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(54) ASSEMBLY FOR FEEDING LABELS AND TAKING UP A BACKING RIBBON IN A LABELING MACHINE FOR PRE-GLUED LABELS

ANORDNUNG ZUM ZUFÜHREN VON ETIKETTEN UND AUFNEHMEN EINES STÜTZBANDES IN EINER ETIKETTIERMASCHINE FÜR VORGEKLEBTE ETIKETTEN

ENSEMBLE POUR INTRODUIRE DES ÉTIQUETTES ET RÉ-ENROULER UN RUBAN DE DOUBLURE DANS UNE MACHINE D'ÉTIQUETAGE POUR ÉTIQUETTES PRÉ-COLLÉES

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Description

Technical field

[0001] The invention relates to an assembly for feeding labels and taking up a backing ribbon in a labeling machine for pre-glued labels, in accordance with the preamble of claim 1 and as known from US 4,417,940.

Background Art

[0002] The very widespread presence of labeling machines is known that perform the application, on containers of all types, of pre-glued labels which are associated with a backing ribbon that is supplied wound on reels so as to be used by the feeding assembly with which such machines are provided. Such an assembly comprises a separator which is situated in the immediate vicinity of the containers to be labeled, which are conveyed by a rotating carousel or by a belt that confers a rectilinear motion to them, and which separates the individual labels from the backing ribbon to apply them on respective containers.

[0003] The backing ribbon, now devoid of labels, must naturally be taken up so as to allow a convenient removal thereof, and the takeup devices present in the known art have various forms and among these, a very common implementation provides a roller onto which the backing ribbon is rewound.

[0004] This implementation however entails rather long idle times during operation, which are necessary for the operator to carry out the maneuvers to remove a reel when it has reached the intended size and to restart operation in order to form a next reel.

Disclosure of the Invention

[0005] The aim of the present invention is to devise a labeling machine for pre-glued labels in which the operation of the backing ribbon takeup device occurs with idle times reduced to a minimum, so as to greatly increase the efficiency of the machine.

[0006] The set aim is achieved by an assembly for feeding labels and taking up a backing ribbon in a labeling machine for pre-glued labels, according to the invention, which comprises a rotating disk for supporting a reel of backing ribbon on which the pre-glued labels are applied, a separator which separates the individual labels from the backing ribbon, with subsequent transfer thereof in application to the individual containers to be labeled, a ribbon traction device, a device for taking up the backing ribbon devoid of labels with an associated device for adjusting the rotation rate thereof, characterized in that the device for taking up the backing ribbon comprises at least two rewinding rollers, which are designed to receive said ribbon and provided with means adapted to cause an alternating operation thereof.

[0007] Advantageously, the above-mentioned backing

ribbon takeup device comprises means adapted to alert an operator during the alternation of the operation of the two rewinding rollers.

Brief description of the drawings

[0008] Further characteristics and advantages of the invention will become more apparent from the description of two preferred but not exclusive embodiments of the invention, which are illustrated by way of non-limiting example in the accompanying drawings wherein:

Figure 1 is a perspective view of the assembly according to the invention;

Figure 2 is a view of a different embodiment of the assembly according to the invention.

Ways of carrying out the Invention

[0009] With reference to the above-mentioned Figure 1, the reference numeral 1 designates a reel supported on a rotating disk 2 from which the backing ribbon of pre-glued labels is unwound that are still present, although not shown in the figure, on the portion 3a which arrives, after a series of transmissions, at a separator 4 which separates the individual labels from the backing ribbon in order to apply them to the individual containers to be labeled such as 5 and 6. The containers 5, 6 are conveyed, in the embodiment shown, by the rotating carousel 7, but they could equally well be handled by a conveyor belt adapted to provide them with a rectilinear motion.

[0010] The portion 3b of the backing ribbon, now devoid of labels, leaves the separator 4 and arrives at a traction device 8 and reaches a takeup device which will now be described in detail and the rotation rate of which is regulated by the device designated with 9.

[0011] The backing ribbon takeup device comprises at least two rewinding rollers 10 and 11, advantageously provided with associated support platters 10a, 11a, and conveniently provided with means for locking the end of the belt 10b, 11b. Each one of the rewinding rollers 10 and 11 is provided with a photocell, not shown in the figure, which is capable of detecting, by reading through a small hole such as 11c in the platter 11a, when the reel of ribbon has reached the intended size during rewinding, and consequently of causing the emission of an alert to the assigned operator.

[0012] Lastly, the reference numeral 12 designates a manually actuated selector which is adapted to actuate the alternation of operation of the two rewinding rollers 10 and 11.

[0013] The operation of the invention will now be described with reference to the situation shown in Figure 1.

[0014] The photocell fitted to the rewinding roller 10 has detected that the reel of ribbon designated with 13 wound on the rewinding roller 10 has reached the maximum intended size, and consequently has commanded

the emission of an alert signal to the assigned operator.

[0015] The operator, after stopping the machine and cutting the backing ribbon at the tail end 13a, has fixed the cut-off end of the backing ribbon to the rewinding roller 11, has actuated the selector 12 so as to change operation from the rewinding roller 10 to the rewinding roller 11, and has put the machine back in operation thus starting the formation of a reel of ribbon on the rewinding roller 11, designated with 14.

[0016] This is exactly the situation shown in Figure 1, which is then followed by unhurried removal of the reel 13 by the operator, thus leading to a considerable reduction in idle times with respect to the conventional implementation which provides for the presence of only one rewinding roller.

[0017] Figure 2 shows a different embodiment of the invention which is provided with an identical assembly for feeding labels, while the assembly for taking up the backing ribbon 3b now devoid of labels, situated downstream of the traction device 8 and provided with the device 9 for adjusting the rotation rate, still features the rewinding rollers 10 and 11 provided with respective photocells that detect reaching of the intended size by the reel of ribbon during winding, but which, differently from the first embodiment described, cause the actuation of the automatic splicing device 15, of a type that is known per se, situated upstream of the rewinding rollers 10, 11.

[0018] Now the operation of the above-mentioned different embodiment shall be described, starting with the situation shown in Figure 2 in which the portion 3b of ribbon arrives at the rewinding roller 10 for the formation of the reel 16 which is near to depletion. On the rewinding roller 11, which is stationary, there is a short portion of ribbon 17 fixed at one end to the rewinding roller 11 and at the other end, not visible, inserted in the automatic splicing device 15.

[0019] The photocell fitted to the rewinding roller 10 detects the depletion of the reel 16, and actuates the automatic splicer 15 to cut the ribbon 3b and splice it with the portion of ribbon 17 that is present on the rewinding roller 11, in this manner arranging the alternation of operation of the rewinding rollers that occurs with the stopping of the rewinding roller 10 and the starting of the rewinding roller 11.

[0020] At this point the operator intervenes, following an alert emitted by the photocell, removing the complete reel 16 from the rewinding roller 10 and placing a short portion corresponding to the portion 17 mentioned previously on the same rewinding roller 10, and in this manner the continuity of operation of the machine is ensured.

[0021] The invention described is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0022] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the

interpretation of each element identified by way of example by such reference signs.

5 Claims

1. An assembly for feeding labels and taking up a backing ribbon in a labeling machine for pre-glued labels, comprising a rotating disk (2) for supporting a reel (1) of backing ribbon on which the pre-glued labels are applied, a separator (4) which separates the individual labels from the backing ribbon, with subsequent transfer thereof in application to the individual containers to be labeled (5, 6), a ribbon traction device (8), a takeup device for taking up the backing ribbon devoid of labels with an associated device (9) for adjusting the rotation rate thereof, **characterized in that** the takeup device for taking up the backing ribbon comprises at least two rewinding rollers (10, 11), which are designed to receive said ribbon and are provided with means adapted to cause an alternating operation thereof.
2. The assembly according to claim 1, **characterized in that** the backing ribbon takeup device comprises means adapted to alert an operator during the alternation of the operation of the two rewinding rollers (10, 11).
3. The assembly according to claims 1 and 2, **characterized in that** the backing ribbon takeup device comprises, for each rewinding roller (10, 11), a photocell which is capable of detecting that the reel (13, 14) of ribbon being wound onto the rewinding roller (10, 11) has reached the intended size and of consequently causing the emission of an alert to the assigned operator, a manually actuated selector (12) being provided which is adapted to actuate the alternation of the operation of the two rewinding rollers (10, 11).
4. The assembly according to claims 1 and 2, **characterized in that** the backing ribbon takeup device comprises, for each rewinding roller (10, 11), a photocell which is capable of detecting that the reel (13, 14) of ribbon being wound onto the rewinding roller (10, 11) has reached the intended size and of consequently causing the actuation of an automatic splicer (15) and the emission of an alert to the assigned operator.

Patentansprüche

1. Anordnung zum Zuführen von Etiketten und Aufnehmen eines Stützbandes in einer Etikettiermaschine für vorgeklebte Etiketten, umfassend eine sich drehende Scheibe (2) zur Stützung einer Spule (1) eines

Stützbandes, auf welchem die vorgeklebten Etiketten aufgebracht sind, eine Trennvorrichtung (4), welche die einzelnen Etiketten vom Stützband abtrennt, mit darauffolgender Übertragung dieser während der Anwendung auf die einzelnen zu etikettierenden Behälter (5, 6), eine Bandbeförderungsvorrichtung (8), eine Aufnahmevorrichtung zur Aufnahme des Stützbandes ohne Etiketten mit einer assoziierten Vorrichtung (9) zur Einstellung von deren Rotationsgeschwindigkeit, **dadurch gekennzeichnet, dass** die Aufnahmevorrichtung zur Aufnahme des Stützbandes wenigstens zwei sich wiederaufwickelnde Walzen (10, 11) umfasst, welche vorgesehen sind, um das Band aufzunehmen und mit einem Mittel ausgestattet sind, um deren alternierenden Betrieb zu bewirken.

2. Anordnung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Stützbandaufnahmevorrichtung ein Mittel umfasst, welches geeignet ist, um eine bedienende Person während des Wechsels des Betriebs der beiden aufwickelnden Walzen (10, 11) zu benachrichtigen.
3. Anordnung nach den Ansprüchen 1 und 2, **dadurch gekennzeichnet, dass** die Stützbandaufnahmevorrichtung für jede aufwickelnde Walze (10, 11) eine Fotozelle umfasst, welche geeignet ist, um festzustellen, dass die Spule (13, 14) des Bandes, welches auf die aufwickelnde Walze (10, 11) aufgewickelt wird, die beabsichtigte Größe erreicht hat und darauffolgend die Ausgabe eines Alarms an die zugeordnete bedienende Person hervorruft, wobei eine manuell betätigte Auswahlvorrichtung (12) bereitgestellt wird, welche geeignet ist, um den Wechsel des Betriebs der beiden aufwickelnden Walzen (10, 11) zu bewirken.
4. Anordnung nach den Ansprüchen 1 und 2, **dadurch gekennzeichnet, dass** die Stützbandaufnahmevorrichtung für jede aufwickelnde Walze (10, 11) eine Fotozelle umfasst, welche geeignet ist, um festzustellen, dass die Spule (13, 14) des Bandes, welches auf die aufwickelnde Walze (10, 11) aufgewickelt wird, die beabsichtigte Größe erreicht hat und darauffolgend die Betätigung einer automatischen Spleißvorrichtung (15) und die Ausgabe eines Alarms an die zugeordnete bedienende Person bewirkt.

pliquées, un séparateur (4) qui sépare les étiquettes individuelles du ruban du support, avec leur transfert consécutif en application sur les récipients individuels à étiqueter (5, 6), un dispositif de traction de ruban (8), un dispositif de récupération pour récupérer le ruban de support dépourvu d'étiquettes avec un dispositif (9) associé pour ajuster sa vitesse de rotation, **caractérisé en ce que** le dispositif de récupération pour récupérer le ruban de support comprend au moins deux rouleaux de rembobinage (10, 11), qui sont conçus pour recevoir ledit ruban et sont prévus avec des moyens adaptés pour provoquer son fonctionnement alternatif.

2. Ensemble selon la revendication 1, **caractérisé en ce que** le dispositif de récupération de ruban de support comprend des moyens adaptés pour alerter un opérateur pendant l'alternance du fonctionnement des deux rouleaux de rembobinage (10, 11).
3. Ensemble selon les revendications 1 et 2, **caractérisé en ce que** le dispositif de récupération de ruban de support comprend, pour chaque rouleau de rembobinage (10, 11), une cellule photoélectrique qui est capable de détecter que la bobine (13, 14) du ruban qui est enroulé sur le rouleau de rembobinage (10, 11) a atteint la taille prévue et provoquant par conséquent l'émission d'une alerte pour l'opérateur en charge, on prévoit un sélecteur (12) actionné manuellement, qui est adapté pour actionner l'alternance du fonctionnement des deux rouleaux de rembobinage (10, 11).
4. Ensemble selon les revendications 1 et 2, **caractérisé en ce que** le dispositif de récupération de rouleau de support comprend, pour chaque rouleau de rembobinage (10, 11), une cellule photoélectrique qui est capable de détecter que la bobine (13, 14) du ruban qui est enroulé sur le rouleau de rembobinage (10, 11) a atteint la taille prévue et provoquant par conséquent l'actionnement d'une colleuse automatique (15) et l'émission d'une alerte pour l'opérateur en charge.

Revendications

1. Ensemble d'alimentation d'étiquettes et de récupération d'un ruban de support dans une étiqueteuse pour étiquettes pré-collées, comprenant un disque rotatif (2) pour supporter une bobine de ruban de support sur lequel les étiquettes pré-collées sont ap-

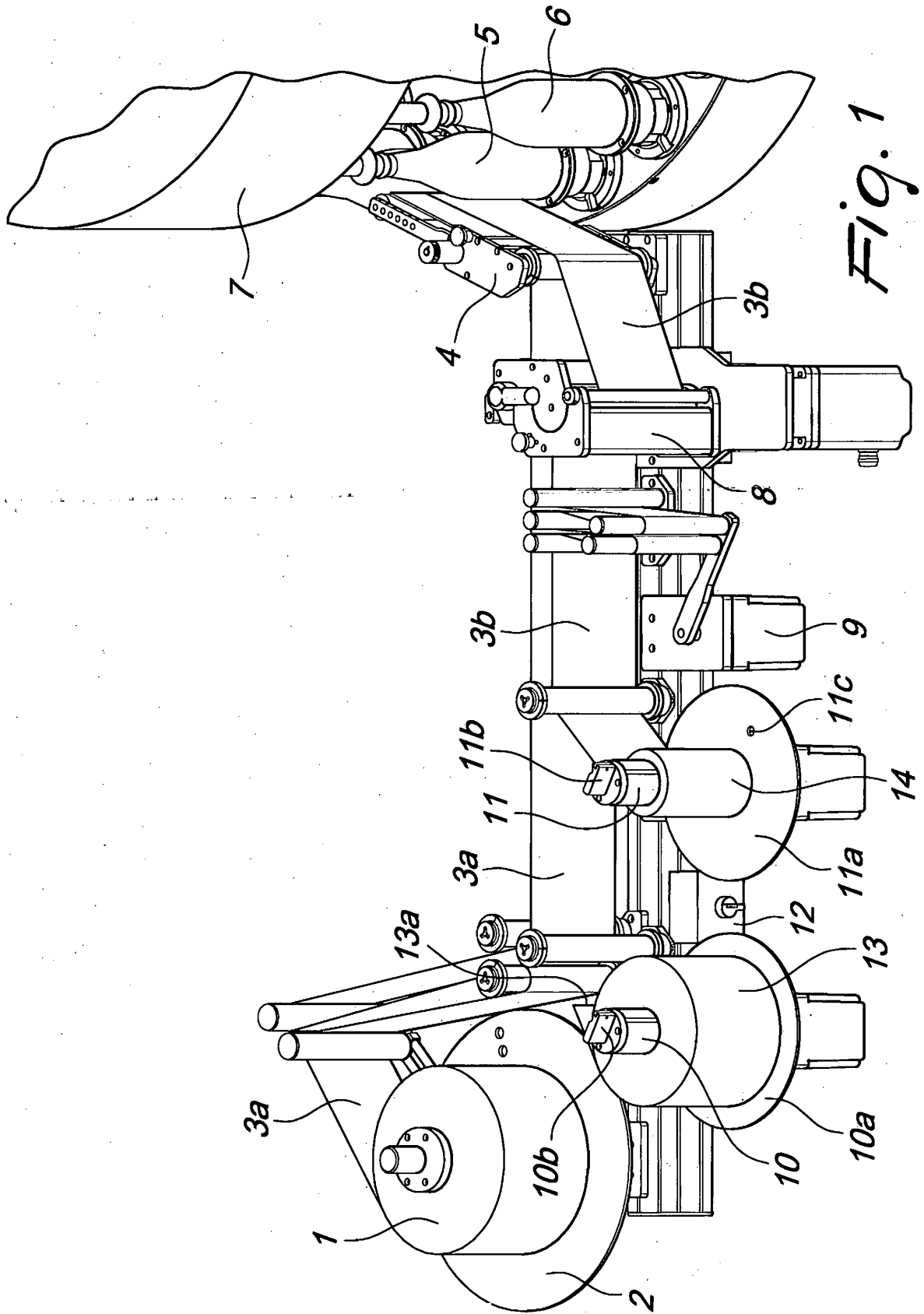


Fig. 1

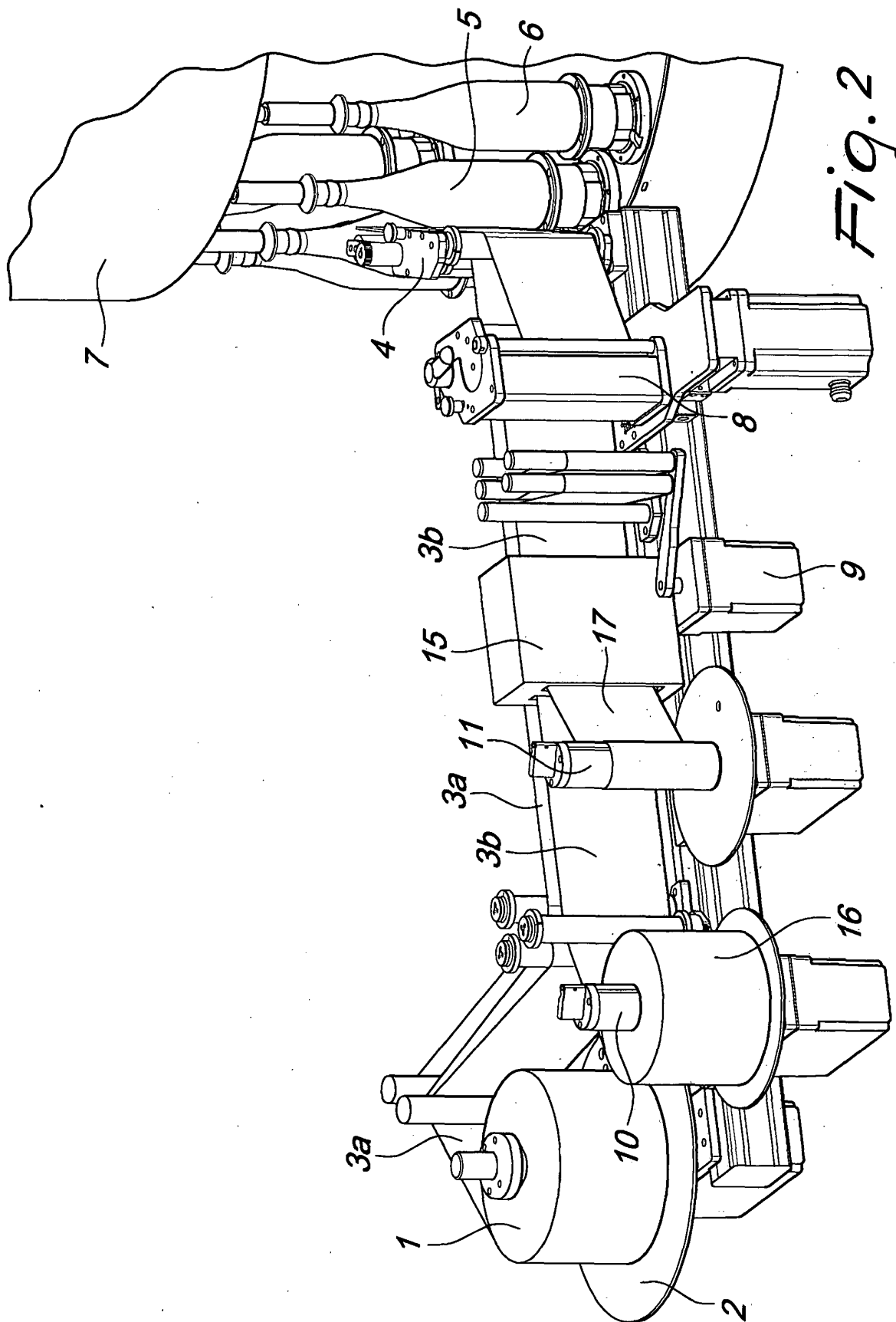


Fig. 2

REFERENCES CITED IN THE DESCRIPTION

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