Nov. 1, 1932. F. GROVER 1,885,543

METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

Filed April 27, 1931 8 Sheets-Sheet 1

Fig. 1.

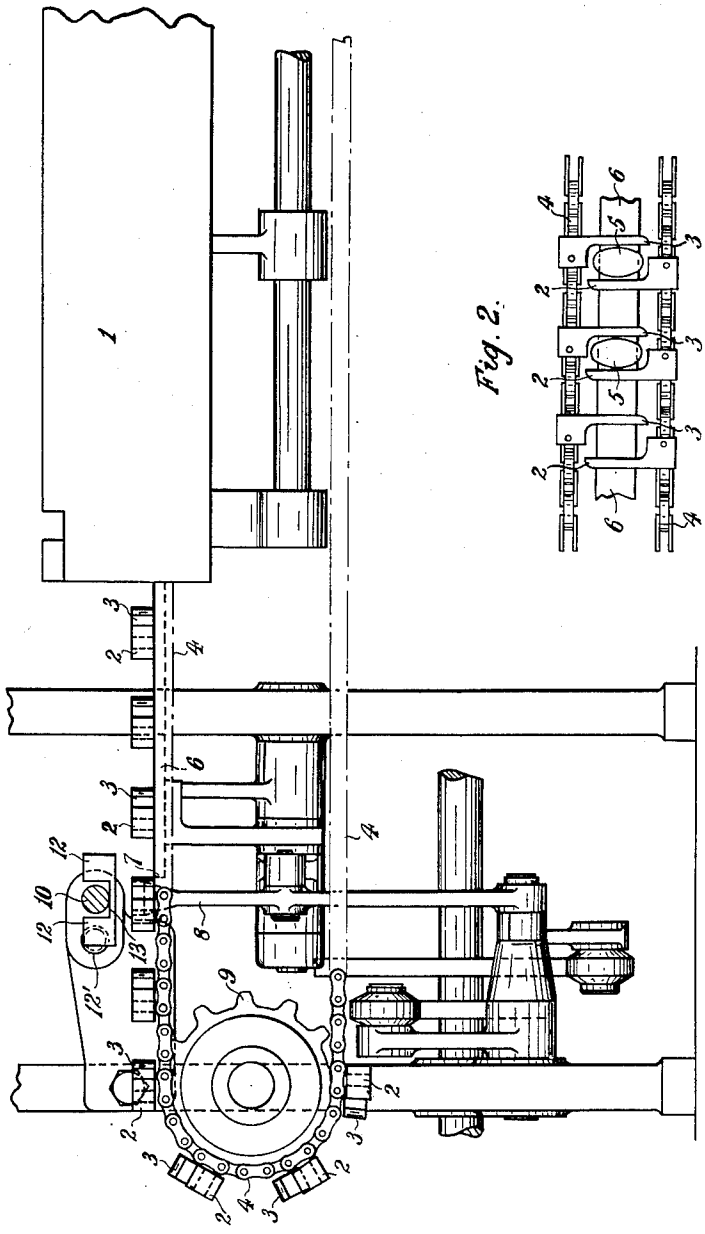


Fig. 2.

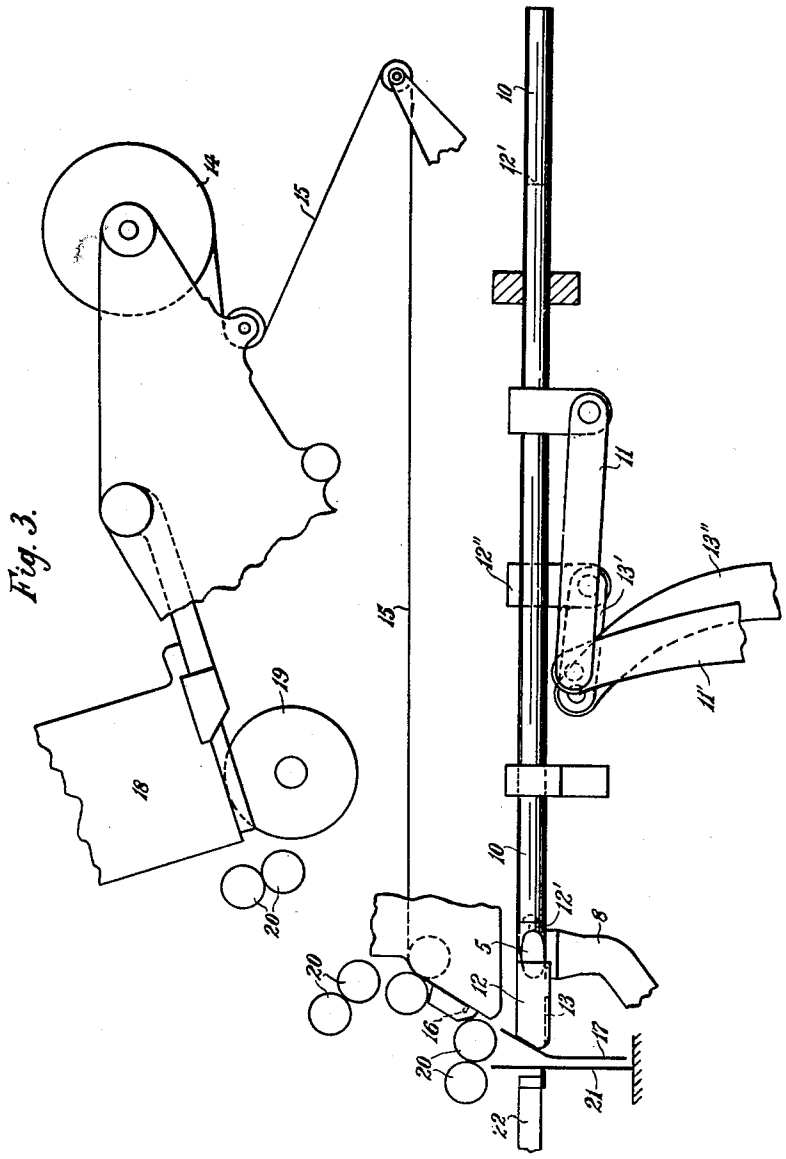
Frederick Grover
Inventor
By Wells & Wells & Lamb & Colby

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METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

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Fig. 3.



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METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

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Fig. 4.

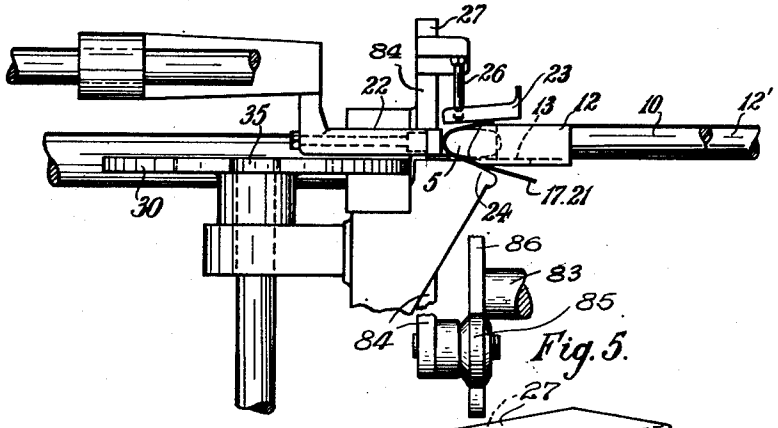


Fig. 5.

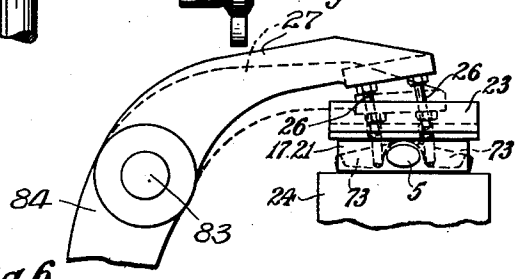
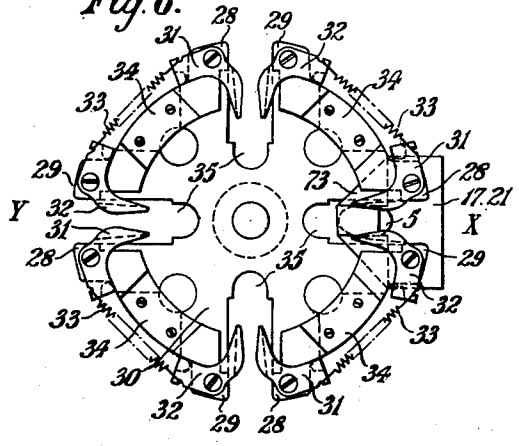


Fig. 6.



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METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

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Fig. 8.

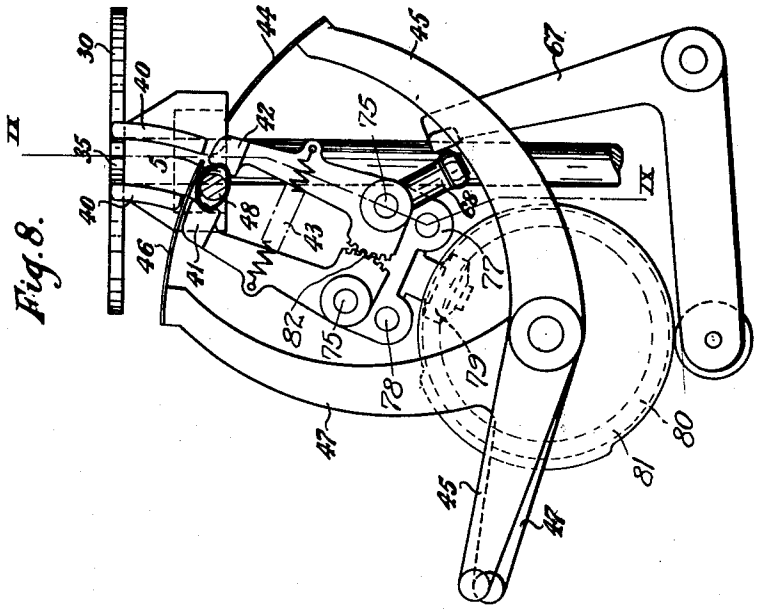
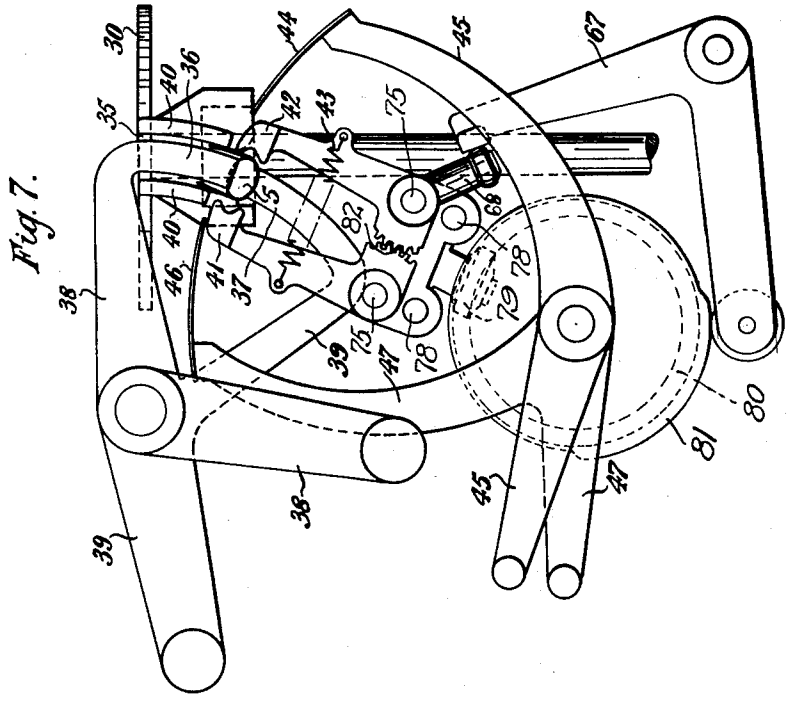


Fig. 7.



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METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

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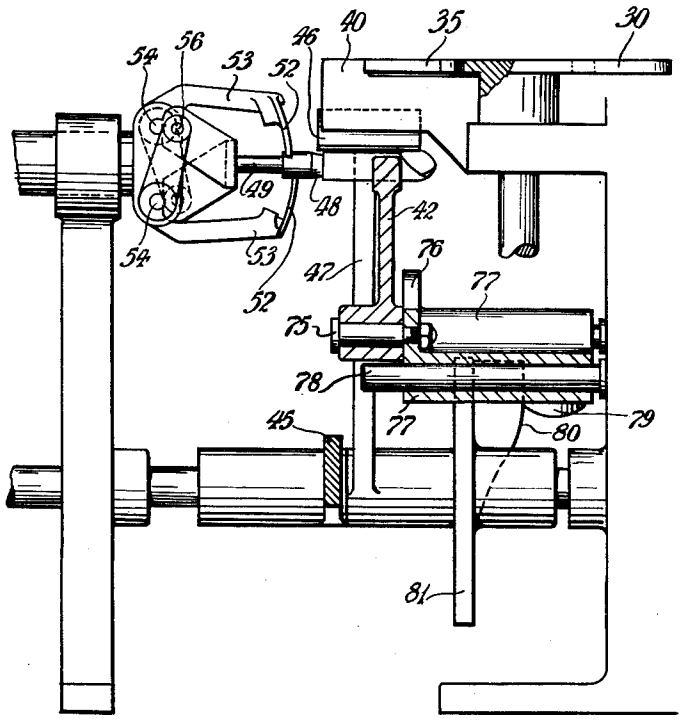


Fig. 9.

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METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

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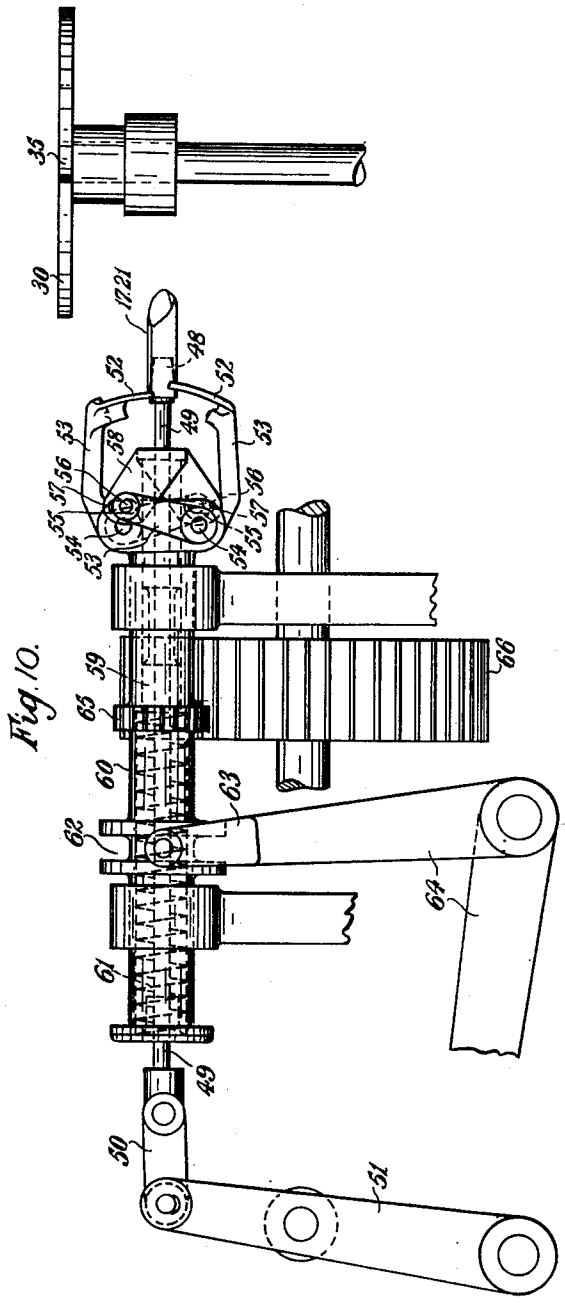


Fig. 10.

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METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

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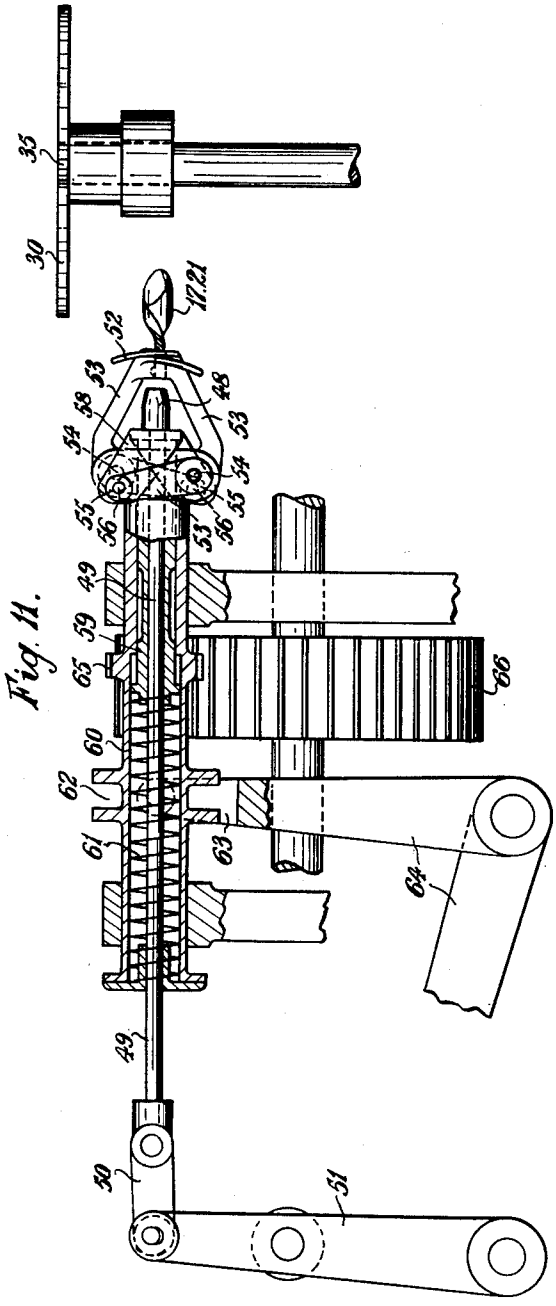


Fig. 11.

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METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

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Fig. 12

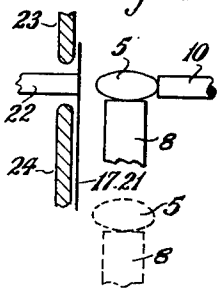


Fig. 13

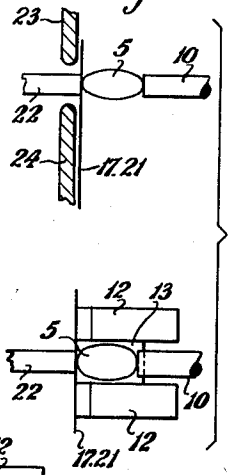


Fig. 14

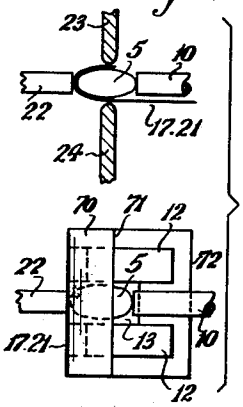


Fig. 15

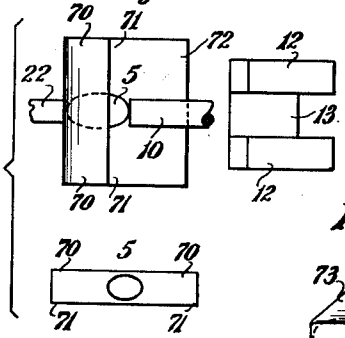


Fig. 16

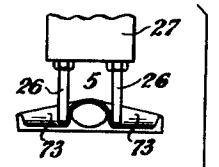
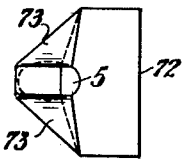


Fig. 17



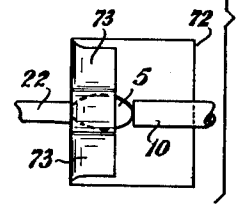


Fig. 18.

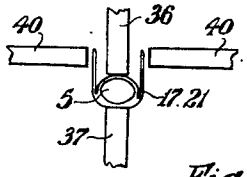


Fig. 19

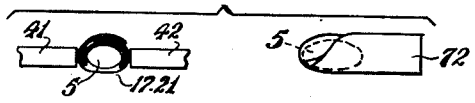
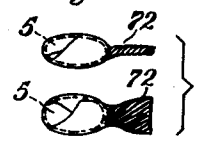


Fig. 20



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Patented Nov. 1, 1932 1,885,543

UNITED STATES PATENT OFFICE

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METHOD OF AND APPARATUS FOR FOLDING WRAPPERS AROUND TABLETS

Application filed April 27, 1931, Serial No. 533,327, and in Great Britain June 20, 1930.

This invention relates to the method of and apparatus for folding wrappers around tablets. The object of the present invention is to provide a method and apparatus which is particularly suitable for wrapping elongated tablets in single or double wrappers, one end of the wrapping material being closed about the tablet by locked folds, the other end being first formed into an open cylinder which is then twisted so as to seal the tablets securely within the tubular wrapper.

According to this invention, such wrappers are folded around tablets by a method which consists in first enclosing one end of the tablet in a wrapper with projecting wrapper sides, folding said projecting wrapper sides on to the tablet with one of said wrapper sides overlapping the other wrapper side, said folding of said wrapper sides also forming the open cylinder at the unenclosed end of said tablet and twisting said open cylinder in such a direction as to retain the wrapper sides in their overlapping relationship.

In practice, the tablet is thrust in the direction of its length against a wrapper or pair of wrappers (hereinafter termed "wrapper"), which wrapper is held in front of a stationary slotted plate or guide and simultaneously with the advance of the tablet, side supports between which the tablet is located advance with the tablet. These side supports may be connected together by a connecting plate forming a support for the tablet as it is thrust forward. The wrapper is therefore bent by the forward end of the tablet assisted by the side supports when these parts are thrust through the slot or guide to form the first fold in the wrapper. After this first fold has been formed, the side supports stop in their advance whilst the slide which presses the tablet forward continues to advance. Two tucking members then move down on to the upper parts of the projecting wrapper sides in such a way that these upper parts of the wrapper sides are bent down snugly against the tablets until they contact with the lower portion of the projecting wrapper sides which are supported by a stationary plate. This tucking of the upper projecting wrapper sides bends the upper part of the wrapper around the sides and top of the tablet and by gathering in the corners of these wrapper sides towards the tablet, forms loops on both sides of the forward end of the tablet. The continued advance of the tablet by means of the slide causes folding plates to fold the loops snugly against the forward sides of the tablets; thus forming secondary folds overlying the projecting wrapper sides.

For the purpose of controlling the axial alignment of the tablet and for preserving the relative position of the tablet and the wrapper during the folding operations so far described, a retractable plunger with a flexible end to accommodate slight variations in length of the tablets is caused to contact with the forward end of the wrapper and tablet so that they are nipped between the advancing slide and the retractable plunger. The retractable plunger movements are synchronized with the slide movements to preserve the nip and convey the tablet and wrapper along the required path. The folding plates which produce the secondary folds are situated upon a slotted carrier which supports the wrapper. In this carrier the projecting wrapper sides rest on the carrier and the wrapper acts as a bridge to support the partially wrapped tablet above a slot in the carrier. The transfer grippers then move into contact with the partially wrapped tablet and move this tablet through the slot in the carrier and thereby cause the projecting wrapper sides to be folded upwards against the sides of the tablet in trough-like form. The sides of the tablet and its wrapper are then received between lateral receiving grippers and the upper transfer gripper then rises. A folding blade then advances transversely of the tablet, turning down one of the wrapper sides on to the upper surface of the tablet, and while this folding blade still holds this wrapper side securely on the tablet, another folding blade advances from the opposite side and turns the remaining wrapper side over the first wrapper side, the first move folding blade being withdrawn towards the end of the movement of the second moved folding blade so as to enable th

second moved folding blade to press the upper wrapper side tightly down upon the first folded wrapper side.

This folding operation of the wrapper sides also forms the open cylinder at the unenclosed end of the tablet, and during the movement of the folding blade a former advances coaxially with the tablet into the open cylinder so as to maintain this part in the required formation. The open cylinder is then gripped by end grippers and said grippers are given a twisting motion about the axis of the former in such a direction that the overlapping folds of the wrapper sides will be retained in their overlapping relationship. While the twisting is in progress, the axial distance between the twisting grippers and the lateral receiving grippers is reduced to allow for the shortening effect of twisting the wrapper, thus preventing the wrapper from being torn in the neck of the twist. The lateral receiving grippers then separate, leaving the twisting grippers still holding the wrapped tablet when these end grippers are opened to release the wrapped tablet which drops into a hopper and opens the end grippers ready for the next twisting operation.

This invention will now be described with reference to the accompanying drawings which show the mechanism employed for folding two wrappers (an inner wrapper and an outer wrapper) around a tablet in accordance with this invention.

In the drawings:—

Fig. 1 is an elevation illustrating the means for feeding the tablet.

Fig. 2 is a plan view of the chain conveyor for the tablet shown in Fig. 1.

Fig. 3 is an elevation illustrating the wrapper feeding mechanism and the slide for moving the tablet during part of the wrapping operation.

Fig. 4 is an elevation illustrating the mechanism for effecting the first wrapper fold and side tucking operations.

Fig. 5 is an end view of a fragment of Figure 4.

Fig. 6 is a plan view of a carrier plate illustrating the mechanism for forming secondary folds on the wrapper sides.

Fig. 7 illustrates a mechanism for folding wrapper sides upwards against sides of tablet.

Fig. 8 illustrates a mechanism for bending wrapper sides over the top of the tablet.

Fig. 9 is a sectional elevation on the line IX—IX in Fig. 8 and showing the end former and end grippers in their relationship to the mechanism for folding the wrapper sides upwardly and bending these sides over the top of the tablet.

Fig. 10 illustrates the end former and end grippers and the mechanism for actuating these, in the position which they occupy before the twisting operation.

Fig. 11 is a similar view to Fig. 10, but illustrating the grippers in a position which they occupy at the end of the twisting operation.

Figs. 12 to 20 illustrate the tablet in the various stages of wrapping.

Referring to Figs. 1 and 2, the tablets from the stationary table 1 are removed manually by the attendant of the machine and are placed one in each of the chain pockets formed between the opposed fingers 2 and 3 mounted upon and extending between two spaced chains 4. The tablet marked 5, in Fig. 2, is supported in said pocket by a fixed supporting surface 6, which extends to a point marked 7 in Fig. 1, where an upstanding lifting plunger 8 is located. The chains 4 are driven through sprocket wheels 9 which are intermittently rotated by a Geneva movement, not shown, to suit the pitch of the pockets in the chain. By this movement the pockets are brought successively into a position above the lifting plunger, when the lifting plunger 8 moves the tablet upwardly out of the pocket into the position shown in Fig. 1. When the tablet has been moved into the position shown in Fig. 1, this tablet comes into a position at the front end of a slide 10, shown in Fig. 3, which is reciprocated by a link 11 and arm 11″ under the movement of a cam, not shown. The slide 10 is moved forward and carries the tablet from the lifting plunger 8 into a carrier member consisting of two side portions 12, forming side supports for the tablet, connected by a carrier plate 13.

The wrappers are fed by the mechanism shown in Fig. 3. A reel 14 feeds a continuous band 15 of inner wrapper material to a cutting device, indicated at 16, where the material is cut into pieces of the required length, which pieces pass downwardly in front of the carrier 12. One of these pieces forming an inner wrapper is shown in position in Fig. 3 and marked 17. The outer wrappers are fed from a pack in the box 18 by the continuously revolving rubber roller 19 and pairs of feed rollers 20. The box 18 is raised and lowered so as periodically to feed the outer wrappers therefrom. An outer wrapper is shown in position for the wrapping operation in Fig. 3 and marked 21.

The wrappers are supported at the front of the carrier by means of a retractable plunger 22, which is so moved in synchronism with the slide 10, that the slide 10 and retractable plunger 22 nip the tablet 5 and the wrappers 17 and 21 between them and thus hold them in the required relative positions. The tablet and wrappers so held together are then moved by the slide 10 and retractable plunger 22 into the position shown in Fig. 4. The carrier, consisting of

the side members 12, and the carrier plate 13, are moved with the slide and tablet by means of the extensions 12′, 12″, and link 13′ and the lever 13″.

In Fig. 4 the wrappers, which are conveniently shown by a single line marked 17 and 21 have been thrust by the tablet between upper and lower guide members 23 and 24 which fold the wrappers into substantially a U-shape around the forward end of the tablet and thus enclose the forward end of the tablet in the wrappers. In this first fold the sides of the wrappers are maintained in an open extending position, as shown in Fig. 5, by the side portions 12 of the carrier. An arm 27 pivoted at 83 and having an extension 84 beyond the pivot, which carries a bowl 85 forming a follower for the cam 86 by which this arm is operated in order to move tucking members 26 mounted on the arm down into contact with the upper portions of the laterally extending wrapper sides to tuck these sides down into the position shown in dotted lines in Fig. 5 and thus form looped portions at opposite sides of the front end of the wrapper. The tucking members 26 remain on the tucked projecting wrapper sides and the forward movement of the tablet between the slide 10 and the retractable plunger 22 is continued. In this continued movement the partially wrapped tablet is carried in between folding plates 28, 29, mounted on a carrier plate 30 and these folding plates 28, 29 engage with the looped side portions on either side of the front end of the tablet and fold these down on to the tucked sides of the wrapper previously formed by the tucking members 26, thus forming secondary folds in the wrapper sides.

The partially wrapped tablet is finally moved by the slide 10 in between the levers 31 and 32 which are caused to grip the tablet by the springs 33. When the tablet is gripped between the levers 31 and 32, the projecting wrapper sides extend between the underside of a plate 34 and the upper side of the carrier disc 30. The carrier disc is provided with a slot 35 and the wrapper sides projecting on to the carrier disc serve as a bridge to support the tablet above the slot. When the tablet is in this position the slide is retracted and the retractable plunger is moved clear of the tablet and wrappers and then the carrier plate is rotatated to move the partially wrapped tablet from the position marked X in Fig. 6 to the position marked Y in this figure.

When the partially wrapped tablet arrives at the position Y in Fig. 6 upper and lower transfer grippers 36 and 37 are moved by means of their arms 38 and 39, respectively, under the action of suitable cam, not shown, until said grippers contact with the upper and lower surfaces of the partially wrapped tablet. These grippers are then caused to move the tablet downwardly in which downward movement the projecting tucked wrapper sides are caused by the edges of the slot 35 in the carrier plate to be moved upwardly against the sides of the tablet into the position shown in Fig. 7. Guides 40 are provided for maintaining the extending wrapper sides in their upturned position, while they are moved into the position shown in Fig. 7. When the tablet and the wrapper reaches the position shown in Fig. 7, the tablet is gripped by side grippers 41 and 42, which are drawn on to the tablet and its wrapper by the spring 43. The upper transfer gripper 36 is then moved upwardly off the tablet and a folding blade 44 is moved by a lever 45, on which it is mounted, under the control of a cam across the tablet from the position shown in Fig. 7 into a position in which it extends across the top of the tablet and folding the contiguous upwardly extending wrapper side on to the top of the tablet. While the folding blade 44 is in this position, a corresponding blade 46 on the opposite side of the table is caused by the lever 47 on which it is mounted, to be moved across the top of the tablet, thus folding the remaining upwardly projecting wrapper side on to the top of the first folded wrapper side. Towards the end of the movement of the folding blade 46 the folding blade 44 is moved away from the tablet into the position shown in Fig. 8, after which continued movement of the folding blade 46 acts to bring the folding blade 46 firmly on to the overlapping wrapper sides to press these closely together. During this folding movement the wrapper at the unenclosed end of the tablet is formed into an open cylinder, and a former 48 of cylindrical form is caused to enter the open cylinder of the wrapper in a manner to be hereinafter described to ensure the correct form of this during the folding operation.

The wrapper is now in the form shown in Fig. 18, and is still held by the side grippers 41 and 42. These side grippers 41 and 42 are mounted as shown clearly in Figs. 8 and 9, on pivots 75 carried by an upstanding end portion 76 of a double bossed slide 77 slidably mounted on spaced guide rods 78. The slide 77 is moved by a spring (not shown) under the control of a bowl 79 and cam face 80 on the cam 81 to the left of the position shown in Fig. 9 so as to cause the side grippers 41 and 42 carrying the tablet and its wrapper to approach the former 48. The former 48 is also approached to the side grippers so as to engage in the open cylinder end of the wrapper by being mounted on a push rod 49 which is connected by a link 50 to a lever 51 operated by cam mechanism. End grippers 52 are provided mounted on one end of levers 53, each of which levers is pivoted at 54,

and is connected at its end 55 by a pin 56 and incline slot 57 to a plate 58.

The plates 58 are fixed to a sleeve 59 fitting concentrically around the push rod 49 and slidably mounted in a sleeve 60 carrying the pivots 54 of the levers 53. A spring 61 acts between the sleeves 59 and 60 and tends to maintain the end grippers 52 in their outwardly extending position. The sleeve 60 is formed with a guide 62 for a fork 63 on a lever 64 by which said sleeve can be moved relatively to the push rod 49 under the control of cam mechanism.

In the position shown in Fig. 10, the end gripping fingers are in their outermost position. From this position the sleeve 60 is moved to the right and simultaneously the former 48 and its push rod 49 are retracted to the left. When the inner end of the former 48 engages with the end of the sleeve 59, the levers will be caused by movement of the pins 56 in the incline slots 55, to move the end gripping fingers inwardly on to the open cylinder end of the wrapper. This position of the end grippers is shown in Fig. 11. The end grippers and the sleeve 60, on which they are mounted, are then rotated by gear wheels 65 and 66, so as to cause the grippers to twist the open cylinder end of the wrapper, as shown in Fig. 11. During the twisting movement of the end grippers, the side grippers 41 and 42 continue to slide under the action of a spring (not shown) and the bowl 79 and cam face 80 towards the end grippers so as to prevent the tearing of the wrapper during the twisting operation, and after the twisting operation, and while the wrapper end is still gripped by the end grippers, the side grippers 41 and 42 are opened by the engagement with an arm 68 fixed on one of said grippers 42 of the lever 67 (Figs. 7 and 8) actuated by the cam 81. The side gripper 41 is moved simultaneously and oppositely to the gripper 42 owing to the interengaging teeth 82. These side grippers are then moved back into the position shown in Fig. 9 by the cam face 80 and bowl 79 ready for the next tablet. The end grippers 52 carrying the wrapped tablet, are now moved back from the position shown in Fig. 11, to the position shown in Fig. 10, in which movement the end grippers are moved outwardly so as to release the wrapped tablet which falls into a hopper or receptacle, not shown.

Various stages in the folding of the wrappers around the tablet are illustrated diagrammatically in Figs. 12 to 20.

Fig. 12 illustrates the lifting of the tablet 5 from the dotted position in which it is in the chain to the raised position, shown in full lines, where it is ready to be moved in the direction of its length for the wrapper folding operation.

Fig. 13 illustrates diagrammatically in elevation and plan views the initial movement of the tablet into contact with the wrapper.

Fig. 14 illustrates diagrammatically in elevation and plan views the first fold formed by forcing the wrapper marked 17 and 21 through the upper and lower guide members 23, 24. The side members 12 and the tablet cause the wrapper to be folded into a substantially U-shape around the forward end of the tablet and leaving upper and lower wrapper side parts 70, 71, in addition to an extending wrapper end part 72.

Fig. 15 shows diagrammatically in plan view and rear elevation the next stage in which the tablet and wrapper in its initial folded condition are moved away from the side members 12, so as to leave the extending wrapper sides 70 and 71 unsupported.

Fig. 16 illustrates diagrammatically in rear elevation and plan view the tucking down of the upper wrapper sides 70 and the formation at the forward end of the wrapper of loops 73.

Fig. 17 illustrates diagrammatically in plan view the supplementary folds made by folding down the loops 73.

Fig. 18 illustrates diagrammatically in rear elevation the folding up of the wrapper sides by the edges of the slot 35 in the carrier plate 30.

Fig. 19 illustrates diagrammatically in rear elevation and side elevation the wrapper sides folded one over the top of the other, which folding over is effected by blades 44 and 46 of the machine.

Fig. 20 shows a side view and a plan view of the wrapper in its final form.

What I claim as my invention and desire to secure by Letters Patent is:—

1. Apparatus for folding wrappers around tablets comprising folding means for enclosing one end of the tablet in a wrapper and forming oppositely projecting wrapper sides and a projecting wrapper end, side tucking projections adapted to tuck the upper portions of the oppositely projecting wrapper sides down on to their lower portions to form side tucks and upstanding loops in said projecting wrapper sides, folding plates adapted to fold said upstanding loops against the sides of the tablet and wrapper sides to form secondary folds overlapping the tucks, side folding devices adapted to fold the projecting wrapper sides and secondary folds around the sides and top of the tablet with the one wrapper side overlapping the other wrapper side, said folding of said wrapper sides to form a single overlapping joint in the wrapper also forming the projecting wrapper end into an open cylinder, and grippers for gripping said open cylinder and twisting said open cylinder in such a direction as to retain the wrapper sides in their overlapping relationship.

2. Apparatus for folding wrappers around tablets comprising folding means for en-

closing one end of the tablet in a wrapper and forming oppositely projecting wrapper sides and a projecting wrapper end, side tucking projections adapted to tuck the upper portions of the oppositely projecting wrapper sides down on to their lower portions to form side tucks and upstanding loops in said projecting wrapper sides, folding plates adapted to fold said upstanding loops against the sides of the tablet and wrapper sides to form secondary folds overlapping the tucks, a carrier plate beneath said folding plates having a slot of a just sufficient width to allow the tablet and several thicknesses of the wrapper to pass through, transfer grippers adapted to grip the tablet and wrapper and to move these through said slot and turn the wrapper sides upwardly against the sides of the tablet, side folding devices adapted to fold the projecting wrapper sides on to the top of the tablet with the one wrapper side overlapping the other wrapper side, said folding of said wrapper sides also forming the projecting wrapper end into an open cylinder, and grippers for gripping said open cylinder and twisting said open cylinder in such a direction as to retain the wrapper sides in their overlapping relationship.

3. Apparatus for folding wrappers around tablets comprising folding means for enclosing one end of the tablet in a wrapper and forming oppositely projecting wrapper sides and a projecting wrapper end, side tucking projections adapted to tuck the upper portions of the oppositely projecting wrapper sides down on to their lower portions to form side tucks and upstanding loops in said projecting wrapper sides, folding plates adapted to fold said upstanding loops against the side of the tablet and wrapper sides to form secondary folds overlapping the tucks, a carrier plate beneath said folding plates having a slot of just sufficient width to allow the tablet and several thicknesses of the wrapper to pass through, transfer grippers adapted to grip the tablet and wrapper and to move these through said slot in the carrier plate and turn the wrapper sides upwardly against the sides of the tablet, side grippers for receiving the tablet and wrapper from the transfer grippers and holding the wrapper sides in their upwardly extending positions, side folding devices adapted to fold the upwardly extending wrapper sides on to the top of the tablet with the one wrapper side overlapping the other wrapper side, said folding of said wrapper sides also forming the projecting wrapper end into an open cylinder, a former adapted to move against the projecting wrapper end to ensure the formation of an open cylinder during the folding of the wrapper sides, end grippers for gripping said open cylinder and twisting said open cylinder in such a direction as to retain the wrapper sides in their overlapping relationship and means for moving the side grippers towards the end grippers during the twisting of the open cylinder.

4. Apparatus for folding wrappers around tablets comprising two spaced guides, a plunger adapted to thrust the tablet in the direction of its length against a wrapper and to force the tablet and wrapper between said guides for first enclosing one end of the tablet in the wrapper but leaving open oppositely projecting wrapper sides and a projecting wrapper end, tucking members adapted to form tucks in said projecting wrapper sides, means for folding said tucked projecting wrapper sides upwardly against the sides of the tablet, folding blades adapted to fold the tucked wrapper sides on to the top of the tablet with the one tucked wrapper side overlapping the other tucked wrapper side, said folding of said tucked wrapper sides also folding the projecting wrapper end into an open cylinder at the unenclosed end of the tablet, and grippers for gripping said open cylinder and twisting said open cylinder in such a direction as to retain the tucked wrapper sides in their overlapping relationship.

5. Apparatus for folding wrappers around tablets comprising two spaced guides, a plunger adapted to thrust the tablet in the direction of its length against a wrapper and to force the tablet and wrapper between said guides for first enclosing one end of the tablet in the wrapper but leaving open oppositely projecting wrapper sides and a projecting wrapper end, side tuckers adapted to form tucks and upstanding loops in said projecting wrapper sides, folding plates adapted to fold said upstanding loops against the sides of the tablet and wrapper sides, a carrier plate beneath said folding plates having a slot of just sufficient width to allow the tablet and several thicknesses of the wrapper to pass through transfer grippers adapted to grip the tablet and wrapper and to move these through said slot and turn the wrapper sides upwardly against the sides of the tablet, side grippers for receiving the tablet and wrapper from the transfer grippers and holding the wrapper sides in their upwardly extending positions, folding blades adapted to fold the wrapper sides on to the top of the tablet with the one wrapper side overlapping the other wrapper side, said folding of said wrapper sides also folding the projecting wrapper end into an open cylinder at the unenclosed end of the tablet, a former adapted to move against the projecting wrapper end to ensure formation of the open cylinder during the folding of the wrapper sides, end grippers for gripping said open cylinder and twisting said open cylinder in such a direction as to retain the tucked wrapper sides in their overlapping relationship and means

for moving the side grippers towards the end grippers during said twisting of the open cylinder.

6. The herein described method of folding wrappers around tablets consisting in first enclosing one end of the tablet in a wrapper with oppositely projecting wrapper sides and a projecting wrapper end, tucking both ends of one of the projecting wrapper sides inwardly against the sides of the tablet and against the opposed projecting wrapper sides to form side tucks and upstanding loops, folding the upstanding loops against the side tucks to form secondary folds overlapping said tucks, folding said oppositely projecting wrapper sides and the secondary folds together around the sides of the tablet with one of said wrapper sides and secondary folds overlapping the other of said wrapper sides and secondary folds to form a single overlapping joint in the wrapper said folding of said wrapper sides and secondary folds also forming the projecting end into an open cylinder and twisting said open cylinder in such a direction as to retain the wrapper sides in their overlapping relationship.

7. Apparatus for folding wrappers around tablets comprising, folding means for enclosing one end of the tablet in a wrapper and forming oppositely projecting wrapper sides and a projecting wrapper end, side tucking devices adapted to tuck both ends of one of the projecting wrapper sides inwardly against the sides of the tablet and against the opposed projecting wrapper sides to form side tucks and upstanding loops, loop folding devices adapted to fold the upstanding loops against the side tucks to form secondary folds overlapping said side tucks, side folding devices adapted to fold the oppositely projecting wrapper sides and secondary folds around the tablet with the one wrapper side and secondary fold overlapping the other wrapper side and secondary fold to form a single overlapping joint in the wrapper, said folding of said wrapper sides and secondary folds also forming the projecting wrapper end into an open cylinder, and grippers for gripping said open cylinder and twisting said open cylinder in such a direction as to retain the wrapper sides in their overlapping relationship.

8. Apparatus for folding wrappers around tablets comprising folding means for enclosing one end of the tablet in a wrapper and forming oppositely projecting wrapper sides and a projecting wrapper end, side tucking projections adapted to tuck the upper portions of the oppositely projecting wrapper sides down on to their lower portions to form side tucks and upstanding loops in said projecting wrapper sides, folding plates adapted to fold said upstanding loops against the sides of the tablet and wrapper sides to form secondary folds overlapping the tucks, side folding devices adapted to fold the projecting wrapper sides and secondary folds around the sides and top of the tablet with the one wrapper side overlapping the other wrapper side to form a single overlapping joint in the wrapper, said folding of said wrapper sides also forming the projecting wrapper end into an open cylinder, and grippers for gripping said open cylinder and twisting said open cylinder in such a direction as to retain the wrapper sides in their overlapping relationship.

In witness whereof I have hereunto set my hand.

FREDERICK GROVER.