

- [54] **SMALL PIECE FOLDER**
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- [73] Assignee: **Jensen Machinery Inc.**, Fort Lauderdale, Fla.
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- [21] Appl. No.: **348,620**

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Attorney, Agent, or Firm—Oltman and Flynn

Related U.S. Application Data

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- [52] U.S. Cl. 270/66, 270/86
- [51] Int. Cl. B65h 45/22
- [58] Field of Search 270/66, 69, 86-94; 223/32-34

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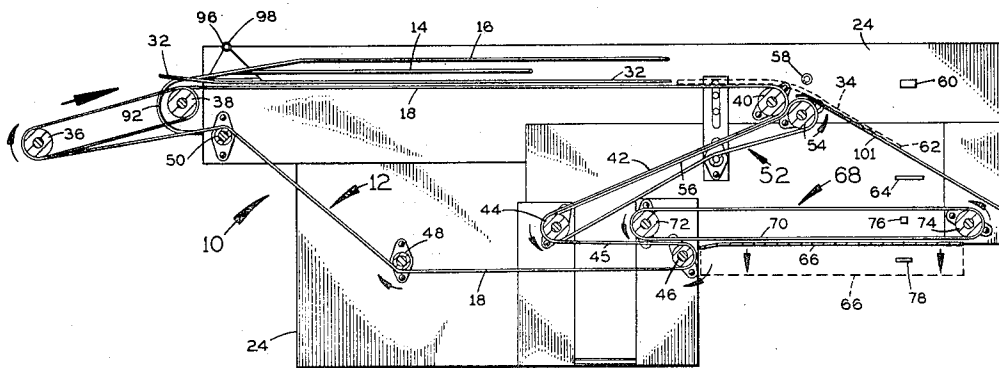
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[57] **ABSTRACT**

A laundry folding apparatus having folding members which are laterally adjustable to accommodate different fold widths, as determined by guides over which the opposite side portions of a laundry piece are folded and which are themselves laterally adjustable by turning a single rod. After being longitudinally folded, each laundry piece is cross folded by being forced pneumatically between downwardly inclined, face-to-face portions of conveyors. Preferably, the fully folded pieces are carried by a return conveyor back to the entrance end of the apparatus.

9 Claims, 15 Drawing Figures



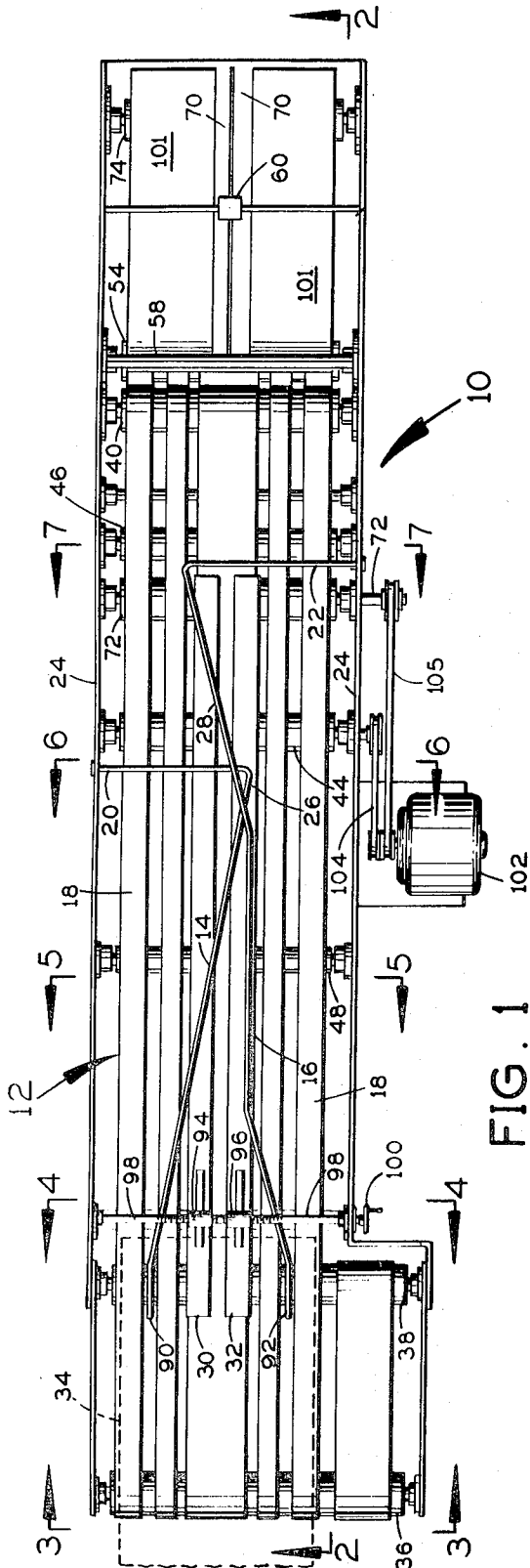


FIG. 1

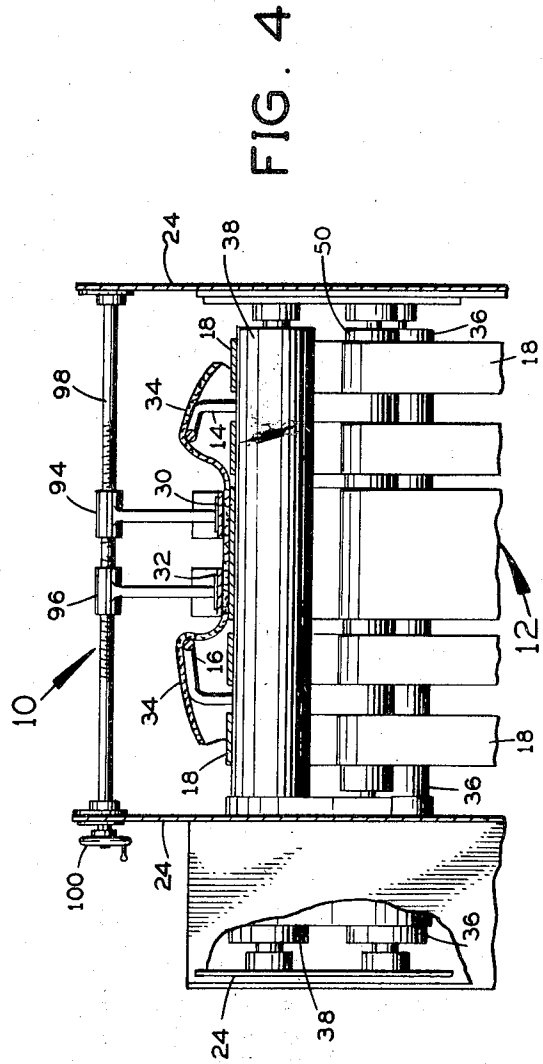


FIG. 4

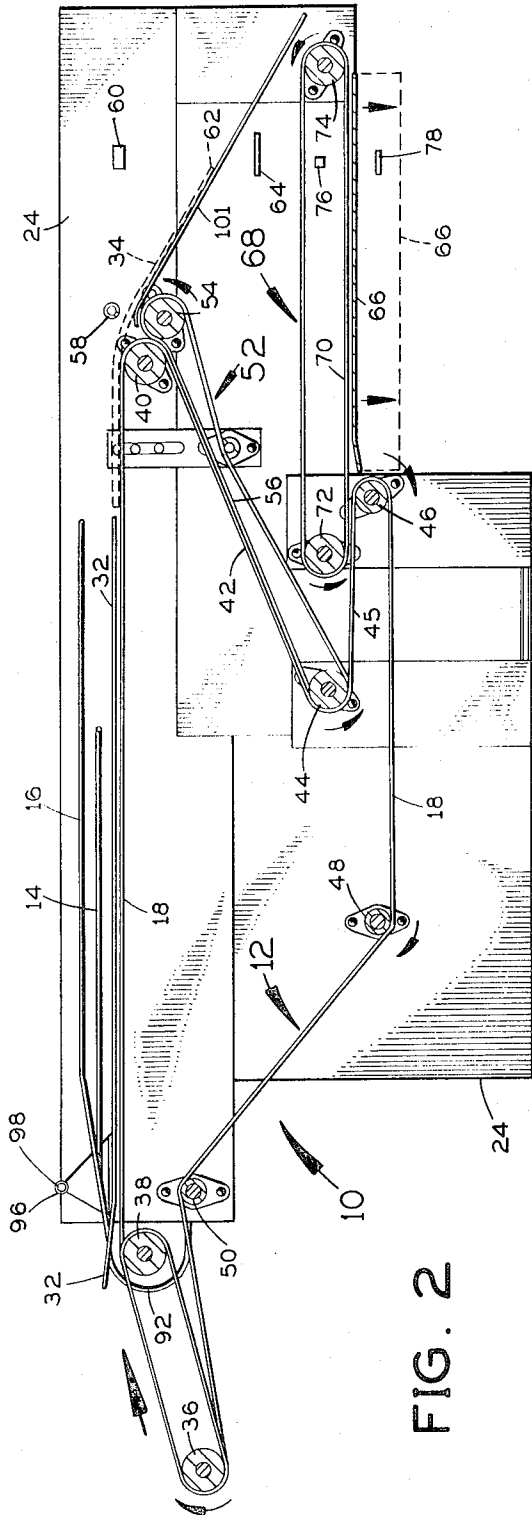


FIG. 2

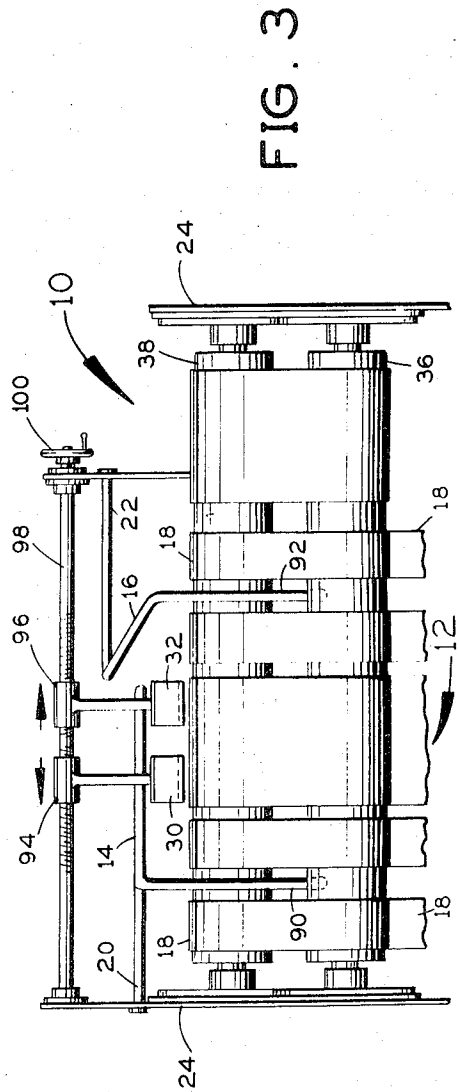


FIG. 3

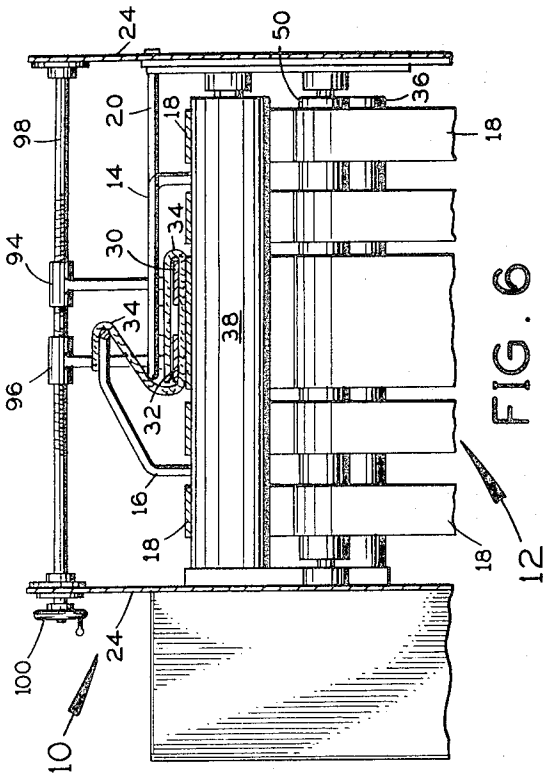


FIG. 6

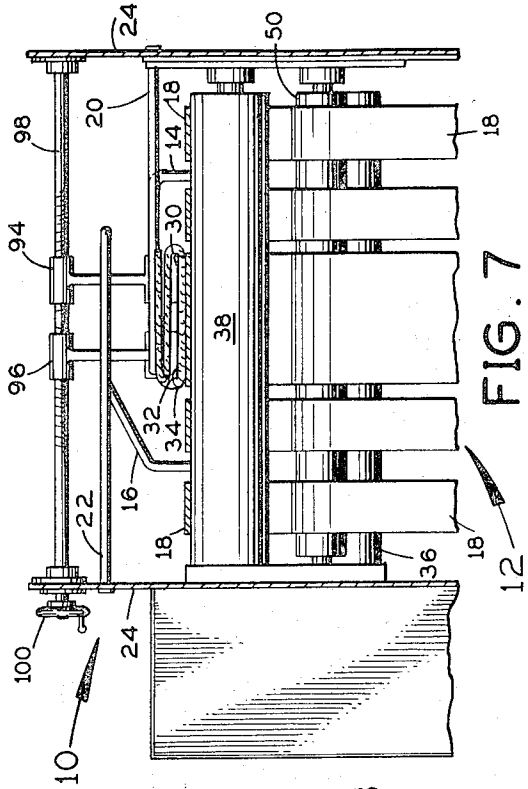


FIG. 7

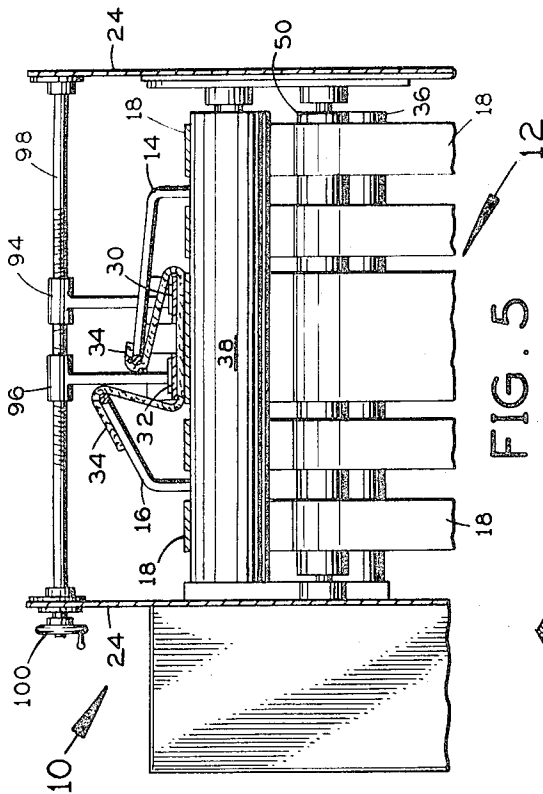


FIG. 5

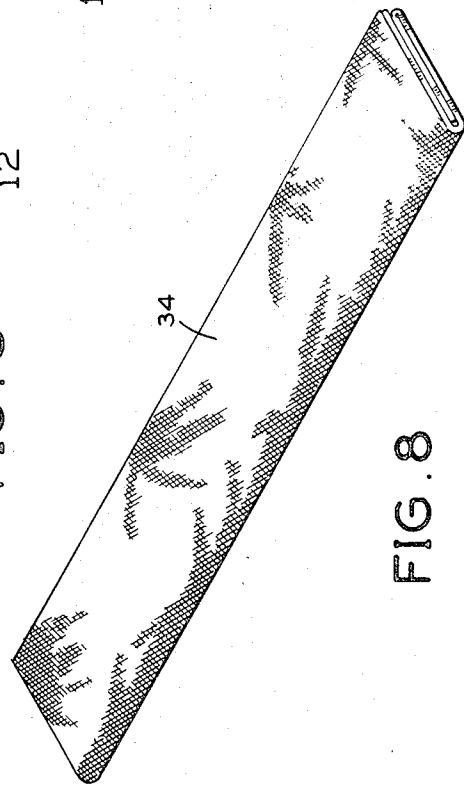


FIG. 8

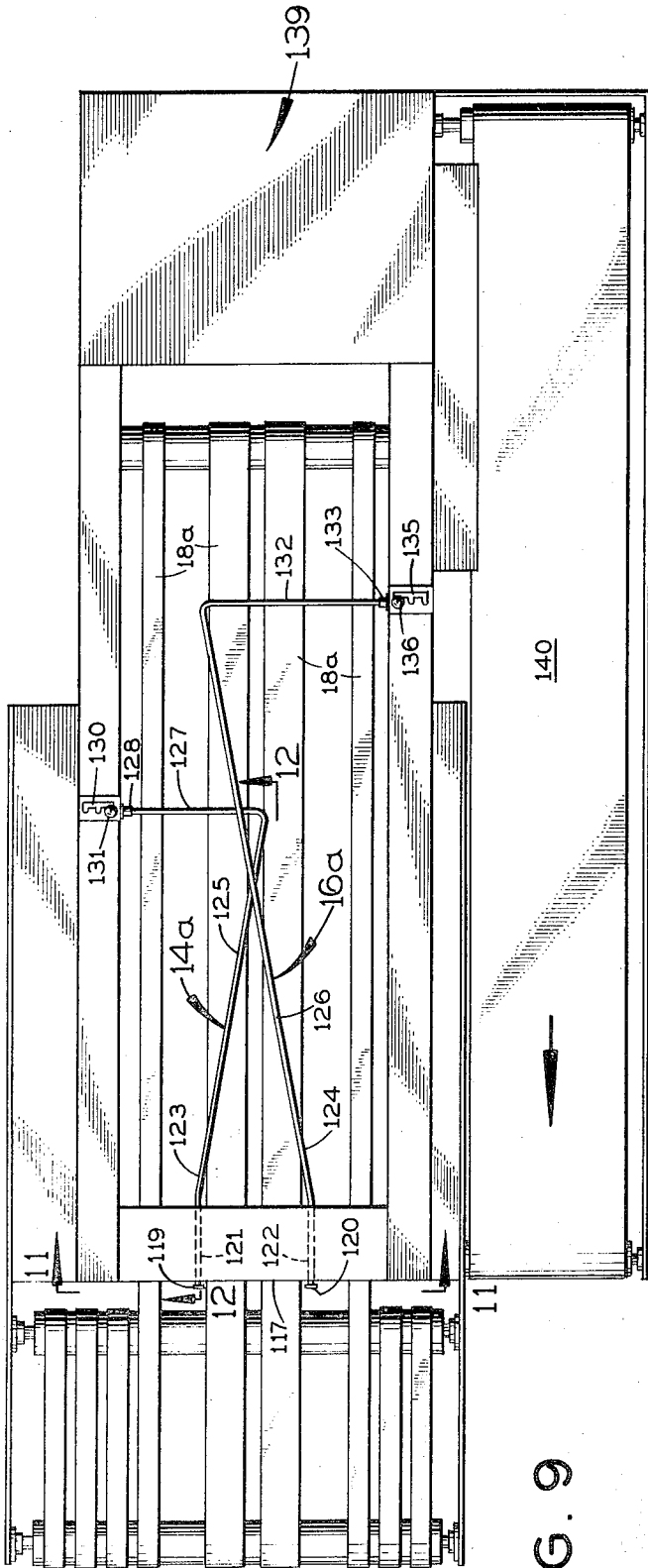


FIG. 9

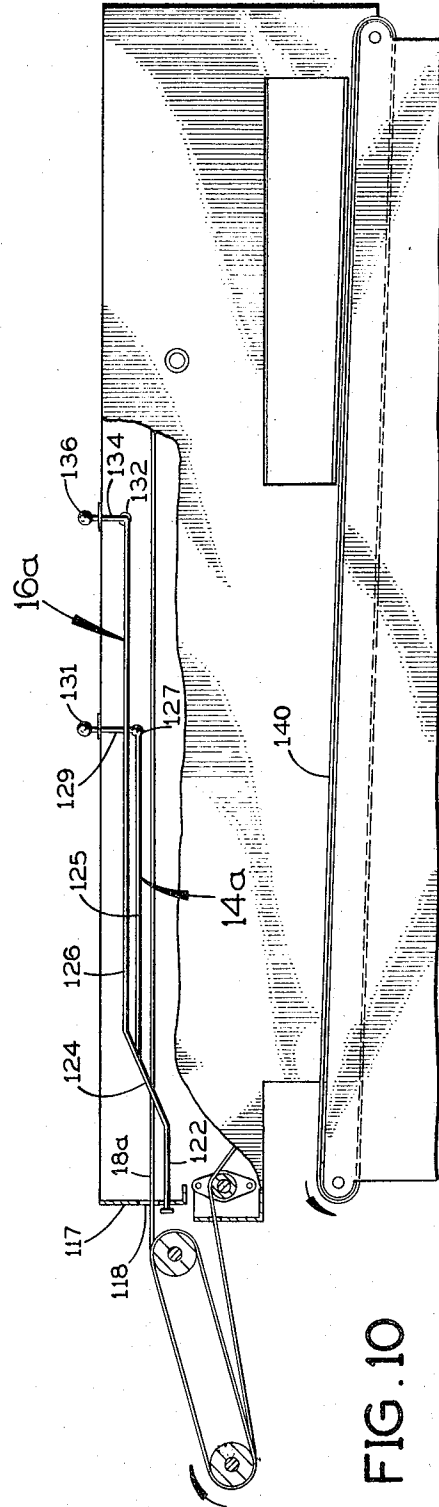


FIG. 10

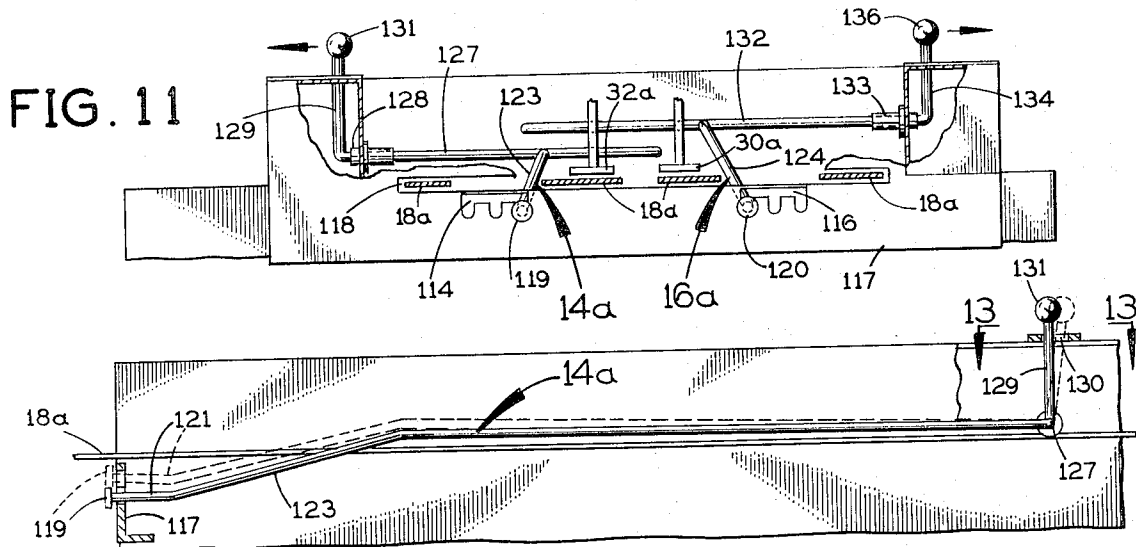


FIG. 12

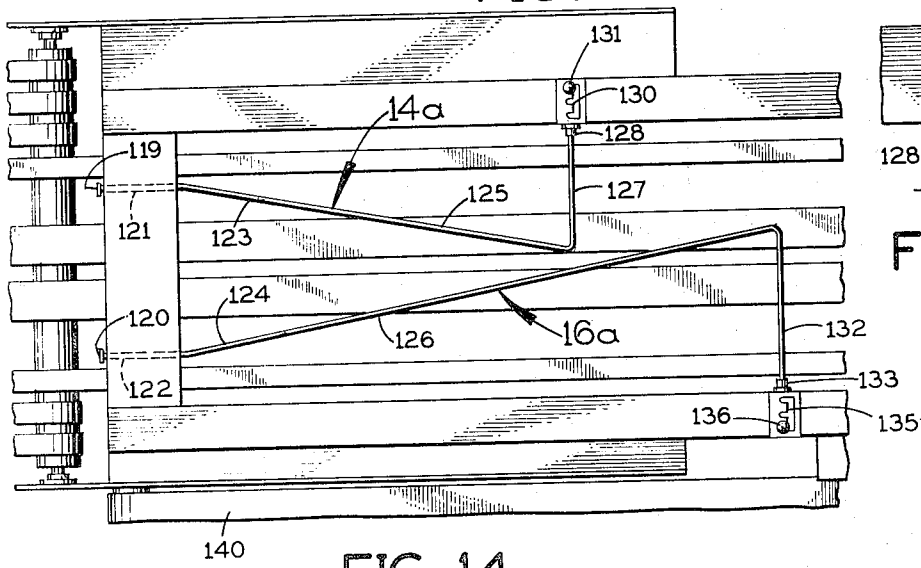


FIG. 13

FIG. 14

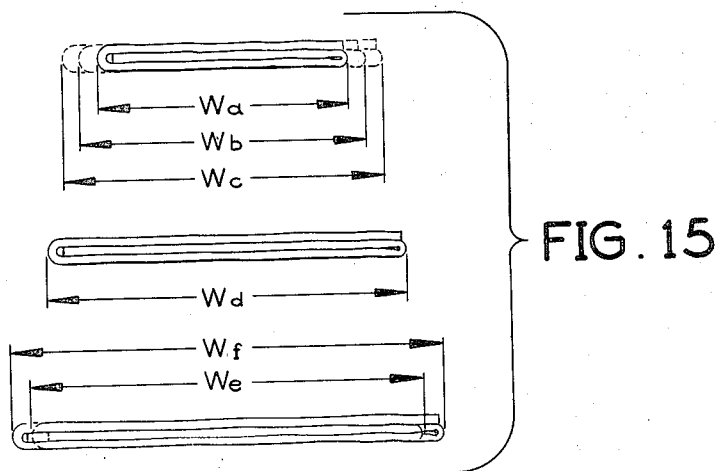


FIG. 15

SMALL PIECE FOLDER

This application is a continuation-in-part of our co-pending U.S. Pat. application, Ser. No. 128,007, filed Mar. 25, 1971 for SMALL PIECE FOLDER, and contains subject matter additional to that disclosed and claimed therein.

BACKGROUND OF THE INVENTION

A persistent problem with laundry folding apparatus is the difficulties which arise when the apparatus becomes jammed. This can occur if the laundry piece going through the apparatus does not fold properly and becomes entangled in the machinery. With respect to machinery which is available at the present time, particularly small piece folders, improvement is needed both in the effectiveness with which folding is accomplished and in the ability to clear jams in case they do occur. One specific objective of the invention is to eliminate the practice of providing folding members underneath conveyors or in otherwise inaccessible positions because if a laundry piece does jam on such folding members it is very difficult to clear the jam.

Another problem with laundry folding apparatus is in adjusting the apparatus to make different fold widths in the laundry pieces. One aspect of the present invention deals effectively with this problem in a manner which greatly enhances the practical utility of this apparatus.

Another problem dealt with by the present invention has to do with making it easier for a single operator to load the machine with laundry pieces to be folded and also to unload the fully folded pieces from the machine.

SUMMARY OF THE INVENTION

The present invention provides an improved small piece folder for folding a small laundry piece such as a towel, by way of example, in a French fold. Such folders sometimes have overlapping folding members cooperating with a conveyor which transports the laundry piece through the folding members so that one member folds a side portion of the piece on a central portion thereof and another member folds the opposite side portion of the piece on the first side portion. In the present improved apparatus, the first and second folding members are supported above laterally adjustable guides which closely overlie the upper flight of a main conveyor, so that the folding members are readily accessible in case a laundry piece should become jammed on the folding members. It thus becomes a relatively simple matter to clear the jam. The folding members fold the side portions of the piece upward, over and down on the central portion of the piece, and it has been found that folding can be accomplished in this manner with little or no tendency for the folded portions to become misoriented as they pass through the folding members.

In a preferred embodiment, the guides are laterally adjustable simultaneously by turning a rotatable rod which overlies the conveyor transversely. Also, the folding members are laterally adjustable in a novel manner. The lateral adjustments of the guides and the folding members enable the apparatus to provide different fold widths for the laundry pieces.

The main conveyor has a return flight, a portion of which is inclined rearwardly and downwardly, and a

second conveyor is provided with a portion in face-to-face relationship with this inclined conveyor run so that the longitudinally-folded piece can be nipped at the center between these two conveyor portions and folded in a cross fold. Pneumatic means is provided at the entrance of the face-to-face conveyor portions for forcing the longitudinally-folded piece between them to make the cross fold. The fully folded piece can then be discharged from between the parallel conveyor portions.

Preferably, the apparatus has a return conveyor for carrying the fully folded laundry pieces back to a location close to where the unfolded pieces are placed on the main conveyor so that a single machine operator can more conveniently handle the loading and unloading of laundry pieces into and out of the apparatus.

Accordingly, it is an object of the present invention to provide a novel and improved small piece folder which eliminates or greatly reduces the tendency for pieces to become jammed in the folder.

Another object of the invention is to make a novel and improved small piece folder whose folding members are readily accessible so that if a laundry piece does become jammed in the folding members, it can be removed more easily.

Another object of this invention is to provide a novel and improved laundry piece folder having folding members which are laterally adjustable to accommodate different fold width, as determined by the lateral adjustment of guides over which the pieces are folded.

Another object of this invention is to provide a laundry piece folder having a novel and improved arrangement for laterally adjusting a pair of guides over which the pieces are folded longitudinally.

Another object of this invention is to provide a novel and improved laundry piece folder in which each piece is cross-folded by being forced down pneumatically between inclined, face-to-face portions of conveyor belts which nip the piece between them.

Another object of this invention is to provide a novel and improved laundry piece folder having a conveyor arrangement for carrying the fully folded pieces back to a location that is close to where the unfolded pieces were inserted into the folder.

Other objects of this invention will appear from the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a folding apparatus in accordance with a first embodiment of the invention;

FIG. 2 is a sectional view taken along line 2—2 of FIG. 1 showing in particular the conveyors of the apparatus;

FIG. 3 is an end elevational view taken along line 3—3 of FIG. 1 showing the entrance end of the apparatus;

FIG. 4 is a cross sectional view taken along line 4—4 of FIG. 1 and looking in the direction of the arrows showing a laundry piece as it starts to pass through the folding members;

FIG. 5 is a sectional view taken along line 5—5 of FIG. 1 and looking in the direction of the arrows show-

ing the same laundry piece as one side portion of the piece is partially folded over the center of the piece.

FIG. 6 is a sectional view taken along line 6—6 of FIG. 1 looking in the direction of the arrows to show the laundry piece as one side portion is completely folded on the center portion and the other side portion is partially folded over the first side portion;

FIG. 7 is a sectional view taken along line 7—7 of FIG. 1 looking in the direction of the arrows to show the piece after both side portions have been folded over the center portion;

FIG. 8 shows the partially folded piece before a cross fold is made to complete the folding;

FIG. 9 is a plan view of a second embodiment of the present apparatus, in which the folding members are laterally adjustable and a return conveyor carries the fully folded laundry pieces back to the entrance end of the apparatus;

FIG. 10 is a front elevational view of the FIG. 9 apparatus, partly broken away for clarity;

FIG. 11 is a vertical cross section taken along the line 11—11 at the entrance end of the FIG. 9 apparatus;

FIG. 12 is a vertical fragmentary longitudinal section taken along the line 12—12 in FIG. 9 and showing in elevation the shorter folding member;

FIG. 13 is a fragmentary horizontal section taken along the line 13—13 in FIG. 12 and showing the adjustable front end of the folding member;

FIG. 14 is a fragmentary plan view of the FIG. 9 apparatus with the folding members adjusted laterally to their outermost positions; and

FIG. 15 shows in end elevation a laundry piece which is longitudinally folded at different fold widths in the present apparatus.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

AS SHOWN ON THE DRAWINGS

Referring first to FIGS. 1 and 2, the small piece folder 10 has a main conveyor 12 which cooperates with two folding members 14 and 16 that are mounted above the upper flight 18 of the conveyor. In this embodiment, the folding member 14 and 16 are elongated rods which have their ends 20 and 22 bolted to the frame of the apparatus. The conveyor 12 runs clockwise as shown in FIG. 2, and the upper flight 18 of the conveyor is generally horizontal. The folding members 14 and 16 extend generally horizontally over the conveyor, and portions 26 and 28 of the folding members extend toward each other, laterally of the conveyor 12, so as to make an overlapping fold. Since the fold is overlapping, the members 14 and 16 will be referred to herein as overlapping folding members.

Underneath the folding members 14 and 16, there are two guides 30 and 32 which provide edges over which the laundry piece is folded. As shown in FIGS. 1 and 2, the guides 30, 32 overlies the conveyor 12 longitudinally through most of the conveyor's upper flight 18. Various types of laundry pieces may be folded in this apparatus, and since towels are typical of such

pieces, a towel 34 is shown in dashed lines in FIG. 1 and in various stages of the folding process in FIGS. 4—8 of the drawings.

As shown in FIGS. 2 and 3, at the entrance end of the apparatus, the main conveyor 12 passes around a roller 36 and runs on an incline to another roller 38 where the horizontal upper flight 18 of the conveyor begins. The conveyor has several such rollers, and all of these rollers are journaled on the two side portions of the frame 24. The conveyor may consist of several belts passing around these rollers. From roller 38, the upper flight 18 of the conveyor 12 extends to a roller 40 at the trailing end of flight 18 where the return flight of the conveyor begins. From roller 40, the main conveyor 12 has a portion 42 extending generally downwardly and at an acute angle rearwardly toward the entrance end of the apparatus, as shown particularly in FIG. 2. The downwardly inclined conveyor portion 42 is of appreciable extent and it terminates at a roller 44, where the main conveyor passes down around roller 44 and forward horizontally to another roller 46, the portion of the main conveyor 12 between rollers 44 and 46 constituting part of the discharge means of the apparatus. From roller 46, the main conveyor passes over two rollers 48 and 50 back to the roller 36 at the entrance end of the apparatus.

A separate, second, endless belt conveyor 52 (FIG. 2) passes around roller 44 at its lower end and also around roller 54 at its upper end which is positioned directly opposite roller 40. The second conveyor 52 has an elongated portion 56 which is adjacent to and in face-to-face contact with the downwardly inclined main conveyor portion 42. The two downwardly inclined conveyor portions 42 and 56 are parallel with each other and run in the same direction. The purpose of the two conveyor portions 42 and 56 is to nip the central portion of a partially folded piece between them in order to make a cross fold in the piece.

In order to force the partially folded piece between the two conveyor portions 42 and 56, pneumatic means 58 is provided just above the entrance leading into the two conveyor portions 42 and 56 for blowing a blast of air on the partially folded piece when the middle of the piece reaches the entrance to the conveyor portions. The pneumatic means 58 may be simply a pipe with holes in it, the pipe being connected to a source of compressed air which is controlled by a valve. The valve is operated by means of a photocell 60 which senses the leading end of the longitudinally folded piece, and causes the pneumatic means 58 to deliver a blast of air when the leading end 62 of the longitudinally folded piece reaches the position shown in FIG. 2. The photocell 60 includes not only a light source, but also the photosensitive material which reacts to light in the manner of switching element. A mirror 64 is provided under the photocell 60 as shown in FIG. 2 so that light can be directed from the photocell 60 onto the mirror 64 and reflected back to the photocell 60 where it is intercepted by the photosensitive element. When this light is interrupted by the leading edge 62 of the longitudinally-folded piece, the photosensitive material, acting as a switch, activates an electrical circuit (not shown) to open the valve of the pneumatic means 58 and thus deliver a blast of air on the center of the partially folded piece 34 to force the center of the piece between the conveyor portions 42 and 56. An elec-

tronic measuring device is a suitable alternative for a photocell or switch.

The two conveyor portions 42 and 56 grip the piece between them and pull it downwardly while making a cross fold in the piece. The piece passes around roller 44 onto the discharge portion 45 of the main conveyor 12 which leads to discharge plates 66. A third endless belt conveyor 68 is provided above the discharge plates 66 and also above the conveyor portion 45. The lower run or portion 70 of conveyor 68 moves to the right across conveyor portion 48 and plates 66 between rollers 72 and 74. Thus, run 70 of conveyor 68 engages the upper side of the folded piece and moves it onto the plates 66. The rollers 72 and 74 are provided with a braking mechanism in the form of a slip clutch which is actuated by another photocell 76 cooperating with a mirror 78 to stop the folded piece on the plates 66 and operate the plates 66 in the manner of a trap door to drop the folded piece from the apparatus. The photocell 76 and mirror 78 operate to sense the leading end of the folded piece in exactly the same manner as described above in connection with photocell 60 and mirror 64.

After the laundry piece has been discharged from the machine, the light again reaches the photosensitive material in the photocell 76, and the photosensitive element acting as a switch operates the control circuit for the plates 66 and the control circuit for the slip clutch mentioned previously in connection with conveyor 68 to return the plates 66 to the horizontal position and to start the conveyor 68. The slip clutch and the control circuit are not shown since they are conventional and do not constitute part of the invention.

The operation of the folding members 14 and 16 to fold the laundry piece 34 in a French fold is best seen in connection with FIGS. 4 through 8 inclusive. In these figures, the laundry piece 34 is shown in various stages of the folding process as it passes through the apparatus. In FIG. 8, the partially folded piece 34 is shown in the condition it assumes just before it enters between the conveyor portions 42 and 56.

At the entrance end of the apparatus, the two folding members 14 and 16 have curved portions 90 and 92 which extend downwardly around roller 38 so as to lie under the piece 34 as it is moved into the apparatus on the upwardly slanting portion of the conveyor between rollers 36 and 38. As the laundry piece 34 continues to move, it rides up over the leading ends of the folding members 14 and 16, but the central portion of the piece enters under the guides 30 and 32 so that it is not lifted by the folding members 14 and 16. The guides 30 and 32 are bars suspended from collars 94 and 96 which are threaded oppositely on a threaded rod 98 which may be turned by means of a crank 100. Rod 98 transversely overlies the upper flight 18 of conveyor 12 above the guides 30, 32 as shown in each of FIGS. 1-7. By turning the crank 100 and rod 98, the lateral positions of the guides 30 and 32 may be adjusted simultaneously in opposite directions. Such lateral adjustment of the guides 30 and 32 determines the fold width of the laundry piece in accordance with the lateral spacing between the respective outer longitudinal edges of the two guides. While the single rotatable rod 98 provides a very effective and convenient mechanism for adjusting the guides laterally, other means of adjusting these guides would be possible.

The leading ends of the folding members 14 and 16 slant toward each other as shown in FIGS. 1 and 4, and the leading ends also rise slightly so as to lift the two side portions of the piece in the manner shown in FIG. 4. Folding member 16 slants inwardly at a steeper angle than member 14, but then member 16 straightens while member 14 continues to slant, so that as shown in FIG. 5, the right side of the laundry piece 34 is folded up, over and down onto the central portion of the piece while the left side of the piece is still raised. FIG. 6 shows the piece as it leaves the slanting portion of member 14 where this member terminates, the right side of the piece then being completely over onto the center portion of the piece.

At this stage, the left side of the piece rides along an inwardly slanting trailing end of the member 16 as shown in FIG. 6 so as to fold the left side of the piece downwardly on the right side of the piece. FIG. 7 shows the piece just after it leaves the terminal end of member 16, the piece being partially folded in a French fold at this stage. The condition of the piece after it leaves the folding members 14 and 16 is shown in FIG. 8, as previously mentioned.

The leading end of the laundry piece 34 then passes over roller 40 onto a ramp 101, and the leading end of the piece 34 is sensed by the photocell 60 which actuates the pneumatic means 58 to force the center of the laundry piece between the conveyor portions 42 and 56 as described previously.

Since the folding members 14 and 16 are above the conveyor flight 18, they are readily accessible in the event that the laundry piece becomes entangled in the folding members. It is not likely that the laundry piece will become thus entangled but if this does happen, the piece may become jammed. It is far easier to remove such a jammed piece from the apparatus when the folding members 14 and 16 are completely accessible than if they were down in the interior of the apparatus. Also, the entrance end of the conveyor portions 42 and 56 is readily accessible from the top of the apparatus, so if there is any failure of the pneumatic means 58, the laundry piece is readily accessible to the operator. The discharge end of the machine is accessible from the bottom of apparatus in the event a jam should occur during the discharge process. The laundry piece travels from the top of the machine to the bottom of the machine between the conveyor portions 42 and 56, and since the laundry piece is held firmly between these two conveyor portions during this transit from top to bottom of the apparatus, it is very unlikely that any jamming or entanglement could occur enroute.

It may be noted in FIG. 1 that power for driving the conveyors is supplied by an electrical motor 102 which is connected by belt 104 to roller 44 and is connected by another belt 105 to roller 72.

FIGS. 9-14 illustrate a second embodiment of this invention which has an improved arrangement for variable width folding. Corresponding elements in these Figures are given the same reference numerals as in FIGS. 1-8, but with an *a* suffix added.

In practice, an apparatus of the type here involved may be required to provide different fold widths which may vary from 7 inches to 12 inches, for example. The width of the middle fold at the bottom is determined by the adjustable setting of the guides 30*a* and 32*a*, as already disclosed. Improved folding is achieved by adjusting the lateral positions of two elongated, rod-like

folding members **14a** and **16a** in accordance with the fold width. For example, if the fold width is 9 inches or less, the folding members **14a** and **16a** are positioned laterally inward so as to overlap, or cross over one another viewed from above as shown in FIG. 9. At the other extreme, for a fold width of 11 inches or more the folding members **14a** and **16a** are spread apart laterally in non-overlapping relationship as shown in FIG. 14. For an intermediate fold width (e.g., 10 inches) the folding members **14a** and **16a** are laterally positioned about midway between the extremes of FIGS. 9 and 14.

Referring to FIG. 11, at the fabric entrance end of the apparatus the corresponding ends of the folding members **14a** and **16a** extend through respective E-Shaped slots **114** and **116** formed in a vertical end wall **117** of the frame of the apparatus at each side of the conveyor **12a**. Each slot **114** and **116** has three downwardly-offset, laterally spaced recesses which are interconnected by the laterally extending top portion of the slot. The respective folding member **14a** or **16a** may be located in any selected one of the three laterally spaced recesses in the respective vertical slot **114** or **116**, depending upon the fold width desired. The folding members **14a** and **16a** terminate at this end in respective enlarged knobs **119** and **120** located at the entrance side of the respective vertically disposed E-slots **114** and **116**.

This end wall **117** of the frame of the apparatus has a horizontal opening **118** through which pass the individual belts on the upper flight **18a** of the conveyor at a level just slightly higher than the tops of the E-slots **114** and **116**, as best seen in FIG. 11.

At the entrance end of the apparatus, the folding members **14a** and **16a** have respective horizontal segments **121** and **122** (FIGS. 9 and 10) which extend parallel to the direction of travel of the upper flight **18a** of the conveyor for a short distance away from the end knobs **119** and **120**. The opposite (forward) ends of these horizontal segments are joined to upwardly and laterally inwardly inclined segments **123** and **124**, which extend to different levels above the upper flight **18a** of the conveyor (FIGS. 10 and 12). Horizontal segments **125** and **126** of the folding members **14a** and **16a** extend from the upper ends of the upwardly inclined segments **123** and **124** at a continued lateral inclination inwardly, overlying the two middle belts in the upper flight **18a** of the conveyor, as shown in FIG. 9. The horizontal segment **126** on folding member **16a** is at a higher level than the horizontal segment **125** on folding member **14a**, as shown in FIG. 10.

The opposite (forward) end of the laterally inclined, horizontal segment **125** on the folding member **14a** is joined to a horizontal segment **127**, which extends laterally outward in the opposite direction, perpendicular to the direction of travel of the upper flight **18a** of the conveyor, and is slidably and rotatably received in a fixed sleeve bearing **128** carried by the frame of the apparatus at the left side of the conveyor, viewed from the entrance end of the apparatus.

As best seen in FIG. 11, at the laterally outward side of this bearing, the folding member **14a** has a vertical arm **129** which extends up through a horizontally disposed E-shaped slot **130** (FIGS. 9 and 13) on the frame of the apparatus at one side of the conveyor **12a**. A knob or handle **131** is attached to the upper end of this vertical **129** arm above the E-slot **130**. The E-slot **130**

has three rearwardly offset, laterally spaced, interconnected recesses and the vertical arm **129** on the folding member **14a** may be received in any selected one of these three laterally spaced recesses, depending upon the fold width.

The laterally inclined, horizontal segment **126** on the other folding member **16a** extends forward well past the journalled end of folding member **14a** in the direction of movement of the upper flight of the conveyor. Its front end is joined to a horizontal segment **132** that extends laterally outward in the opposite direction, perpendicular to the direction of travel of, and overlying, the upper flight **18a** of the conveyor. The outer end of this segment **132** is slidably and rotatably received in a fixed sleeve bearing **133** carried by the frame of the apparatus at the opposite side of the conveyor.

Laterally outward from the bearing **133** the folding member **16a** has a vertical arm **134** (FIG. 10) that extends up through a horizontally disposed E-shaped slot **135** on the frame of the apparatus at this side of the conveyor (FIGS. 9 and 14) and carries a knob or handle **136** on its upper end above this slot. This E-slot **135** has three rearwardly offset, laterally spaced, interconnected recesses. The vertical arm **134** on folding member **16a** may be received in any selected one of these recesses, in accordance with the fold width desired.

In one practical embodiment, when the fold width is nine inches or less, as determined by the lateral positions of the guides **30a** and **32a**, the vertical arms **129** and **134** on the front ends of the respective folding members **14a** and **16a** are seated in the laterally innermost recesses in the respective horizontal E-slots **130** and **135**, and the opposite (rear) ends of these folding members are seated in the laterally innermost recesses in the respective vertical E-slots **114** and **116**. Consequently, the laterally inclined folding segments **125** and **126** on the two folding members are at their innermost positions laterally, with the upper, longer folding member **16a** crossing over the lower, shorter folding member **14a**, as shown in FIG. 9, and vertically spaced above it as shown in FIG. 10. This overlapping positioning of the two folding members **14a** and **16a** insures that the two opposite side flaps of the fabric will be folded over snugly to provide the fold width determined by the lateral setting of the guides **30a** and **32a**.

In FIG. 15, the widths W_a , W_b , and W_c represent three different fold widths (e.g., 7, 8 and 9 inches, respectively) which may be obtained at this FIG. 9 setting of the folding members **14a** and **16a**, depending upon the lateral settings of the guides **30a** and **32a**.

To change the lateral positions of the folding members **14a** and **16a** when the fold width, as determined by the lateral settings of guides **30a** and **32a**, is to be eleven inches or more, the machine operator rocks each handle **131** and **136** forward (to the right in FIG. 9, away from the entrance end of the apparatus). The corresponding folding member **14a** or **16a** pivots about the horizontal axis provided by its bearing **128** or **133**, and its vertical arm **129** and **134** moves out of the innermost recess in the respective horizontal E-slot **130** or **135**. The opposite end of the folding member moves up out of the laterally innermost recess in the respective vertical E-slot **114** and **116** at the entrance end of the apparatus. Now, by moving the handle **131** or **136** laterally outward, each folding member **14a** or **16a** may be adjusted laterally outward (sliding along the respec-

tive bearing 128 or 133) to a position in which its vertical arm 129 or 134 may be moved into the laterally outermost recess in the respective horizontal E-slot 130 or 135, as shown in FIG. 14. At the same time, the opposite (rear) end of the folding member is moved into the laterally outermost recess in the respective vertical E-slot 114 or 116 at the entrance end of the apparatus.

In this position, the two folding members 14a and 16a are spread apart laterally in non-overlapping relationship, and they are ideally positioned to fold over the side flaps of the fabric for this wider fold width without likelihood of jamming of the apparatus by the fabric.

In FIG. 15, *We* and *Wf* show two different fold widths (e.g., 11 and 12 inches) that may be obtained at the FIG. 14 setting of the folding members 14a and 16a, by adjusting the lateral positions of the guides 30a and 32a.

For an intermediate width fold (e.g., 10 inches) the handles 131 and 136 on the folding members 14a and 16a may be manipulated as described so as to position the opposite ends of each folding member in the middle recesses of the respective horizontal and vertical E-slots. The intermediate fold width obtained is shown at *Wd* in FIG. 15.

After being conveyed past the folding members 14a and 16a (to the right in FIG. 9), the longitudinally folded fabric passes into a cross-folding mechanism, designated generally by reference numeral 139. This cross-folding mechanism preferably is of the type shown in FIG. 2.

In this embodiment of the invention, after being cross-folded the fabric piece is discharged onto a return conveyor 140 whose upper flight carries the fabric piece upward at a slight angle and from right to left in FIG. 9 to the fabric entrance end of the apparatus. With this advantageous arrangement of the return conveyor, a single machine operator may conveniently handle the insertion of the laundry pieces into the folding apparatus and the removal of the longitudinally-folded and cross-folded pieces from the return conveyor 140.

We claim:

1. In a laundry folding apparatus having a conveyor for advancing a laundry piece in a predetermined path, laterally adjustable guide means closely overlying the conveyor, and a pair of folding members extending up on the opposite outer sides of said guide means and laterally inward across said conveyor at opposite lateral inclinations to fold the opposite sides of the laundry piece up around said guide means as the laundry piece is advanced by the conveyor, each of said folding members having its back end located at the entrance end of said guide means and having its front end spaced therefrom in the direction of conveyor movement, the improvement which comprises:

means for selectively positioning the back end and means for selectively positioning the front end of each of said folding members in different lateral positions in accordance with the lateral adjustment of said guide means for different fold widths of the laundry piece.

2. A folding apparatus according to claim 1, wherein said means for positioning the back end and the front end of each of said folding members selectively are adjustable to position them with one partially overlying the other laterally for narrower width folding or spread

apart laterally in non-overlying relationship for wider-width folding.

3. A folding apparatus according to claim 1, wherein said guide means comprises a pair of guides overlying the conveyor longitudinally, and further comprising a rotatable rod transversely overlying the conveyor above said guides, said rod having oppositely screw-threaded portions thereon which are threadedly coupled respectively to said guides for simultaneously adjusting the guides laterally in opposite directions to adjust the fold width of the laundry piece in response to rotation of said rod in one direction or the other.

4. In a laundry folding apparatus having a conveyor for advancing a laundry piece in a predetermined path, laterally adjustable guide means closely overlying the conveyor, and a pair of folding members extending up on the opposite outer sides of said guide means and laterally inward across said conveyor at opposite lateral inclinations to fold the opposite sides of the laundry piece up around said guide means as the laundry piece is advanced by the conveyor, each of said folding members being an elongated rod extending from a location at the entrance end of said guide means toward the exit end of said guide means, an improved arrangement for selectively positioning said folding members in different lateral positions comprising:

means on the apparatus defining a pair of slots at the entrance end of said guide means which receive the back ends of the respective folding members individually thereat, each of said slots having interconnected, laterally spaced recesses for snugly but slidably receiving the back end of the respective folding member at different laterally spaced positions;

and means on the apparatus spaced from said slots in the direction of movement of the conveyor and which receive and engage the front ends of the respective folding members individually to locate said front ends at different positions laterally.

5. A folding apparatus according to claim 4, and further comprising means pivotally and slidably supporting each folding member adjacent its front end.

6. A folding apparatus according to claim 5, wherein the respective slots at the entrance end and said last-mentioned means position the folding members with one partially overlying the other laterally for narrower-width folding and, alternatively, position the folding members spread apart laterally in non-overlying relationship for wider-width folding.

7. In a laundry folding apparatus having a conveyor for advancing a laundry piece in a predetermined path, a frame supporting said conveyor, laterally adjustable guide means closely overlying the conveyor, and a pair of folding members extending up on the opposite outer sides of said guide means and laterally inward across said conveyor at opposite lateral inclinations to fold the opposite sides of the laundry piece up around said guide means as the laundry piece is advanced by the conveyor, an improved arrangement for selectively positioning said folding members in different lateral positions comprising:

means located on said frame at the entrance end of said guide means and defining a pair of laterally spaced slots which receive the back ends of the respective folding members individually, each of said slots having offset recesses which are spaced apart laterally of the conveyor and which snugly but slid-

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ably receive the back end of the respective folding member at different laterally spaced positions; and means located on said frame at each side of the conveyor beyond the entrance end of said guide means in the direction of movement of the conveyor for receiving and engaging the front ends of the respective folding members to locate the latter selectively at different lateral positions.

8. A folding apparatus according to claim 7, wherein:

said folding members cross each other vertically spaced apart when received in the laterally innermost recesses of said slots.

and said folding members are laterally spread apart

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throughout their extent when received in the laterally outermost recesses of said slots.

9. A folding apparatus according to claim 7, wherein said guide means comprises a pair of guides overlying the conveyor longitudinally, and further comprising a rotatable rod transversely overlying the conveyor above said guides, said rod having oppositely screw-threaded portions thereon which are threadedly coupled respectively to said guides for simultaneously adjusting the guides laterally in opposite directions to adjust the fold width for the laundry piece in response to rotation of said rod in one direction or the other.

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