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(54) **HIGH-SPEED DOUBLE-TRACK BLISTER PILLOW PACKING AND CARTONING PACKING
INTEGRATED MACHINE**

HOCHGESCHWINDIGKEITS-DOPPELSPUR-BLISTERKISSENVERPACKUNG UND
KARTONIERVERPACKUNGSINTEGRIERTE MASCHINE

MACHINE INTÉGRÉE DE CONDITIONNEMENT EN CARTON ET DE CONDITIONNEMENT EN
SACHET COUSSIN POUR EMBALLAGE-COQUE, À DOUBLE VOIE ET GRANDE VITESSE

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Description

TECHNICAL FIELD

[0001] The present disclosure relates to the field of pharmaceutical card packaging machines, particularly to a machine for packaging blister cards.

BACKGROUND

[0002] In modern pharmaceutical packaging, a more flexible packaging solution for pharmaceutical blister cards is desired by pharmaceutical companies. Given the thermal sensitivity of some medicines, pharmaceutical blister cards (referred to as blisters or blister cards) not only are cartoned (e.g., the pharmaceutical blister cards are directly packaged into cartons), but also are packaged into pillow bags to be placed into cartons. In the prior art, different packaging devices are used to provide perform different packaging manners, or the pharmaceutical cards are preliminarily distributed to a rear packaging device by a conveyor belt. This increases the equipment purchasing cost of the pharmaceutical companies and requires larger equipment space, higher mounting costs, and higher equipment operation and maintenance costs. Therefore, the prior art can hardly meet the demand of modern pharmaceutical packaging for flexibility in the new era.

[0003] The Chinese Patent Application Publication CN 206 871 414 U discloses a high-speed double-line blister and pillow bag cartoning integrated machine, comprising a blister packaging machine, a pillow-type packaging machine, and a cartoning machine, wherein the blister packaging machine is connected to a discharging grid conveyor device for conveyance. A blister card transfer device is also included for transferring blister cards on the discharging grid conveyor device to a pillow bag conveyor chain device or a transiting grid conveyor device.

SUMMARY

[0004] Given shortages in the prior art, the present disclosure provides a high-speed double-line blister and pillow bag cartoning integrated machine, which not only can directly carton the blisters but can also package the blisters into the pillow bags for cartoning.

[0005] A high-speed double-line blister and pillow bag cartoning integrated machine includes a blister packaging machine, a pillow-type packaging machine, and a cartoning machine. The blister packaging machine is connected to a discharging grid conveyor device for conveyance. A pillow bag conveyor chain device is provided side by side at one side of the discharging grid conveyor device. The pillow bag conveyor chain device is connected to the pillow-type packaging machine for conveyance. An output end of the pillow-type packaging machine is connected to a pillow bag grid conveyor device for conveyance. One side of the pillow bag grid conveyor device

is provided with a cartoning conveyor chain device, and the cartoning conveyor chain device is connected to the cartoning machine for conveyance. The other side of the discharging grid conveyor device is provided with a transiting grid conveyor device. The transiting grid conveyor device extends to one side of the cartoning conveyor chain device, and the cartoning conveyor chain device is located between the transiting grid conveyor device and the pillow bag grid conveyor device. A blister card transfer device for transferring blister cards on the discharging grid conveyor device to the pillow bag conveyor chain device or the transiting grid conveyor device is provided on the discharging grid conveyor device, and the blister card transfer device is provided with blister vacuum nozzles. A material transfer device for transferring the blister cards on the transiting grid conveyor device or pillow bags on the pillow bag grid conveyor device to the cartoning conveyor chain device is provided on the cartoning conveyor chain device, and the material transfer device is provided with material vacuum nozzles. The transiting grid conveyor device is composed of a first grid conveyor device and a second grid conveyor device, and a connecting ramp is provided between the first grid conveyor device and the second grid conveyor device. The high point of the connecting ramp is connected to the first grid conveyor device, and the low point of the connecting ramp is connected to the second grid conveyor device. The first grid conveyor device and the second grid conveyor device each are driven by an independent motor. The corresponding independent motors configured to provide a grid spacing of the first grid conveyor device different from a grid spacing of the second grid conveyor device, the corresponding independent motors configured to move the first grid conveyor device and the second grid conveyor device by one grid spacing in a same amount of time, and the first grid conveyor device is provided side by side with the discharging grid conveyor device. The grid spacing of the first grid conveyor device is the same as the grid spacing of the pillow bag conveyor chain device. The second grid conveyor device is provided side by side with the cartoning conveyor chain device, and the grid spacing of the second grid conveyor device is the same as the grid spacing of the cartoning conveyor chain device.

[0006] The output end of the pillow-type packaging machine is connected to the pillow bag grid conveyor device through a rotary transfer manipulator for conveyance, and the rotary transfer manipulator may rotate pillow bags on the output end of the pillow-type packaging machine by 90° and transfer the pillow bags to the pillow bag grid conveyor device.

[0007] The material transfer device includes a manipulator and a suction mechanism. The suction mechanism includes a nozzle holder and a plurality of the material vacuum nozzles. The material vacuum nozzles are provided on the nozzle holder. The nozzle holder is connected to a connecting seat, a connecting groove is formed in the connecting seat, and the connecting seat is con-

nected to a locating pin. The manipulator is connected to a connecting member, a pinhole is formed in the connecting member, the connecting member is provided in the connecting groove of the connecting seat, and the locating pin may be inserted into the pinhole of the connecting member.

[0008] A guideway is provided on the blister card transfer device. The blister card transfer device is slidably provided on the guideway through a sliding seat, and the blister card transfer device may move to an upward side between the discharging grid conveyor device and the transiting grid conveyor device or move to an upward side between the discharging grid conveyor device and the pillow bag conveyor chain device.

[0009] The high-speed double-line blister and pillow bag cartoning integrated machine provided by the present disclosure can realize packaging of cartoning the blisters and packaging of cartoning the blisters and the pillow bags in a small footprint and can be switched between two different packaging forms quickly and flexibly.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

FIG. 1 is a top view of the present disclosure;

FIG. 2 is an operation view of a blister card transfer device;

FIG. 3 is an operation view of a material transfer device; and

FIG. 4 is a side view of a transiting grid conveyor device.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0011] As shown in FIG. 1, the high-speed double-line blister and pillow bag cartoning integrated machine includes blister packaging machine 1, pillow-type packaging machine 6, and cartoning machine 11. The blister packaging machine 1 is configured to form, package, and cut pharmaceutical blister cards. The pillow-type packaging machine 6 is configured to package the blister cards into packaging films to form pillow bags. The cartoning machine 11 is configured to package the pharmaceutical blister cards or pillow bags into cartons.

[0012] To link the blister packaging machine 1, the pillow-type packaging machine 6, and the cartoning machine 11 and realize a packaging manner of cartoning the blisters and a packaging manner of cartoning the blisters and the pillow bags, the present disclosure provides the following technical solutions.

[0013] For the packaging manner of cartoning the blisters and the pillow bags: As shown in FIG. 1, the blister packaging machine 1 is connected to discharging grid conveyor device 2 for conveyance (i.e., the blister pack-

aging machine 1 conveys the blister cards to the discharging grid conveyor device 2). Pillow bag conveyor chain device 3 is provided side by side at one side of the discharging grid conveyor device 2 (e.g., the pillow bag conveyor chain device 3 is also a grid conveyor device but is only provided with one row of grids). Blister card transfer device 4 (as shown in FIG. 2, the blister card transfer device 4 is provided with blister vacuum nozzles 40 capable of sucking the blister cards, which is the prior art) is provided on the discharging grid conveyor device 2. The blister card transfer device 4 can transfer the blister cards on the discharging grid conveyor device 2 to the pillow bag conveyor chain device 3. The pillow bag conveyor chain device 3 is connected to the pillow-type packaging machine 6 for conveyance. The pillow bag conveyor chain device 3 conveys the blister cards to the pillow-type packaging machine 6. The pillow-type packaging machine 6 packages the blister cards into the packaging films to form the pillow bags. An output end of the pillow-type packaging machine 6 is connected to pillow bag grid conveyor device 8 for conveyance. The pillow bags from the output end of the pillow-type packaging machine 6 enter the pillow bag grid conveyor device 8 and are continuously conveyed by the pillow bag grid conveyor device 8. One side of the pillow bag grid conveyor device 8 is provided with cartoning conveyor chain device 10 (e.g., the cartoning conveyor chain device 10 is also a grid conveyor device but is only provided with one row of grids). Material transfer device 9 (as shown in FIG. 3, the material transfer device 9 is provided with material vacuum nozzles 90 capable of sucking the blister cards or the pillow bags, which is the prior art) is provided on the cartoning conveyor chain device 10. The material transfer device 9 can transfer the pillow bags on the pillow bag grid conveyor device 8 to the cartoning conveyor chain device 10 (which can realize tracking and multi-bag stacking). The cartoning conveyor chain device 10 is connected to the cartoning machine 11 for conveyance. The cartoning conveyor chain device 10 conveys the pillow bags to the cartoning machine 11. The cartoning machine 11 packages the pillow bags into the cartons. With the above structure, the packaging manner of cartoning the blisters and the pillow bags can be realized.

[0014] For the packaging manner of cartoning the blisters: As shown in FIG. 1, the other side of the discharging grid conveyor device 2 is provided with transiting grid conveyor device 5. The blister card transfer device 4 can transfer the blister cards on the discharging grid conveyor device 2 to the transiting grid conveyor device 5. The transiting grid conveyor device 5 extends to one side of the cartoning conveyor chain device 10. The cartoning conveyor chain device 10 is located between the transiting grid conveyor device 5 and the pillow bag grid conveyor device 8. The material transfer device 9 can transfer the blister cards on the transiting grid conveyor device 5 to the cartoning conveyor chain device 10 (which can realize tracking and multi-card stacking). The cartoning conveyor chain device 10 conveys the blister cards to

the cartoning machine 11. The cartoning machine 11 packages the blister cards into the cartons. With the above structure, the packaging manner of cartoning the blisters can be realized.

[0015] The high-speed double-line blister and pillow bag cartoning integrated machine has a small footprint and can be switched between the packaging of cartoning the blisters and the packaging of cartoning the blisters and the pillow bags as required by the user, thereby being very convenient and flexible.

[0016] As shown in FIG. 1, since there are different requirements for the spacing between materials in the pillow-type packaging machine 6 and the spacing between materials in the cartoning machine 11, the grid spacing of the pillow bag conveyor chain device 3 is different from the grid spacing of the cartoning conveyor chain device 10. Since the transiting grid conveyor device 5 needs to transfer the blister cards to the cartoning conveyor chain device 10, the grid spacing of the transiting grid conveyor device 5 is the same as the grid spacing of the cartoning conveyor chain device 10. In other words, normally, the grid spacing of the pillow bag conveyor chain device 3 is different from the grid spacing of the transiting grid conveyor device 5. When different packaging manners are switched, it is essential to change the suction mechanism of the blister card transfer device 4, such that matched spacing is provided between the blister vacuum nozzles on the suction mechanism, which is inconvenient.

[0017] To solve the problem above, as shown in FIG. 4, the transiting grid conveyor device 5 is composed of first grid conveyor device 50 and second grid conveyor device 51 (both have different grid spacings). Connecting ramp 52 is provided between the first grid conveyor device 50 and the second grid conveyor device 51. The high point of the connecting ramp 52 is connected to the first grid conveyor device 50. The low point of the connecting ramp 52 is connected to the second grid conveyor device 51. In addition, the first grid conveyor device 50 and the second grid conveyor device 51 each are driven by an independent motor. The first grid conveyor device 50 and the second grid conveyor device 51 each work under the control of the corresponding independent motor. The time it takes for the first grid conveyor device 50 to move by one grid spacing is the same as the time it takes for the second grid conveyor device 51 to move by one grid spacing. In this case, the blister card in one grid of the first grid conveyor device 50 falls into one grid of the second grid conveyor device 51 through the connecting ramp 52. Certainly, the first grid conveyor device 50 is provided side by side with the discharging grid conveyor device 2. The grid spacing of the first grid conveyor device 50 is the same as the grid spacing of the pillow bag conveyor chain device 3. The second grid conveyor device 51 is provided side by side with the cartoning conveyor chain device 10. The grid spacing of the second grid conveyor device 51 is the same as the grid spacing of the cartoning conveyor chain device 10.

[0018] With the above structure, the blister cards in the two modes can be transferred through only one type of the blister card transfer device 4, and there is no need to change the suction mechanism of the blister card transfer device 4. The transiting grid conveyor device 5 is divided into two segments, such that the transmission chain on each segment is shorter (the grid plate is provided on the transmission chain), the transmission chain operates more stably, and the transportation on the machine is more convenient (the loading requirement cannot be met if the transiting grid conveyor device 5 is very long). Certainly, if the transiting grid conveyor device 5 is still too long after being divided into two segments, the second grid conveyor device 51 may be divided into two segments. In this case, the transiting grid conveyor device 5 is divided into one segment of the first grid conveyor device 50 and two segments of the second grid conveyor device 51 to meet the loading requirement. It is noted that any case where the transiting grid conveyor device 5 is segmented falls within the protection scope of the present disclosure.

[0019] As shown in FIG. 3, the output end of the pillow-type packaging machine 6 is provided with conveyor belt 60. The pillow-type packaging machine 6 conveys the pillow bags through the conveyor belt 60. The pillow bags on the conveyor belt 60 can directly fall into the grids of the pillow bag grid conveyor device 8. However, the pillow bags from the pillow-type packaging machine 6 are horizontally arranged. According to longitudinal feeding of the cartoning machine 11, it is better to rotate the pillow bags on the conveyor belt 60 by 90° and then fall the pillow bags into the pillow bag grid conveyor device 8. In this case, the material transfer device 9 can directly transfer the materials on the pillow bag grid conveyor device 8 to the cartoning conveyor chain device 10. The output end of the pillow-type packaging machine 6 is connected to the pillow bag grid conveyor device 8 through rotary transfer manipulator 7 for conveyance. The rotary transfer manipulator 7 can rotate the pillow bags on the conveyor belt 60 of the pillow-type packaging machine 6 by 90° and transfer the pillow bags to the pillow bag grid conveyor device 8. The rotary transfer manipulator 7 is the prior art, and its structure is not described repeatedly herein. Certainly, the rotary transfer manipulator 7 may also not be used, but the material transfer device 9 sucks the pillow bags for rotation. In this case, the material transfer device 9 will be more complicated. Regardless of the manners used, all should fall within the protection scope of the present disclosure.

[0020] As shown in FIG. 3, the material transfer device 9 includes manipulator 91 and a suction mechanism. The suction mechanism includes nozzle holder 92 and a plurality of the material vacuum nozzles 90. The material vacuum nozzles 90 are provided on the nozzle holder 92. As mentioned above, the material transfer device 9 not only transfers the pillow bags from the pillow bag grid conveyor device 8 to the cartoning conveyor chain device 10 but also transfers the blister cards from the transiting

grid conveyor device 5 to the cartoning conveyor chain device 10. The pillow bags are conveyed in one row, while the blister cards are conveyed in multiple rows. Hence, when the packaging manner is switched, the suction mechanism of the material transfer device 9 is changed. To quickly change the suction mechanism, the nozzle holder 92 is connected to a connecting seat. A connecting groove is formed in the connecting seat. The connecting seat is connected to a locating pin. The manipulator 91 is connected to a connecting member. A pinhole is formed in the connecting member. The connecting member is provided in the connecting groove of the connecting seat. The locating pin may be inserted into the pinhole of the connecting member. When the suction mechanism is changed, the connecting member on the manipulator 91 is clamped into the connecting groove of the connecting seat, and the locating pin is inserted into the pinhole of the connecting member, which is very convenient and quick.

[0021] Finally, it is worth noting that the blister card transfer device 4 can realize tracking and multi-card stacking when transferring the blister cards. Since the pillow bag conveyor chain device 3 and the transiting grid conveyor device 5 to be tracked are respectively located on two sides of the discharging grid conveyor device 2, there is a need to locate the blister card transfer device 4 at an appropriate position. When the pillow bag conveyor chain device 3 is to be tracked, the blister card transfer device 4 is located on an upward side between the discharging grid conveyor device 2 and the pillow bag conveyor chain device 3. When the transiting grid conveyor device 5 is to be tracked, the blister card transfer device 4 is located on an upward side between the discharging grid conveyor device 2 and the transiting grid conveyor device 5. A guideway 41 is provided on the blister card transfer device 4. The blister card transfer device 4 is slidably provided on the guideway 41 through a sliding seat. By sliding the sliding seat, the blister card transfer device 4 may move to the upward side between the discharging grid conveyor device 2 and the transiting grid conveyor device 5 or move to the upward side between the discharging grid conveyor device 2 and the pillow bag conveyor chain device 3, thereby transferring, tracking and stacking the blister cards in different packaging manners.

Claims

1. A high-speed double-line integrated blister and pillow bag cartoning machine, comprising a blister packaging machine (1), a pillow-type packaging machine (6), and a cartoning machine (11), wherein the blister packaging machine (1) is connected to a discharging grid conveyor device (2) and a pillow bag conveyor chain device (3) is arranged at one side of the discharging grid conveyor device (2), the pillow bag conveyor chain device (3) is connected to the

pillow-type packaging machine (6) wherein an output end of the pillow-type packaging machine (6) is connected to a pillow bag grid conveyor device (8), at one side of the pillow bag grid conveyor device (8) a cartoning conveyor chain device (10) is arranged, and the cartoning conveyor chain device (10) is connected to the cartoning machine (11) wherein at the other side of the discharging grid conveyor device (2) a transiting grid conveyor device (5) is arranged and the transiting grid conveyor device (5) extends to one side of the cartoning conveyor chain device (10), and the cartoning conveyor chain device (10) is located between the transiting grid conveyor device (5) and the pillow bag grid conveyor device (8) wherein a blister card transfer device (4) adapted to transfer blister cards on the discharging grid conveyor device (2) to the pillow bag conveyor chain device (3) or to the transiting grid conveyor device (5) is arranged over the discharging grid conveyor device (2), **characterized in that** the blister card transfer device (4) is provided with blister vacuum nozzles (40); and a material transfer device (9) is adapted to transfer the blister cards on the transiting grid conveyor device (5) or pillow bags on the pillow bag grid conveyor device (8) to the cartoning conveyor chain device (10) is arranged over the cartoning conveyor chain device (10), and the material transfer device (9) is provided with material vacuum nozzles (90), wherein the transiting grid conveyor device (5) is composed of a first grid conveyor device (50) and a second grid conveyor device (51), wherein a connecting ramp (52) is provided between the first grid conveyor device (50) and the second grid conveyor device (51), a high point of the connecting ramp (52) is connected to the first grid conveyor device (50), a low point of the connecting ramp (52) is connected to the second grid conveyor device (51), the first grid conveyor device (50) and the second grid conveyor device (51) each are driven by an independent motor wherein the grid spacing of the first grid conveyor device (50) is different from the grid spacing of the second grid conveyor device (51) wherein the corresponding independent motors are configured to move the first grid conveyor device (50) and the second grid conveyor device (51) by one grid spacing in the same amount of time, wherein the first grid conveyor device (50) is provided side by side with the discharging grid conveyor device (2), the grid spacing of the first grid conveyor device (50) is same as the grid spacing of the pillow bag conveyor chain device (3), the second grid conveyor device (51) is provided side by side with the cartoning conveyor chain device (10), and the grid spacing of the second grid conveyor device (51) is same as the grid spacing of the cartoning conveyor chain device (10).

2. The high-speed double-line integrated blister and pillow bag cartoning machine according to claim 1,

wherein the output end of the pillow-type packaging machine (6) is connected to the pillow bag grid conveyor device (8) through a rotary transfer manipulator (7) Bayramoglu Patent ve Marka Danismanlik Limited Sirketi, Mira Office, Kanuni Sultan Suleyman Boulevard, 5387. Street, Beytepe, floor 12, no:50 Cankaya/Ankara, Turkey and the rotary transfer manipulator (7) is adapted to rotate the pillow bags on the output end of the pillow-type packaging machine (6) by 90° and to transfer the pillow bags to the pillow bag grid conveyor device (8).

3. The high-speed double-line integrated blister and pillow bag cartoning machine according to claim 1, wherein the material transfer device (9) comprises a manipulator (91) and a suction mechanism, the suction mechanism comprises a nozzle holder (92) and a plurality of material vacuum nozzles (90), the material vacuum nozzles (90) are provided on the nozzle holder (92), the nozzle holder (92) is connected to a connecting seat, wherein a connecting groove is formed in the connecting seat, the connecting seat is connected to a locating pin, the manipulator (91) is connected to a connecting member, a pinhole is formed in the connecting member, the connecting member is provided in the connecting groove of the connecting seat, and the locating pin is inserted into the pinhole of the connecting member.
4. The high-speed double-line integrated blister and pillow bag cartoning machine according to claim 1, wherein a guideway (41) is provided on the blister card transfer device (4), the blister card transfer device (4) is slidably provided on the guideway (41) through a sliding seat, and the blister card transfer device (4) is adapted to move between the discharging grid conveyor device (2) and the transiting grid conveyor device (5) or to move between the discharging grid conveyor device (2) and the pillow bag conveyor chain device (3) on the upper side.

Patentansprüche

1. Eine integrierte Hochgeschwindigkeits-Doppellinien-Blister- und Kissenbeutel-Kartoniermaschine, bestehend aus einer Blister-Verpackungsmaschine (1), einer Kissentyp-Verpackungsmaschine (6) und einer Kartoniermaschine (11), wobei die Blister-Verpackungsmaschine (1) mit einer Austragsgitter-Fördervorrichtung (2) verbunden ist und eine Kissenbeutel-Förderkettenvorrichtung (3) an einer Seite der Austragsgitter-Fördervorrichtung (2) angeordnet ist, die Kissenbeutel-Förderkettenvorrichtung (3) mit der Kissentyp-Verpackungsmaschine (6) verbunden ist, wobei ein Ausgangsende der Kissentyp-Verpackungsmaschine (6) mit einer Kissenbeutel-Git-

terfördervorrichtung (8) verbunden ist, an einer Seite der Kissenbeutel-Gitterfördervorrichtung (8) eine Kartonier-Förderkettenvorrichtung (10) angeordnet ist, und die Kartonier-Förderkettenvorrichtung (10) mit der Kartoniermaschine (11) verbunden ist, wobei an der anderen Seite der Austragsgitter-Fördervorrichtung (2) eine Durchlaufgitter-Fördervorrichtung (5) angeordnet ist und die Durchlaufgitter-Fördervorrichtung (5) sich zu einer Seite der Kartonier-Förderkettenvorrichtung (10) erstreckt, und die Kartonier-Förderkettenvorrichtung (10) zwischen der Durchlaufgitter-Fördervorrichtung (5) und der Kissenbeutel-Gitterfördervorrichtung (8) angeordnet ist, wobei über der Austragsgitter-Fördervorrichtung (2) eine Blisterkarten-Transfervorrichtung (4) angeordnet ist, die zur Übergabe von Blisterkarten auf der Austragsgitter-Fördervorrichtung (2) an die Kissenbeutel-Förderkettenvorrichtung (3) oder an die Durchlaufgitter-Fördervorrichtung (5) angepasst ist, **dadurch gekennzeichnet, dass** die Blisterkarten-Transfervorrichtung (4) mit Blister-Vakuumdüsen (40) versehen ist; und eine Materialtransfervorrichtung (9) über der Kartonier-Förderkettenvorrichtung (10), die zur Übergabe der Blisterkarten auf der Durchlaufgitter-Fördervorrichtung (5) oder von Kissenbeuteln auf der Kissenbeutel-Gitterfördervorrichtung (8) an die Kartonier-Förderkettenvorrichtung (10) angepasst ist, und die mit Material-Vakuumdüsen (90) versehen ist, wobei die Durchlaufgitter-Fördervorrichtung (5) aus einer ersten Gitterfördervorrichtung (50) und einer zweiten Gitterfördervorrichtung (51) zusammengesetzt ist, wobei zwischen der ersten Gitterfördervorrichtung (50) und der zweiten Gitterfördervorrichtung (51) eine Verbindungsrampe (52) vorgesehen ist, ein Hochpunkt der Verbindungsrampe (52) mit der ersten Gitterfördervorrichtung (50) verbunden ist, ein Tiefpunkt der Verbindungsrampe (52) mit der zweiten Gitterfördervorrichtung (51) verbunden ist, die erste Gitterfördervorrichtung (50) und die zweite Gitterfördervorrichtung (51) jeweils von einem unabhängigen Motor angetrieben werden, wobei der Gitterabstand der ersten Gitterfördervorrichtung (50) sich von dem Gitterabstand der zweiten Gitterfördervorrichtung (51) unterscheidet, wobei die entsprechenden unabhängigen Motoren so konfiguriert sind, dass sie die erste Gitterfördervorrichtung (50) und die zweite Gitterfördervorrichtung (51) in der gleichen Zeitspanne um einen Gitterabstand bewegen, wobei die erste Gitterfördervorrichtung (50) Seite an Seite mit der Austragsgitter-Fördervorrichtung (2) vorgesehen ist, der Gitterabstand der ersten Gitterfördervorrichtung (50) gleich dem Gitterabstand der Kissenbeutel-Förderkettenvorrichtung (3) ist, die zweite Gitterfördervorrichtung (51) Seite an Seite mit der Kartonier-Förderkettenvorrichtung (10) vorgesehen ist und der Gitterabstand der zweiten Gitterfördervorrichtung (51) gleich dem Gitterabstand der Kartonier-Förderkettenvorrichtung

(10) ist.

2. Die integrierte Hochgeschwindigkeits-Doppellinien-Blister- und Kissenbeutel-Kartoniermaschine nach Anspruch 1, wobei das Ausgabeende der Kissentyp-Verpackungsmaschine (6) mit der Kissenbeutel-Gitterfördervorrichtung (8) durch einen Drehübertragungsmanipulator (7) verbunden ist und der Drehübertragungsmanipulator (7) geeignet ist, die Kissenbeutel am Ausgabeende der Kissentyp-Verpackungsmaschine (6) um 90° zu drehen und die Kissenbeutel an die Kissenbeutel-Gitterfördervorrichtung (8) zu übertragen. 5
3. Die integrierte Hochgeschwindigkeits-Doppellinien-Blister- und Kissenbeutel-Kartoniermaschine nach Anspruch 1, wobei die Materialtransfervorrichtung (9) einen Manipulator (91) und einen Saugmechanismus umfasst, der Saugmechanismus einen Düsenhalter (92) und eine Mehrzahl von Material-Vakuumdüsen (90) umfasst, die Material-Vakuumdüsen (90) am Düsenhalter (92) angebracht sind, der Düsenhalter (92) mit einem Verbindungssitz verbunden ist, wobei eine Verbindungsnut im Verbindungssitz ausgebildet ist, der Verbindungssitz mit einem Fixierstift verbunden ist, der Manipulator (91) mit einem Verbindungselement verbunden ist, ein Stiftloch im Verbindungselement ausgebildet ist, das Verbindungselement in der Verbindungsnut des Verbindungssitzes angeordnet ist und der Fixierstift in das Stiftloch des Verbindungselements eingesetzt ist. 10 15 20 25 30
4. Die integrierte Hochgeschwindigkeits-Doppellinien-Blister- und Kissenbeutel-Kartoniermaschine nach Anspruch 1, wobei eine Führungsbahn (41) an der Blisterkarten-Transfervorrichtung (4) vorgesehen ist, die Blisterkarten-Transfervorrichtung (4) über einen Gleitsitz gleitend auf der Führungsbahn (41) angeordnet ist, und die Blisterkarten-Transfervorrichtung (4) so angepasst ist, dass sie sich zwischen der Ausgabegitter-Fördervorrichtung (2) und der Durchlaufgitter-Fördervorrichtung (5) oder zwischen der Ausgabegitter-Fördervorrichtung (2) und der Kissenbeutel-Förderkettenvorrichtung (3) auf der Oberseite bewegt. 35 40 45

Revendications

1. Encartonneuse rapide intégrale en forme d'oreiller sous blister à double ligne, comprenant une emballeuse de blister (1), une emballeuse en forme d'oreiller (6) et une encartonneuse (11); ladite emballeuse de blister (1) étant connectée au convoyeur à grille de décharge (2); un convoyeur en chaîne d'oreiller (3) étant disposé en parallèle sur un côté dudit convoyeur à grille de décharge (2); ledit con- 50

voyeur en chaîne d'oreiller (3) étant connecté à l'emballeuse en forme d'oreiller (6); **caractérisée en ce que** l'extrémité de sortie de l'emballeuse en forme d'oreiller (6) étant connectée à un convoyeur à grille des oreillers (8); un convoyeur en chaîne d'encartonnage (10) étant disposé sur un côté dudit convoyeur à grille des oreillers (8); ledit convoyeur en chaîne d'encartonnage (10) étant connecté à l'encartonneuse (11); un convoyeur transitoire à grille (5) étant disposé sur un autre côté dudit convoyeur à grille de décharge (2); ledit convoyeur transitoire à grille (5) s'étendant jusqu'à un côté du convoyeur en chaîne d'encartonnage (10); ledit convoyeur en chaîne d'encartonnage (10) se trouvant entre le convoyeur transitoire à grille (5) et le convoyeur à grille des oreillers (8); un transporteur de carton de blister (4) étant disposé sur le haut dudit convoyeur à grille de décharge (2) pour transférer le carton de blister du convoyeur à grille de décharge (2) jusqu'au convoyeur en chaîne d'oreiller (3) ou jusqu'au convoyeur transitoire à grille (5); ledit transporteur de carton de blister (4) étant pourvu de buses d'aspiration des blisters à vide (40); un transporteur de matériau (9) étant disposé sur le haut dudit convoyeur en chaîne d'encartonnage (10) pour transférer les cartons de blister du convoyeur transitoire à grille (5) ou les sacs d'oreiller sur le convoyeur à grille des oreillers (8) jusqu'au convoyeur en chaîne d'encartonnage (10); ledit transporteur de matériau (9) étant pourvu de buses d'aspiration des matériaux à vide (90); **caractérisée en ce que** ledit convoyeur transitoire à grille (5) étant composé d'un premier convoyeur à grille (50) et d'un deuxième convoyeur à grille (51); une rampe de liaison (52) étant disposée entre ledit premier convoyeur à grille (50) et ledit deuxième convoyeur à grille (51); le point supérieur de ladite rampe de liaison (52) étant connecté au premier convoyeur à grille (50); le point inférieur de ladite rampe de liaison (52) étant connecté au deuxième convoyeur à grille (51); le premier convoyeur à grille (50) et le deuxième convoyeur à grille (51) étant entraînés par des moteurs indépendants; ledit premier convoyeur à grille (50) se trouvant à côté du convoyeur à grille de décharge (2), dont l'espacement entre les grilles du premier convoyeur à grille (50) étant identique à celui entre les grilles du convoyeur en chaîne d'oreiller (3); ledit deuxième convoyeur à grille (51) se trouvant à côté du convoyeur en chaîne d'encartonnage (10), dont l'espacement entre les grilles du deuxième convoyeur à grille (51) étant identique à celui entre les grilles du convoyeur en chaîne d'encartonnage (10). 55

2. Encartonneuse rapide intégrale en forme d'oreiller sous blister à double ligne selon la revendication 1, **caractérisée en ce que** l'extrémité de sortie de l'emballeuse en forme d'oreiller (6) étant connectée au convoyeur à grille des oreillers (8) par l'intermédiaire

d'un manipulateur de transfert rotatif (7) ; ledit manipulateur de transfert rotatif (7) étant adapté pour faire pivoter les sacs d'oreiller sur l'extrémité de sortie de l'emballeuse en forme d'oreiller (6) de 90° et pour transférer les sacs d'oreiller dans le convoyeur à grille des oreillers (8). 5

3. Encartonneuse rapide intégrale en forme d'oreiller sous blister à double ligne selon la revendication 1, **caractérisée en ce que** le transporteur de matériau (9) comprenant un manipulateur (91) et un mécanisme d'aspiration ; ledit mécanisme d'aspiration comprenant un porte-buse (92) et plusieurs buses d'aspiration des matériaux à vide (90) ; lesdites buses d'aspiration des matériaux à vide (90) étant disposées sur le porte-buse (92) ; ledit porte-buse (92) étant relié à un socle de liaison ; une rainure de liaison étant prévue sur ledit socle de liaison ; une goupille de positionnement étant connectée audit socle de liaison ; ledit manipulateur (91) étant relié à un bloc de liaison ; un trou d'épingle étant formé dans ledit bloc de liaison ; ladite la goupille de positionnement pouvant être insérée dans le trou d'épingle du bloc de liaison. 10 15 20 25

4. Encartonneuse rapide intégrale en forme d'oreiller sous blister à double ligne selon la revendication 1, **caractérisée en ce qu'**une glissière (41) étant prévue sur le transporteur de carton de blister (4) ; ledit transporteur de carton de blister (4) étant disposé de manière coulissante sur la glissière (41) à travers un socle coulissant ; ledit transporteur de carton de blister (4) étant adapté pour se déplacer jusqu'à la partie supérieure entre le convoyeur à grille de décharge (2) et le convoyeur transitoire à grille (5) ou jusqu'à la partie supérieure entre le convoyeur à grille de décharge (2) et le convoyeur en chaîne d'oreiller (3). 30 35 40 45 50 55

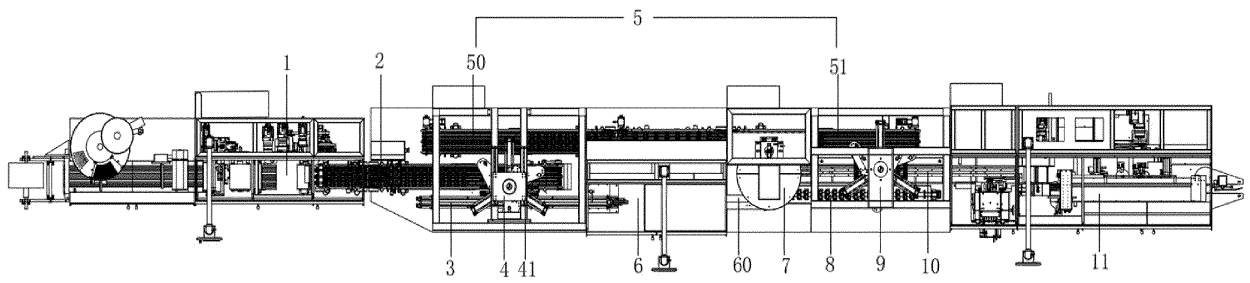


FIG. 1

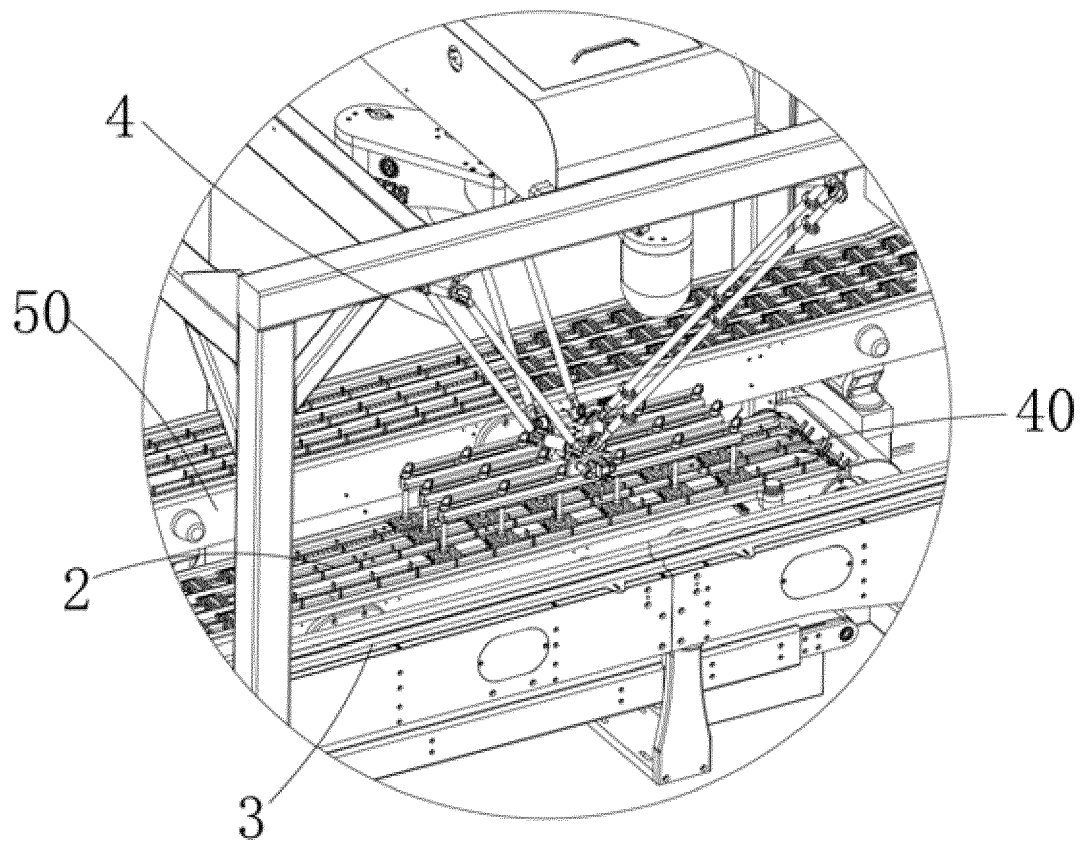


FIG. 2

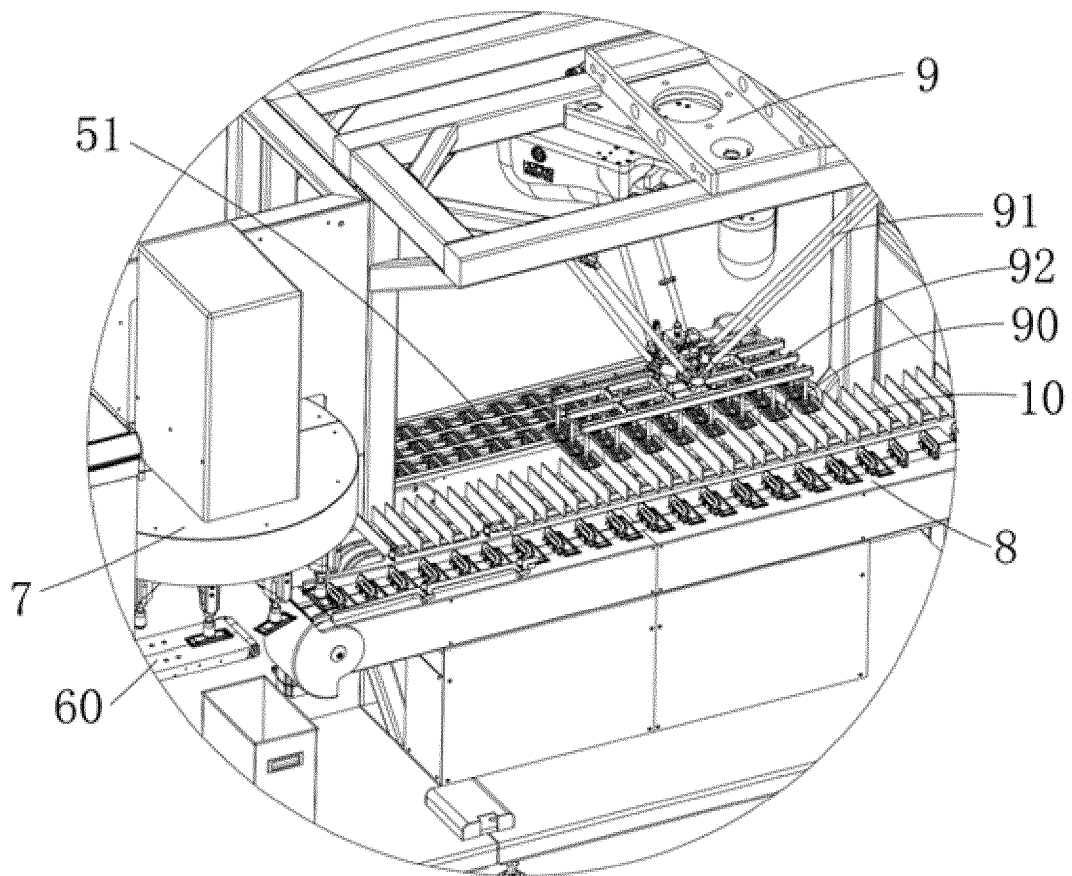


FIG. 3

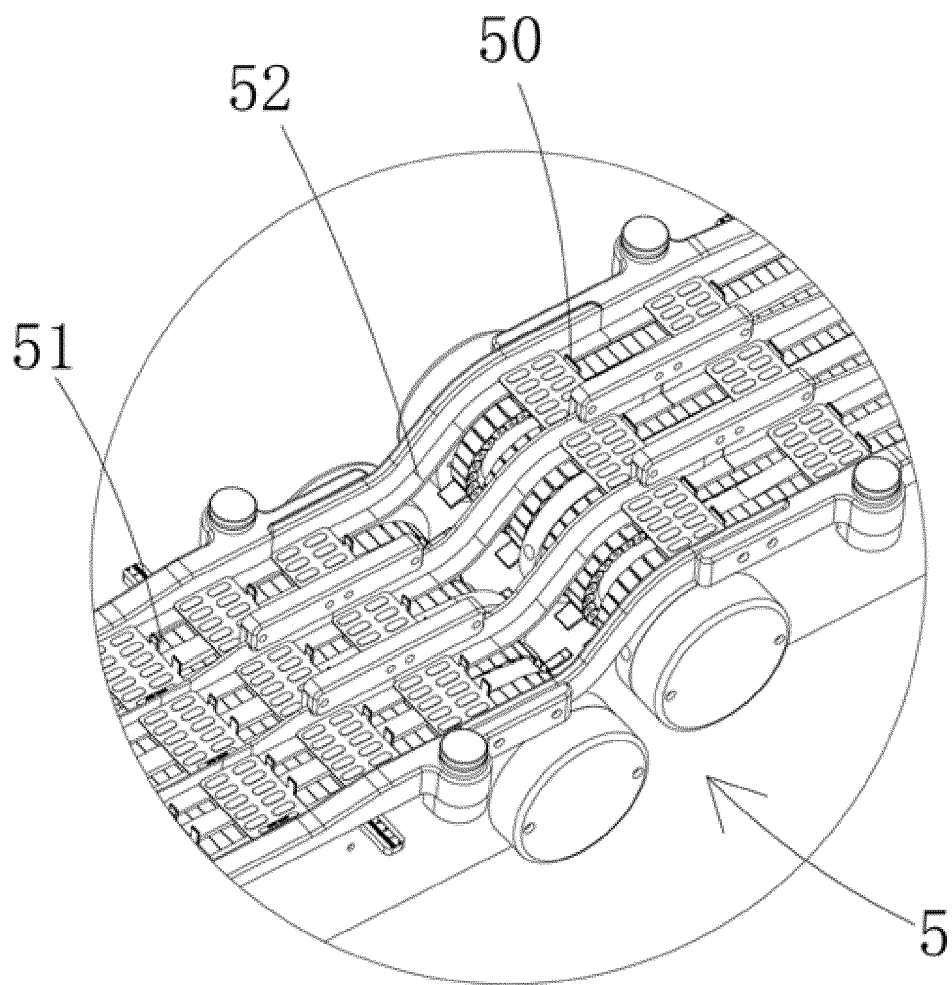


FIG. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 206871414 U [0003]