May 10, 1966 R. M. LOASE 3,250,528

FOLDER FOR A CONTINUOUS WEB OF PAPER

Filed June 17, 1964 2 Sheets-Sheet 1

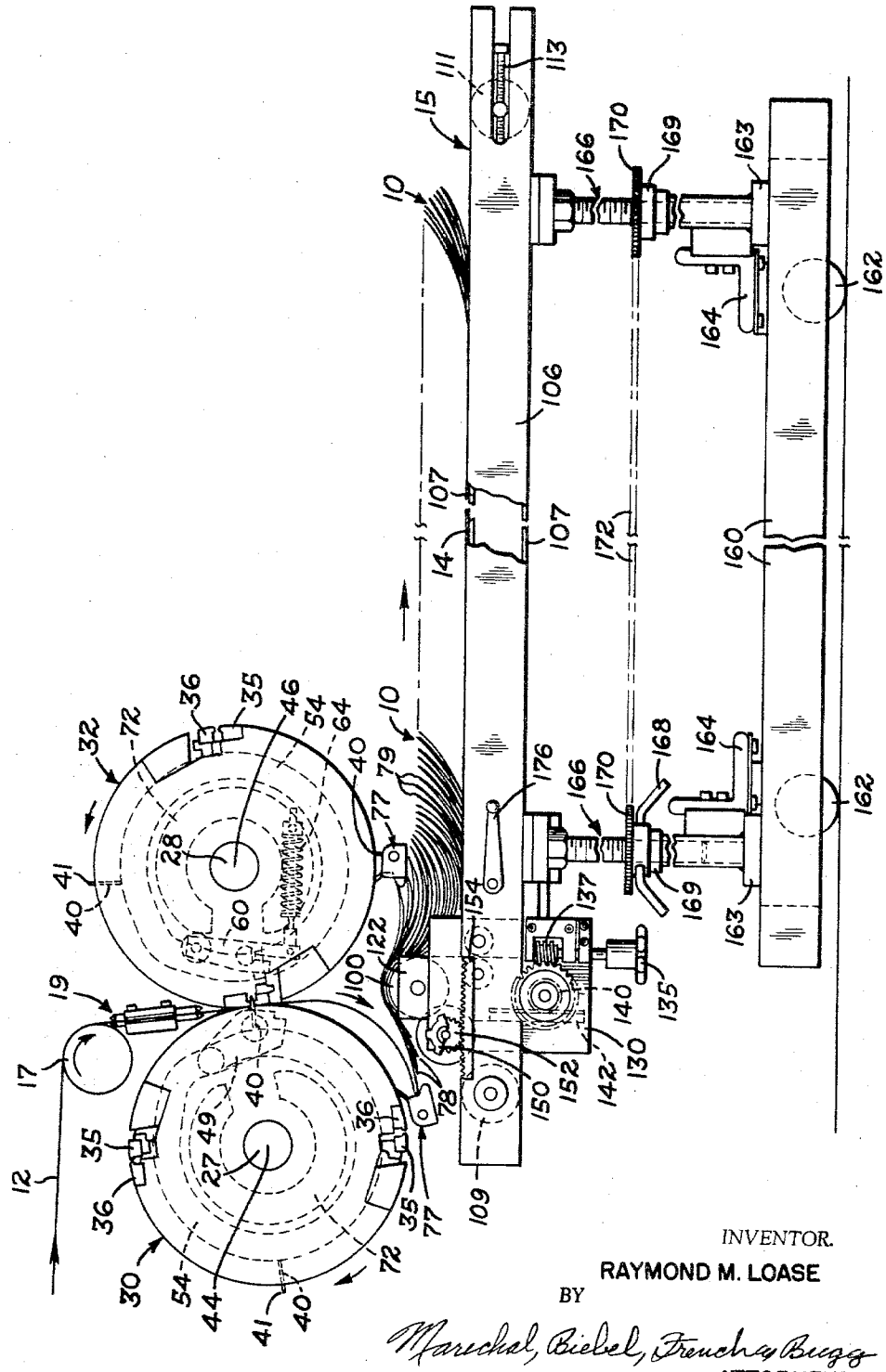

FIG-1

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Filed June 17, 1964 2 Sheets-Sheet 2

FIG-2

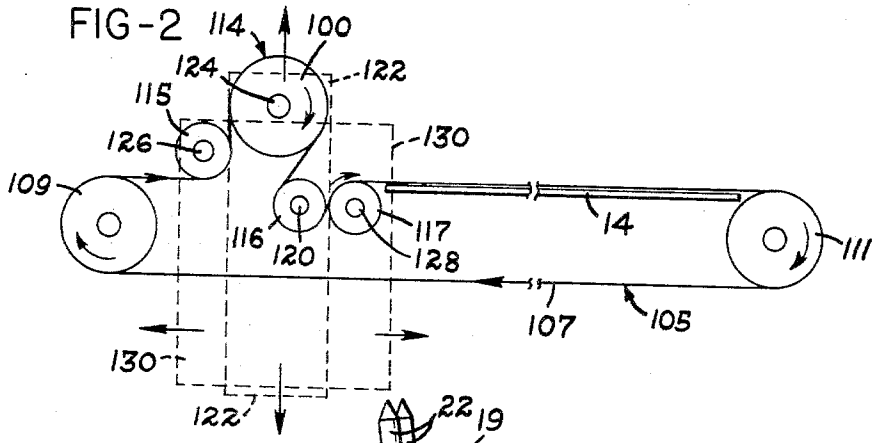


FIG-3

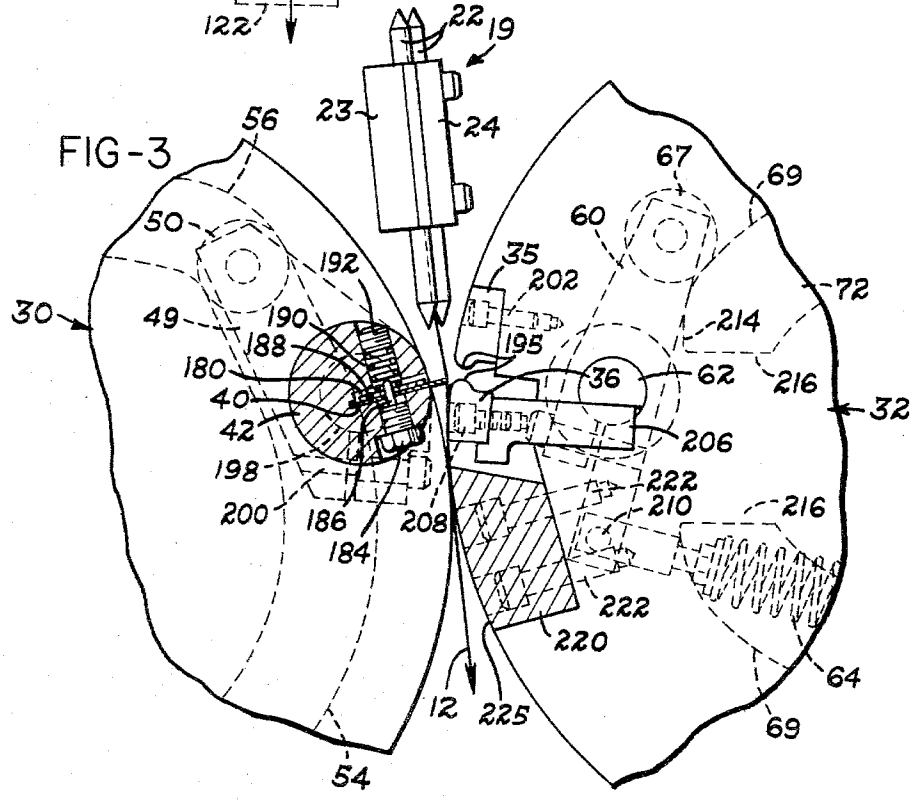
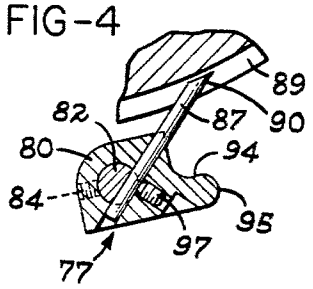


FIG-4



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3,250,528

FOLDER FOR A CONTINUOUS WEB OF PAPER

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6 Claims. (Cl. 270—73)

This invention relates to a folding machine for paper, and particularly, to an apparatus for receiving a continuous web of paper and folding the web in a zig-zag manner.

The present invention is especially adaptable for zig-zag folding of a continuous web of successive business forms and for distributing the forms in an overlapping manner along a horizontal table. It is to be understood, however, that the present invention is not limited to the folding of only business forms, but may be used for folding webs of any type of sheet material, as for example, when the sheet material is folded in this manner for packaging.

For purposes of illustration of the invention, however, the folding apparatus shown in the drawings is intended to be mounted on the discharge end of a printing press or a collating machine which has processed a continuous web of successive business forms. Commonly, the web may have a line of transverse perforations spaced between the successive forms to provide for easy separation of the forms, as desired. When such a perforated web is fed into the apparatus of the invention, it is the general purpose of the apparatus to fold the web back over on itself precisely on the centerline of the transverse perforations, and then to crease the fold in order that one form will lie tightly against an adjoining form, thus, enabling the maximum number of forms to be contained within a given space.

It is particularly desirable, for high-speed production, to have a folded web delivered along a horizontal table, primarily in order that a group of the folds may easily be separated for packaging without disturbing the continuous flow of the folds from the folding apparatus. The present invention is directed to a folding apparatus which smoothly delivers a continuous supply of folds onto a horizontal delivery table and is constructed for high-speed production in order that the folding apparatus will not hold back the output of the printing machine, collator, or the like, from which the folding apparatus may directly receive the web.

A basic advantage of the folding apparatus according to the present invention is the ability to receive and accurately fold high-speed webs of different thicknesses and to distribute the folds uniformly along a horizontal delivery table, regardless of the thickness, surface quality, stiffness, moisture content, or other variable factors which may be present in different webs of paper.

Accordingly, a primary object of the present invention is to provide a zig-zag folding apparatus which cooperates with a delivery conveyor in order to receive and fold a high-speed paper web accurately and uniformly, and to distribute the folds of the web evenly onto the delivery conveyor.

As another object, the present invention provides a folding apparatus with a device for consistently spacing the web folds in the proper order along a delivery conveyor.

Another object of the present invention is to provide a web folding apparatus which will precisely fold webs of different thicknesses, surface quality or stiffness, and consistently space the zig-zag folds uniformly along a horizontal delivery table.

Still another object of the present invention is to provide a web folding apparatus which includes a substantially horizontal delivery conveyor, and is adapted to fold and crease a continuous paper web along predetermined parallel lines on the web and to deliver the folds uniformly onto the conveyor with a corresponding edge of each fold lying substantially in a common plane.

Other objects and advantages of the invention will be apparent from the following description, the accompanying drawings and the appended claims.

In the drawings—

FIG. 1 is a somewhat schematic elevational view of the web folding apparatus in accordance with the invention;

FIG. 2 is a schematic elevational view of only the delivery conveyor showing the path of the belts which form the conveyor;

FIG. 3 is a fragmentary sectional view of the folding cylinders showing on an enlarged scale details of the construction of the cylinders; and

FIG. 4 is a sectional view of the stripping means which release the folded edges of the web from the folding cylinders.

Referring to the drawings, which illustrate a preferred embodiment of the present invention, FIG. 1 shows, in a somewhat schematic manner, the overall construction and arrangement of the folding apparatus and the path of the continuous folds **10** of the web **12** as the folds are delivered along the supporting top **14** of a delivery table, generally referred to as **15**.

In FIG. 1, the web **12** of paper is shown entering the folding machine in the upper left-hand corner as it is received from a printing press, or the like, and is directed over a power-driven roller **17** downwardly into a feed chute **19**. It is to be understood, however, that reference to a web is intended to include several webs which are overlaid on top of one another, as is commonly used to form multiple-copy business forms. As mentioned above, it is also common to provide the web with uniformly spaced perforations which lie transversely across the web and serve the purpose of allowing one form to be easily separated from an adjacent form.

The feed chute **19** which is employed includes a series of rods **22** which are positioned in a staggered relationship at an angle slightly from vertical. The rods are retained by the bars **23** and **24** which are mounted at the end to the main side frames (not shown) of the folding apparatus. Typically, the side frames may be extensions from the printing press, collator, or the like. The feed chute **19** is constructed to cause a slight corrugated effect in the web (across its length) in order to provide the web **12** with linear rigidity as it is directed into the folding apparatus.

Fixed to the parallel arranged shafts **27** and **28**, which are rotatably mounted within the side frames, are a pair of folding cylinders **30** and **32** which are spaced substantially adjacent each other and which are power driven in timed relationship so that the surface speed of the cylinders is the same as the speed of the web **12**.

Mounted longitudinally and diametrically opposite on each cylinder, below the peripheral surface, are two pairs of folding jaws **35** and **36** which are constructed to open and close as the cylinders **30** and **32** are counter-rotated by a suitable power source (not shown).

Spaced 90° from the folding jaws **35** and **36**, on each of the cylinders **30** and **32**, there is mounted a pivotable tucker blade **40** having a tip **41**. The blade tip **41** is adapted to engage the web **12**, and tuck a small portion of the web in between the folding jaws **35** and **36** mounted on the opposite cylinder when the folding jaws are in the open position. Each tucker blade **40** is mounted substantially radially within a rod **42** which is spaced within the cylinders **30** and **32** parallel to the axes **44** and **46** of the cylinders. The rod **42** is adapted to rotate slightly,

as the cylinders 30 and 32 rotate, by a lever 49 which is clamped over the end of the rod 42 and which carries on one end a roller 50 that follows within a box cam 54 which is stationarily mounted on the side frame at the end of each cylinder. The box cam 54 is circular in shape except for the rise 56 near the top of the cam.

Referring to FIG. 1, when the left cylinder 30 rotates clockwise, the roller 50 reaches the rise 56 in the box cam 54 causing the lever to rotate clockwise. The rise 56 in the box cam is so positioned that the tip 41 of the tucker blade 40 will advance clockwise, ahead of the surface of the cylinder 30, immediately before the tip of the tucker blade 40 picks up the web 12 coming from the feed chute 19. As the blade tip 41 picks up the web 12, the box cam 54 is so formed that the tip 41 of the tucker blade 40 will begin to move counterclockwise in relation to the folding cylinder 30. As the blade tip 41 tucks a small portion of the web 12 into the open jaws 35 and 36, the peripheral speed of the blade tip 41 will be precisely the same as the speed of the web 12. Otherwise, since the surface speed of the cylinder 30 is the same as the web speed, if the blade 40 did not retract by rotating counterclockwise as it picks up the web, the speed of the blade tip 41 would be faster than the web speed due to the fact that the tip of the tucker blade extends radially outward from the surface of the cylinder.

This retracting of the blade tip 41 prevents the web from tearing as will happen with a rigidly mounted tucker blade. Furthermore, the timed retraction of blade tip 41 enables it to follow and remain in a precise engaged relationship with the row of cross performations as the web 12 is pushed into and around the jaw edge, and thus requiring that the blade tip 41 travels slower than the folding jaws 35 and 36, after the tip picks up the web. When the tucker blade 40 is fully engaged between the folding jaws 35 and 36, which is essentially at the point when the blade 40 lies in a reference plane passing through the center axis of the folding cylinder, that is, the position shown in FIG. 1, the tip 41 of the tucker blade is no longer retracted in relation to the cylinder 30. Instead, the rod 42 in which the tucker blade 40 is mounted, remains in a fixed position in relation to the cylinder on which it is mounted due to the fact that the roller 50 is then within the circular portion of the box cam 54.

As the cylinders 30 and 32 continue to rotate to the position shown in FIG. 1, the folding jaws 35 and 36 are closed tightly on a small portion of the web 12 which has been inserted within the jaws 35 and 36 by the tucker blade 40. This closing of the jaws is accomplished by the slight rotation of a lever 60 which is mounted on one end of the rod 62 which, in turn, supports the movable jaw 36. A compression spring 64 holds the jaws tightly closed after the roller 67, carried by the lever 60, drops off the circular surface 69 of a C-shaped cam 72 which is also mounted to one of the side frames of the folding apparatus.

Since both of the cylinders 30 and 32 contain two pairs of folding jaws 36 and 35 and two tucker blades 40, each of the cylinders 30 and 32 requires both a box cam 54 and a C-shaped cam 72 in order to control the pivoting movements of the movable folding jaw 36 and the tucker blade 40. Preferably, the cams 54 and 72 are adjustably mounted on the side frames (not shown) in order to acquire the precise timing and spacing as the tucker blades 40 enters the folding jaws 35 and 36.

Also mounted to the side frames of the folding apparatus and spaced adjacent the bottom portion of each cylinder 30 and 32, is a stripping member 77 which is adapted to engage the edges 78 and 79 of a fold 10 and release the edges from between the folding jaws 35 and 36, which have been opened by the cam 72 slightly before the folding jaws reach the stripping member 77.

The stripping members 77, one of which is shown in details in FIG. 4, include an elongated bar 80 which is adjustably mounted on a rod 82 by the set screws 84.

The ends of the rod 82 are mounted to the side frames of the apparatus. Projecting upwardly from the elongated bar 80 are a series of stripping pins 87 which extend into corresponding grooves 89 formed in the outer surface of the cylinders 30 and 32. The ends 90 of pins 87 are cut on a sharp angle such that the leading edge of the pin 87 will readily engage the edges 78 or 79 of the folds 10 and will cam the edges downwardly along the pins onto a curved shelf 94 which is formed as part of the elongated bar 80. The shelf includes a rounded nose 95 which allows the folded edge to drop smoothly off the shelf 94.

The stripping pins 87 are retained within the elongated bar 80 by the set screws 97 and are adapted to be adjusted longitudinally when the elongated bar 80 is adjusted on the rod 82. By the adjustable mounting of the pins 87 and the elongated bar 80, it is possible to set the stripping member 77 accurately in order to acquire the smoothest and fastest stripping action of the folded edges 78 and 79 of the web 12 from the opened jaws 35 and 36. The adjustments which are provided are especially desirable when webs of different thickness and stiffness are to be run at different times through the folding apparatus.

Spaced substantially midway between the stripping members 77 is a power driven roller 100 which is adapted to support the center portion of a fold 10, the ends of which are resting on the shelf 94 of the stripping member 77. Preferably, the roller 100 is positioned to support the center portion of the last fold to leave the cylinders 30 and 32, plus the end portion of a few preceding folds, slightly above the supporting shelf 94 of the stripping members 77. This has been found desirable in order to obtain accurate control over the releasing of the edges of the folds from the stripping members 77. If the folds are allowed to sag between the stripping members 77, several folds may drop together which can allow one of the upper folds to move ahead of a lower fold, and thus, interrupt the uniform flow of evenly spaced folds from the folding apparatus. This especially has been the result when the web 12 is running at speeds of 700 to 800 feet per minute.

According to a preferred embodiment of the invention, the roller 100 is incorporated as part of a belt-type delivery conveyor 105 which transports the folds 10 of the web 12 horizontally on the delivery table 15. Preferably, the conveyor 105 comprises a frame 106 and a series of parallel spaced endless belts 107 which proceed around a roller 109 mounted on the forward end of the frame 106 and another roller 111 adjustably mounted by the screws 113 on the opposite end of the frame 106.

Referring to FIG. 2, the conveyor belts 107 are directed upwardly around the delivery roller 100 to form a loop 113, which is defined, in addition to the delivery roller 100, by the three guide rollers 115, 116 and 117. The guide roller 116 is mounted on a shaft 120 which extends into a pair of mounting blocks 122, one being spaced on each side of the conveyor 105. The mounting blocks 122 also retain the ends of the shaft 124 which supports the delivery roller 100. The remaining two guide rollers 115 and 117 are mounted on shafts 126 and 128, respectively, the ends of which are retained by a pair of larger mounting blocks 130, one block being spaced also on each side of the conveyor 105.

The delivery roller 100 and guide roller 116 are adjustable vertically in relation to the remaining portion of the conveyor 105 and in relation to the stripping members 77 by a knob 135. The knob is adapted to rotate a worm gear 137 which, in turn, rotates a pinion 140 to cause an engaging rack 142, which is vertically mounted on the blocks 122, to move up or down in relation to the blocks 130. It will be seen from FIG. 2, that due to the spacing of the delivery roller 100 and the guide rollers 115, 116 and 117, which direct the path of the belts 107, the delivery roller 100 and guide

roller **116**, which are mounted on the blocks **122**, may be moved vertically without affecting the tension preset within the belts **107** by the screw **113**. The guide roller **116** will compensate for the belt length required by the delivery roller **100** as the delivery roller and guide roller **116** are adjusted vertically.

The larger mounting blocks **130** are horizontally slidable on the conveyor frame **106** and carry with them the delivery roller **100** and all of guide rollers **115**, **116**, and **117**, since the mounting block **122** is slidably mounted within the larger block **130**. A hand knob **150** is provided to rotate another set of pinions **152** which engage with a set of racks **154**, one of which is horizontally mounted on each side of the conveyor frame **106**. It will be apparent that the delivery roller **100** and three guide rollers **115**, **116** and **117** are all adjustable together in a horizontal direction without changing the belt tension.

By providing the delivery roller **100** with a mechanism for fine adjustment both vertically and horizontally, it has been found that the delivery roller **100** may be precisely positioned in relation to the stripping members **77** and the delivery table **15** so that when combined with the vertical adjustment of the table **15**, the folding apparatus will perform equally well with webs of different thickness and stiffness.

That is, the thickness or weight and stiffness of each fold **10** are the primary factors which determine the extent of web sag between the shelf **94** of the forward stripping member **77** and the supporting roll as shown in FIG. 1. Thus by precisely spacing the roll **100** relative to the forward stripping member **77**, the sag of the folds is controlled and flow of the edges **79** around the nose **95** is controlled precisely to produce a uniform flow of folds **10** along the delivery table **15**.

The base of the delivery table **15** and included conveyor **105** consists of a rectangularly shaped frame member **160** which is supported by four wheels **162** in order to permit the delivery table **15** to be moved independently from the folding cylinders **30** and **32** and thereby enable the delivery table **15** to be used for other purposes, for example, for serving more than one set of folding cylinders mounted on separate printing machines which are in use at different times, or to allow access to the press when rewinder is used instead of folder.

Mounted on top of the rectangular frame **160** by the cross members **163** and the angle brackets **164** are a pair of screw jacks **166**, the top of which supports the underneath side of the conveyor frame **106**. The screw jacks **166** are adjustable together by a hand wheel **168** which is adapted to turn, simultaneously the threaded heads **169** of the jacks **166** through a set of sprockets **170** connected together by an endless chain **172**. This parallel adjustment provided between the base frame **160** and conveyor frame **106** has been found desirable in order to accurately space the delivery table **15** from the stripping members **77**, so that, when combined with the independent adjustability of the delivery roller **100**, a consistently uniform spacing of the folds **10** is obtained along the horizontal table **15**. The vertical adjustment of the delivery table **15**, by itself, however, will not produce the consistent results obtainable from combining the delivery roller **100** and its fully independent adjustment mechanism. This is especially true when webs of different thickness, stiffness and surface condition are fed through the folding apparatus since thinner or lighter weight webs tend to sag more and lay closer together and usually require a higher position of the table **15** and a closer position of the roll **100** relative to the nose **95** of the forward stripping member **77**.

The crank handle **176**, shown in FIG. 1, is linked to a variable speed drive unit (not shown) through which power is supplied to the belt conveyor **105**. By adjusting the crank handle **176**, the speed of the conveyor **105** may be overspeeded in order to distribute the folds of the web onto the table **15** with slightly greater spacing between each fold.

Referring to FIG. 3 which shows a detailed view of the mounting of the tucker blade **40** and the mounting of the folding jaws **35** and **36**, it will be seen that the tucker blade **40** is mounted within a slot **180** formed within the rod **42** and is retained therein by a series of bolts **184** having a pin **186** projecting from the end which extends into a corresponding series of holes within the tucker blade **40**. A supporting plate **188** is placed adjacent the tucker blade **40** within the slot **180** and is held firmly against the tucker blade **40** by a series of compression springs **190** which are adjustably retained therein by the corresponding set screws **192**. In order to remove the tucker blade, the bolts **184** are merely unscrewed part way which alllows the blade to be pulled out of the slot.

As explained above, the tucker blade **40** is adapted to rotate slightly as determined by the lever **49** which has a cam follower or roller **40** supported on one end. The spring-pressure on the tucker blade **40** is provided to permit the movable jaw **36** to press the tucker blade firmly against the fixed jaw **35** and to enable the tucker blade **40** to slide out of the closed jaws **35** and **36** once the tucker blade **40** has passed the fully engaged central position, shown in FIG. 1. The folding jaws **35** and **36** are provided with a rounded engaging portion **195** which enables the tucker blade **40** to insert the web **12** easily into the jaws and to prevent the web **12** from creasing except for along the line where the blade **40** engages the web. Also, the rounded portion **195** enables the tucker blade **40** to withdraw easily from the closed jaws after the blade passes the fully engaged position.

For fine adjustment, the lever **49** is adjustably mounted on the reduced end portion **198** of the rod **42** by means of a clamping arrangement which is tightened to the rod at the desired position by the screw **200**.

As mentioned above, the folding jaw **35** is rigidly mounted to the folding cylinders by a series of countersunk screws **202** and the movable jaw **36** is pivotally mounted about the shaft **62** through a supporting bar **206** which supports the jaw **36** on one end by a series of countersunk screws **208**. The folding jaws are held normally open, against the force of the compression spring **64** acting on a pin **210** extending through one end of the lever **60**, by the cam follower or roller **67** mounted on the other end of the lever **60**. As the tucker blade **40** and folding jaws **35** and **36** advance towards the fully engaged position, the jaws are constructed to close at the point when the roller **67** reaches the flat section **214** of the C-shaped cam **72**. As the tucker blade **40** and jaws **36** and **35** move past the central fully engaged position, the roller **67** moves into the open section **216** of the C-shaped cam **72** which causes the folding jaws to bite against the web **12** as the tucker blade **40** withdraws and thereby creases the web **12** along the line which was engaged by the tucker blade.

As the cylinders **30** and **32** continue to rotate, substantially past the fully engaged position, the roller **67** picks up the outer surface **69** of the other end of the C-shaped cam **72** and rotates the shaft **62**, shown in FIG. 3, counterclockwise, against the force of the compressing spring **64**. This opens the jaws **35** and **36** so that the folded edge **79** of the web **12** may be released by the stripping member **77**.

A filler bar **220** is mounted longitudinally along the outer surface of the cylinders and adjacent the movable folding jaw **36**, by a series of countersunk screws **222**. The outer surface **225** of the filler bar **220** conforms to to the outer surface of the cylinders **30** and **32** to assist in confining the web and to maintain a smooth flow of air currents which are caused by the rotating cylinder.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made

therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. Apparatus for accordian folding of web materials of varying thickness, comprising guide means for receiving and directing the path of the web, folding mechanism for forming tucks in the web material alternatively in opposite directions and in predetermined spaced relation lengthwise of the web material to initiate the accordian folding thereof, shelf means positioned generally below said folding mechanism for receiving the web material from said folding mechanism and to support the folded edges of the web temporarily initiating the accordian folding thereof, a conveyor spaced below said shelf means for receiving the folded web material from said shelf means, a power driven roller spaced below said folding mechanism for moving the folded web from said shelf means onto said conveyor, and means mounting said roller for adjustable movement with respect to said shelf means to provide an adjustment for different thicknesses of web material while maintaining a constantly uniform spacing of the folded web material along said conveyor.

2. Apparatus for folding a web material in a zig-zag manner along lines of transverse perforations and adapted to receive webs of different thicknesses, said apparatus comprising, a pair of folding cylinders rotatably mounted on parallel axes, a set of folding jaws recessed within the peripheral surface of each cylinder, a pivotally mounted tucker blade projecting outwardly from the peripheral surface of each cylinder, cam means for closing and opening said folding jaws, cam means for pivoting said tucker blade in timed relationship with the closing of said jaws to enable the tip of said tucker blade to follow a line of transverse perforations, power operated means for rotating said cylinders in opposite directions at the same speed, stripping means rigidly mounted adjacent the bottom surface of each cylinder for releasing alternate folded edges of the web from said jaws and to support the edges momentarily after releasing, a power operated conveyor spaced below said cylinders for receiving the folded web from said stripping means in a continuous zig-zag manner, a power driven roller having an axis parallel with the axis of said cylinders and spaced substantially midway between said stripping means for moving the folded web from said stripping means onto said conveyor, and means for adjustably mounting said roller in relation to said conveyor and to said cylinders to accommodate webs of different thickness and to provide the web with a consistently uniform spacing of the zig-zag folds along said conveyor.

3. Apparatus for folding web material in a zig-zag manner and adapted to receive webs of different thicknesses, said apparatus comprising, a pair of folding members rotatably mounted on parallel axes, means mounted on said members for tucking the web material alternately in opposite directions and in predetermined spaced relation lengthwise of the web material to initiate the zig-zag folding thereof, power operated means for rotating said folding members in opposite directions and in timed relationship, stripping means rigidly mounted below said members for releasing alternate folded edges of the web from said members and to support the edges momentarily after releasing, a power operated conveyor spaced below said members for receiving the folded web from said stripping means in a continuous zig-zag manner, a power driven roller having an axis parallel with the axis of said members and spaced substantially midway between said stripping means for moving the folded web from said stripping means onto said conveyor, and means for adjustably mounting said roller in relation to said members and said stripping means to accommodate webs of different thickness and to provide each web with a consistently uniform spacing of the zig-zag folds along said conveyor.

4. Apparatus for folding web material in a zig-zag manner and adapted to receive webs of different thicknesses, said apparatus comprising, a pair of folding members rotatably mounted on parallel axes, means mounted on said members for tucking the web material alternately in opposite directions and in predetermined spaced relation lengthwise of the web material to initiate the zig-zag folding thereof, power operated means for rotating said members in opposite directions in timed relationship, stripping means rigidly mounted below said members for releasing alternate folded edges of the web from said members and to support the edges momentarily after releasing, a power operated conveyor adjustably spaced below said members for receiving the folded web from said stripping means in a continuous zig-zag manner, roller means on said conveyor for directing a portion of said conveyor upwardly to form a loop substantially midway between said stripping means, and means for adjustably mounting said roller in relation to said conveyor and to said members to accommodate webs of different thickness and to provide each web with a consistently uniform spacing of the zig-zag folds along said conveyor.

5. Apparatus for folding web material in a zig-zag manner and adapted to receive webs of different thickness, said apparatus comprising, a pair of folding cylinders rotatably mounted on parallel axes, guide means for directing the web between said cylinders, a set of folding jaws recessed within the peripheral surface of each cylinder, one of said jaws being movable and the other rigidly mounted to said cylinder, a pivotally mounted tucker blade projecting outwardly from the peripheral surface of each cylinder, cam means for moving said movable jaw toward and away from said rigidly mounted jaw for closing and opening said jaws, cam means for pivoting said tucker blade in timed relationship with the movement of said movable jaw, power operated means for rotating said cylinders in opposite directions for engagement of said tucker blade between said folding jaws, stripping means rigidly mounted adjacent the bottom surface of each cylinder for releasing alternate folded edges of the web from said jaws, a power operated conveyor spaced below said cylinders for receiving the folded web from said stripping means in a continuous zig-zag manner, roller means on said conveyor for directing a portion of said conveyor upwardly to form a loop substantially midway between said stripping means, and means for adjustably mounting said roller means in relation to said stripping means and to said cylinders to accommodate webs of different thickness and to provide each web with a consistently uniform spacing of the zig-zag folds along said conveyor.

6. Apparatus for folding web material in a zig-zag manner and adapted to receive webs of different thickness, said apparatus comprising, a pair of folding cylinders rotatably mounted on parallel axes, guide means for directing the web between said cylinders, means mounted on said cylinders for tucking the web material alternately in opposite directions and in predetermined spaced relation lengthwise of the web material to initiate the zig-zag folding thereof, power operated means for rotating said cylinders in opposite directions, stripping means rigidly mounted adjacent the bottom surface of each cylinder for releasing alternate folded edges of the web from said cylinders, a power operated conveyor spaced below said cylinders for receiving the folded web from said stripping means in a continuous zig-zag manner, a plurality of rollers on said conveyor for directing a portion of said conveyor upwardly between said stripping means, and means for adjustably mounting at least two of said rollers in relation to the remaining portion of said conveyor and to said stripping means to accommodate webs of different thickness and to provide each

web with a consistently uniform spacing of the zig-zag folds along said conveyor.

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