

April 16, 1929.

T. L. LOWE

1,708,948

LAUNDRY RECEIVING AND DISTRIBUTING MACHINE

Filed Oct. 17, 1925

4 Sheets-Sheet 1

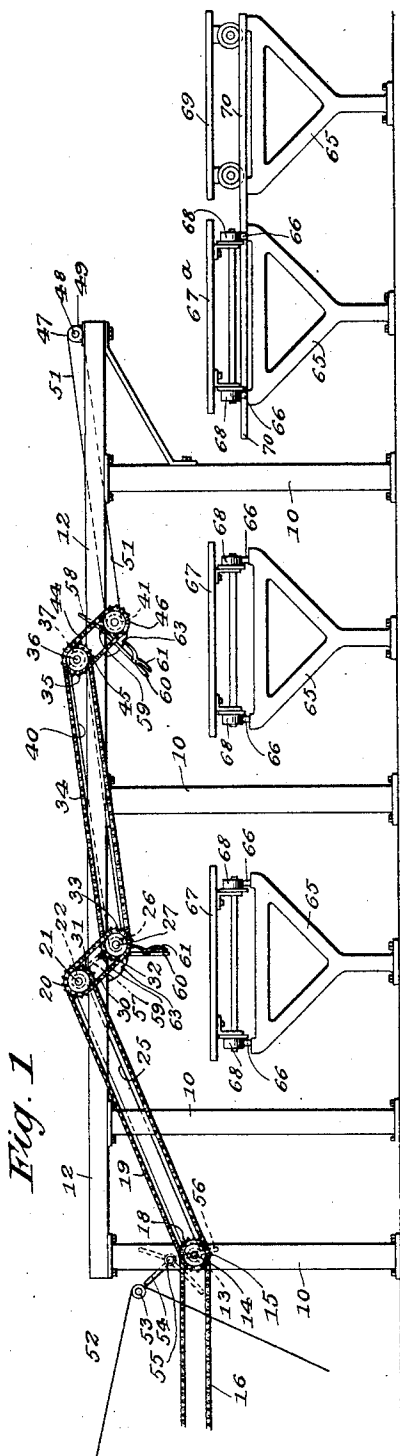


Fig. 2

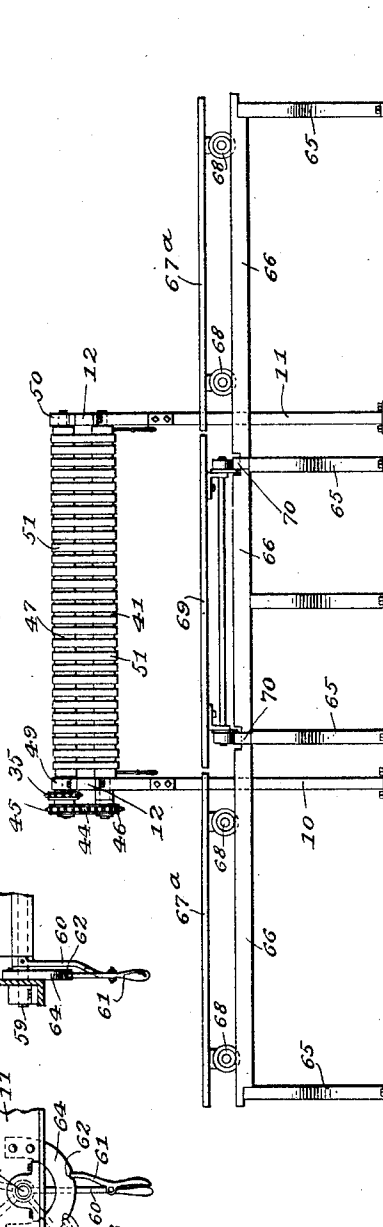


Fig. 3

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Fig. 99

Fig. 100

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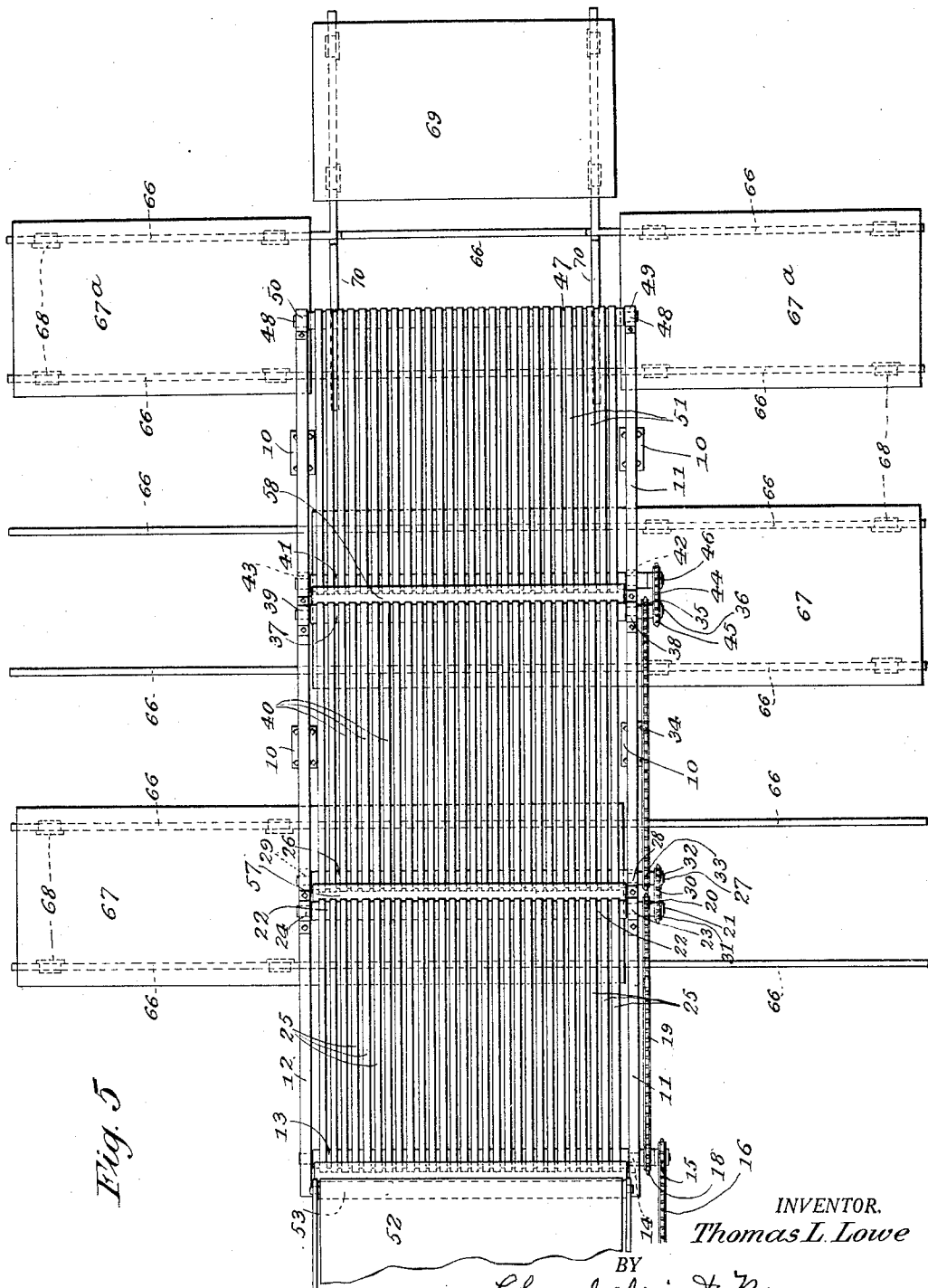
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4 Sheets-Sheet 3

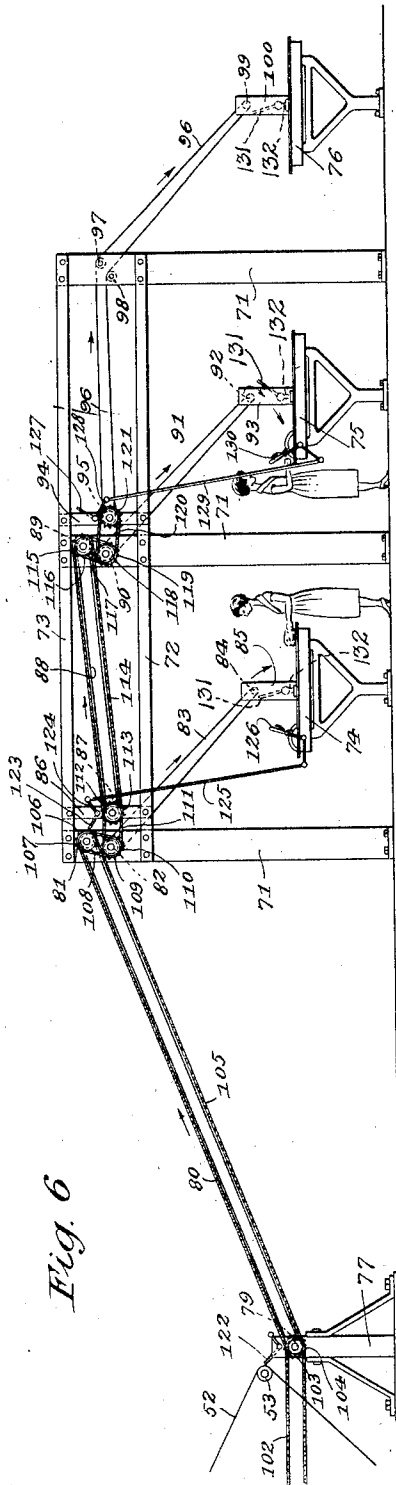
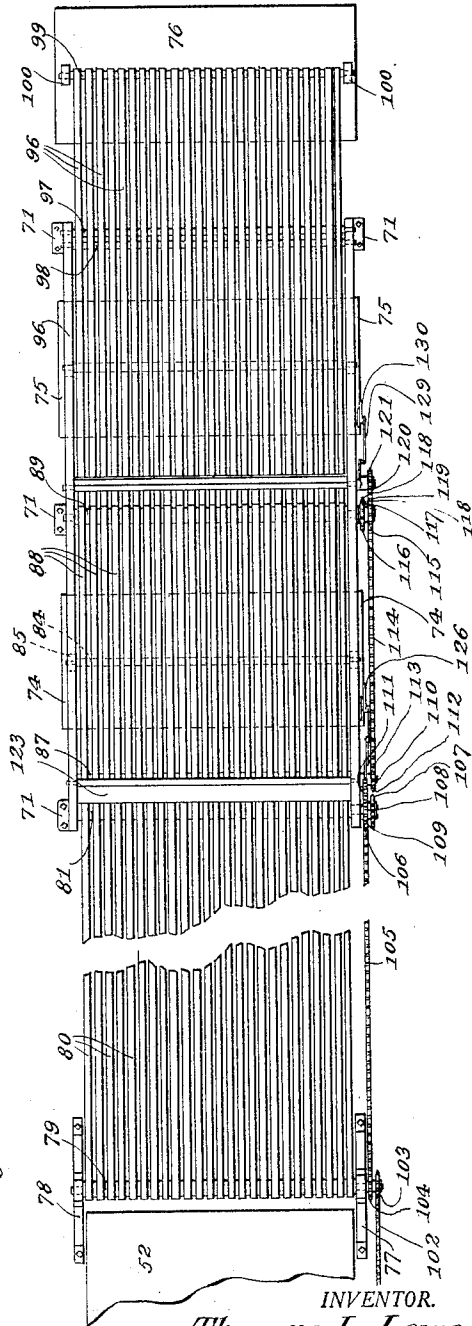


Fig. 7



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4 Sheets-Sheet 4

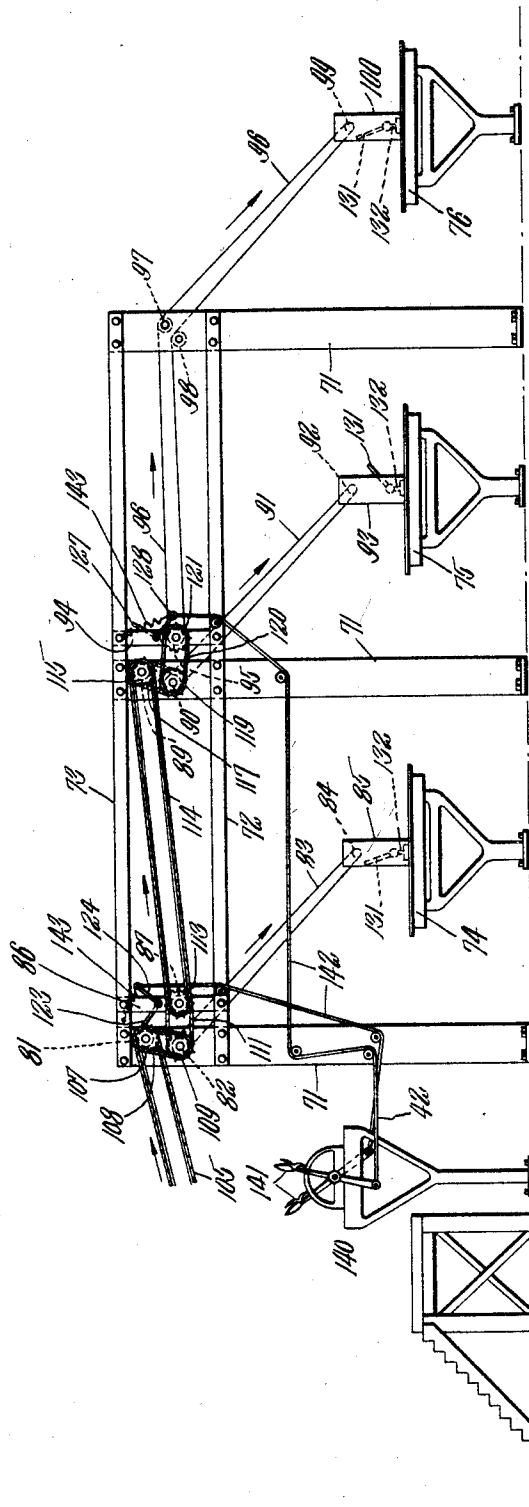


Fig. 8.

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UNITED STATES PATENT OFFICE.

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LAUNDRY RECEIVING AND DISTRIBUTING MACHINE.

Application filed October 17, 1925. Serial No. 62,982.

The present invention relates to laundry distributing apparatus, particularly for use in connection with flatwork ironers. In the normal operation of an ironer the laundry is fed therefrom into a relatively small space and at such speed that it has heretofore been difficult to properly distribute the clothes continuously in time with the output of the ironer, with the result that it has been necessary to operate the ironer intermittently to allow the successive groups or parcels of clothes to be properly distributed and folded. It should be pointed out that it is customary to feed the successive parcels of clothes of different customers to the ironer in separated groups, the same being thereupon fed from the ironer to operators who distribute and fold the separated groups. With this method it has obviously not been possible to operate an ironer at its full efficiency, and it is an object of the present invention, therefore, to provide distributing apparatus adapted to operate in conjunction with an ironer so that the latter will be permitted to operate at its full speed efficiency and continuously, thereby greatly increasing the capacity of the ironer for a given period, and speeding up the laundering process.

A further object is to provide a distributing apparatus which may be selectively operated to take care of the variable output of the ironer, so that as the ironer is operated with greater or less parcels of laundry the apparatus may be controlled to be attended by the desired number of operators.

With the above and other objects in view, embodiments of the invention are shown in the accompanying drawings, and these embodiments will be hereinafter more fully described with reference thereto, and the invention will be finally pointed out in the claims.

In the drawings:

Fig. 1 is a side elevation of a laundry distributing apparatus, according to one embodiment of the invention;

Fig. 2 is an end elevation thereof;

Fig. 3 is a detail side view of one of the selectively operated guide devices employed;

Fig. 4 is a vertical sectional view showing the same;

Fig. 5 is a plan view of the apparatus, as shown in Fig. 1;

Fig. 6 is a side elevation of a modified form of the invention; and

Fig. 7 is a plan view thereof.

Figure 8 is a view somewhat similar to a portion of Figure 6, but illustrating a modification.

Similar reference characters indicate corresponding parts throughout the several figures of the drawings.

Referring to the drawings, and more particularly to Figs. 1 to 5 thereof, the laundry distributing apparatus according to the embodiment shown therein comprises a frame consisting of two rows of spaced upright supports 10, upon the upper ends of which there are supported horizontal beams 11 and 12 between which the conveyor aprons are supported. Between the end supports 10, adjacent the ironer, there is rotatably supported a roller 13 provided upon one end of its shaft 14 with a sprocket gear 15 connected by a sprocket chain 16 to the drive means of the ironer, and adjacent said gear 15 another gear 18 is secured upon the shaft and is connected by a sprocket chain 19 to a gear 20 provided upon the shaft 21 of a roller 22, said shaft being journaled in bearings 23 and 24 secured upon the upper sides of the beams 11 and 12. An endless conveyor apron 25 consisting of a plurality of spaced tapes extends about the rollers 14 and 22 forming an upwardly inclined conveyor.

In spaced and offset relation beneath the roller 22 there is provided a roller 26, its shaft 27 being journaled in bearings 28 and 29 secured to the lower sides of the beams 11 and 12, and driven by a sprocket chain 30 extending about gears 31 and 32 secured upon the respective shafts of said rollers. A gear 33 is secured upon the shaft 27 and is connected by a chain 34 to a gear 35 provided on the end of the shaft 36 of a roller 37 supported in bearings 38 and 39 secured upon the upper sides of the beams 11 and 12, and an upwardly inclined endless conveyor apron 40, similar to the apron 25, is extended over the rollers 26 and 37.

In spaced and offset relation beneath the roller 37 there is provided a roller 41, its shaft being journaled in bearings 42 and 43 secured upon the lower side of the beams 11 and 12, and driven by a sprocket chain 44 extending about gears 45 and 46 secured upon the respective shafts of said rollers 37 and 41. A roller 47 is provided at the end of the frame, its shaft 48 being journaled in bearings 49 and 50 secured upon the upper sides of the beams 11 and 12, and an endless con-

veyor apron 51 extends from the roller 41 about said roller 47 forming an upwardly inclined conveyor.

The conveyor 52 from the ironer extends over a roller 53 disposed in spaced and offset relation above the roller 13, and the laundry is adapted as the conveyor moves over said roller 53 to be deposited on the conveyor 25, a gate board 54 pivoted at 55 upon the up-
rights 10 above the roller 13 adapted to guide the laundry to said conveyor 25. A handle 56 is provided on the board 54, and by swinging the same to the dotted line position, (Fig. 1) the laundry will be permitted to fall directly from the conveyor 53 without passing to the conveyor 25.

As the laundry is carried by the conveyor 25 over the end formed by the roller 22, it is adapted to be selectively deposited at any one of three stations, located directly beneath the respective rollers 22, 37 and 47. For this purpose gate boards 57 and 58 are pivotally mounted in the beams 11 and 12 above the rollers 26 and 41, and are adapted in one of two moved positions to either open or close the spaces between the rollers 22 and 26 and the rollers 37 and 41, so that the clothes may either pass over said rollers to the respective stations beneath them, or may pass onto the next conveyor. As shown in Fig. 1 the gate board 57 is closed, while the gate board 58 is open, so that the clothes will be deposited at the second station. In order to fix the position of the gate boards the shaft 59 of each is provided at one end with a handle 60 (Figs. 3 and 4) having a pivoted spring pressed latch 61 adapted to be locked with notches 62 and 63 formed in a segment 64 secured to the inner side of the beam 11.

At each of the stations, and mounted upon supporting standards 65, there are provided parallel tracks 66 extending at each side of the frame, as shown in Figs. 2 and 5, and upon the first two of which there are mounted tables 67 having rollers 68 engaging the tracks, each of these tables being of such length that half of it is disposed beneath the conveyor and the other half is disposed at one side, where an operator folds and removes the laundry previously deposited thereon, the half beneath the conveyor receiving laundry in the meantime. At the second station an operator works in a similar manner at the other side of the conveyor. When the folded laundry is removed the positions of the tables are reversed, the operator previously working at the first station turning around to the filled table at the second station, while the operator at the other side turns to the first station. At the end station there are provided two half length tables 67^a adapted to be moved to an intermediate position beneath the conveyor, and thereupon moved to either side where operators fold the laundry, one table being filled while laundry on the other is being

folded. At this station there is also provided an emergency table 69 movable on tracks 70 disposed at right angles to and crossing the tracks 66, and adapted to be moved beneath the conveyor end while the tables 67^a are at their positions at each side.

As above pointed out the laundry is delivered from the ironer in groups, the first group passing from the conveyor 25 to the receiving half of the first table 67, which is thereupon shifted, the second group either being deposited upon the other half of this first table, or being carried by the conveyor 40 to the next station, the gate board 58 being opened and the gate board 57 closed during this latter operation. By closing both gate boards the laundry will pass to the conveyor 51 and be deposited at the end station. Obviously the gate boards may if desired be controlled from a single point by pull wires or the like.

In Figs. 6 and 7 there is illustrated a modified form of the invention, in which the frame consists of two rows of spaced uprights 71 and spaced parallel horizontal beams 72 and 73 at each side secured at the upper ends of the uprights. Three stations are provided consisting of fixed tables 74, 75 and 76, the latter table being forwardly of one end of the frame, while the other two tables are within the frame. Adjacent the ironer apron 52 there are provided spaced upright standards 77 and 78, within which there is journaled a horizontal roller 79, and over which a conveyor apron 80 extends to a horizontal roller 81 journaled in the upper ends of the first uprights 71. Beneath the roller 81 there is journaled a roller 82 from which a downwardly inclined conveyor 83 extends to a roller 84 journaled in vertical supports 85 secured centrally upon the ends of the table 74.

In forwardly offset relation beneath the roller 81 there is journaled in vertical supports 86 secured between the beams 72 and 73 a roller 87 over which an upwardly inclined conveyor 88 extends to a roller 89 journaled in the upper ends of the second uprights 71. Beneath the roller 89 there is journaled a roller 90 from which a downwardly inclined conveyor 91 extends to a roller 92 journaled in vertical supports 93 secured centrally upon the ends of the table 75.

In forwardly offset relation beneath the roller 89 there is journaled in vertical supports 94 secured between the beams 72 and 73 a roller 95 over which a conveyor 96 extends in upwardly inclined relation to guide rollers 97 and 98 in the end uprights 71 and then in downwardly inclined relation to a roller 99 journaled in vertical supports 100 secured centrally upon the ends of the table 76.

Movement is transmitted to the conveyor from the ironer by means of a sprocket chain 102 extending to a gear 103 upon the end of

the roller 79, a second gear 104 upon said roller being connected by a sprocket chain 105 to a gear 106 upon the end of the roller 81. A second gear 107 upon the roller 81 is connected by a sprocket chain 108 to a gear 109 upon the roller 82, and a second gear 110 upon said roller 82 is connected by a sprocket chain 111 to a gear 112 upon the roller 87, while a second gear 113 upon said roller 87 is connected by a sprocket chain 114 to a gear 115 upon the roller 89. A second gear 116 upon the roller 89 is connected by a sprocket chain 117 to a gear 118 upon the roller 90, and a second gear 119 upon said roller 90 is connected by a sprocket chain 120 to a gear 121 upon the roller 95. Thus continuous movement is imparted to the several conveyors in the same direction.

An adjustable gate board 122 is pivotally mounted between the standards 77 and 78 above the roller 79, and is adapted in one position to guide the laundry from the ironer to the conveyor 80, and as it is conveyed over the roller 81 it is adapted to be either deposited upon the conveyor 83 for conveyance to the first table 74, or guided to the conveyor 88. For this latter purpose an adjustable gate board 123 is pivotally mounted in the supports 86 above the roller 87 and is provided at one end with a lever arm 124 connected by a rod 125 to a control lever 126 mounted upon the table 74, and by means of which the operator may open or close the gate board. Similarly, a gate board 127 is pivotally mounted above the roller 95 and is provided with a lever arm 128 connected by a rod 129 to a control lever 130 mounted upon the table 75. As the laundry is conveyed to the respective tables it is adapted to be selectively deposited at either side thereof, and for this purpose each table is provided beneath the end of its conveyor with a guide board 131 pivoted upon a bracket 132 disposed upon the center line of the table, the board adapted in its left hand position to guide the laundry to the right hand side of the table, as shown at the first station, Fig. 6, and in its right hand position to guide the laundry to the left hand side of the table, as shown at the second station. Thus two operators may work at each table to fold the groups of laundry deposited at each side, or the same operator may work first at one side and then at the other, folding at one side while laundry is being deposited at the other side. Obviously in this form the gate boards 123 and 127 may be controlled by a single operator stationed at a suitable point to observe the work of the other operators, a suitable means for this purpose consisting of a spring secured to each board for retaining it in one position and a pull wire extending to the control operator for moving it to the other position as shown in Figure 8. As shown in this figure the common station is illustrated at 140 where levers

141 are shown by which the pull wires 142 may be manipulated. Springs 143 tend to hold each of the gate boards in one of its positions.

It will thus be seen that I have provided a mechanism by which the articles of laundry may be taken from an ironing station, led into any selected of a plurality of paths, and if desired deposited from each of said paths into any of a plurality of places. By this means articles belonging to separate washes may be easily segregated and separately handled for delivery to the owners.

I have illustrated and described preferred and satisfactory embodiments of the invention, but it will be obvious that changes may be made therein, within the spirit and scope thereof, as defined in the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. In a laundry distributing apparatus, a plurality of conveyors arranged end to end and in spaced relation, adjustable deflecting means between said conveyors whereby in one position the laundry passes from one conveyor to the next and in the other position is discharged between the adjacent ends of any two consecutive conveyors, a plurality of tables arranged in positions to receive laundry respectively from the delivery ends of said conveyors, other conveyors extending from a point beneath said delivery ends to a point centrally above said tables, and adjustable deflecting means for guiding the laundry from said last mentioned conveyors to either side of the center of said tables.

2. In an apparatus of the class described, a plurality of conveyors arranged end to end in spaced relation, adjustable deflecting means between said conveyors whereby in one position articles conveyed pass from one conveyor to the next and in the other position are discharged from said conveyor, means for conveying articles so discharged, and means for controlling the deposit of articles from said conveying means in any selected one of a plurality of places.

3. In an apparatus of the class described, a plurality of conveyors arranged end to end in spaced relation, adjustable deflecting means between said conveyors whereby in one position articles conveyed pass from one conveyor to the next and in the other position are discharged from said conveyor, a receiver position below the discharge end of each conveyor and laterally spaced therefrom, other conveyors leading from said discharge ends to said receivers, and means associated with said other conveyors for deflecting articles selectively to different parts of said receivers.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 15th day of October, A. D. 1925.

THOMAS L. LOWE.