Oct. 20, 1936. C. J. WEST 2,057,989

LAUNDRY IRONER

Filed Feb. 19, 1935

Fig. 1.

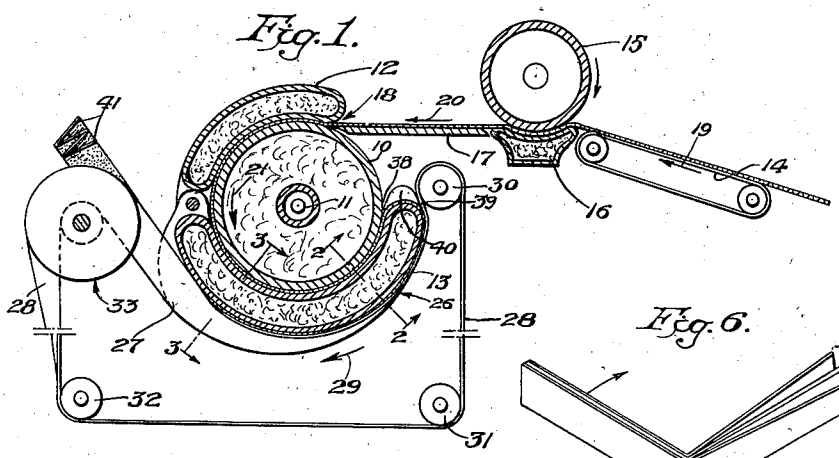


Fig. 6.

Fig. 5.

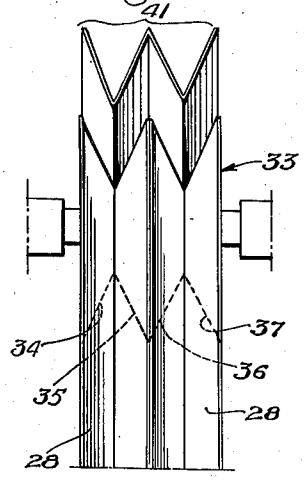


Fig. 2.

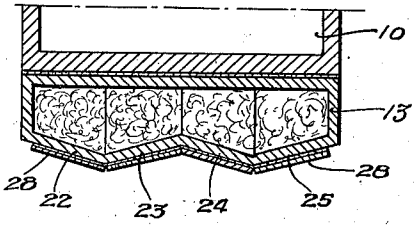


Fig. 3.

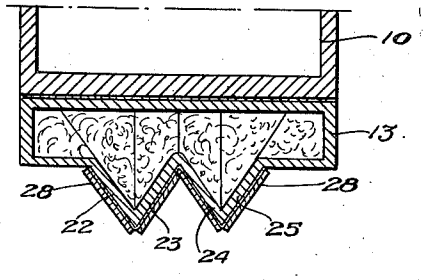
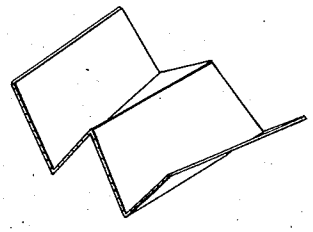


Fig. 4.



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LAUNDRY IRONER

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6 Claims. (Cl. 38—2)

The present invention relates to folding means for ironing machines or manglers for laundries and the like, and it relates more particularly to continuous and automatic means for folding large sheets along parallel folds more or less simultaneously with and somewhat as a part of the ironing operation.

The present invention consists principally of a plurality of angularly disposed surfaces in the path of the "work" (that is, the sheet or other objects to be laundered) with the gradually varying angularity increasing from zero at the receiving end to a substantial angle at the discharge end, and a belt adapted to carry the work past and in contact with these surfaces and to cause the work to assume the folds of these surfaces.

The present invention further consists of other novel features and details of construction, all of which will appear more fully from the following detailed description.

For the purpose of illustrating the invention, there is shown in the accompanying drawing one form thereof which is at present preferred, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and that the invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

Referring to the drawing in which like reference characters indicate like parts:

Figure 1 represents a schematic or diagrammatic vertical sectional view of an ironing machine embodying the present invention.

Figure 2 represents a section on line 2—2 of Figure 1.

Figure 3 represents a section on line 3—3 of Figure 1.

Figure 4 represents a fragmentary perspective view of the sheet as it would appear at the stage indicated in Figure 3.

Figure 5 represents a rear elevational view of the discharge portion of the forming belt and pulley which guides the belt, shown on an enlarged scale from that indicated in Figure 1.

Figure 6 represents a perspective view of a sheet as it is finally intended to be folded.

Merely for purposes of illustration, some of the more or less conventional parts of an ironing machine have been illustrated in Figure 1, in order that the relation of the present invention to ironing machines may be more readily understood. Thus, in Figure 1, the numeral 10 designates any conventional rotary cylinder carried upon the shaft 11 and being hollow within and generally supplied with steam or other source of heat by any conventional means known in the laundry machinery art, while 12 designates the upper yieldably supported steam chest or press platen, and 13 the lower yieldably supported steam chest or press platen bearing against the rotary cylinder so as to press the work. There is also shown in Figure 1 the feeding table or feeding belt or apron 14 and the roll 15, the steam chest 16, and intermediate guide table or feed table 17 whereby the goods are fed to the cylinder 10 at the receiving point 18;—the arrows 19 and 20 indicating the general direction of travel of the goods to the receiving point or entrance point 18, while the arrow 21 indicates the direction of rotation of the cylinder 10, and hence also the direction of travel of the goods on the cylinder.

The lower or outer surface of the steam chest or press platen 13 is provided with a plurality of angularly inclined surfaces;—the number being generally dependent upon the number of folds desired in the work, as for instance, the surfaces 22, 23, 24 and 25, the angular relationship of which varies from zero or what is in reality 180° from at about the point or zone indicated by the numeral 26 where the surfaces are in line with each other, to the zone indicated generally by the numeral 27 where the surfaces are at substantial angles to each other, as indicated for instance, by the section in Figure 3. The section shown in Figure 2 is taken through an intermediate zone where the angles have been substantially formed to some extent.

An endless belt or moving apron 28 is held in close contact with the surfaces 22, 23, 24 and 25 and is caused to follow these surfaces around in the direction of the arrow 29, as indicated particularly in Figure 1, the belt being carried by pulleys or pulley-like members 30, 31, 32 and 33, any one or more of which may be driven or may be idlers. The pulley 33 at which the work is discharged, is also formed with corresponding surfaces 34, 35, 36 and 37, so as to receive the belt in its shaped condition. The belt, if desired, may be one piece or may be formed of a plurality of parallel strips or bands wholly detached from each other but merely lying adjacent to each other, or may be connected with more or less flexible connections, so that the folds in the belt will be formed more readily.

The belt 28 may be driven, as stated, by any suitable means.

The work, after it is discharged from between the cylinder 10 and the platen 13 at the point 38 is guided onto the belt 28 to the point 39 by any

suitable guide member 40 or other suitable means.

As the work is discharged in the longitudinally folded condition as indicated at 41, it may be manually or otherwise folded transversely as at 42, to complete the assembly operation.

By the present invention, the work of longitudinally folding the sheets or large pieces is eliminated and the work is discharged in the pre-folded condition in a longitudinal direction, so that only the transverse folding is necessary.

While in the accompanying drawing, only schematic arrangement is shown, it will be understood that the details of construction both of the conventional ironer as well as of the features of the present invention, may be changed according to desired engineering or designing practice, as the present invention is principally in the broad idea of delivering the work from ironers in the pre-folded condition by pressing the work against surfaces of gradually changing angularity by means of a moving belt or the like whereby the laundered work is gradually creased and folded before it is discharged. It will be understood naturally that the work as it is discharged is not folded flat against itself, but only to the extent more or less indicated at 41 in Figure 1. It naturally follows that after the creases have been formed, the tendency of the work is to remain folded in that condition, and when the work is stacked, the folds of the work fold flat against each other, as shown on the left side of Figure 6.

The invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

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

1. Folding means for laundry ironers comprising a corrugated surface of zig-zag section, and a conveyor belt adapted to bear against the walls of said corrugated surface; the corrugations of said surface extending in the direction of travel of said belt and the inclination of the walls of the corrugations with respect to the surface increasing gradually in the direction of travel of said belt and the corrugations approaching one another, whereby work conveyed by said belt will be folded.

2. A laundry ironer comprising a rotary cylinder and a cooperating press platen having one surface adjacent to and curved to fit the cylinder and having its opposite surface provided with flat-sided trough-like grooves extending normal to the axis of the cylinder and having a connecting surface merging into both of said surfaces, and a conveyor belt mounted to rub the grooved surface of the platen and adapted to press into said grooves work issuing from the adjacent surfaces of the cylinder and platen.

3. A laundry ironer comprising a rotary cylinder and a cooperating press platen having one surface adjacent to and curved to fit the cylinder and having its opposite surface provided with flat-sided trough-like grooves extending normal to the axis of the cylinder and having a connecting surface merging into both of said surfaces, and a conveyor belt mounted to rub the grooved surface of the platen and adapted to press into said grooves work issuing from the adjacent surfaces of the cylinder and platen, the depth of said grooves increasing in the direction of travel of the belt over them.

4. A laundry ironer comprising a rotary cylinder and a cooperating press platen having one surface adjacent to and curved to fit the cylinder and having its opposite surface provided with flat-sided trough-like grooves extending normal to the axis of the cylinder and having a connecting surface merging into both of said surfaces, and a conveyor belt mounted to rub the grooved surface of the platen and adapted to press into said grooves work issuing from the adjacent surfaces of the cylinder and platen, the depth of said grooves increasing and said grooves approaching each other in the direction of travel of the belt over them.

5. A laundry ironer comprising a rotary cylinder, a cooperating press platen having one surface adjacent to and curved to fit the cylinder and having its opposite surface provided with flat-sided trough-like grooves extending normal to the axis of the cylinder and having a connecting surface merging into both of said surfaces, a conveyor belt mounted to rub the grooved surface of the platen and adapted to press into said grooves work issuing from the adjacent surfaces of the cylinder and platen, and means for guiding work issuing from said adjacent surfaces over the connecting surface and to a position between the grooved surface of the platen and the belt engaged therewith.

6. A laundry ironer comprising a rotary cylinder, a cooperating press platen having one surface adjacent to and curved to fit the cylinder and having its opposite surface provided with flat-sided trough-like grooves extending normal to the axis of the cylinder and having a connecting surface merging into both of said surfaces, a conveyor belt mounted to rub the grooved surface of the platen and adapted to press into said grooves work issuing from the adjacent surfaces of the cylinder and platen, the depth of the grooves increasing in the direction of travel of the belt over them, and means for guiding work issuing from the adjacent surfaces of the cylinder and platen over said connecting surface and to a position between the grooved surface of the platen and the belt engaged therewith.

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