

Description

This invention relates to a mechanism of the type disclosed in European Patent Application No 0 200 445 and more specifically to the carton blank folding devices including pivotal folders included therein. Such pivotal folders are used to fold bottle retaining and blank reinforcing flaps which define bottle heel receiving apertures, into overlapping relationship with adjacent portions of the carton blank to which they are hinged. Such retaining and reinforcing flaps are incorporated in the carton blank shown in European patent Application No 0 171 229 which is incorporated herein by reference. This flap folding operation is performed while the carton blank is advanced together with the folding devices of the mechanism through the infeed end of a packaging machine.

In the known construction, each pivotal folder comprises a pair of blank engaging pivotal fingers arranged to open and close together in response to movement of a spherical cam follower, forming a part of the pivotal folder, along a cam track. In order to perform the flap folding operation, the pivotal fingers are pivoted into one extreme outward position in which the fingers are caused to move apart together to engage and fold the carton flaps of a bottle heel retaining aperture and are thereafter pivoted into a fully retracted position in which the fingers are caused to close together.

However, it has been found that there is a tendency for the known pivotal fingers to strike the bottles or other articles to be packaged, resulting in a bottle breakage risk and/or likelihood of an incomplete flap folding operation. The present invention seeks to alleviate this problem and to create an improved folding action by causing the pivotal fingers to move downwardly during their opening movement.

To this end, one aspect of the invention provides in a machine for packaging articles in a tubular wrap-around carrier formed from a blank having a pair of walls adjoined together along a fold line and having a pair of article retaining and blank reinforcing flaps disposed astride said fold line and which includes means for advancing a blank and its associated articles along a predetermined path, a mechanism for engaging and folding said pair of flaps and to fold such flaps inwardly of the carrier, said folding mechanism comprising a folder adapted to execute a folding movement thereby progressively to enter an aperture defined at least partially by said pair of flaps, in the blank to fold the flaps and to retract therefrom during feed movement of the blank and said folder together through a folding station of the machine, said folder including a pair of blank engaging fingers and means for cooperation with actuating means to cause opening and

closing movement of said fingers, characterised in that said pair of fingers are interconnected for the opening and closing movement together during said folding and retracting movements respectively, and in that said cooperating means is carried by each of said pair of fingers, the cooperating means of one finger controlling said opening movement of the pair of fingers, and the cooperating means of the other finger controlling said closing movement of the pair of fingers.

Another aspect of the invention comprises, in a machine for packaging articles in a tubular wrap-around carrier formed from a blank having a pair of walls adjoined together along a fold line and having a pair of article retaining and blank reinforcing flaps disposed astride said fold line and which includes means for advancing a blank and its associated articles along a predetermined path a method of folding said pair of flaps inwardly of the carrier, in which a folding mechanism comprising a folder is adapted to execute a folding movement thereby progressively to enter an aperture defined at least partially by said pair of flaps, in the blank to fold the flaps and to retract therefrom during feed movement of the blank and said folder together through a folding station of the machine, characterised in that said pair of fingers are caused to open and close together during said folding and retracting movements respectively, and in that one of said fingers controls said opening movement of the pair of fingers, and the other of said fingers controls said closing movement of the pair of fingers.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

FIGURE 1a is a plan view of a folder of the mechanism in which a pair of pivotal fingers are shown in closed position;

FIGURE 1b is a perspective view of the folder as seen remote from the pivotal fingers.

FIGURE 1c is a side view of the folder;

FIGURE 2a is a plan view of the folder in which the pivotal fingers are shown in open position;

FIGURE 2b is a perspective view of the folder showing pivotal fingers;

FIGURE 2c is a plan view of the folder as seen with the pivotal fingers open;

FIGURE 3 is a plan view of a cam track through which cam followers of the folders move to cause opening and closing movement of the pivotal fingers;

FIGURE 4 is a front elevation of the cam track; and

FIGURE 5 is a plan view of the mechanism in which the folders are carried by an endless chain.

Referring first to Figure 5 of the drawing, the

blank folding mechanism 10 comprises a chain and sprocket set comprising spaced sprockets 12 and 14 respectively, about which is entrained endless chain 16.

The blank folding mechanism is adapted to be installed adjacent the infeed end of a packaging machine. Two such mechanisms are installed in side-by-side relationship so that a blank and article feed path is provided between the mechanisms. The description hereinafter refers to one such mechanism of the pair.

A series of carton blank folders 'f' are secured to the endless chain at spaced locations along its length so that successive bottle retaining and blank reinforcing flaps in a carton blank can be folded as the blank passes through the mechanism.

The endless chain 16 is driven in synchronism with the blank feed and thus each folder is moved along the chain paths at the same speed as a carton blank passing through the mechanism. In operation of the mechanism each blank folder is moved by the chain 16 along a working path 'W' parallel to a blank and article feed path 'F' and thereafter along a return path 'R'. As a folder approaches the working path 'W', it moves along a convergent path 16A so that the pivotal fingers of the folder are progressively caused to enter a bottle heel aperture of the carton blank.

Referring to Figures 1a-1c and 2a-2c, each folder 'f' comprises a support block 20 including a central raised portion 22 on which the pivotal fingers P1 and P2 are supported. The central raised portion comprises upwardly convergent flats 22a and 22b from which extend pivot shafts 24 and 26 respectively such that the angle subtended between the axes of the pivot shafts is 53.13 degrees. It has been found that this angle gives the requisite downward component of travel of the pivotal fingers during their opening movement.

The pivotal fingers P1 and P2 are mounted on respective ones of the pivot shafts 24 and 26 by a bored through mid-portion PM1 and PM2. Each of the mid-portions are formed with a bevel gear segment PG1 and PG2 which meshes with the gear segment of the other pivotal finger. Thus, clockwise rotation of pivotal finger P1 causes simultaneous anti-clockwise rotation of pivotal finger P2. The pivotal fingers further include carton blank engaging portions PB1 and PB2 extending in one direction (forwardly) of the mid-portions of the respective pivotal fingers and actuating arms PA1 and PA2 extending in the opposite (rearward) direction of the mid-portions of the respective pivotal fingers. Both actuating arms terminate in spherical cam followers PF1 and PF2. As best seen in Figures 1c and 2c, actuating arm PA1 lies in a plane which is above that occupied by the actuating arm PA2 such that the arms can be caused to move

relative to one another without mutual interference as described below. The inclined mounting of the pivotal fingers on the convergent flats 22a and 22b of the support block results in an arrangement in which the blank engaging portions of the fingers extend substantially horizontally from the mounting block when the blank engaging portions are closed, as shown in Figures 1a-1c, and in which the blank engaging portions are inclined downwardly when fully opened to 90 degrees as shown in Figures 2a-2c. The angle subtended between the plane containing each blank engaging portion of a finger and a plane containing the base of the mounting block is substantially 30 degrees when the fingers are fully open. Thus, when the fingers are open, the blank engaging portions move apart and progressively downwardly to their fully opened 90 degrees condition. This opening action has been found to minimise the risk of bottle contact by the blank engaging portions of the fingers and also to improve proper folding of the bottle retaining and blank reinforcing flaps. The 30 degrees angle is chosen to coincide with the plane containing the carton panel against which the flaps are to be folded.

Referring now also to Figures 3 and 4, the pivotal fingers are actuated by a cam track 28 formed in a cam block 30 disposed alongside the feed path 'F' and adapted to receive the actuating arms and cam followers of the pivotal fingers as each folder passes through the working path 'W'.

The pivotal action is now described in which the pivotal finger P1 of a folder leads movement in the feed direction shown and pivotal finger P2 trails. A series of successive positions of the respective spherical cam followers is shown schematically in the cam track 28. As the actuating arms of a folder enters the cam track, in closed position, the cam follower PF1 strikes inclined cam surfaces 32 in the 'opening section' of the track which causes the actuating arm PA1 to move in opposition to the feed direction and towards the neighbouring actuating arm PA2. This pivotal action causes simultaneous movement of the blank engaging portions of the pivotal fingers away from one another by virtue of the geared connection between the fingers thereby bringing the pivotal fingers into their opened position. The other cam follower PF2 has a clear path of movement through the opening section of the cam track.

A straight mid-section of the cam track allows the fingers to be maintained in the open condition.

The actuating arms then enter a 'closing section' of the cam track in which the cam follower PF2 strikes inclined cam surface 34 which causes actuating arm PA2 to move in opposition to the feed direction and away from the neighbouring actuating arm PA1. This pivotal action causes si-

multaneous movement of the blank engaging portions of the pivotal fingers to move towards one another thereby returning the pivotal fingers to their closed position. Of course, immediately prior to the opening section, the convergent chain path 16A of movement of the folders towards the feed path of the carton blank causes the blank engaging portions of each folder progressively to enter a carton bottle heel retaining aperture thereby displacing and folding the carton flaps during movement of the fingers through the opening section of the cam track. The fingers remain engaged in the carton in opened position through the mid section of the cam and are thereafter progressively retracted during movement of the pivotal fingers through the closing section of the cam track by virtue of the divergent chain path 16b.

Claims

1. In a machine for packaging articles in a tubular wrap-around carrier formed from a blank having a pair of walls adjoined together along a fold line and having a pair of article retaining and blank reinforcing flaps disposed astride said fold line and which includes means for advancing a blank and its associated articles along a predetermined path, a mechanism (10) for engaging and folding said pair of flaps and to fold such flaps inwardly of the carrier, said folding mechanism comprising a folder (f) adapted to execute a folding movement thereby progressively to enter an aperture defined at least partially by said pair of flaps in the blank to fold the flaps and to retract therefrom during feed movement of the blank and said folder together through the machine, said folder including a pair of blank engaging fingers (P1, P2) and means PA1, PA2) for cooperation with actuating means to cause opening and closing movement of said fingers, characterised in that said pair of fingers are interconnected for the opening and closing movement together during said folding and retracting movements respectively, and in that said cooperating means is carried by each of said pair of fingers, the cooperating means of one finger controlling said opening movement of the pair of fingers, and the cooperating means of the other finger controlling said closing movement of the pair of fingers.
2. A mechanism according to claim 1, further characterised in that said cooperating means and said actuating means cause downward pivotal movement of said fingers during said opening movement.
3. A mechanism according to claim 2, further characterised in that said fingers are mounted on upwardly convergent surfaces (22a, 22b) of support means (20) upon which said fingers are pivotal thereby to produce said downward pivotal movement of said fingers during said opening movement.
4. A mechanism according to claim 3, further characterised in that said fingers move apart by an angle of substantially 90 degrees and downwardly through an angle of substantially 30 degrees during said opening movement.
5. A mechanism according to any of the preceding claims, further characterised in that said actuating means comprises a cam track (28) provided at said folding station and in that said cooperating means comprises for each blank engaging finger an actuating arm (PA1, PA2) for engagement with said cam track thereby to execute said folding movement of said folder.
6. A mechanism according to claim 5, further characterised in that the follower arm of one of said fingers is disposed in a different plane to the follower arm of the other of said fingers such that during said opening and closing movement said follower arms are caused to move relative to one another without interference and in that one of said follower arms cooperates with a cam surface of said cam track to control opening movement of the pair of fingers and the other of said follower arms cooperates with another cam surface of said cam track to control closing movement of the pair of fingers.
7. A mechanism according to claim 6, further characterised in that said cam track comprises an opening section having a cam surface (32) inclined to the direction of travel of said follower arms and which is engaged by said one follower arm (PA1) to cause opening movement of said pair of fingers, a closing section having a cam surface (34) inclined to the direction of travel of said follower arms and which is engaged by said other follower arm (PA2) to cause closing movement of said pair of fingers, and a mid-section in which said fingers are maintained in their opened condition.
8. A mechanism according to any of the preceding claims, further characterised in that said interconnecting of said pair of fingers comprises meshed gears (PG1, PG2).
9. A mechanism according to claim 8, further

multaneous movement of the blank engaging portions of the pivotal fingers to move towards one another thereby returning the pivotal fingers to their closed position. Of course, immediately prior to the opening section, the convergent chain path 16A of movement of the folders towards the feed path of the carton blank causes the blank engaging portions of each folder progressively to enter a carton bottle heel retaining aperture thereby displacing and folding the carton flaps during movement of the fingers through the opening section of the cam track. The fingers remain engaged in the carton in opened position through the mid section of the cam and are thereafter progressively retracted during movement of the pivotal fingers through the closing section of the cam track by virtue of the divergent chain path 16b.

Claims

1. In a machine for packaging articles in a tubular wrap-around carrier formed from a blank having a pair of walls adjoined together along a fold line and having a pair of article retaining and blank reinforcing flaps disposed astride said fold line and which includes means for advancing a blank and its associated articles along a predetermined path, a mechanism (10) for engaging and folding said pair of flaps and to fold such flaps inwardly of the carrier, said folding mechanism comprising a folder (f) adapted to execute a folding movement thereby progressively to enter an aperture defined at least partially by said pair of flaps in the blank to fold the flaps and to retract therefrom during feed movement of the blank and said folder together through the machine, said folder including a pair of blank engaging fingers (P1, P2) and means PA1, PA2) for cooperation with actuating means to cause opening and closing movement of said fingers, characterised in that said pair of fingers are interconnected for the opening and closing movement together during said folding and retracting movements respectively, and in that said cooperating means is carried by each of said pair of fingers, the cooperating means of one finger controlling said opening movement of the pair of fingers, and the cooperating means of the other finger controlling said closing movement of the pair of fingers.
2. A mechanism according to claim 1, further characterised in that said cooperating means and said actuating means cause downward pivotal movement of said fingers during said opening movement.

3. A mechanism according to claim 2, further characterised in that said fingers are mounted on upwardly convergent surfaces (22a, 22b) of support means (20) upon which said fingers are pivotal thereby to produce said downward pivotal movement of said fingers during said opening movement.
4. A mechanism according to claim 3, further characterised in that said fingers move apart by an angle of substantially 90 degrees and downwardly through an angle of substantially 30 degrees during said opening movement.
5. A mechanism according to any of the preceding claims, further characterised in that said actuating means comprises a cam track (28) provided at said folding station and in that said cooperating means comprises for each blank engaging finger an actuating arm (PA1, PA2) for engagement with said cam track thereby to execute said folding movement of said folder.
6. A mechanism according to claim 5, further characterised in that the follower arm of one of said fingers is disposed in a different plane to the follower arm of the other of said fingers such that during said opening and closing movement said follower arms are caused to move relative to one another without interference and in that one of said follower arms cooperates with a cam surface of said cam track to control opening movement of the pair of fingers and the other of said follower arms cooperates with another cam surface of said cam track to control closing movement of the pair of fingers.
7. A mechanism according to claim 6, further characterised in that said cam track comprises an opening section having a cam surface (32) inclined to the direction of travel of said follower arms and which is engaged by said one follower arm (PA1) to cause opening movement of said pair of fingers, a closing section having a cam surface (34) inclined to the direction of travel of said follower arms and which is engaged by said other follower arm (PA2) to cause closing movement of said pair of fingers, and a mid-section in which said fingers are maintained in their opened condition.
8. A mechanism according to any of the preceding claims, further characterised in that said interconnecting of said pair of fingers comprises meshed gears (PG1, PG2).
9. A mechanism according to claim 8, further



characterised in that each of said pivotal fingers comprises a mid-portion (PM1, PM2) formed with a bevel gear segment (PG1, PG2) which meshes with a like bevel gear segment of the other pivotal finger, a carton blank engaging portion (PB1, PB2) extending in one direction away from the mid portion and an actuating arm extending (PA1, PA2) in a direction opposite to said one direction away from the mid portion, said actuating arm terminating in a cam follower (PF1, PF2).

10. In a machine for packaging articles in a tubular wrap-around carrier formed from a blank having a pair of walls adjoined together along a fold line and having a pair of article retaining and blank reinforcing flaps disposed astride said fold line and which includes means for advancing a blank and its associated articles along a predetermined path, a method of folding said pair of flaps inwardly of the carrier, in which a folding mechanism comprising a folder (f) is adapted to execute a folding movement thereby progressively to enter an aperture defined at least partially by said pair of flaps in the blank to fold the flaps and to retract therefrom during feed movement of the blank and said folder together through the machine, characterised in that said pair of fingers are caused to open and close together during said folding and retracting movements respectively, and in that one of said fingers controls said opening movement of the pair of fingers, and the other of said fingers controls said closing movement of the pair of fingers.

Revendications

1. Dans une machine pour emballer des objets dans un emballage enveloppant tubulaire formé à partir d'un flan ayant deux parois se raccordant le long d'une ligne de pliage et ayant deux languettes de retenue d'objets et de renforcement du flan disposées à cheval sur cette ligne de pliage, et qui comporte des moyens pour faire avancer le flan et les objets associés le long d'un trajet prédéterminé, un mécanisme (10) pour coopérer avec cette paire de languettes et les plier et pour plier ces languettes vers l'intérieur de l'emballage, ce mécanisme de pliage comprenant un plieur (f) adapté pour exécuter un mouvement de pliage de manière à pénétrer progressivement dans une ouverture, définie au moins partiellement par cette paire de languettes dans le flan, afin de plier les languettes et de s'en dégager lors du mouvement d'avance du flan et du plieur à travers la machine, ce plieur comprenant deux

doigts de coopération avec le flan (P1,P2) et des moyens (PA1,PA2) pour coopérer avec des moyens d'actionnement provoquant un mouvement d'ouverture et de fermeture des doigts, caractérisé en ce que les deux doigts sont reliés ensemble pour le mouvement d'ouverture et de fermeture pendant les mouvements respectifs de pliage et de dégagement et en ce que les moyens de coopération sont portés par chacun des deux doigts, les moyens de coopération d'un doigt commandant le mouvement d'ouverture de la paire de doigts et les moyens de coopération de l'autre doigt commandant le mouvement de fermeture de la paire de doigts.

2. Mécanisme selon la revendication 1, caractérisé en outre en ce que les moyens de coopération et les moyens d'actionnement provoquent un mouvement de pivotement vers le bas des doigts pendant le mouvement d'ouverture.
3. Mécanisme selon la revendication 2, caractérisé en outre en ce que ces doigts sont montés sur des surfaces convergentes vers le haut (22a,22b) des moyens de support (20) sur lesquels sont montés les doigts à pivotement, produisant ainsi le mouvement de pivotement vers le bas des doigts lors du mouvement d'ouverture.
4. Mécanisme selon la revendication 3, caractérisé en ce que les doigts se séparent l'un de l'autre d'un angle d'environ 90° et se déplacent vers le bas d'un angle d'environ 30° pendant le mouvement d'ouverture.
5. Mécanisme selon l'une des revendications précédentes, caractérisé en outre en ce que les moyens d'actionnement comprennent un chemin de came (28) prévu au niveau du poste de pliage et en ce que les moyens de coopération comprennent pour chaque doigt coopérant avec le flan un bras d'actionnement (PA1,PA2) pour coopérer avec ce chemin de came afin d'exécuter le mouvement de pliage du plieur.
6. Mécanisme selon la revendication 5, caractérisé en outre en ce que le bras suiveur de l'un des doigts est disposé dans un plan différent du bras suiveur de l'autre doigt de telle sorte que, pendant le mouvement d'ouverture et le mouvement de fermeture, les bras suiveurs sont amenés à se déplacer l'un par rapport à l'autre sans se gêner et en ce que l'un des bras suiveurs coopèrent avec une surface de came du chemin de came pour commander le mouvement d'ouverture de la paire de doigts



et que l'autre bras suiveur coopère avec une autre surface de came du chemin de came pour commander le mouvement de fermeture de la paire de doigts.

7. Mécanisme selon la revendication 6, caractérisé en outre en ce que le chemin de came comprend une section d'ouverture ayant une surface de came (32) inclinée par rapport à la direction de déplacement des bras suiveurs et qui coopère avec un bras suiveur (PA1) pour provoquer le mouvement d'ouverture de la paire de doigts, une section de fermeture ayant une surface de came (34) inclinée par rapport à la direction de trajet des bras suiveurs et qui coopère avec l'autre bras suiveur (PA2) pour provoquer le mouvement de fermeture de la paire de doigts, et une section médiane dans laquelle les doigts sont maintenus dans leur position ouverte.

8. Mécanisme selon l'une des revendications précédentes, caractérisé en outre en ce que la liaison mutuelle des deux doigts est réalisée par des pignons engrenant ensemble (PG1, PG2).

9. Mécanisme selon la revendication 8, caractérisé en outre en ce que chaque doigt pivotant comportant une section intermédiaires (PM1, PM2) formée avec un segment de pignon conique (PG1, PG2) qui engrène avec un segment de pignon conique analogue de l'autre doigt pivotant, une portion coopérant avec le flan du carton (PB1, PB2), s'étendant dans une direction en s'éloignant de la portion intermédiaire et un bras d'actionnement (PA1, PA2) s'étendant dans une direction opposée à la première direction en s'éloignant de la portion intermédiaire, ce bras d'actionnement se terminant par un suiveur de came (PF1, PF2).

10. Dans une machine pour emballer des objets dans un emballage enveloppant tubulaire formé à partir d'un flan ayant deux parois se raccordant ensemble le long d'une ligne de pliage et ayant deux languettes de retenue d'objets et de renforcement du flan disposées à cheval sur cette ligne de pliage, et qui comporte des moyens pour faire avancer le flan et les objets associés le long d'un trajet prédéterminé, un procédé pour plier la paire de languettes vers l'intérieur de l'enveloppe, dans lequel un mécanisme de pliage comprenant un plieur (f) est adapté pour exécuter un mouvement de pliage afin de pénétrer progressivement dans une ouverture, définie au moins partiellement par cette paire de languettes dans le

flan, pour plier les languettes et s'en dégager lors du mouvement d'avancement du flan et du plieur ensemble à travers la machine, caractérisé en ce que les deux doigts sont amenés à s'ouvrir et à se fermer ensemble pendant les mouvements respectifs de pliage et de dégauchement et en ce que l'un des doigts commande le mouvement d'ouverture de la paire de doigts et que l'autre doigt commande le mouvement de fermeture de la paire de doigts.

Patentansprüche

1. Maschine zum Verpacken von Artikeln in einen röhrenförmigen Umschlingungsträger, der aus einem Zuschnitt gebildet ist, mit einem Paar Wänden, die entlang einer Faltlinie aneinander angeschlossen sind, und mit einem Paar Artikelhalte- und Zuschnittversteifungsklappen, die rittlings der Faltlinie angebracht sind, und mit Mitteln zum Vorschieben eines Zuschnittes und seiner zugehörigen Artikel entlang einer vorbestimmten Bahn, einem Mechanismus (10) zum Erfassen und Falten des Klappenpaares und um solche Klappen zum Innern des Trägers zu falten, wobei der Faltmechanismus einen Falter (f) aufweist, der vorgesehen ist, eine Faltbewegung durchzuführen, und dabei fortschreitend in eine Öffnung einzudringen, die zumindest teilweise durch die paarigen Klappen im Zuschnitt begrenzt ist, um die Klappen zu falten und sich während der Vorschubbewegung des Zuschnittes und des Falters gemeinsam durch die Maschine daraus zurückzuziehen, wobei der Falter ein Paar Zuschnitteingreiffinger (P1, P2) und Mittel (PA1, PA2) zum Zusammenwirken mit Betätigungsmitteln einschließt, um Öffnungs- und Schließbewegungen der Finger zu veranlassen, dadurch gekennzeichnet, daß die paarigen Finger zur gemeinsamen Öffnungs- und Schließbewegung während der jeweiligen Falt- und Zurückziehbewegungen miteinander verbunden sind, und daß die Zusammenwirkungsmittel durch jeden der paarigen Finger gehalten werden, wobei das Zusammenwirkungsmittel von einem Finger die Öffnungsbewegung des Fingerpaares steuert, und das Zusammenwirkungsmittel des anderen Fingers die Schließbewegung des Fingerpaares steuern.

2. Mechanismus nach Anspruch 1, dadurch gekennzeichnet, daß die Zusammenwirkungsmittel und die Betätigungsmittel eine Abwärtschwenkbewegung der Finger während der Öffnungsbewegung verursachen.

3. Mechanismus nach Anspruch 2, dadurch ge-



kennzeichnet, daß die Finger an nach oben konvergenten Flächen (22a, 22b) von Trägermitteln (20) angeordnet sind, auf denen die Finger schwenkbar sind, um dabei die Abwärtsschwenkbewegung der Finger während der Öffnungsbewegung zu erzeugen.

4. Mechanismus nach Anspruch 3, dadurch gekennzeichnet, daß sich die Finger während der Öffnungsbewegung um einen Winkel von im wesentlichen 90 Grad auseinander und um einen Winkel von im wesentlichen 30 Grad nach unten bewegen.

5. Mechanismus nach irgendeinem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Betätigungsmittel eine Kulissenbahn (28) aufweisen, die an der Faltstation vorgesehen ist, und daß die Zusammenwirkungsmittel für jeden Zuschnitteingriffinger einen Betätigungsarm (Pa1, Pa2) zum Eingriff mit der Kulissenbahn aufweisen, um dadurch die Faltbewegung des Falters auszuführen.

6. Mechanismus nach Anspruch 5, dadurch gekennzeichnet, daß der Kulissenarm von einem der Finger in einer unterschiedlichen Ebene zum Kulissenarm des anderen der Finger derart angeordnet ist, daß während der Öffnungs- und Schließbewegung die Kulissenarme veranlaßt werden, sich relativ zueinander ohne gegenseitige Störung zu bewegen, und daß einer der Kulissenarme mit einer Mitnehmerfläche der Mitnehmerbahn zusammenwirkt, um die Öffnungsbewegung des Fingerpaares zu steuern, und der andere der Kulissenarme mit einer anderen Mitnehmerfläche der Mitnehmerbahn zusammenwirkt, um die Schließbewegung des Fingerpaares zu steuern.

7. Mechanismus nach Anspruch 6, dadurch gekennzeichnet, daß die Kulissenbahn einen Öffnungsbereich mit einer Mitnehmerfläche (32) aufweist, die zur Vorschubrichtung der Kulissenarme geneigt ist, und die von dem einen Kulissenarm (PA1) abgetastet wird, um die Öffnungsbewegung des Fingerpaares zu verursachen, einen Schließbereich mit einer Mitnehmerfläche (34), die zur Vorschubrichtung der Kulissenarme geneigt ist, und die durch den anderen Kulissenarm (PA2) abgetastet wird, um die Schließbewegung des Fingerpaares zu verursachen, und einen Mittelbereich, in dem die Finger in ihrer geöffneten Lage gehalten werden.

8. Mechanismus nach irgendeinem der vorangehenden Ansprüche, dadurch gekennzeichnet,

net, daß die Verbindung der Fingerpaare kämmende Zahnräder (PG1, PG2) aufweist.

9. Mechanismus nach Anspruch 8, dadurch gekennzeichnet, daß jeder der schwenkbaren Finger einen mittleren Abschnitt (PM1, PM2) aufweist, der mit einem Kegelradsegment (PG1, PG2) ausgebildet ist, welches mit einem ähnlichen Kegelradsegment des anderen schwenkbaren Fingers kämmt, einen Kartonzuschnitt-Eingriffsabschnitt (PB1, PB2), der sich in einer Richtung weg vom mittleren Abschnitt erstreckt, und einen Betätigungsarm (PA1, PA2), der sich in eine Richtung entgegengesetzt der einen Richtung weg vom mittleren Abschnitt erstreckt, wobei der Betätigungsarm in einem Mitnehmer (PF1, PF2) endet.

10. Verfahren in einer Maschine zum Verpacken von Artikeln in einen röhrenförmigen Umschlingungsträger, der aus einem Zuschnitt gebildet ist, mit einem Paar Wänden, die entlang einer Faltlinie aneinander angeschlossen sind, und mit einem Paar Artikelhalte- und Zuschnittversteifungsklappen, die rittlings der Faltlinie angebracht sind, und mit Mitteln zum Vorschieben eines Zuschnittes und seiner zugehörigen Artikel entlang einer vorbestimmten Bahn zum Falten der Klappenpaare zum Innern des Trägers hin, bei dem ein Falter (f) aufweisender Faltmechanismus vorgesehen ist, eine Faltbewegung durchzuführen, um dabei fortschreitend in eine Öffnung einzudringen, die zumindest teilweise durch die paarigen Klappen im Zuschnitt begrenzt ist, um die Klappen zu falten und sich während der gemeinsamen Vorschubbewegung des Zuschnittes und des Falters durch die Maschine daraus zurückzuziehen, dadurch gekennzeichnet, daß die paarigen Finger während der jeweiligen Falt- und Zurückziehbewegung veranlaßt werden, sich gemeinsam zu öffnen und zu schließen, und daß einer der Finger die Öffnungsbewegung des Fingerpaares steuert und der andere der Finger die Schließbewegung des Fingerpaares steuert.

