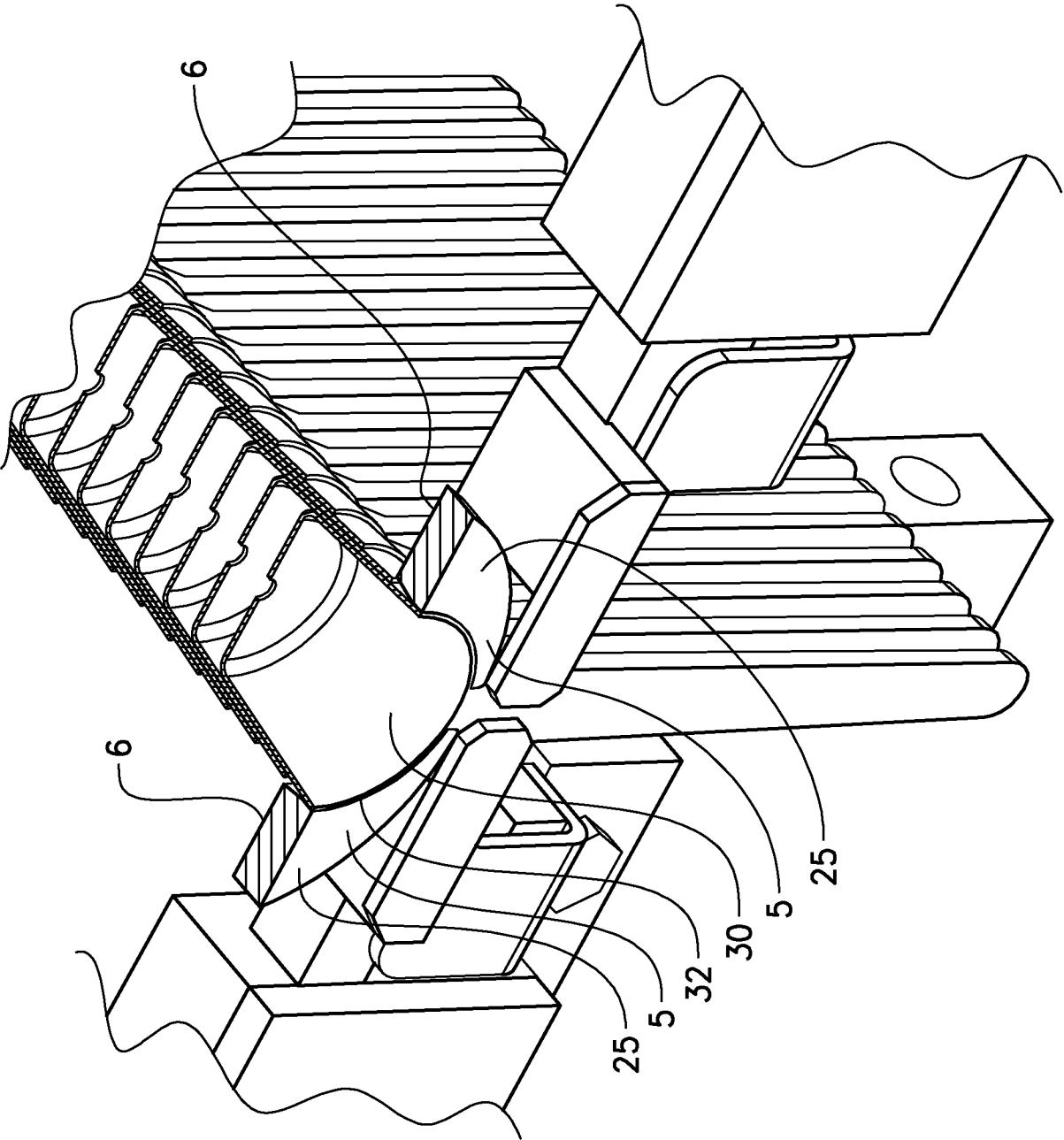


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2012/050045

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: B65B, B65D, B65G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 8412326 U1 (RETZLAFF GERHARD), 23 August 1994 (1994-08-23) --	1-10, 12-14
A	JP 11314618 A (SHIBUYA KOGYO CO LTD), 16 November 1999 (1999-11-16); abstract; figures 1-7 --	1-10, 12-14
A	JP 1254526 A (SUMITOMO BAKELITE CO), 11 October 1989 (1989-10-11); abstract; figures 1-2 --	1-10, 12-14
A	JP 2001354214 A (KYOTO KASEI KOGYO KK), 25 December 2001 (2001-12-25); abstract; figures 1-10 --	1-10, 12-14



Further documents are listed in the continuation of Box C.



See patent family annex.

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“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

29-11-2012

Date of mailing of the international search report

03-12-2012

Name and mailing address of the ISA/SE

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2012/050045

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See extra page

.../...

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-10, 12-14

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

Continuation of: Box No. III

The following separate inventions were identified:

1: Claims 1-10, 12-14 directed to an apparatus and method for automatically placing a scoop in a container.

2: Claim 11 directed to a scoop.

A partial search has been carried out, which relates to the invention 1 mentioned above.

The present application has been considered to contain two inventions which are not linked such that they form a single general inventive concept, as required by Rule 13 PCT for the following reasons:

Claim 1 relates to the problem of placing a scoop in a container in a fast and reliable way. This problem appears to be solved by providing the apparatus with a gripping device that picks up only one scoop at the time and the moves the scoop to a delivery position in which the scoop can be placed in the container.

Claim 11 relates to the problem of providing a scoop that can co-operate with flanges of a gripping device. This problem is solved by providing the scoop with recesses in the upper region of the handle.

As both the problems and solutions are technically different, no single general concept can be formulated based on the technical features of the inventions. Consequently, the requirements of Rule 13.1 PCT are not met.

It was investigated under Rule 13.2 if any further feature, either in the claims or derivable from the description, could be considered as a same or corresponding feature, and could be considered a special technical feature establishing a technical link between the two groups of inventions.

No such features were identified.

Consequently, the two groups of inventions are not so linked as to form a single general inventive concept as required by Rule 13.1 PCT.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2012/050045

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2008120400 A (TOYO JIDOKI KK), 29 May 2008 (2008-05-29); abstract; figures 1-10 --	1-10, 12-14
A	US 2563728 A (LEO KULPINSKI), 7 August 1951 (1951-08-07); column 1, line 1 - line 3; column 3, line 5 - line 35; figures 1-2 --	1-10, 12-14
A	US 4091915 A (CLAASEN ANTONIUS BERNARDUS), 30 May 1978 (1978-05-30); abstract; figures 1-6 -- -----	1-10, 12-14

Continuation of: second sheet

International Patent Classification (IPC)

B65B 61/20 (2006.01)

B65B 5/04 (2006.01)

B65B 35/16 (2006.01)

B65D 77/24 (2006.01)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/SE2012/050045

DE	8412326 U1	23/08/1994	NONE		
JP	11314618 A	16/11/1999	JP	3937581 B2	27/06/2007
JP	1254526 A	11/10/1989	NONE		
JP	2001354214 A	25/12/2001	NONE		
JP	2008120400 A	29/05/2008	NONE		
US	2563728 A	07/08/1951	NONE		
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			GB	1527947 A	11/10/1978
			JP	52034895 A	17/03/1977
			NL	7509802 A	22/02/1977