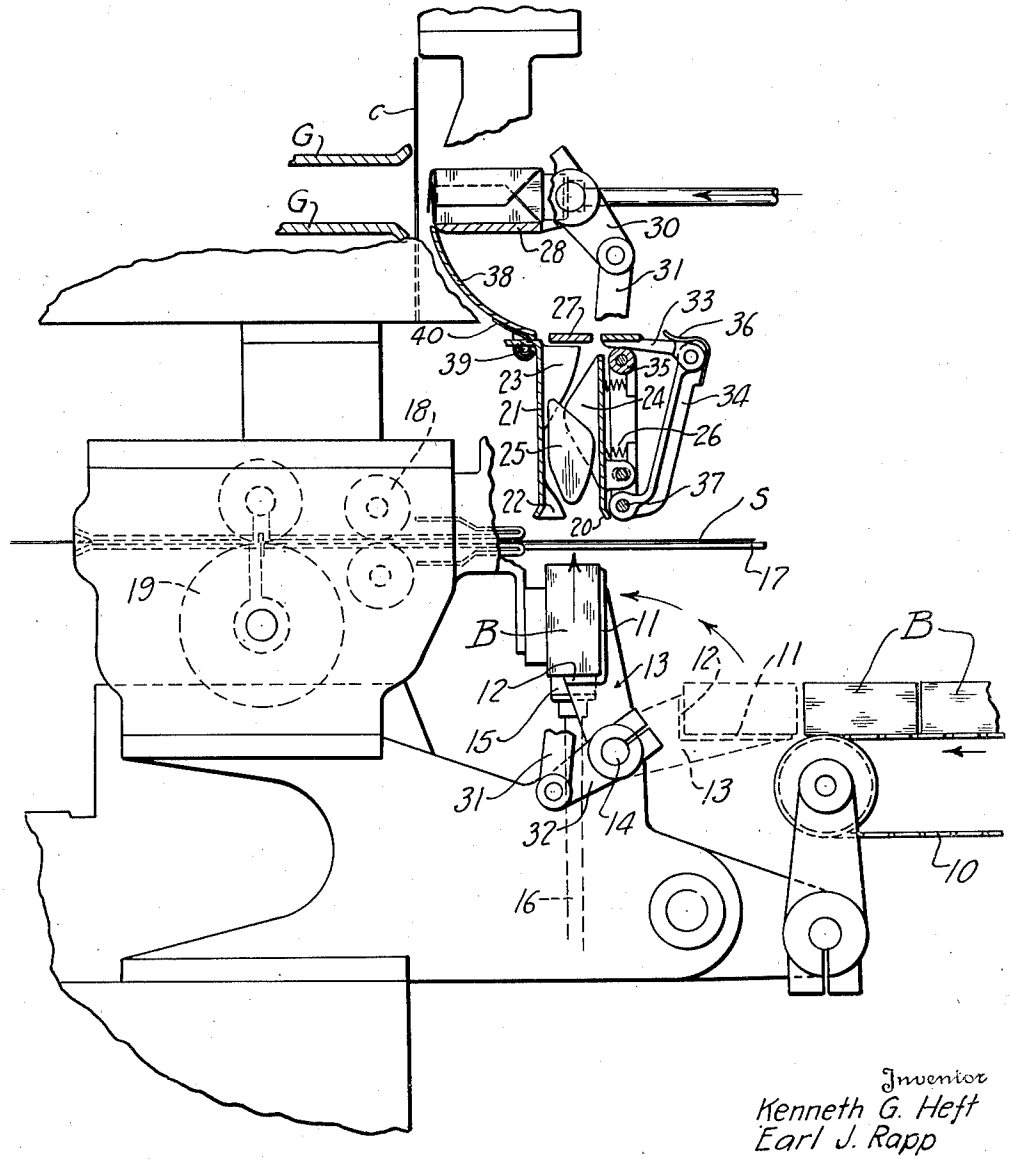
Oct. 31, 1939. K. G. HEFT ET AL 2,177,773

METHOD AND APPARATUS FOR WRAPPING PRINTS OF BUTTER OR THE LIKE

Filed Feb. 23, 1938 4 Sheets-Sheet 1

FIG. 1.



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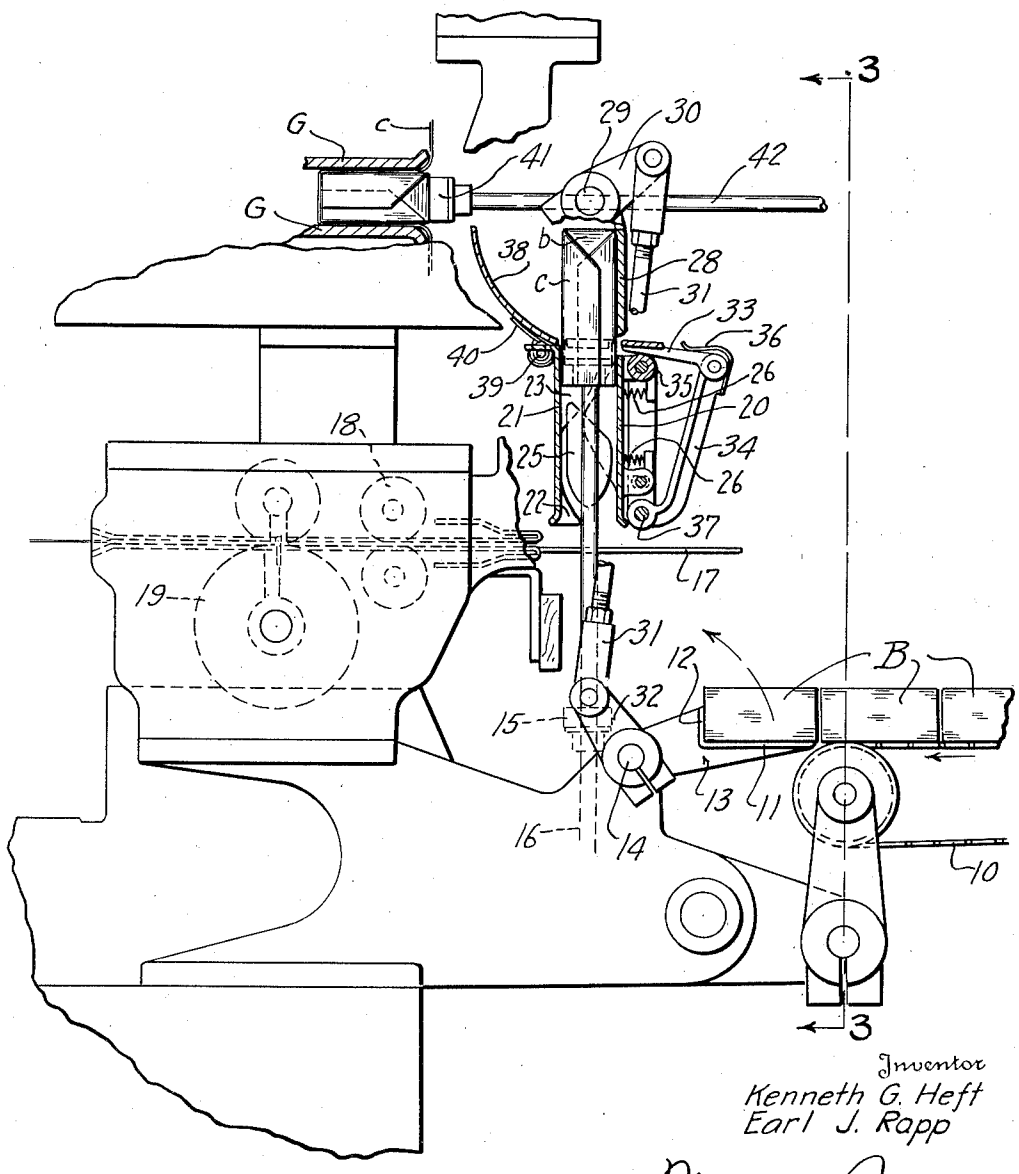
Attorney

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METHOD AND APPARATUS FOR WRAPPING PRINTS OF BUTTER OR THE LIKE

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FIG. 2.



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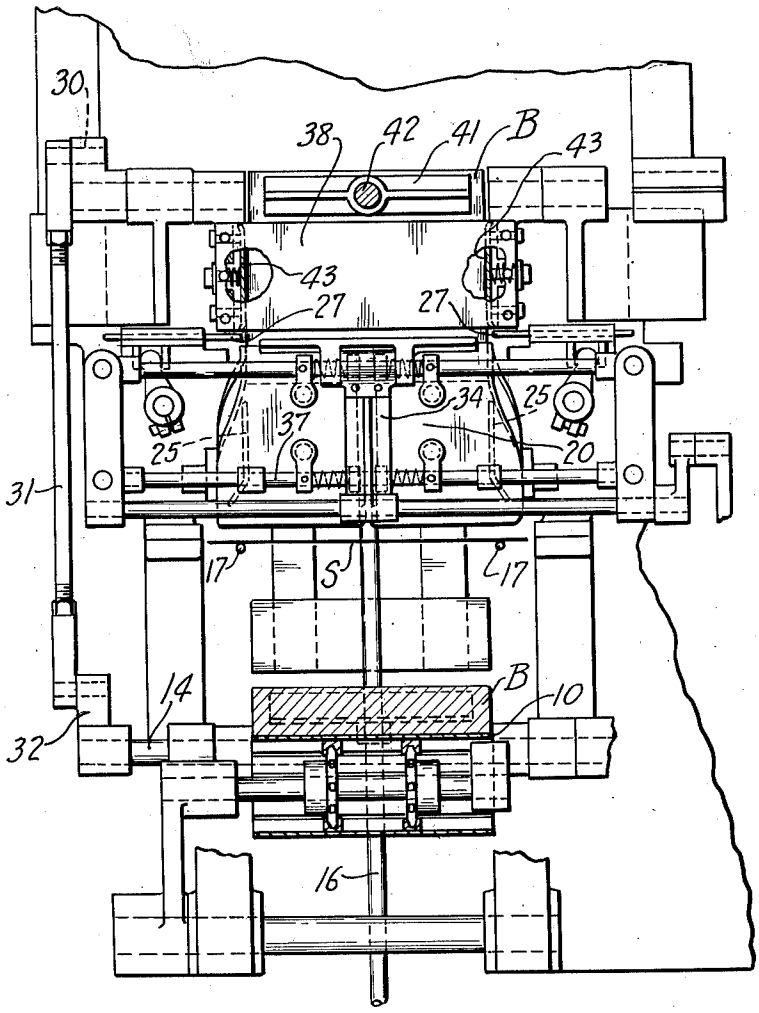
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METHOD AND APPARATUS FOR WRAPPING PRINTS OF BUTTER OR THE LIKE

Filed Feb. 23, 1938 4 Sheets-Sheet 3

FIG. 3.



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Oct. 31, 1939. K. G. HEFT ET AL 2,177,773

METHOD AND APPARATUS FOR WRAPPING PRINTS OF BUTTER OR THE LIKE

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FIG. 4.

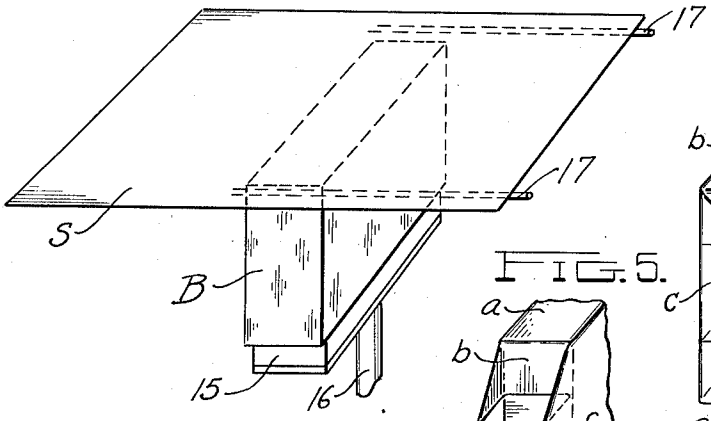


FIG. 6.

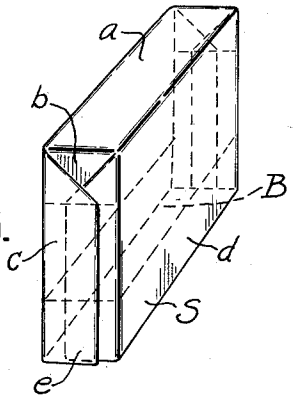


FIG. 5.

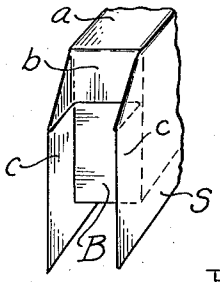


FIG. 7.

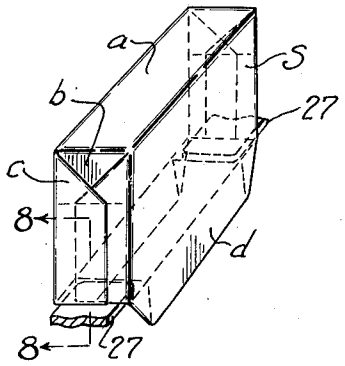


FIG. 8.

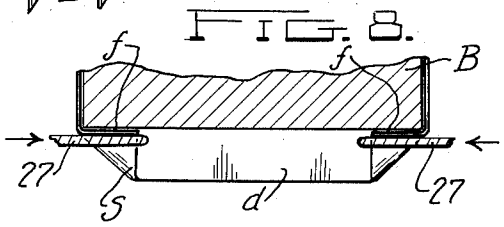


FIG. 10.

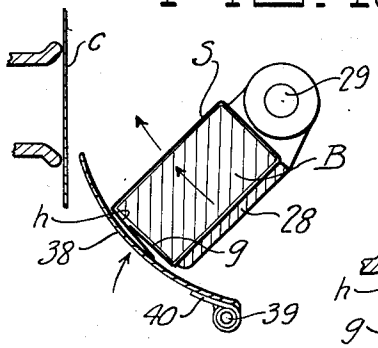


FIG. 9.

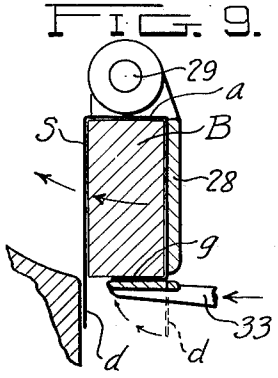


FIG. 11.

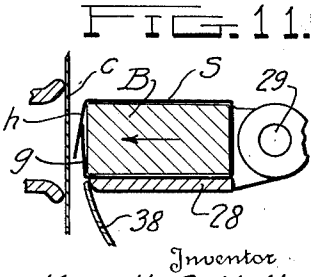
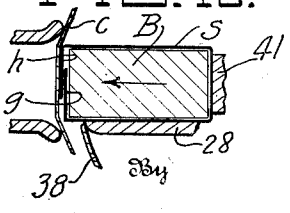


FIG. 12.



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Patented Oct. 31, 1939 2,177,773

UNITED STATES PATENT OFFICE

2,177,773

METHOD AND APPARATUS FOR WRAPPING PRINTS OF BUTTER OR THE LIKE

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Application February 23, 1938, Serial No. 191,934

4 Claims. (Cl. 93—2)

This invention relates to a method and apparatus for wrapping bars or prints of butter, oleomargarine or similar substances of plastic or semi-plastic nature with relatively light flexible sheet material preparatory to packaging the wrapped bars in cardboard cartons or other suitable containers.

An object is to produce a new and improved method of wrapping bars of the above character whereby wrapping is satisfactorily and efficiently accomplished, each bar being rocked or oscillated for effecting part of the fold of the sheet.

Another object is to produce a method and apparatus for folding sheet material about a bar of the above character by which the bar is advanced and during the advancing movement the sheet material is folded about the bar, a portion of the folding being effected by swinging the bar or moving it through an arcuate path.

A further object is to produce a wrapping machine in which the bar is advanced in one direction and during the advancing movement, partial folding of the sheet material is accomplished by a series of means and the final folding operation is effected by swinging the bar through an arcuate path, the wrapper being retained against unfolding.

Other objects and advantages of the invention will hereinafter appear and, for purposes of illustration but not of limitation, an embodiment of the invention is shown on the accompanying drawings in which

Figure 1 is a side elevation partly in section of a machine for wrapping rectangular bars or prints of butter or the like with relatively flexible sheet material, only so much of the machine being shown as to enable those skilled in the art to understand the construction and operation of the various parts;

Figure 2 is a view similar to Figure 1 but showing a bar after it is partially passed through the folding mechanism;

Figure 3 is a vertical sectional elevation substantially on the line 3—3 of Figure 2;

Figures 4 to 12 are diagrammatic views showing successively the manner in which each bar or print is brought into contact with the parchment sheet and the folds which are made during the advancing movement and showing particularly in Figures 7 to 12 the moving of a bar and sheet through an arcuate path to effect the final folding of the sheet about the bar, and Figure 8 being a sectional view substantially on the line 8—8 of Figure 7 more clearly showing the folding fingers and the manner in which they effect folding of the sheet against the narrow elongate side wall of the bar.

The illustrated embodiment of the invention comprises a machine for wrapping and packaging bars of butter, oleomargarine or the like with flexible sheet material, such as parchment paper, the sheet or wrapper folding means being particularly illustrated. A series of bars or prints B are delivered to the machine from an endless conveyor 10 to which is imparted in any suitable manner a step by step advancing movement, each print being elongate and rectangular in shape. The foremost bar B of the series is delivered onto a platform 11 against a stop wall 12. The platform and stop wall form an integral part of an an arm 13 which is mounted for swinging movements upon a shaft 14 rocked in any suitable manner in timed relation to the advancing movement of the bars B to receive the foremost bar. As soon as a bar is delivered to the platform 11, as shown in Figure 2, the arm 13 swings in a counterclockwise direction to the position shown in Figure 1, whereupon a ram having a head 15 to which is connected a rod 16 engages the underside of the bar and shoves it vertically from the arm. The ram 15 is operated in any suitable manner in timed relation to the swinging movement of the arm 13 in order to engage a bar B thereon after it has been moved to an upright position as indicated in Figure 1.

Disposed in the path of movement of the bar B as advanced by the ram 15 is a relatively flexible sheet of material S, such as parchment paper, the same being delivered to a support 17 on which the opposite edges of the sheet are adapted to rest so as not to interfere with the advancing movement of the bar. The sheet S is delivered in any suitable manner as by a pair of advancing rolls 18 in rear of which are severing rolls 19 which cut a segment from a continuous length of sheet material as will be readily understood by those skilled in this art. Since the particular mechanism employed for delivering the severed segment of sheet material of the proper size forms no part of the present invention, further description thereof is not considered necessary. Suffice it to say that severed segments S are successively delivered into the path of movement of each bar B and in timed relation to the vertically advancing movement of the ram 15. Attention is called to Figure 4 which shows the relation of a bar B and sheet S substantially at the time when the bar is moved by the ram into engagement with the sheet.

The sheet S and bar B are thereupon advanced together by the ram 15 between vertically disposed laterally spaced folding plates 20 and 21 having folding wings 22, 23 and 24 and laterally spaced end folders 25. The plate 20 is resiliently urged toward the plate 21 by relatively light coil springs 26. Folding plates or shoes of this character are old in the art and suffice it to call attention to Figures 5 and 6 which show the manner in which these plates or shoes operate to effect folding of the sheet against the opposite ends of the bar. Obviously, the sheet is first folded against the leading end of the bar as indicated at *a* in Figure 5. Then as the bar is advanced, the fold *b* is effected at opposite ends of the bar, leaving the portions *c* projecting laterally beyond the adjacent ends of the bar. Then, as advancing continues the portions *c* are successively folded in overlapped relation to the position indicated in Figure 6 with side extensions *d* and end extensions *e* depending beyond the lower edge of the bar.

It will be apparent that the above described folding operations take place as the bar is advanced vertically by the ram 15 to the position shown in Figure 2, and thereafter the ram retracts to engage and advance the next succeeding bar. Thereupon, a pair of folding fingers 27 are moved horizontally toward each other by any suitable means operating in timed relation to the movement of the ram 15. As the fingers 27 move inwardly, they engage depending overlapped portions *e* of the sheet at each end and effect the fold *f* against the lower end of the bar substantially as indicated in Figures 7 and 8. The fingers 27 retract to normal position after making the folds *f* at each end.

The partially wrapped bar is now in engagement with an arm 28 which is pivotally mounted at 29 on a horizontal axis and is actuated by a crank arm 30 which is connected by an arm 31 to a crank arm 32 fixed to the shaft 14 so that the arms 28 and 13 operate conjointly, the arm 28 imparting folding of the sheet as will hereinafter appear.

The rearmost sheet portion *d* is next folded by a finger 33 which is pivoted to an arm 34 and is yieldingly urged against a roller 35 by a leaf spring 36. The arm 34 swings about a pivot 37 and is rocked in a counterclockwise direction (Figure 2) in timed relation to the movement of the fingers 27. It is apparent that the folding finger 33 moves at substantially right angles to the movement of the fingers 27, and, as shown in Figure 9, the finger 33 moves forwardly to effect the fold *g* against the underside of the bar B. The finger 33 remains in the position shown in Figure 9 until the arm 28 has swung to a predetermined position as will hereinafter appear.

Disposed in advance of the partially wrapped bar B, and in opposing relation to the arm 28 is an arm 38 which is vertically disposed and is pivoted at its lower end at 39, a relatively weak spring 40 normally urging the arm 38 toward the front face of the partially wrapped bar B. The arm is upwardly and rearwardly curved substantially as shown so that when the arm 28 is swung in a counterclockwise direction (Figure 10) the remaining unfolded portion *d* of the sheet S is moved into engagement with the curved surface of the arm 38, thus folding such portion against the fold *g* forming the fold *h* as indicated in Figure 10. The finger 33 remains in the position shown in Figure 9 until such time that the fold *h* is sufficiently made to prevent unfolding of the folded portion *g*, and thereupon, the finger 33 retracts to the position shown in Figures 1 and 2.

In the swinging of the arm 28 forwardly, the arm 38 is accordingly swung to the left of Figure 2, but is yieldingly held by the spring 40 in engagement with the bar until the bar has been swung to a substantially horizontal position as shown in Figure 11. The front end of the wrapped bar is in close juxtaposed relation to a carton blank C which has been fed into position by any suitable means.

It is apparent that the bar B has been completely wrapped by the sheet S and is ready to be packaged in a suitable carton. A ram 41 carried by a rod 42 is then advanced by any suitable means into engagement with the rear face of the wrapped bar and advances it into engagement with the carton C. Disposed on opposite sides of the rocking arm 28 are spring pressed plates 43 which engage the opposite ends of the bar, holds the same in position and prevents the folds *c* from coming apart. It will thus be apparent that neither the end folds nor the front folds *g* and *h* are permitted to separate but are held against the bar.

The ram 41 operating in timed relation to the swinging movement of the arm 28 advances the wrapped bar and the carton C between guide plates G thereby partially folding the carton about the bar. The completion of the carton folding may be accomplished in any suitable or well-known manner and, since such mechanism forms no part of the present invention, illustration or description thereof is not considered necessary. After the ram 41 has advanced the wrapped bar and carton substantially as shown in Figure 2, it retracts until the next succeeding bar is in position for horizontal advancing movement. It will also be understood that after the wrapped bar has been moved from the arm 28, the latter swings back to its normal position shown in Figure 2.

From the above description, it will be apparent that the prints or bars of butter or similar material may be efficiently and speedily wrapped with sheet material such as parchment paper and an important feature of the invention resides in the rocking or arcuate movement which is imparted to the partially wrapped bar thereby completing the folding of the sheet against it. This materially simplifies wrapping mechanism of this character and insures against unfolding of the folded sheet portions, those portions which have previously been folded being positively held against unfolding so that the finally wrapped bar is neat and trim in appearance and all portions of the print or bar completely covered.

It is to be understood that numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention especially as defined in the appended claims.

What we claim is:

1. Apparatus of the character described comprising means for feeding flatwise a series of bars of butter or the like each bar being substantially rectangular and of greater breadth than thickness, means operable successively to move the foremost bar from said feeding means to a position at substantially right angles to the path of movement of the feeding means, means for advancing the bar edgewise from said last means, means to receive a wrapping sheet in the path

of movement of said advancing means, means for partially folding the wrapping sheet about the bar during the advancing movement thereof, said advancing means retracting after partial folding of the wrapper sheet, and means for completing the folding operation including means for imparting translatory movement to the partially wrapped bar through an arcuate path to a position corresponding to its initial flatwise position.

2. Apparatus of the character described comprising bar feeding means, rockable arm for receiving a bar and moving same through an arc of approximately 90°, means operable in timed relation to said arm for advancing a bar therefrom, means to receive a sheet of flexible sheet material in the path of movement of said advancing means, a series of means for partially folding the wrapper sheet about the bar during advancing movement thereof, said advancing means retracting after partial folding of the sheet is effected, means for completing the folding of the wrapper sheet including a rockable arm for rocking the partially wrapped bar through an arc of approximately 90°, and conjoint means for actuating said rockable arms.

3. Apparatus of the character described comprising means for feeding bars of butter or the like in a step by step manner, a rockable arm to receive the foremost bar and swing same about an arc of approximately 90°, means to engage the bar on said arm and advance same along a path at substantially right angles to the path of movement of said feeding means, means to support a wrapper sheet in the path of movement of said advancing means, a series of means to partially fold a wrapper sheet about the bar during advancing movement thereof, means for completing the folding of the wrapper sheet including a rockable arm for swinging the bar through an arc of approximately 90°, means cooperating with said arm for effecting partial folding of the sheet during such swinging movement, and means for concomitantly actuating said rockable arm.

4. The method of handling and wrapping with sheet material bars of butter or the like, each bar being substantially rectangular, elongate and of greater breadth than thickness, said method consisting in advancing a series of bars in flatwise manner, successively moving the foremost bar to a position at substantially right angles to the path of advancing movement, advancing such bar edgewise, wrapping the bar during such edgewise advancing movement with sheet material except for an elongate side from the edges of which extend parallel end portions of the sheet, folding one end portion against such side, rocking the bar to cause the other end portion to wipe against a surface to effect folding, and advancing the wrapped bar flatwise in a direction parallel to its initial advancing movement.

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