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(54) **Paperboard slitter machine**

Kartonrollenschneidmaschine

Découpeuse de carton

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(73) Proprietor: **Tzu-Che, Lin**
Taipei Hsien (TW)

(72) Inventor: **Tzu-Che, Lin**
Taipei Hsien (TW)

(74) Representative: **Glawe, Delfs, Moll**
Patent- und Rechtsanwälte
Rothenbaumchaussee 58
20148 Hamburg (DE)

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention:

[0001] The present invention relates to a paperboard cutting technology and more particularly, to a paperboard slitter machine, which utilizes a linking mechanism to carry roller brushes in and out of a paperboard feeding passage so that when a rotary cutter is moved to cut a paperboard, the roller brushes are pressed on the paperboard at two sides relative to the rotary cutter for enabling the paperboard to be accurately and smoothly cut by the rotary cutter.

2. Description of the Related Art:

[0002] Following the rise in living standards and the consciousness of environmental protection, using a paper material to pack products has become a popularly accepted trend. For the advantages of light in weight, shock absorbnesss, colorful printing and high durability, corrugated paperboard is intensively used for making cartons and paper boxes for packing different products, avoiding product damage during transportation.

[0003] When making a corrugated paperboard, a strip of paperboard is corrugated by heated, fluted rolls, and then the protruding tips on one side of the fluted paperboard strip are coated with an adhesive, and then a flat sheet of facing paperboard is positioned in contact with the tips, and then heat and pressure are applied as the fluted strip and facing board are held together to complete the bond. To fit different requirements, a big size corrugated paperboard is made and then properly cut through a paperboard slitter machine into the desired size or sizes. FIG. 4 illustrates a paperboard slitter machine according to the prior art. According to this design, the paperboard slitter machine comprises a bottom machine frame unit A, a top machine frame unit **B** spaced above the bottom machine frame unit A, a passage **B1** defined between the bottom machine frame unit A and the top machine frame unit **B,** a rotary cutter **A1** mounted in the bottom machine frame unit **A** and adapted for cutting a paperboard **C** that is being fed through an entrance **B11** into the passage **B1,** and a roller brush **B2** mounted in the top machine frame unit B and suspending in the passage **B1** to press the paperboard **C** being delivered through the passage **B1** for cutting.

[0004] The aforesaid prior art paperboard slitter machine is still not satisfactory in function and has the drawbacks as follows:

1. The paperboard **C** will be cut by the rotary cutter **A1** after having been pressed by the roller brush B2. When the lead end of the paperboard **C** passed over the roller brush **B2** and is cut by the rotary cutter **A1**, rotary cutter **A1** will give an upward pressure to the lead end of the paperboard **C** during cutting, causing an incomplete cutting. A further checking by labor is necessary. When an incomplete cutting occurs, a further manual cutting step must be performed, increasing the cost.
2. When the lead end of the paperboard **C** is lifted during cutting, the roller brush **B2** is kept pressed on the tail end of the paperboard **C**, causing formation of a dent or bending trace on the paperboard **C**. In consequence, the defective rate will be increased.

[0005] Therefore, it is desirable to provide a paperboard slitter machine, which eliminates the aforesaid problems.

[0006] The document EP-A-0 990 491 discloses a paperboard slitter having the feature of the preamble of claim 1.

SUMMARY OF THE INVENTION

[0007] The present invention has been accomplished under the circumstances in view. It is therefore the main object of the present invention to provide a paperboard slitter machine, which facilitates accurate cutting of each fed paperboard without causing damage to the paperboard, thereby increasing the yield. It is another object of the present invention to provide a paperboard slitter machine, which assures accurate cutting, avoiding damage to the machine parts and saving much machine parts maintenance labor and cost.

[0008] To achieve these and other objects of the present invention, a paperboard slitter machine comprises a first housing having defined therein an accommodation chamber, a second housing, a passage defined between the first housing and the second housing for the passing of a paperboard, a rotary cutter mounted in the accommodation chamber inside the first housing and movable out of the accommodation chamber into the passage to cut the paperboard being delivered through the passage, and a linking mechanism mounted in the second housing. The linking mechanism comprises at least one roller brush holder arm mounted in the second housing, two roller brushes pivotally mounted on the at least one roller brush holder arm, and a driving device controllable to move the at least one roller brush holder arm between a first position where the roller brushes are held in the passage at two sides relative to the rotary cutter to press the fed paperboard in the passage for cutting by the rotary cutter and a second position where the roller brushes are kept away from the passage and received inside the second housing.

[0009] Further, a space is left between the two roller brush holder arms for receiving the rotary cutter during cutting. When the rotary cutter is moved out of the first housing to cut the paperboard, the two roller brushes are pressed on the paperboard against the first housing at two opposite lateral sides relative to the rotary cutter, and therefore the paperboard will not be curved or deformed

during cutting and will be accurately cut, avoiding any further supplementary manual cutting step.

[0010] The space left between the two roller brushes is adapted for receiving the rotary cutter when the rotary cutter is being moved out of the first housing to cut the paperboard, avoiding accidental damage to the roller brushes by the rotary cutter and saving much roller brush maintenance and replacement labor and time.

[0011] Further, by means of controlling the driving device to move one roller brush holder arm of the linking mechanism, the two roller brush holder arms are moved synchronously to carry the two roller brushes to one same plane, keeping the two roller brushes in balance when the two roller brushes are pressed on the paperboard against the platform of the first housing, and therefore the two roller brushes impart an equal amount of pressure to the paperboard, avoiding damage and increasing the yield.

[0012] In one embodiment of the present invention, two substantially L-shaped roller brush holder arms of the linking mechanism are pivotally mounted in the second housing and coupled together by the link for synchronous rotary motion. By means of biasing the roller brush holder arms to carry the roller brushes in and out of the passage in a swinging motion, the total height of the second housing is minimized, and therefore the machine size can be minimized.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

FIG. 1 is a schematic side view of a paperboard slitter machine in accordance with a first embodiment of the present invention

FIG. 2 is a schematic side view of the first embodiment of the present invention, illustrating the paperboard slitter machine in a cutting operation.

FIG. 3 is a schematic side view of a paperboard slitter machine in accordance with a second embodiment of the present invention.

FIG. 4 is a side view of a paperboard slitter machine according to the prior art.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0014] Referring to FIGS. 1 and 2, a paperboard slitter machine in accordance with the present invention is shown comprising a first housing **1** and a second housing **2**.

[0015] The first housing **1** comprises an accommodation chamber **10**, a platform **11** located on one side relative to the accommodation chamber **10** for bearing a paperboard **3** for cutting, and a cutter slot **111** cut through the platform **11** and disposed in communication with the accommodation chamber **10** and the outside space. Further, a rotary cutter **12** is pivotally mounted in the accommodation chamber **10** and partially movable in and out of the cutter slot **111** to cut the paperboard **3** that is being transferred over the platform **11**.

[0016] The second housing **2** is disposed at one side relative to the platform **11** of the first housing **1** in such a manner that a passage **21** is defined between the platform **11** of the first housing **1** and the second housing **2** for the passing of a paperboard **3** for cutting. The second housing **2** houses a linking mechanism **22** having at least one, for example, two roller brush holder arms **221**, two roller brushes **23** respectively pivotally mounted on the two roller brush holder arms **221** adjacent to the passage **21**, and a driving device **222** connected to the linking mechanism **22** at a location far from the passage **21** and adapted for moving the roller brush holder arms **221**. The two roller brushes **23**, i.e., the two roller brush holder arms 221 are spaced from each other by a space **24** that is provided for receiving the rotary cutter **12** when the rotary cutter **12** protrudes over the cutter slot **111** to cut the paperboard **3** being transferred over the platform **11**. Therefore, the rotary cutter **12** does not touch the roller brushes **23** during cutting. Further, each roller brush **23** has multiple bundles of tough bristles densely fastened to the periphery of the core shaft thereof.

[0017] Referring to FIGS. 1 and 2 again, the roller brush holder arms **221** of the linking mechanism **22** have a substantially L-shaped profile. Each roller brush holder arm **221** has an elongated base arm portion **2211**, an end portion **2212** extended from one end of the elongated base arm portion **2211** at a predetermined angle, a first pivot **2213** pivotally connect the end portion **2212** to the second housing **2** for enabling the respective roller brush holder arm **221** to be turned back and forth about the first pivot **2213** within a predetermined angle to carry the associating roller brush **23** into or out of the passage **21**, an elongated actuation arm portion **2214** perpendicularly extended from the other end of the elongated base arm portion **2211**, a second pivot **2215** pivotally connect the distal end of the elongated actuation arm portion **2214** to the driving device **222** and a connection portion **2216** fixedly located on the elongated actuation arm portion **2214** between the second pivot **2215** and the elongated base arm portion **2211**. The linking mechanism **22** further comprises a link **223** coupled between the connection portions **2216** of the two roller brush holder arms 221. Further, the driving device **222** is pivotally connected to the second housing **2** by a pivot member **2222**, having a reciprocating rod **2221** connected to the second pivot **2215** at one roller brush holder arm **221**. Further, the roller brushes **23** are respectively pivotally mounted on the elongated actuation arm portions **2214** of the roller brush holder arms **221** adjacent to the associating elongated base arm portions **2211**.

[0018] When a paperboard **3** is being delivered through the passage **21** between the first housing **1** and the second housing **2**, the rotary cutter **12** is moved out of the cutter slot **111** to cut the paperboard **3**, and the same time the driving device **222** is controlled to extend out the

reciprocating rod **2221**, moving the elongated actuation arm portion **2214** of the respective roller brush holder arm **221** in one direction. At this time, the end portion **2212** of the respective roller brush holder arm **221** is forced to turn about the respective first pivot **2213** in one direction, and therefore the associating roller brush **23** is moved into the passage **21** to press the paperboard 3 on the platform **11** of the first housing **1** for cutting by the rotary cutter **12** accurately. Subject to the linking effect of the link **223** that is coupled between the connection portions **2216** of the two roller brush holder arms **221**, the two roller brush holder arms **221** are moved synchronously, and therefore the two roller brushes **23** are simultaneously moved into the passage **21** to press the paperboard **3** on the platform **11** of the first housing **1**, keeping the paperboard **3** is smooth condition for cutting by the rotary cutter **12** accurately. Therefore, the paperboard **3** will not be curved or deformed during cutting, i.e., the invention facilitates accurate paperboard cutting, saving much the cutting cost and increasing the yield.

[0019] After cutting, the rotary cutter **12** is moved backwards to the inside of the accommodation chamber **10**, and the driving device **222** is controlled to move back the reciprocating rod **2221**, and therefore the roller brush holder arms **221** and the roller brushes **23** are returned to their former positions.

[0020] Further, the first housing 1 can be set at the bottom side, and the second housing **2** can be set at the top side. Alternatively, the position of the first housing 1 and the position of the second housing **2** can be exchanged, enabling the paperboard 3 to be closely attached to the platform **11** of the first housing **1** for cutting by the rotary cutter **12**.

[0021] FIG. 3 illustrates an alternate form of the present invention. According to this alternate form, the driving device, referenced by **23**, is fixedly mounted in the second housing **2** in vertical and controllable to move the linking mechanism **22** up and down between the operative position where the roller brushes 23 that are carried on the linking mechanism **22** are moved into the passage **21** and pressed on the fed paperboard **3** against the platform **11** of the first housing **1** for enabling the paperboard **3** to be accurately cut by the rotary cutter **12** and the non-operative position where the roller brushed **23** are moved away from the passage **21**. According to this alternate form, the vertical height of the path required for the roller brushes **23** is relatively longer than the swinging motion in the embodiment of FIGS. 1 and 2, i.e., the height of the second housing 2 in accordance with the embodiment of FIGS. 1 and 2 can be shorter than that in accordance with the embodiment of FIG. 3.

[0022] Further, the aforesaid driving device **23** can be an air cylinder, hydraulic cylinder or any of a variety of other means capable of moving the reciprocating rod **2221** linearly back and forth between an extended position and a received position.

[0023] In conclusion, the invention provides a paperboard slitter machine, which has advantages and features as follows:

1. Subject to the arrangement of the space **24** between the two roller brush holder arms **221** for receiving the rotary cutter **12** during cutting, the two roller brushes **23** are pressed on the paperboard **3** against the platform **11** of the first housing **1** at two opposite lateral sides relative to the rotary cutter **12** which is being moved out of the cutter slot **111** to cut the paperboard 3, and therefore the paperboard **3** will not be curved or deformed during cutting and will be accurately cut, avoiding any further supplementary manual cutting step.
2. During cutting, the two roller brushes **23** are pressed on the paperboard **3** against the platform **11** of the first housing **1** at two opposite lateral sides relative to the cutting position, and therefore the paperboard **3** will not be curved or deformed during cutting, increasing the yield.
3. The space **24** left between the two roller brush holder arms **221** is adapted for receiving the rotary cutter **12** when the rotary cutter **12** protrudes over the cutter slot **111** to cut the paperboard **3** being transferred over the platform **11**, avoiding accidental damage to the roller brushes **23** by the rotary cutter **12** and saving much roller brush maintenance and replacement labor and time.
4. By means of controlling the driving device **222** to move one roller brush holder arm **221** of the linking mechanism **22**, the two roller brush holder arms **221** are moved synchronously to carry the two roller brushes **23** to one same plane, keeping the two roller brushes **23** in balance when the two roller brushes **23** are pressed on the paperboard **3** against the platform **11** of the first housing **1**, and therefore the two roller brushes **23** impart an equal amount of pressure to the paperboard **3**, avoiding damage and increasing the yield.
5. The roller brush holder arms **221** of the linking mechanism **22** are pivotally mounted in the second housing **2** and coupled together by the link **223** for synchronous rotary motion. By means of biasing the roller brush holder arms **221** to carry the roller brushes **23** in and out of the passage **21** in a swinging motion, the total height of the second housing **2** is minimized, and therefore the machine size can be minimized.

[0024] In general, the invention provides a paperboard slitter machine, which comprises a first housing **1**, a rotary cutter **12** mounted in the first housing **1** and movable in and out of the first housing **1** for cutting a paperboard **3**, a second housing **2** kept apart from the first housing **1** such that a passage **21** is defined between the first housing **1** and the second housing **2** for the passing of the paperboard **3** to be cut, a linking mechanism **22** having two roller brush holder arms **221** pivotally mounted in the second housing **2** and connected in parallel by a link **223**

and a driving device **222** controllable to bias the roller brush holder arms **221**, and two roller brushes **23** respectively pivotally mounted on the roller brush holder arms **221** and movable by the roller brush holder arms **221** in and out of the passage **21** for holding down the fed paperboard **3** on the first housing **1** for cutting by the rotary cutter **12** accurately and smoothly.

[0025] Although particular embodiments of the invention have been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.

Claims

1. A paperboard slitter machine (3), comprising:

a first housing (1) having defined therein an accommodation chamber (10);
a second housing (2);
a passage (21) defined between said first housing (1) and said second housing (2) for the passing of a paperboard (3);
a rotary cutter (12) mounted in said accommodation chamber (10) inside said first housing (1) and movable out of said accommodation chamber (10) into said passage (21) to cut the paperboard (3) being delivered through said passage (21); and **characterised**
by a linking mechanism (22) mounted in said second housing (2), said linking mechanism (22) comprising at least one roller brush holder arm (221), a plurality of roller brushes (23) pivotally mounted on said at least one roller brush holder arm (221), and a driving device (222) controllable to move said at least one roller brush holder arm (221) between a first position where said roller brushes (23) are held in said passage (21) at two sides relative to said rotary cutter (12) to press the fed paperboard (3) in said passage (21) for cutting by said rotary cutter (12) and a second position where said roller brushes (23) are kept away from said passage (21) and received inside said second housing (2), wherein said driving device (222) comprises a reciprocating rod (2221) connected to said at least one roller brush holder arm (221) and movable between an extended position and a received position.

2. The paperboard slitter machine as claimed in claim 1, wherein said first housing (1) comprises a platform (11) located on one side of said accommodation housing and facing said passage (21), and a cutter slot (111) cut through said platform (11) for the passing of said rotary cutter (12) in and out of said passage.

3. The paperboard slitter machine as claimed in claim 1, wherein each said brush roller comprises multiple bundles of tough bristles evenly fastened to the periphery thereof.

4. The paperboard slitter machine as claimed in claim 1, wherein said linking mechanism (22) comprises a plurality of roller brush holder arms (221) respectively pivotally mounted in said second housing (2), and at least one link (223) coupled to said roller brush holder arms (221) to connect said roller brush holder arms (221) in parallel, each said roller brush holder arm (221) comprising an elongated base arm portion (2211), an end portion (2212) extended from one end of said elongated base arm portion (2211) at a predetermined angle, a first pivot (2213) pivotally connect said end portion (2212) to said second housing (2) for enabling the respective roller brush holder arm (221) to be turned back and forth about said first pivot (2213) between said first position and said second position by said driving device (222), an elongated actuation arm portion (2214) perpendicularly extended from an opposite end of said elongated base arm portion (2211), a second pivot (2215) pivotally connect a distal end of said elongated actuation arm portion (2214) to said driving device (222); said roller brushes (23) are respectively pivotally mounted the elongated actuation arm portions (2214) of said roller brush holder arms (221) adjacent to the respective elongated base arm portions (2211).

5. The paperboard slitter machine as claimed in claim 4, wherein said driving device (222) comprises a reciprocating rod (2221) coupled to the second pivot (2215) of one said roller brush holder arm (221) and movable between an extended position and a received position to bias said roller brush holder arms (221) between said first position and said second position.

Patentansprüche

1. Kartonschneidmaschine (3) mit
einem ersten Gehäuse (1), in dem eine Aufnahmekammer (10) definiert ist,
einem zweiten Gehäuse (2),
einem zwischen dem ersten Gehäuse (1) und dem zweiten Gehäuse (2) definierten Durchgang für den Durchgang eines Kartons (3),
einem Drehschneider (12), der in der Aufnahmekammer (10) im ersten Gehäuse (1) montiert ist und aus der Aufnahmekammer (10) in den Durchgang (21) bewegt werden kann, um den durch den Durchgang (21) beförderten Karton (3) zu schneiden,

gekennzeichnet durch einen Verbindungsmechanismus (22), der in dem zweiten Gehäuse (2) montiert ist und mindestens einen Rollenbürstenhaltearm (221), mehrere Rollenbürsten (23), die schwenkbar an dem mindestens einen Rollenbürstenhaltearm (221) montiert sind, und eine Antriebsvorrichtung (222) umfasst, die so gesteuert werden kann, um den mindestens einen Rollenbürstenhaltearm (221) zwischen einer ersten Position, in der die Rollenbürsten (23) in dem Durchgang (21) an zwei Seiten bezüglich des Drehschneiders (12) gehalten werden, um den zugeführten Karton (3) in den Durchgang (21) zu drücken, so dass er vom Drehschneider (12) geschnitten werden kann, und einer zweiten Position, in der die Rollenbürsten (23) vom Durchgang (21) weg gehalten und im zweiten Gehäuse (2) aufgenommen werden, zu bewegen, wobei die Antriebsvorrichtung (222) eine hin- und hergehende Stange (2221) umfasst, die mit dem mindestens einen Rollenbürstenhaltearm (221) verbunden ist und zwischen einer ausgefahrenen Position und einer aufgenommenen Position bewegt werden kann.

2. Kartonschneidmaschine nach Anspruch 1, wobei das erste Gehäuse (1) eine Plattform (11), die an einer Seite des Aufnahmegehäuses angeordnet ist und dem Durchgang (21) zugewandt ist, und einen durch die Plattform (11) geschnittenen Schneidschlitz (111), damit der Drehschneider (12) in den Durchgang hinein und aus ihm herausgehen kann, umfasst.

3. Kartonschneidmaschine nach Anspruch 1, wobei jede Bürstenrolle mehrere Bündel aus rauen Borsten umfasst, die gleichmäßig an ihrer Peripherie befestigt sind.

4. Kartonschneidmaschine nach Anspruch 1, wobei der Verbindungsmechanismus (22) mehrere Rollenbürstenhaltearme (221), die jeweils schwenkbar im zweiten Gehäuse (2) montiert sind, und mindestens ein Verbindungsglied (223) umfasst, das an die Rollenbürstenhaltearme (221) gekoppelt ist, um die Rollenbürstenhaltearme (221) parallel zu verbinden, wobei jeder Rollenbürstenhaltearm (221) einen länglichen Basisarmabschnitt (2211), einen Endabschnitt (2212), der sich in einem vorbestimmten Winkel von einem Ende des länglichen Basisarmabschnitts (2211) erstreckt, einen ersten Drehpunkt (2213), der den Endabschnitt (2212) schwenkbar mit dem zweiten Gehäuse (2) verbindet, damit der jeweilige Rollenbürstenhaltearm (221) von der Antriebsvorrichtung (222) um den ersten Drehpunkt (2213) zwischen der ersten Position und der zweiten Position hin- und hergedreht werden kann, einen länglichen Betätigungsarmabschnitt (2214), der sich senkrecht von einem entgegengesetzten Ende des länglichen Basisarmabschnitts (2211) erstreckt, und einen zweiten Drehpunkt (2215) umfasst, der ein distales Ende des länglichen Betätigungsarmabschnitts (2214) schwenkbar mit der Antriebsvorrichtung (222) verbindet, wobei die Rollenbürsten (23) jeweils schwenkbar an den länglichen Betätigungsarmabschnitten (2214) der Rollenbürstenhaltearme (221) neben den jeweiligen länglichen Basisarmabschnitten (2211) montiert sind.

5. Kartonschneidmaschine nach Anspruch 4, wobei die Antriebsvorrichtung (222) eine hin- und hergehende Stange (2221) umfasst, die an den zweiten Drehpunkt (2215) des einen Rollenbürstenhaltearms (221) gekoppelt ist und zwischen einer ausgefahrenen Position und einer aufgenommenen Position bewegt werden kann, um die Rollenbürstenhaltearme (221) zwischen der ersten Position und der zweiten Position vorzuspannen.

Revendications

1. Découpeuse de carton (3) comprenant:

un premier boîtier (1) ayant, définie à l'intérieur de ce dernier, une chambre de logement (10);
un second boîtier (2);
un passage (21) défini entre ledit premier boîtier (1) et ledit second boîtier (2) pour le passage d'un carton (3);
un dispositif de coupe rotatif (12) monté dans ladite chambre de logement (10) à l'intérieur dudit premier boîtier (1) et mobile à l'extérieur de ladite chambre de logement (10) dans ledit passage (21) pour couper le carton (3) qui est distribué par ledit passage (21); et **caractérisée par**:

un mécanisme de liaison (22) monté dans ledit second boîtier (2), ledit mécanisme de liaison (22) comprenant au moins un bras de support de rouleau laveur (221), une pluralité de rouleaux laveurs (23) montés de manière pivotante sur ledit au moins un bras de support de rouleau laveur (221), et un dispositif d'entraînement (222) pouvant être commandé pour déplacer ledit au moins un bras de support de rouleau laveur (221) entre une première position dans laquelle lesdits rouleaux laveurs (23) sont maintenus dans ledit passage (21) au niveau de deux côtés par rapport audit dispositif de coupe rotatif (12) pour comprimer le carton (3) fourni, dans ledit passage (21) pour la coupe par ledit dispositif de coupe rotatif (12) et une seconde position dans laquelle lesdits rouleaux laveurs (23) sont maintenus à

distance dudit passage (21) et reçus à l'intérieur dudit second boîtier (2), dans laquelle ledit dispositif d'entraînement (222) comprend une tige réciproque (2221) raccordée audit au moins un bras de support de rouleau laveur (221) et mobile entre une position étendue et une position reçue.

2. Découpeuse de carton selon la revendication 1, dans laquelle ledit premier boîtier (1) comprend une plateforme (11) positionnée d'un côté dudit boîtier de logement et faisant face audit passage (21), et une fente (111) pour dispositif de coupe découpée à travers ladite plateforme (11) pour le passage dudit dispositif de coupe rotatif (12) à l'intérieur et à l'extérieur dudit passage.

3. Découpeuse de carton selon la revendication 1, dans laquelle chacun desdits rouleaux laveurs comprend plusieurs paquets de poils résistants fixés régulièrement sur sa périphérie.

4. Découpeuse de carton selon la revendication 1, dans laquelle ledit mécanisme de liaison (22) comprend une pluralité de bras de support de rouleau laveur (221) montés de manière respectivement pivotante dans ledit second boîtier (2) et au moins une liaison (223) couplée auxdits bras de support de rouleau laveur (221) pour raccorder lesdits bras de support de rouleau laveur (221) en parallèle, chacun desdits bras de support de rouleau laveur (221) comprenant une partie de bras de base allongée (2211), une partie d'extrémité (2212) étendue à partir d'une extrémité de ladite partie de bras de base allongée (2211) selon un angle prédéterminé, un premier pivot (2213) raccorde de manière pivotante ladite partie d'extrémité (2212) audit second boîtier (2) pour permettre au bras de support de rouleau laveur (221) respectif d'être pivoté vers l'arrière et vers l'avant autour dudit premier pivot (2213) entre ladite première position et ladite seconde position par ledit dispositif d'entraînement (222), une partie de bras d'actionnement allongée (2214) perpendiculairement étendue à partir d'une extrémité opposée de ladite partie de bras de base allongée (2211), un second pivot (2215) raccorde de manière pivotante une extrémité distale de ladite partie de bras d'actionnement allongée (2214) audit dispositif d'entraînement (222); lesdits rouleaux laveurs (23) sont respectivement montés de manière pivotante sur les parties de bras d'actionnement allongées (2214) desdits bras de support de rouleau laveur (221) adjacentes aux parties de bras de base allongées (2211) respectives.

5. Découpeuse de carton selon la revendication 4, dans laquelle ledit dispositif d'entraînement (222) comprend une tige réciproque (2221) couplée au second pivot (2215) dudit bras de support de rouleau laveur (221) et mobile entre une position étendue et une position reçue pour solliciter lesdits bras de support de rouleau laveur (221) entre ladite première position et ladite seconde position.

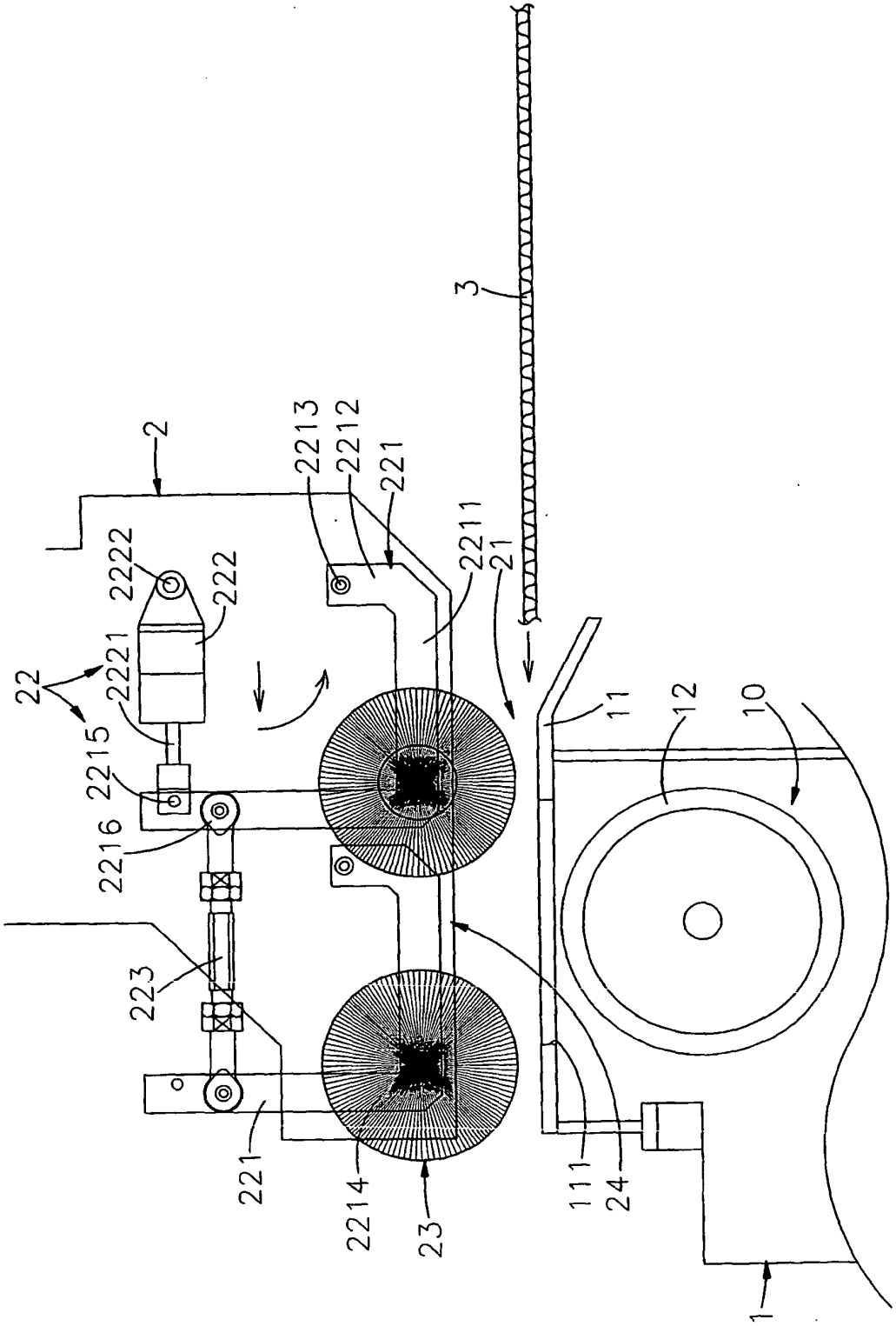

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FIG. 1

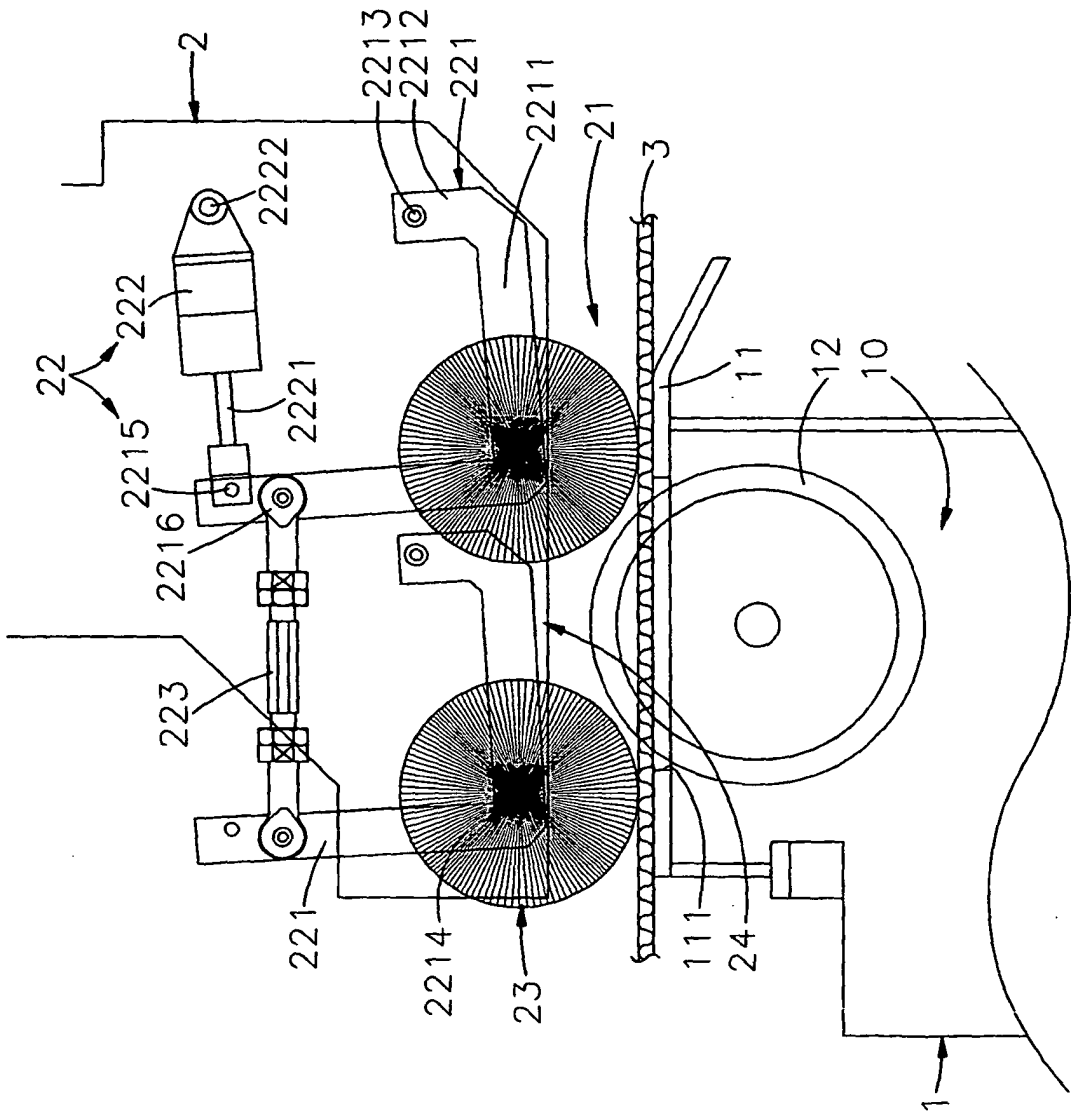

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221
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FIG.2

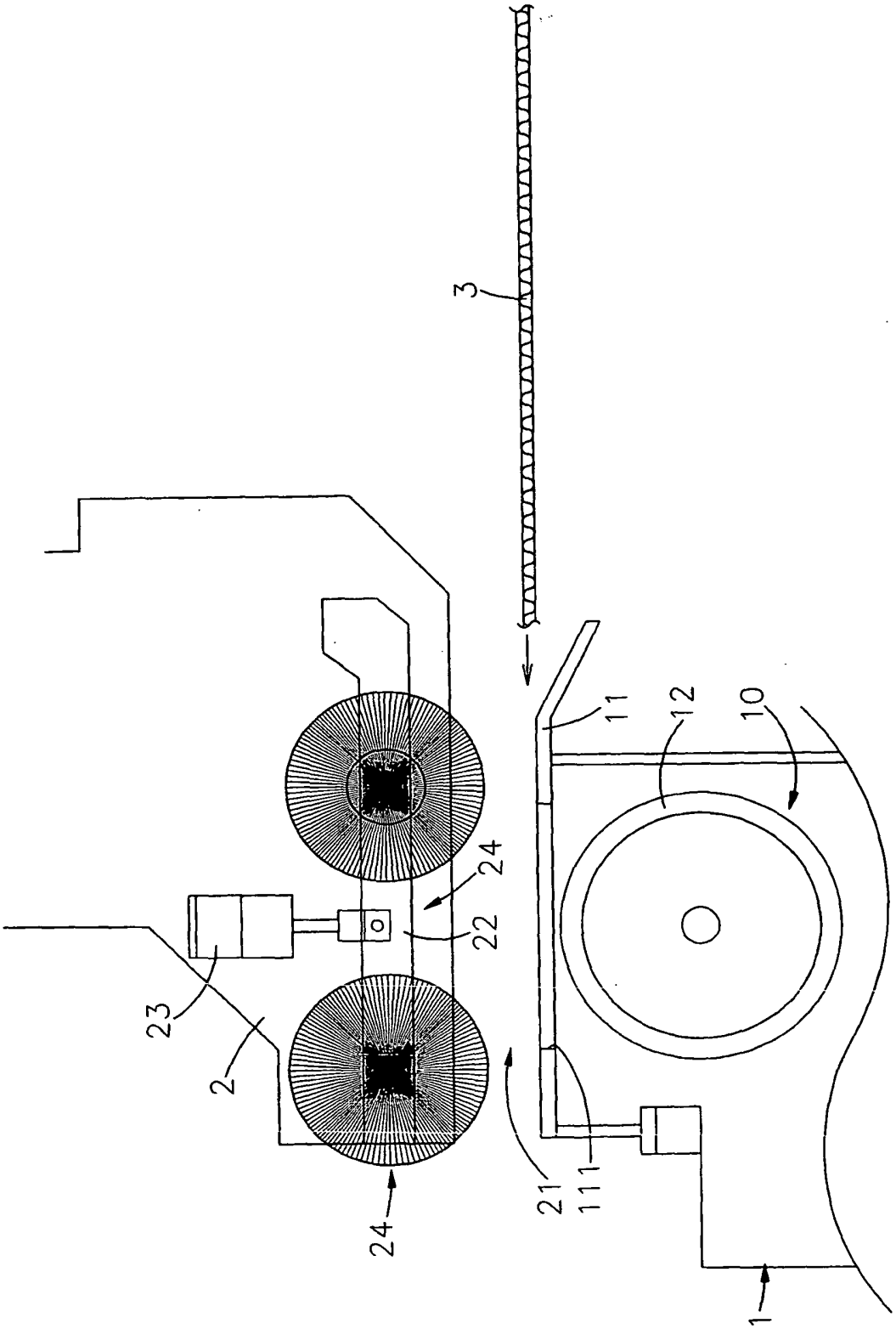


FIG.3

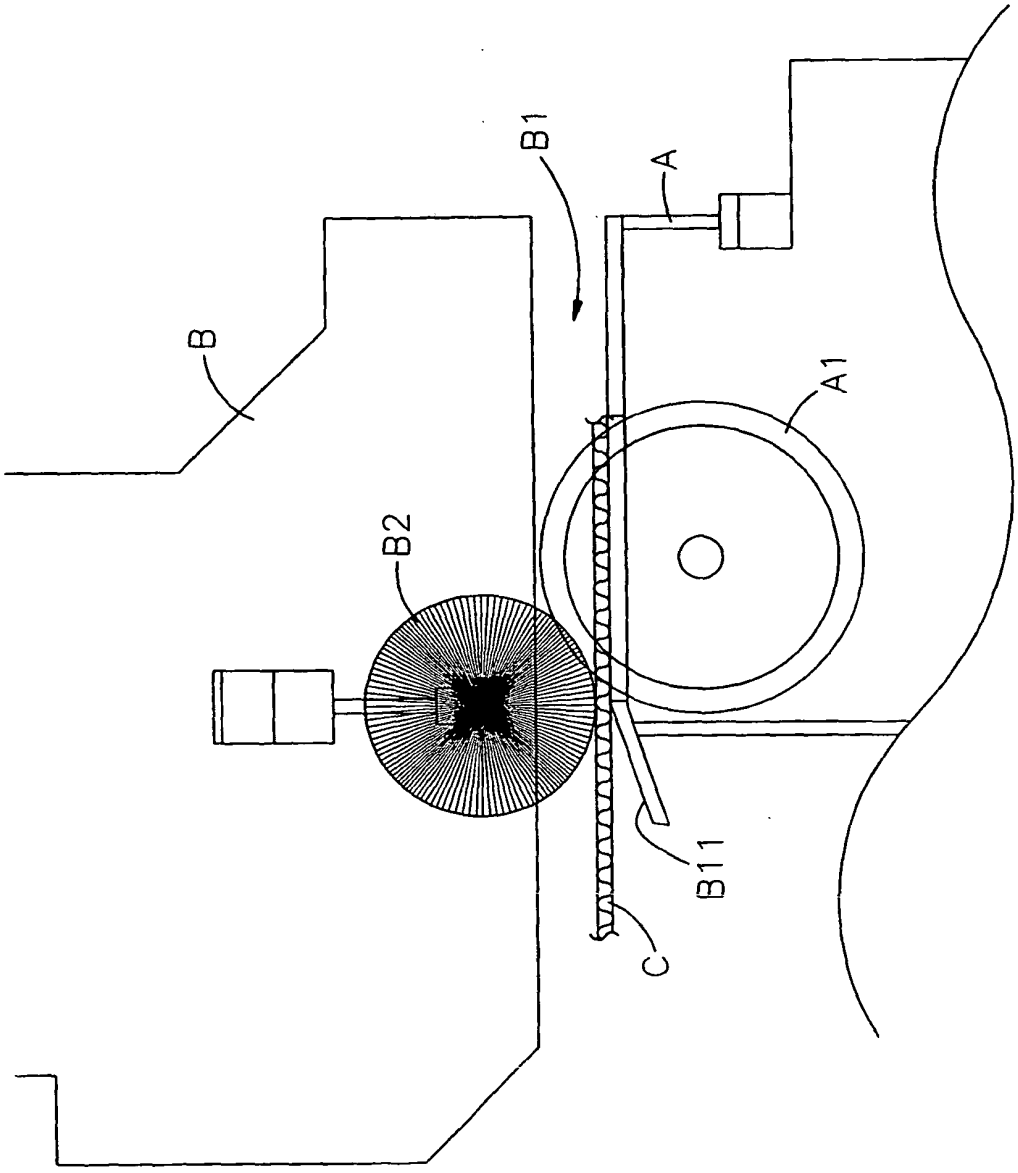


FIG.4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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