United States Patent

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[54] **SPREADER DEVICE FOR FLATWORK**
17 Claims, 7 Drawing Figs.

[52] **U.S. Cl.** **38/143,** 271/54
[51] **Int. Cl.** **D06f 67/04**
[50] **Field of Search** ..... 38/1, 143; 214/1 L; 26/15, 54–67; 28/1 E; 271/45, 49, 51–54, 74–76, 79, 68–70, 84, 85

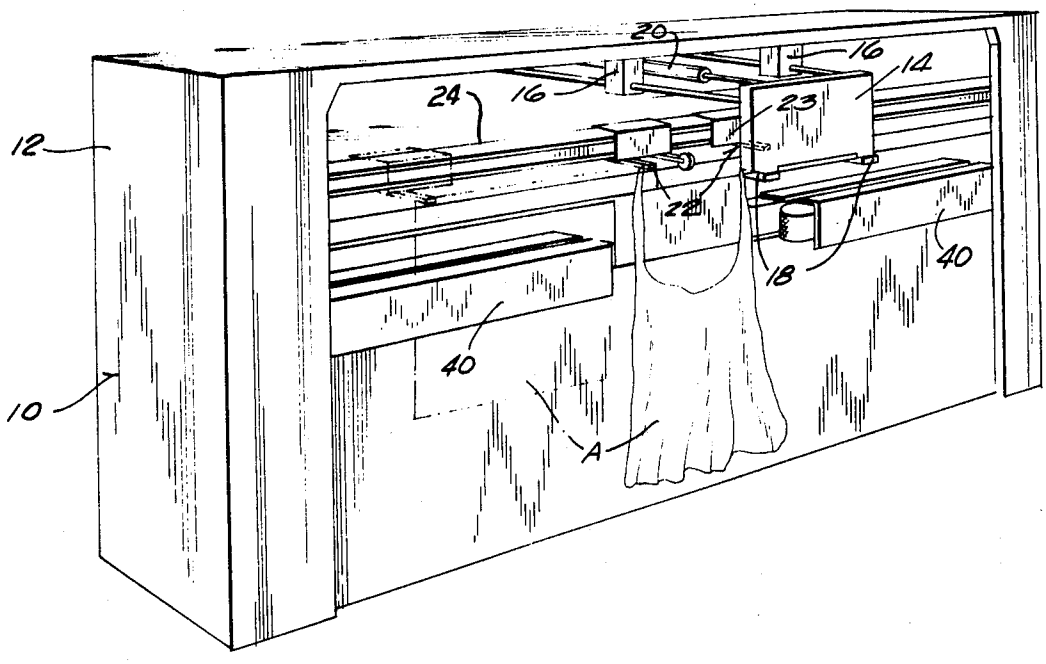
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ABSTRACT: Improved device for spreading large articles of flatwork and for feeding same onto a conveyor, and including a beam supported transverse to the conveyor adapted to be reciprocated over the conveyor; where two sleds are mounted on the beam and means reciprocate the sleds, clamps suited to grip the leading edge of the article carried by the sleds and adapted to slide between remote end positions within the sleds whereat detent means hold the clamps until sled separation draws the leading edge tight whereupon the clamps shift to adjacent end positions within the sleds, and a control responsive to the leading edge being drawn tight to stop the sled separation subsequently; where the sled-separating means includes a loop trained over rotatable elements at the beam ends, and a power shaft supported independently of the beam but extended parallel to the beam movement that slides axially within but is keyed to one of the elements; and where the means to reciprocate the beam includes a second loop trained over rotatable elements spaced apart in the direction of conveyor travel and having separate parallel runs, lateral guides for the loop runs and means connecting the loop to the beam.



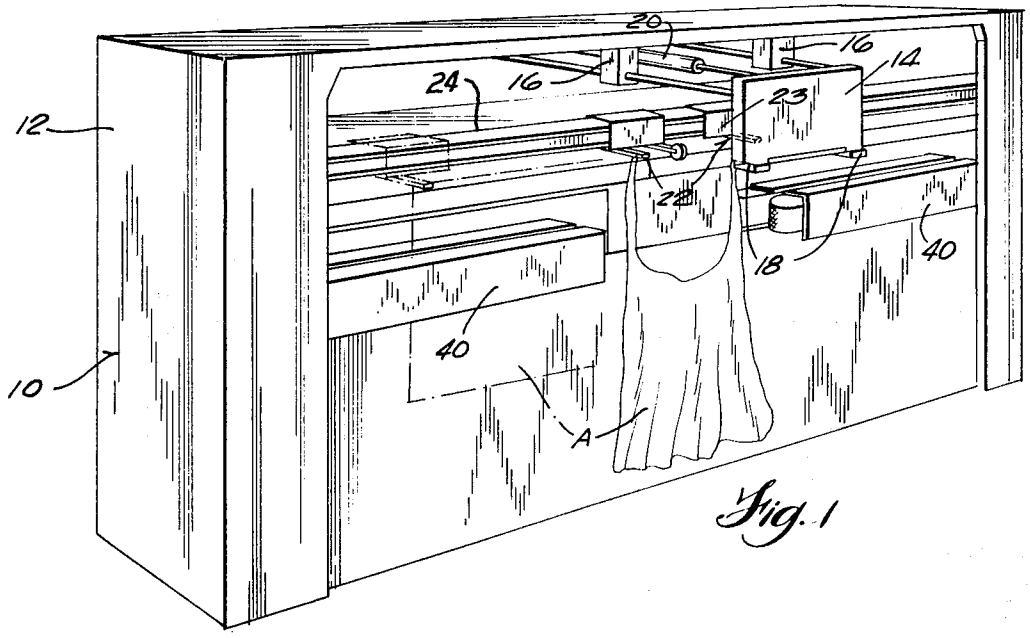


Fig. 1

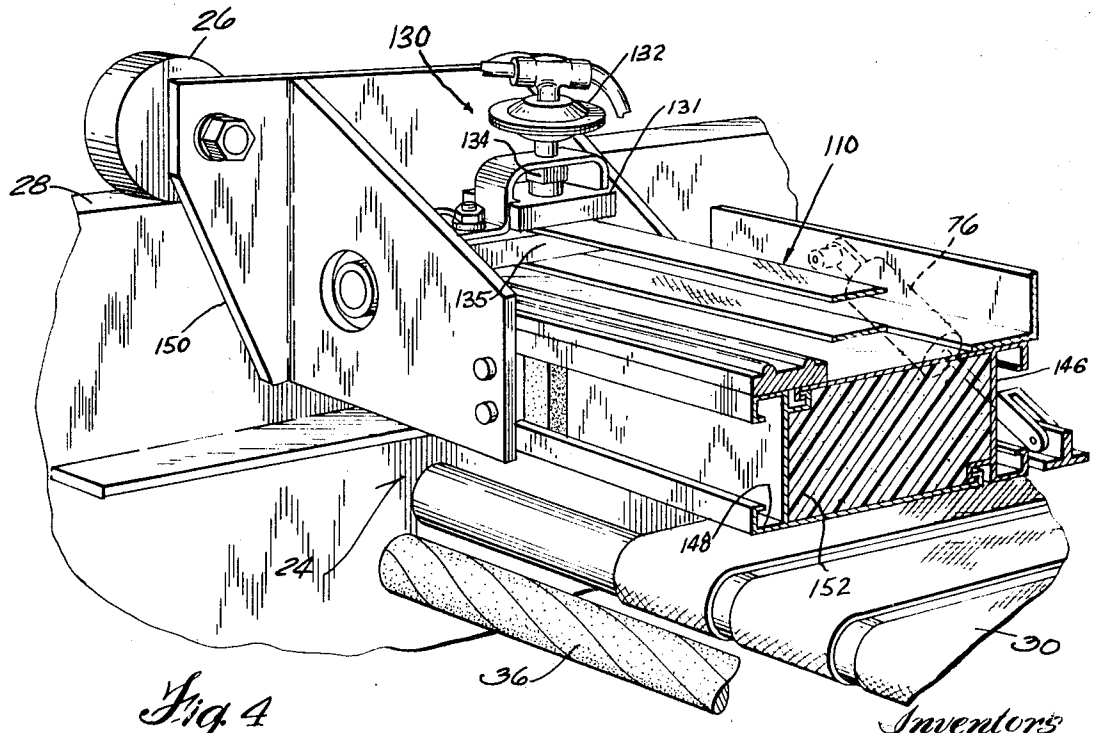
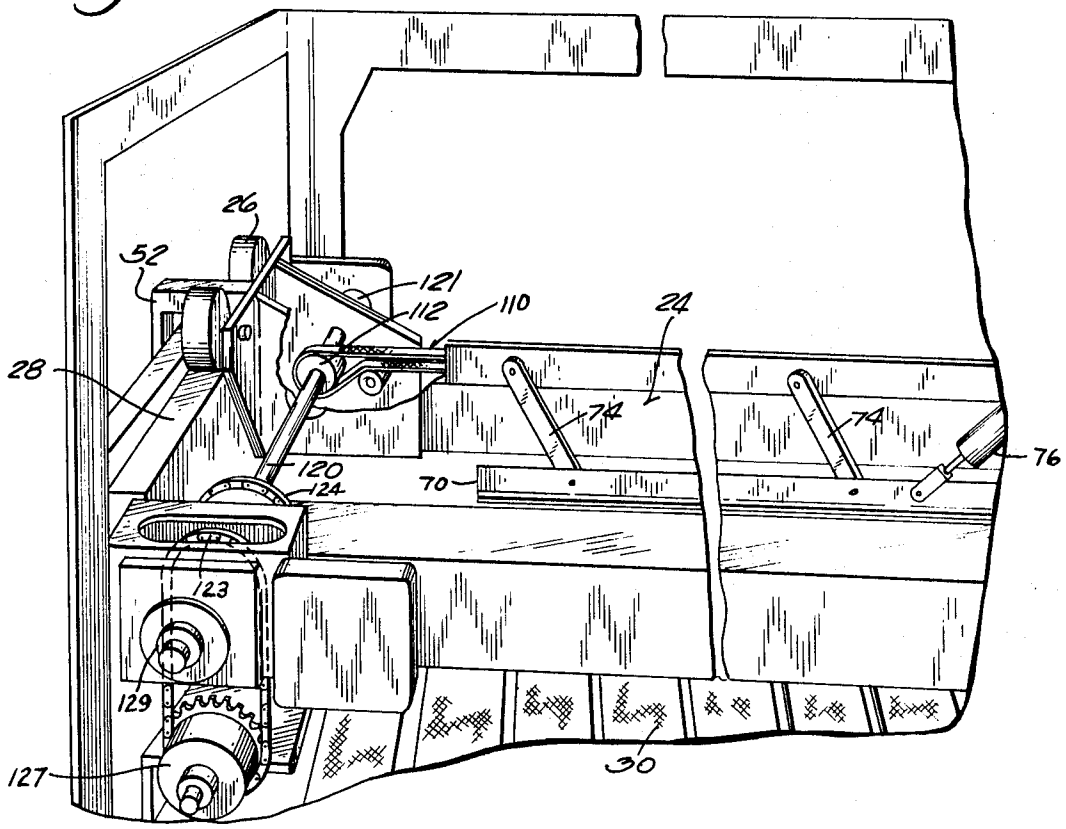


Fig. 4

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Fig. 5



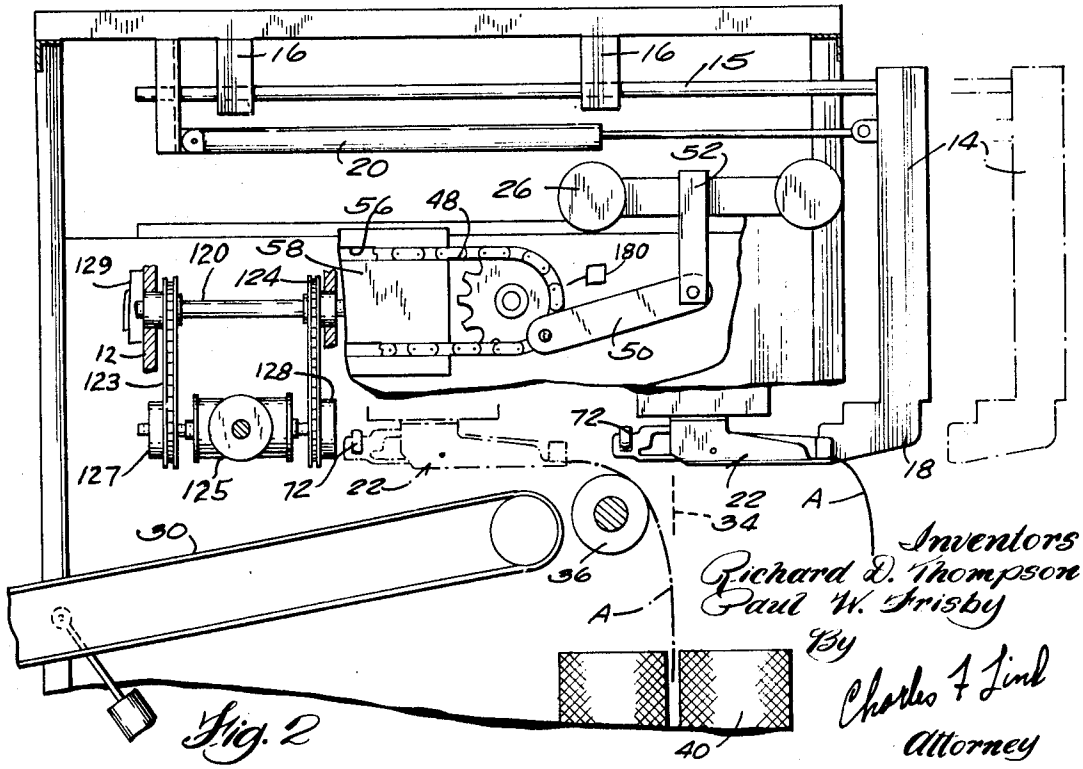
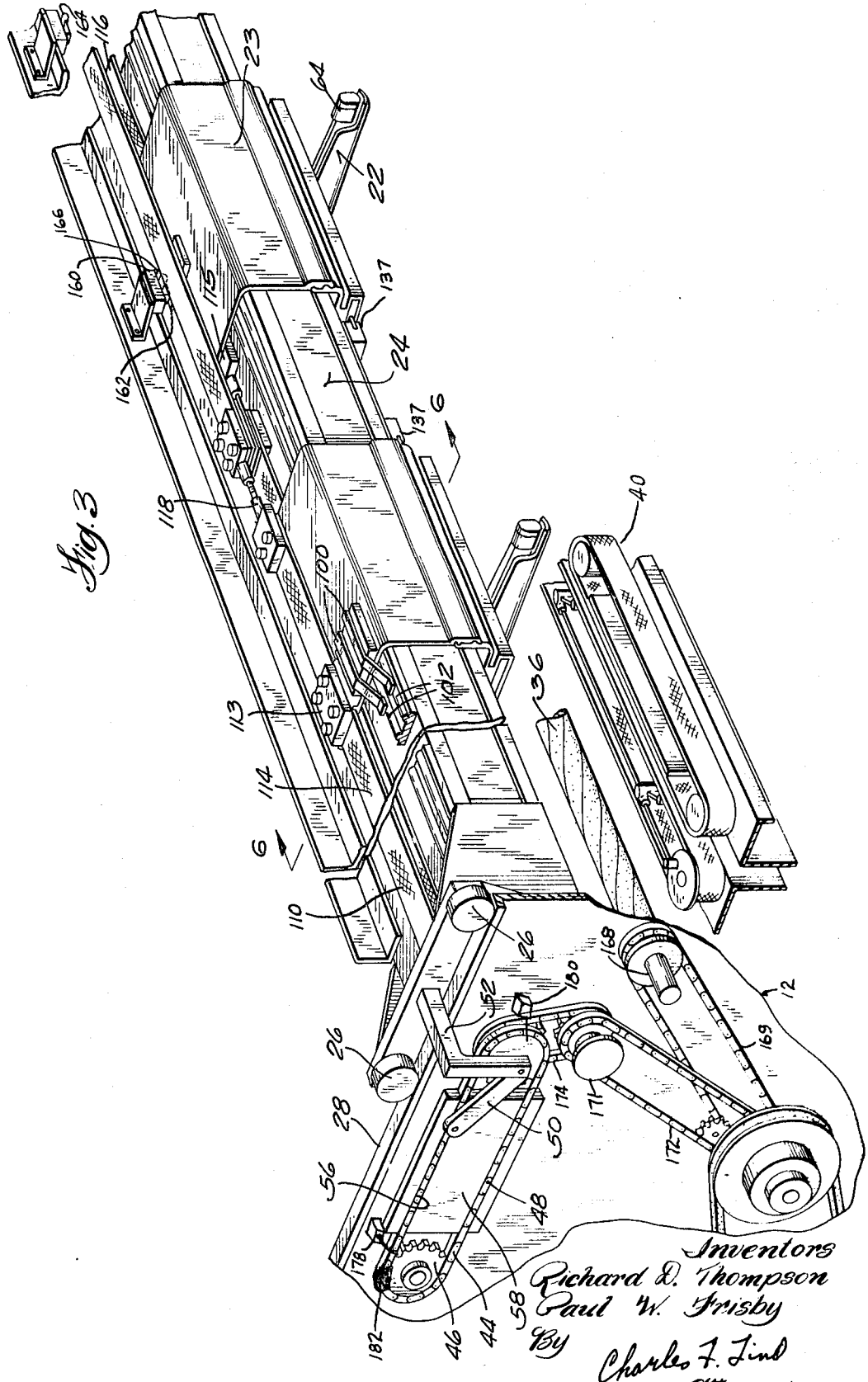


Fig. 2

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Fig. 3



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Fig. 7

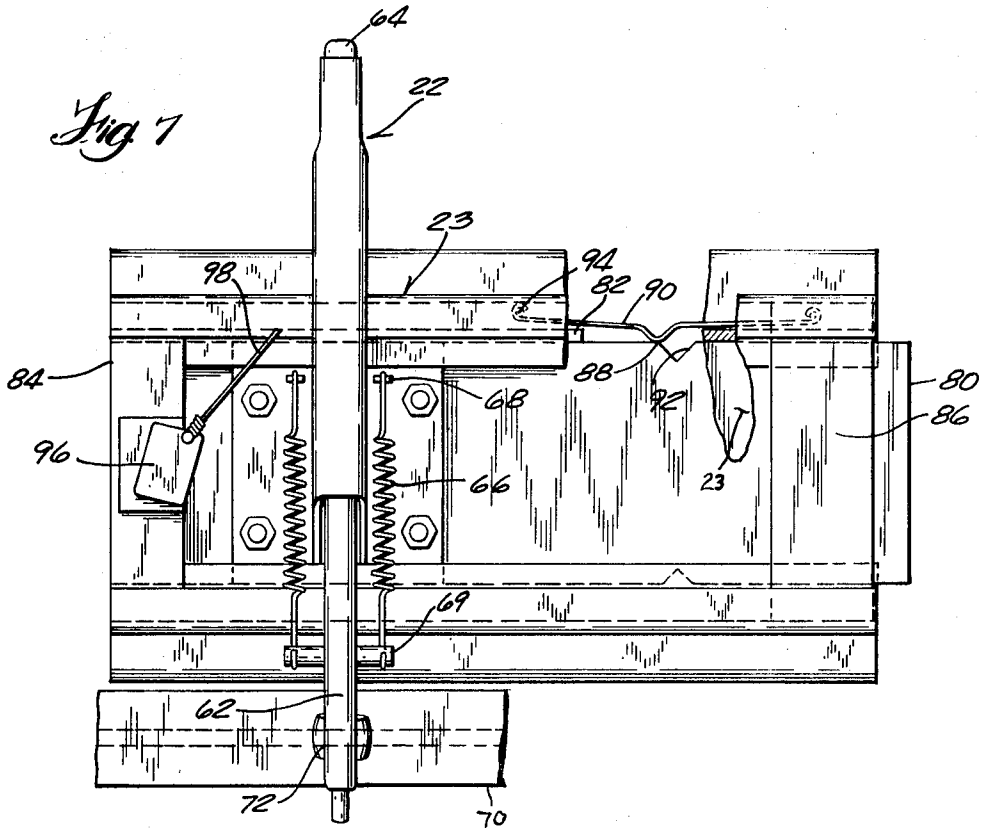
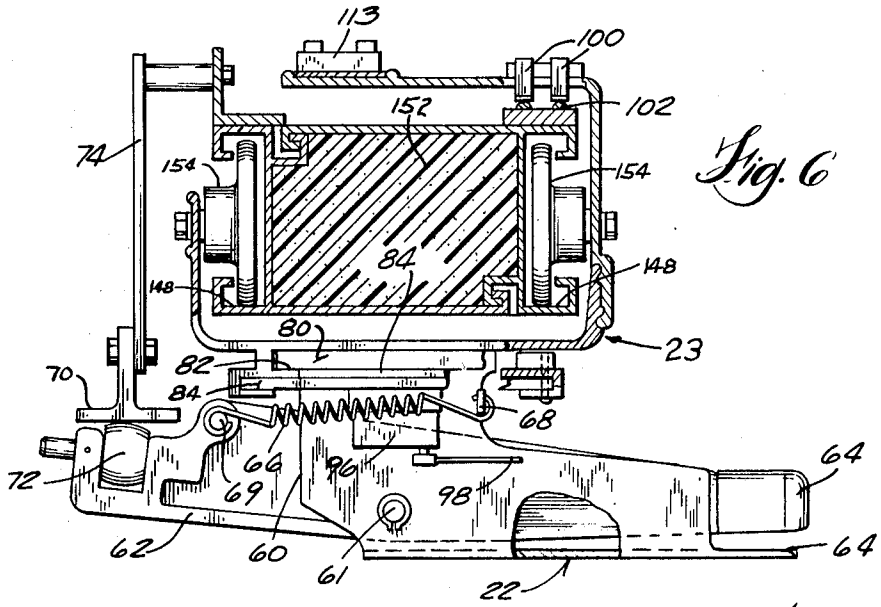


Fig. 6



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SPREADER DEVICE FOR FLATWORK

In commercial laundries, it is typical to press large flatwork articles, such as sheets and tablecloths on a roll-type ironer. Generally, the washed articles are in a hamper and two operators are required to manually straighten the leading edge of each article and feed it into the control of the ironer conveyor, and then continually fluff out the trailing side edges of the article upon the advance of the conveyor. This need of two operators that work as a team to spread and feed is quite unsatisfactory for high output laundries since the output and quality of work is only as good as the team. Consequently, a semiautomatic devices capable of both spreading a flatwork article and feeding it onto a conveyor run have been devised, where only one operation is required to load the particular unit. See for example the H. J. Weir U.S. Pat. Nos. 3,376,036 and 3,421,756. This invention is an improvement in this type of device.

An object of this invention is to provide means for rapidly separating article-holding clamps until the leading article edge is drawn tight and then stopping the clamps almost instantaneously upon designated article tightness being exceeded, while yet allowing the use of commercial grade equipment having inherent operating delays.

A more detailed object of the invention is to provide sleds that are separated from one another along a beam, where slides reciprocate in the sleds and carry respective article-holding clamps, and where detent means hold the slides relative to the sleds until the leading article edge exceeds the designated degree of tightness whereupon slide separation stops almost instantaneously while sled separation stops at a slower rate according to the delays of commercial braking means.

A further object of this invention is to provide a drive for accurately and rapidly moving the beam in order first to permit the clamps to grip the leading article edge and then transfer the article to and release it into the control of the conveyor, specifically including a loop trained over spaced rotating elements and thereby having opposing runs extended parallel to the beam travel, guides for the opposing loop runs, and means connecting the loop to the beam.

Another object of the invention is to provide a drive for reciprocating article-holding clamps along a beam itself adapted to reciprocate in a direction transverse to the beam while minimally increasing the weight of the beam thereby allowing rapid cycling of the beam including a power shaft carried independently of the beam and extended parallel to beam travel which is keyed to but mounted to slide axially within a drive element carried on the beam and which is connected by a loop arrangement operatively to the clamps.

These and other objects of this invention will be more fully understood and appreciated after reviewing the following specification, the accompanying drawings forming a part thereof, wherein:

FIG. 1 is a front perspective view from the left side of the subject spreading and feeding device;

FIG. 2 is a left side elevational view of part of the device shown in FIG. 1;

FIG. 3 is an exploded left side front perspective view generally similar to FIG. 1, except showing additional details of construction;

FIG. 4 is a right side front perspective view of part of the transverse beam and support shown in FIG. 3;

FIG. 5 is a right side rear perspective view, of part of the opposite end of the beam to that shown in FIG. 4;

FIG. 6 is an elevational sectional view as taken generally along the line 6— in FIG. 3, except showing the clamp in the open position; and

FIG. 7 is a bottom view of the components shown in FIG. 6, except showing the clamp and slide in an intermediate position.

The device **10** includes a frame **12** which is longer than the widest piece of laundry flatwork to be handled, has a height convenient to an operator, and further has an open front serving as the operator work area. A combination loading and transfer mechanism **14** is mounted by rods **15** extended through appropriate frame bearings **16** to reciprocate front to rear of the unit between a forward loading position (shown in phantom in FIG. **2**) and a rearward unloading position (shown in solid in FIG. **2**). Rearwardly open clips **18** on the underside of the mechanism **14** are adapted to hold and edge of the article A, and an operator secures the adjacent corners of the article in the clips **18** when the mechanism is in its forward loading position. The operator then signals for the unloading cycle to begin whereupon the mechanism **14** is moved to the rearward unloading station by power cylinder **20** connected between the frame and mechanism.

With the mechanism **14** in the unloading position, clamps **22** are used to grip the article and remove it from the clips. The clamps **22** are supported on sleds **23** to reciprocate along a beam **24**, and the beam is supported on rollers **26** which ride along tracks **28** at the opposite ends of the frame **12** so that the beam also reciprocates front to rear of the unit. A conveyor **30** underlies the beam and has an upper run that advances from the front to the rear of the unit. To allow the clamps **22** to grip the article, the beam is brought from a home position (FIG. **3**) forwardly to a gripping position (FIG. **2**) and then returned to a spread position. In the spread position, the article as hung from the clamps is generally along line **34** (FIG. **2**).

The clamps **22** separate on the sleds **23** along the beam **24** until the gripped edge of the article is drawn tight, whereupon the beam is moved rearwardly to bring the stretched edge of the article over the conveyor (phantom in FIG. **2**) and the trailing portion of the article against a drive roll **36** located forward of the conveyor. The roll **36** has an abrasive surface and is rotated under power such that it lifts the trailing part of the article onto the conveyor **30**. Separating means **40**, such as counterrotating flapping belts move against the trailing side edges of the article and serve to unfold and spread them to full width. The clamps release the article on the upper conveyor run which then carries the article away flat and spread to full width.

The beam **24** is supported on rollers **26** and reciprocates, as was previously mentioned, front to rear of the device along frame tracks **28**. A continuous chain or loop **44** is trained around sprockets **46** which are mounted to rotate about axes extended parallel to the beam. The loop **44** defines upper and lower runs **48** which extend parallel to the track **28** and thus to the beam travel. A link **50** is connected to the loop **44** and to beam extension arm **52** at a location approximately along a line extended between the sprocket axes. Rotation of the loop **44** in a single direction thereby reciprocates the beam along the track **28**, although the loop is stopped to locate the connected beam properly so that the various functions previously mentioned can take place. The opposite parallel runs of the loop are constrained in tracks **56** formed in the face of a plastic guide element **58** and thereby are maintained straight and parallel to the beam track **28**. An identical loop **44** is connected to each end of the beam and driven together to maintain exact control over the position of the beam.

Although this beam drive structure is quite economical, it permits very rapid beam reciprocation to shorten the cycle time, even though during each cycle the beam must change directions several times and come to a complete stop several times. Thus, the beam is moved forward from its stationary home position to remove the article from the transfer mechanism clips, is reversed to return to the spread position and then stopped so that the clamps can be separated, is accelerated rearwardly again to bring the article over and drop it on the conveyor and is reversed again to return to the home position and is stopped. Moreover, the constrained parallel loop runs of the drive accurately position the beam at the various required locations even under repeated use where the chain slack may increase.

Each clamp **22** includes a stationary base member **60** which supports at pivot pin **61** a movable clamp member **62**, where

the opposing front ends 64 provide the gripping faces of the clamp. A spring 66 between slide plate bracket 68 and connection 69 at the clamp element 62 tends to close the clamp. The clamp is opened by a bar 70 moving against the projected end of the clamp element 62 at roller 72. The bar 70 is supported by parallel links 74 from the beam 24 to move with and remain parallel to the beam, and a power cylinder 76 between the beam and bar moves the bar against the rollers 72 to open the clamps 22. The rollers minimize twisting of the clamps upon opening, and also dragging interference between the bar and clamps while the clamps are being moved along the beam.

A slide 80 is confined in sled tracks 82 extended in line with the beam, and each clamp is carried from a like slide 80 in each sled. The slides 80, and thus the supported clamps, can be moved relative to the sleds between remote end positions against cross elements or stops 84 on the sleds and adjacent end positions against stops 86. Each slide 80 is of plastic preferably so that its resistance to travel along the sled is minimized because of the self-lubricating frictionless nature of plastic as well as its light weight. A detent 88 is disposed between the sled 23 and slide 80 in order to releasably hold the sled in its remote end position, the detent being a slightly bowed wire 90 having its ends confined at pins 94 and having an intermediate bend which is biased toward the slide, and in the remote end position received within the slide notch 92.

As such, each slide and clamp carried thereby is confined in the remote end position relative to the sled by the detent until upon the sled and thus clamp separation the leading article edge is drawn sufficiently tight to release the detent 88 and thus the slide. Since the slides and clamps are lightweight, they are stopped almost instantaneously, which minimizes possible ripping of the article. On the other hand, the sled separation can continue along the beam a limited degree further as determined by the free play movement of the slides within the sleds between the remote and adjacent positions.

It is possible to utilize the breakaway movement of the slide within the sled to sense when the leading edge of the article has been drawn tight.

A limit switch 96 is supported on one sled with an actuating arm 98 engaged by the clamp in the remote end position, such that the switch shifts upon the slide being displaced from its remote end position. Power is brought to the limit switch 96 through a pair of leaf spring contacts 100 carried on the sled that slide along separate rails 102 supported on the beam as the sled moves along the beam. The separate rails are connected by appropriate flexible leads (not shown) to braking controls to operate the sled-stopping brakes responsive to limit switch 96 shifting.

The shifting mount of the clamps relative to the sleds is extremely important for providing a commercially accepted device having sufficiently high output, since the cycle time for completely separating the sleds to possibly 100 inches for spreading a large flatwork article to full width can take only fractions of a second, and the clamps must yet stop almost instantaneously to avoid tearing of the article. With the breakaway clamp mount, the lightweight clamp and slide can be stopped solely by and upon the leading edge of the article exceeding a determined tightness, while the slide-carrying sleds need only be stopped within the free play distance of the slide within the sled. This permits the use of conventional braking structure and controls having inherent operating delays to brake the sleds.

Referring now specifically to the means for separating and braking the sleds, a belt loop 110 extends the length of the beam and encircles pulley elements 112 (only one being shown, FIG. 5) to rotate about axes disposed parallel to frame track 28 and thus the reciprocating movement of the beam. The left sled 23 shown (FIG. 3) is connected at bracket 113 to the upper run 114 of the loop while the right sled shown is connected at bracket 115 to the lower run 116 of the loop. In this manner, the sleds are moved in exact synchronization from a common point on the beam centered relative to the transfer mechanism 14 when the latter is in its rearward unloading position. Appropriate adjusting structure 118 is provided in the loop to set the sled spacing as required in the actual device. A shaft 120 (FIG. 5) is supported on the frame 12 within appropriate bearings 121 and is rotatably keyed to one of the rotating pulley elements 112 although it slides freely through the pulley. This permits the beam to be moved along the tracks 28 while yet maintaining a powered drive between the shaft 120 and pulley 112.

The shaft 120 is powered clockwise (relative to FIG. 5) to separate the sleds and is powered counterclockwise (FIG. 5) to move the sleds towards one another. Power is brought to the shaft 120 by separate chain drives 123 and 124 each being trained over a sprocket keyed to shaft 120 and over a sprocket rotatably mounted relative to an output shaft of a double-reverse output drive box 125. Separate clutches 127 and 128 independently connect the respective output sprockets selectively with the output shafts, which rotating in opposite directions, power the sleds selectively together or apart. Consequently for the sleds to separate, the clutch 127 would be engaged while for the sleds to approach one another clutch 128 would be engaged. A brake mechanism 129 connected to the frame 12 serves to retain the shaft 120 in a rotatably stationary position when it is desired to stop the sled separation.

A brake device 130 (FIG. 4) having a moving element 131 controlled by a diaphragm 132 is mounted by means of adjusting nut 134 adjacent the loop belt 110 so that upon diaphragm actuation the brake element 131 pinches and constrains the loop belt against beam plate 135. The loop belt brake when applied serves to hold the sleds in the adjacent positions against center stops 137 (FIG. 3) and/or serves to stop and hold the sleds in the outer positions after the leading article edge is drawn tight.

The beam construction and sled support on the beam will now be described. Since the beam should be light in weight, it preferably is of hollow aluminum channel or the like 146 having opposed front and rear tracks 148. Brackets 150 at the beam ends are used to support the rollers 26 and the sled drive pulleys 112. To minimize noise while yet maintain a lightweight construction, the hollow beam is packed lightly with a granular foamed plastic 152. Each sled 23 almost encloses the beam and rotatably supports a pair of rollers 154 that ride along the tracks 148 of the beam. The rollers are of plastic to be lightweight and minimize wear against the aluminum beam. The sleds also are preferably of aluminum of lightweight material.

The sleds must move quite rapidly along the beam but they must be stopped quickly at both the outer separated positions and inner adjacent positions. As the sleds approach one another, the slides 80 confined within the sleds are in the adjacent end positions and project beyond the sleds (shown partly projected in FIG. 7 for example), so that the slides abut the center stops 137 to in part slow down the approaching sleds and secondly to reset the slides to the remote end positions within the sleds. The sleds also are designed to abut the center stops, but to minimize bounce back, it is preferable to actuate the loop brake arrangement 130 to hold the sleds and slides also against the stops. The stops are formed of a cork or fibered nylon which is soft and durable but yet lightweight. For stopping the approaching sleds, a limit switch 160 (FIG. 3) can be used, supported on the beam which is triggered by a cam element 162 carried on the upper side of the sled 23. To preclude unlimited sled separation, should in fact a larger article be put into the spreader than can be accommodated or should a cycle be started where no article is gripped by the clamps, a limit switch 164 at the outer extremity of the beam is triggered by cam 166 on the sled. The cams 162 and 166 can in fact be part of the same block except having appropriately sloped leading cam faces. It is to be noted that the sled separation will normally be stopped responsive to the breakaway action of the sleds and the limit switch 96 carried on the sleds being actuated. To brake the sleds, the belt loop 130 is pinched to restrain the sleds and the driving shaft 120 for the loop can also be braked by brake 129. The nominal delay for

actuating the braking mechanisms normally permits the sleds to travel a few inches so that the limit switch **162** is appropriately spaced from the stops **137**.

The speeds of feed of the various components are important, where for example, the conveyor **30** is advancing faster than the power roll **36** so that the leading edge of the article on the conveyor is biased away from the trailing part of the article. In this regard the conveyor **30** is typically of a cloth belt so that the pull on the article caused by the conveyor is not positive but merely frictional. The rearward advance of the beam over the conveyor is faster than the speed of the conveyor so that after the leading edge is released, the clamps move away from the leading edge. The drive roll **36** frictionally lifts the article while further serving as a drag for the leading edge on the faster conveyor **30**, which helps keep the article flat and square. To minimize damage to or ripping of the article should it become entangled in the drive roll, a friction clutch **168** is connected between the roll itself and its power chain drive **169** so that the roll can be stopped if sufficient drag is placed on it.

Also of importance is the manner of stopping the beam at the specified locations and rapidly. A power brake and clutch combination **171** (FIG. 3) is used between a power input chain drive **172** and idler drive **174** to the loop drive **44**. The clutch connects the chain drive **174** to the constantly moving drive **172** to power the loop **44**, while the brake releases the clutch while simultaneously stopping the drive **174** by connection to the frame **12** to in turn stop the loop **44** and beam **24**.

The operation of the device is quite simple in that the article A need only be placed at its corners onto the clips **18** of loading and transfer mechanism **14**, at which time the mechanism is moved into the pickoff area. The beam **24** is moved forward by loop drive **44** to where the clamps **22** can drip the article and remove it from the transfer mechanism, and then the beam is moved rearwardly to bring the article generally in line with the line **34** (FIG. 2). At this time the sleds **23** separate until the leading edge of the article is drawn tight and the slides **80** and clamps **22** break away from the sleds. This signals through limit switch **96** for the sled separation to stop and deenergizes the respective clutch **127** and applies brakes **129** and **130**. This also signals for the beam-advancing mechanism to be actuated at which time the combination loop clutch **171** is energized and brake released to cause the beam to be moved rearward until the leading article edge is brought over the conveyor **30** and the clamps opened to drop the leading edge onto the conveyor. The beam is then returned to its forward home position at which time the sleds are returned to the center position and stopped upon the sleds' tripping limit switch **162** to apply the brakes **129** and **130**. The clamps **22** are opened momentarily upon properly located limit switches **178** and **180** being shifted by cam element **182** carried by the loop drive **44**, actuation of switch **178** allowing the clamps to grip the article from the mechanism **14** and actuation of switch **180** allowing the clamp to release the article. Likewise, the beam home and spread positions are determined by switches (not shown) being triggered responsive to the location of the beam, allowing for proper lead time to stop the beam as it is moving rearwardly from the pickoff location or forwardly from the dropoff location.

What is claimed is:

1. In a device for spreading articles of flatwork, particularly those having an edge length greater than the normal hand-to-hand stretched span of an operator, and for feeding the article with the stretched edge thereof leading in the direction of advance of a conveyor for ultimate transfer of the article to the conveyor, the device having a frame and an elongated beam supported on the frame crosswise to and over the conveyor and means to move the beam in line with the conveyor advance, and means supporting clamps relative to the beam which clamps are adapted to grip the leading article edge and then be separated to stretch the edge tight, comprising the combination of the clamp-supporting means including sleds carried on the beam to move along the beam, means powering the sleds towards and away from a common point on the beam including a loop trained over elements rotatably supported on shafts disposed generally normal to the beam, where the sleds are connected to opposite sides of the loop and where one shaft is supported rotatably in bearings on the frame and extends through one of the rotatable elements and means key the one shaft and one rotatable element together while accommodating axial movement of the elements along the shaft, means supported on the frame for rotating the one shaft whereby rotation thereof moves the sleds along the beam while the beam can yet be moved forwardly and rearwardly; the clamp-supporting means further including a slide mounted on each sled for movement relative to the sled toward and away from one another between adjacent positions at the adjacent ends of the sleds and remote positions at the remote ends of the sleds and means to limit movement of the slide to between the mentioned adjacent and remote positions, and detent means between the sled and slide operable to maintain the sled in the remote positions, said clamps being carried on respective slides whereby upon sled separation and the leading article edge being drawn generally straight as between the clamps at least one slide is shifted upon the release of the detent means to the adjacent position, and means responsive to the shift of the slide to signal an arrest command to the sled-powering means to terminate the sled separation; and the means for moving the beam including spaced rotatable elements supporting a loop therebetween having opposing runs extended parallel to the beam advance, a guide element of plastic or the like adapted to receive and support the opposing loop runs and maintain said runs straight as between the rotatable elements, a link connected between the beam and loop such that loop rotation in a single direction reciprocates the beam, and means for rotating the loop.

2. In a device for spreading articles of flatwork, particularly those having an edge length greater than the normal hand-to-hand stretched span of an operator, and having an elongated beam and means supporting clamps relative to the beam which clamps are adapted to grip the article edge and then be separated to stretch the edge tight, comprising the combination of the clamp-supporting means including a sled carried on the beam to move along the beam toward and away from one of the clamps, means powering the sled along the beam, a slide mounted on said sled for movement relative to the sled in the direction toward and away from the one clamp between two stops, which slide when restrained against the stops is correspondingly positioned as related to the sled toward an end of the sled adjacent the one clamp or toward an end of the sled remote from the one clamps, the other of the clamps being carried on the slide, means to shift the slide relative to the sled to the end that when the clamps are disposed for receiving and gripping the article the slide is in the remote position relative to the sled whereupon sled separation and the article edge being drawn tight as between the clamps and exceeding a predetermined degree of tightness the slide is shifted to the adjacent position relative to the sled, detent means between the sled and slide operable normally to releasably retain the slide in the remote position relative to the sled, and means to stop sled separation.

3. A device combination according to claim **2**, wherein the means to stop the sled separation includes a limit switch carried on the sled and actuated upon the slide shifting within the sled upon the article edge being drawn tight, the beam having power control rails, and the sled carrying contact means engageable with the contact rails providing continuous power control contact from the limit switch as the sled moves along the beam.

4. A device combination according to claim **2**, wherein the sled rotatably supports rollers, and wherein the beam has longitudinal track means for receiving the sled rollers and thereby accommodating sled movement along the beam.

5. A device combination according to claim **4**, wherein the sled-powering means and the means to stop and sled separation include a continuous loop disposed over rotatable ele-

ments supported at the opposite ends of the beam, means connecting the sled to one of the runs of the loop, and means to power and to brake one of the elements as required.

6. A device combination according to claim 2, wherein the means to shift the slide includes a stop on the beam engaged by the slide as the sled is moved to dispose the clamps in the position to receive and grip the article of flatwork.

7. In a device for feeding articles of flatwork having a stretched edge thereof leading in the direction of advance of a conveyor for ultimate transfer of the article to the conveyor, the device having a frame and an elongated beam supported on the frame crosswise to and over the conveyor to move in line with the conveyor advance, and clamps supported on the beam which clamps are adapted to grip the leading article edge, comprising the combination of spaced rotatable elements and a loop supported therebetween and having opposing runs extended in the direction of beam movement, a guide element adapted to receive and support the opposing loop runs and maintain said runs straight, means connected between the beam and loop such that loop rotation in a single direction reciprocates the beam, means for selectively rotating the loop, and means for opening the clamps.

8. A device combination according to claim 7, wherein the means for rotating the loop includes a combination clutch and brake that provides when either is engaged the other is released, whereby when the clutch is engaged a continuously moving element is connected with the loop to drive the loop and whereby when the brake is engaged the loop also is braked, and means to actuate the combination clutch and brake.

9. A device combination according to claim 7, wherein a fraction roll is rotated forwardly spaced from the conveyor to engage the article also as it is brought over the conveyor, means to power the roll at a feed rate slower than the advance rate of the conveyor, and whereby the loop advances the beam over the conveyor at a rate faster than the advance rate of the conveyor.

10. In a device for spreading articles of flatwork and for feeding an individual article with the stretched edge thereof leading in the direction of advance of a conveyor for ultimate transfer of the article to the conveyor, the device having a frame and an elongated beam supported on the frame crosswise to and over the conveyor and means to move the beam in line with the conveyor advance, and means supporting clamps relative to the beam which clamps are adapted to grip the leading article edge and then be separated to stretch the edge tight, comprising the combination of the clamp-supporting means including sleds carried on the beam to move along the beam, means powering the sleds towards and away from one another including a loop trained over elements rotatably supported on shafts carried adjacent the ends of the beam, where the sleds are connected to opposite sides of the loop and where one shaft is supported rotatably in bearings on the frame and extends through one of the rotatable elements and means key the one shaft and one rotatable element together while accommodating axial movement of the element along the shaft, means supported on the frame for rotating the one shaft whereby rotation thereof moves the sleds along the beam while the beam can yet be moved forwardly and rearwardly, and means to stop sled separation.

11. A device combination according to claim 10, wherein the means for stopping sled separation includes means for braking the one shaft which thereby rotatably brakes the one element over which the loop is trained.

12. A device combination according to claim 10, wherein control means are provided for stopping sled separation including spaced limit switches disposed along the beam and actuated by the sleds, where actuation of one limit switch brakes the sleds as they approach maximum separation and where actuation of the other limit switch brakes the sleds as they approach minimum separation.

13. A device combination according to claim 10, wherein the clamp-supporting means includes a breakaway slide maintained on one sled for movement relative to the one sled toward and away from the other sled, and wherein said clamps are carried on the slide and other sled.

14. A device combination according to claim 10, wherein the beam-moving means includes a loop having opposed run extended parallel to the beam movement, guide means receiving and supporting each loop run and maintaining said run straight, means for connecting the beam and loop together such that loop rotation in a single direction reciprocates the beam, and means for powering the loop.

15. A device combination according to claim 10, wherein the clamps are spring biased closed and include respective release portions which when actuated open the clamps, and means for opening the clamps including a bar pivoted on links from the beam to swing against the clamp release portions simultaneously and means for moving the bar.

16. In a device for spreading articles of flatwork and for feeding the article to the control of a conveyor for ultimate transfer of the article to the conveyor, the combination of an elongated beam supported adjacent the conveyor, a pair of normally closed clamps for holding the article at adjacent corners relative to beam, means for separating the clamps along the beam to draw the interconnected article edge tight and subsequently to brake the clamps as separated, means to move the beam from this spreading position where the article is free of the conveyor to a dropoff position where the article is within the control of the conveyor, and means to open the clamps to release the article to the conveyor, said clamp-opening means including a release portion on each clamp which when actuated opens the respective clamp, a bar pivoted on links from the beam to be generally parallel thereto operable to swing against the clamp release portions simultaneously, and means for moving the bar.

17. In a device for spreading articles of flatwork and for feeding the stretched article edge to the control of a conveyor for ultimate transfer of the article to the conveyor, the combination of an elongated beam, clamps adapted to grip the leading article edge and means supporting the clamps relative to the beam to move from a loading position adjacent one another to a spreading position where the article edge is drawn tight, the clamp-supporting means including sleds carried on the beam to move along the beam and means powering the sleds towards and away from one another, a slide mounted on one sled for breakaway movement relative to the one sled toward and away from the other sled, and one of said clamps being carried on the slide and the other clamps being carried on the sled whereby clamp separation stops almost immediately upon the leading article edge being drawn generally tight as between the clamps and means to subsequently stop the sled separation, means to move the beam from this spreading position where the article is free of the conveyor to an unloading position where the article is brought into the control of the conveyor, and means to open the clamps simultaneously to release the article to the conveyor.