

L. FISCHER.  
WRAPPER FOLDER.  
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1,069,119.

Patented Aug. 5, 1913.

2 SHEETS—SHEET 1.

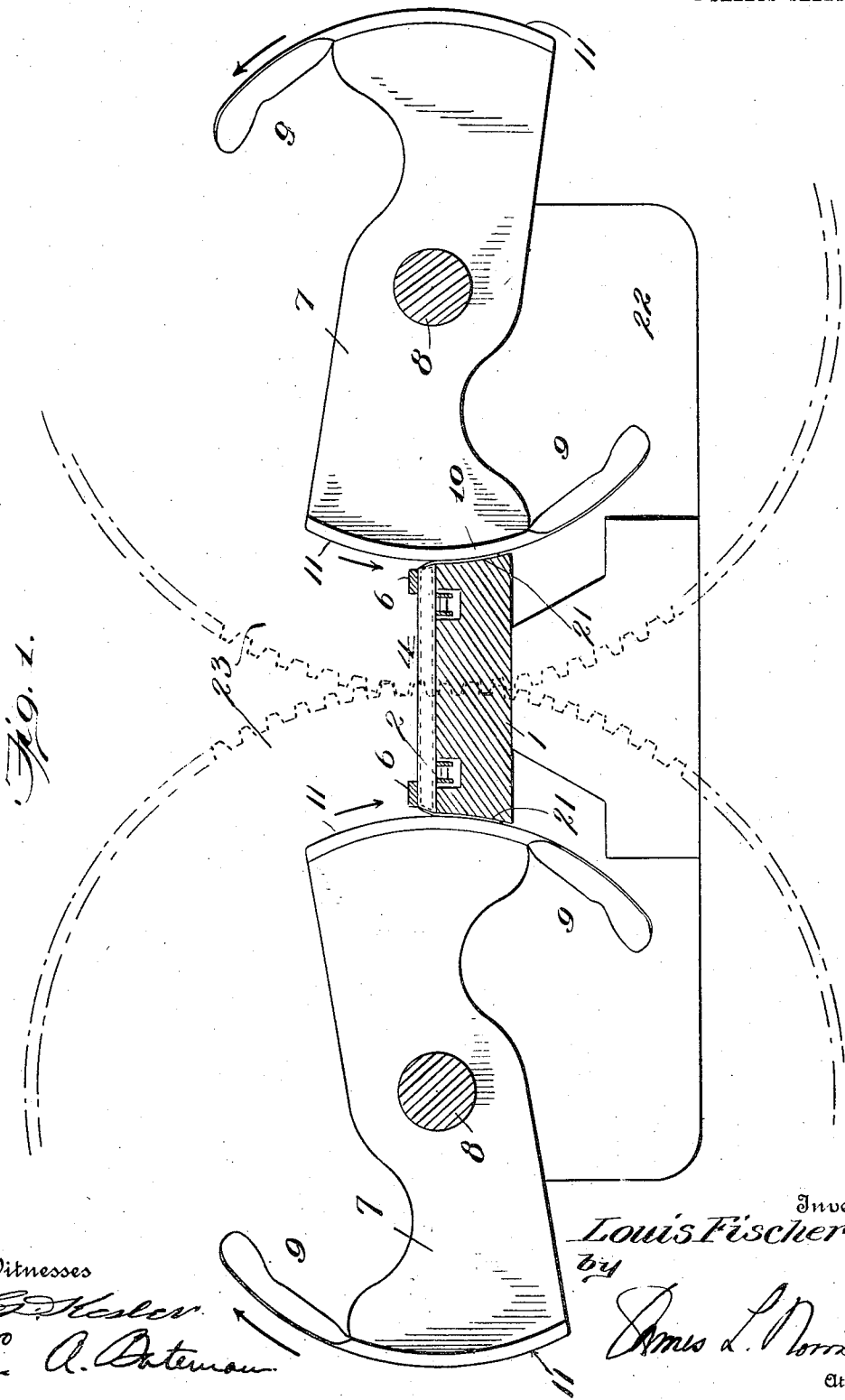


Fig. 1.

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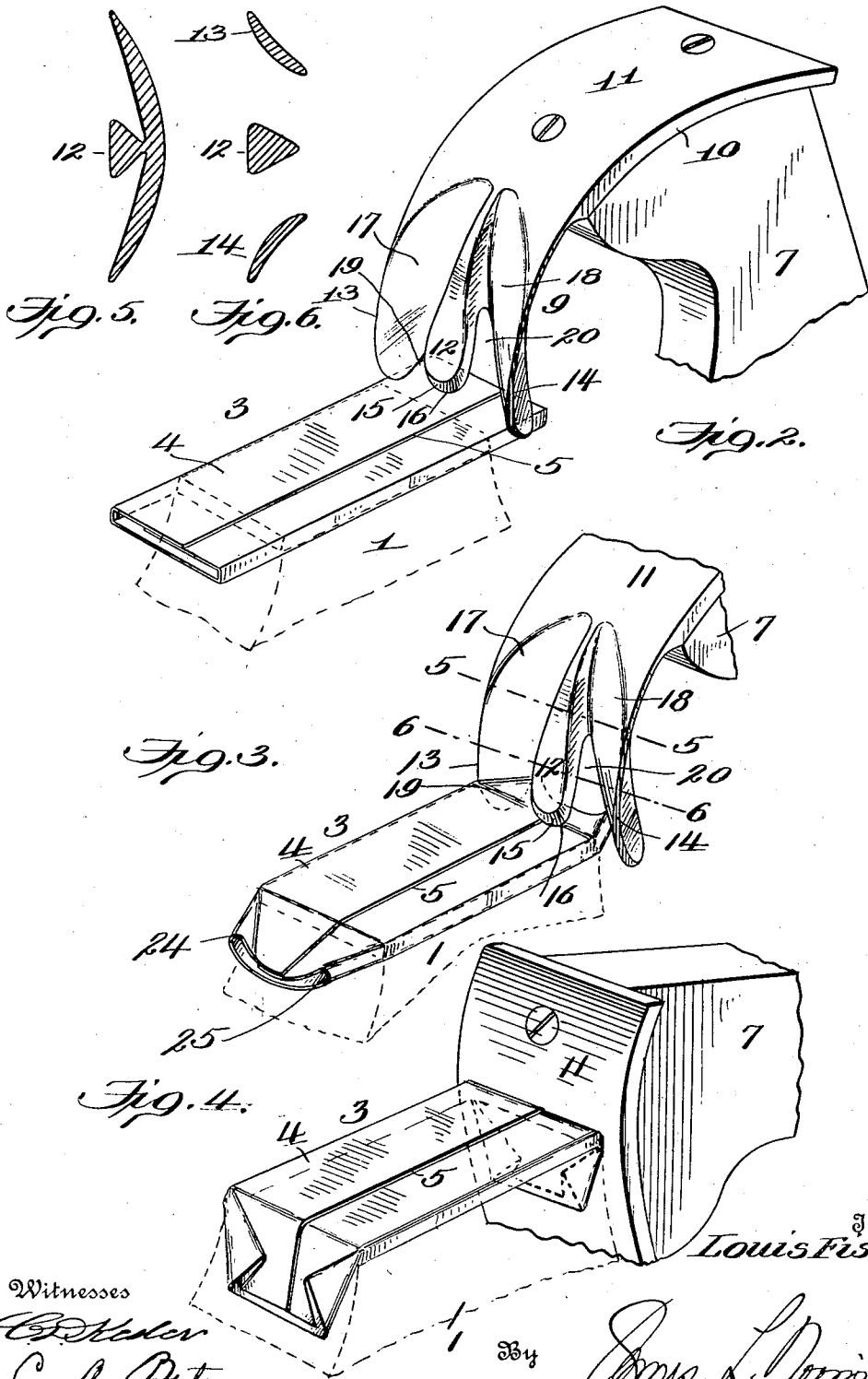
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# UNITED STATES PATENT OFFICE.

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## WRAPPER-FOLDER.

1,069,119.

Specification of Letters Patent.

Patented Aug. 5, 1913.

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*To all whom it may concern:*

Be it known that I, LOUIS FISCHER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Wrapper-Folders, of which the following is a specification.

The present invention relates to improvements in mechanisms for folding the ends of wrapped packages and especially packages which are relatively flat in form such, for example, as those containing cakes or tablets of chocolate and other substances, and the primary object of this invention is to provide a relatively simple and improved device for folding the end flaps of packages in such manner that the package is closed effectively and the flaps will remain in folded condition without requiring the application of an adhesive thereto, folding mechanism embodying this invention enabling the corners of the flaps at each end of the package to be folded inwardly, the flaps to be folded bodily in a direction laterally of the package at one operation, and the folded portions to be ironed or pressed in a manner to crease them and thereby cause the same to remain in folded condition.

In the preferred embodiment of the invention, the folding means for each end of the package has a rotary motion which may be continuous and the devices for turning and folding the corners, folding the flap laterally, and for ironing the folds are in fixed relation on a rotary member, thus insuring rapid operation and simplifying greatly the construction.

To these and other ends, the invention consists in certain improvements, and combinations and arrangements of parts, all as will be hereinafter more fully described, the novel features being pointed out particularly in the claims at the end of the specification.

In the accompanying drawings:—Figure 1 is a diagrammatic view represented in vertical section showing wrapper-folding mechanism constructed in accordance with the preferred embodiment of the invention; Figs. 2, 3 and 4 are diagrammatic respective views showing the progressive folding

operation; and Figs. 5 and 6 represent transverse sections of one of the folding devices on the lines 5—5 and 6—6 respectively of Fig. 3.

Similar parts are designated by the same reference characters in the several views.

Folding mechanism embodying the present invention is capable of application generally to packages of various kinds, and, moreover, it is capable of being combined to operate with wrapping or packaging machines of various types. The drawing shows the preferred embodiment of the invention and this embodiment will be hereinafter described in detail, although it is to be understood that the invention is not limited to the particular construction shown, as modifications and changes may be made therein in applying the invention to different uses without departing from the essential features of the invention.

In the present instance, each wrapped package is supported in wrapping position by a table or other appropriate support and any suitable means may be provided for conducting the wrapped packages to and from such position, a conveyer 2 being shown as an example of such means in the present instance. This support is preferably of a length which corresponds substantially to the length of the tablet or other contents of the package, thereby enabling the flaps at both ends of the wrapper to be folded while the package is in folding position. The packages are brought to the folding point in wrapped form substantially as shown in Fig. 2, the tablet or contents of the package 3 having a sheet of suitable wrapping material 4 wrapped about the same with the lapped edges 5 preferably at the top thereof and the ends of the wrapper project suitable distances from the opposite ends of the tablet to provide for the end folds. The lapped edges of the package may be retained in engagement and the package held in proper position at the folding point by suitable guiding means 6 which are located a proper distance above the table or support and have a proper engagement with the upper side of the package.

In the present instance, both ends of the wrapper are folded while the package is at

the folding point, and duplicate means is provided for folding the ends of the package. In the present instance, the folding means for each end of the wrapper embodies a rotary member 7 which is mounted on and operated by a suitable shaft 8, and this member 7 carries one or more folders, a pair of folders 9 being shown in the present instance which are duplicates and are arranged at diametrically opposite positions on the rotary member 7, thereby balancing the member as well as enabling the member to complete two folding operations at each revolution. In the present instance, each folder is formed as a part of a plate 10 which is suitably attached to the periphery of the member 7 and is concentric with the axis of rotation of said member, this plate also operating to iron or press the flaps after they have been folded whereby the flaps will have a tendency to remain in folded form, the concentric surface 11 in the present instance serving as the ironing or pressing surface while the folder 9 which is also concentric with the axis of rotation of the supporting member is arranged on the plate 10 and in advance of the ironing or pressing surface. Each folder embodies substantially an intermediate or central tongue or rib 12 and a pair of lateral wings 13 and 14 which are spaced at suitable distances at opposite sides of the tongue or rib. The extreme marginal or lateral edges of the wings 13 and 14 and the peripheral face of the tongue or rib 12 are in alignment and concentric with the axis about which the folder swings. The forward ends of the wings 13 and 14 are slightly in advance of the forward end of the tongue or rib 12, and these forward ends of the wings are also preferably spaced apart a distance somewhat greater than the width of the package in order to insure proper entrance of the end flap of the wrapper thereof at the moment the end flap is engaged by the forward end of the tongue or rib 12, Fig. 2 showing the position of the folder at the moment of engagement. The forward end of the tongue or rib 12 is preferably beveled inwardly as at 15 and the foremost edge 16 of this tongue is preferably rounded in order to give the end flap of the wrapper a channeled form as the tongue advances, this effect being shown diagrammatically in Fig. 3. The faces of the wings 13 and 14 between the tongue 12 are beveled to form the corner-turning surfaces 17 and 18 which surfaces converge toward a point at the base of the tongue or rib 12, these corner-turning surfaces being cut away adjacent to the forward ends of the wings and the tongue 12 to form the openings or recesses 19 and 20 which accommodate the extreme ends of the flap on the wrapper before the flap is folded downwardly or laterally of the package and

the corner-turning surfaces 17 and 18 approach and merge into the concentric ironing or pressing surface 11. Each side of the package support or table 1 is provided with a concave surface 21 which is concentric with the arc through which the respective folder and ironing surface move, these parts being spaced just sufficient to accommodate the thickness of the folded end flap when the latter is in ironed or firmly pressed condition. The shafts 8 for the devices which operate to fold and iron the ends of the wrapped package may be supported in a suitable frame 22 and they are preferably driven or rotated in unison. It is also preferable to rotate these devices in such a manner that both ends of the wrapper package will be operated on simultaneously, thus saving considerable time in the operation of the machine. The folding and ironing devices are shown connected, for example, by gears 23 which may be used to insure operation of these devices in properly timed relation.

In operation, the packages supplied with wrappers as shown for example in Fig. 2 are brought at proper intervals to the folding point with the end flaps thereof projecting beyond the adjacent edges of the table or support 1 and into the paths of the respective folding and ironing devices. The foremost edge 16 of the tongue on each folding device presses upon the middle of the respective end flap at a point immediately adjacent to the tablet or other contents of the package, thereby bowing the end flap about an axis longitudinally of the package, the corners 24 and 25 of the flap occupying positions above the depressed middle portion of the flap and these upturned corners encounter the convergent turning surfaces 17 and 18 at the inner sides of the wings. As the folder continues its movement, the depression of the middle of the flap is increased and during this same operation, the corners of the flap are turned in a diagonal direction toward one another and toward the end of the package, this turning operation of the corners being effected by the convergent inner edges of the turning surfaces 17 and 18 which define the outer sides of the openings 19 and 20 and during the turning of the corners, portions thereof may project into or through these openings 19 and 20. After the corners have been turned and doubled upon the middle portion of the flap, the doubled corners are then engaged by the portions of the turning surfaces 17 and 18 above the openings 19 and 20 and as these turning surfaces approach the concentric ironing or pressing surface 11, the doubled corners are folded flatwise against the middle of the flap which will then be folded laterally or at right angles to the plane of the package by the tongue 12. The continued movement of

the device brings the concentric ironing or pressing surface 11 into engagement with the doubled and folded corners and against the middle portion of the flap which is folded about the corner of the table or support 1, thereby producing a firm creasing and pressing effect upon the lines on which the different parts of the flap are folded, the folded flap then having a tendency to remain in folded condition. After the ends of each package have been folded and ironed, this package is removed from the folding point and any suitable means may be employed to turn the folded flaps up against the flat side or bottom of the package. A label is usually wrapped about packages folded in this manner and the label then serves to hold the folded flaps flatwise against the package.

I claim as my invention:—

1. A wrapper folder embodying a device operative to press on an intermediate portion of a flap of the wrapper, and members in fixed relation to said device and one another and operative to turn and fold the opposite corners of such flap.
2. A wrapper folder embodying a tongue to press on an intermediate portion of a flap of the wrapper, and relatively fixed wings at opposite sides of said tongue operative to turn and fold the corners of such flap concurrently with the operation of said tongue.
3. A wrapper folder embodying a support for a wrapped package, and a member movable past said support and embodying a tongue to fold a flap of the wrapper, and devices movable past the package concurrently with the tongue and operative to turn and fold the corners of such flap, said devices being in fixed relation to one another and to said tongue.
4. A wrapper folder embodying a support for a wrapped package, and a member movable relatively to said support and carrying a device to turn a flap of the wrapper, and wings in fixed relation at opposite sides of said device and movable with said device to turn the corners of such flap.
5. A wrapper folder embodying a support for a wrapped package, and a member movable past said support and carrying devices in fixed relation to one another and operative to simultaneously turn a flap of the wrapper and to turn the opposite corners of such flap.
6. The combination of a support for a wrapped package, and a rotary member carrying therewith means to fold the flap of a wrapper and to turn the opposite corners of such flap at one operation.
7. The combination of a support for a package supplied with a wrapper, and a rotary member carrying therewith a flap-folding tongue and wings for turning the corners of a flap.
8. The combination of a support for a

package supplied with a wrapper, and a rotary member carrying therewith means for folding a flap of the wrapper and devices at opposite sides thereof for turning the corners of such flap while passing the package.

9. The combination of a support for a package supplied with a wrapper, and a rotary member movable past said support and carrying therewith in fixed relation means for bending and folding a flap of the package, and means for turning and folding the corners of such flap.

10. The combination of a support for a package supplied with a wrapper, and a member movable past said support and carrying therewith in fixed relation a flap-folding tongue to press on the middle of the flap, and a pair of relatively fixed wings at opposite sides of the tongue and operative to turn and fold the corners of such flap.

11. A combined folder and presser for package wrappers embodying a support for a wrapper having an abutment surface, and a member movable relatively to said support and embodying means for turning and folding the corners of a flap and for folding such flap against said abutment, and an ironing surface for pressing said flap against said abutment.

12. A flap folder for package wrappers embodying a support for the wrapper and a member movable past said support, said member having in fixed relation thereon a flap-folding tongue, and a pair of wings at directly opposite sides thereof and formed with convergent turning and folding surfaces for the corners of the flap.

13. A flap folder for package wrappers embodying a support for the wrapper, and a member movable past said support, said member having in fixed relation thereon a flap-folding tongue, an ironing surface, and a pair of wings at directly opposite sides of the tongue and formed with surfaces which converge toward said tongue and merge into the ironing surface.

14. The combination of a support for a package supplied with a wrapper, and a co-operative rotary member carrying therewith means for folding a flap of the wrapper, and ironing means for pressing the folded flap, said folding and ironing means being concentric and in fixed relation to each other.

15. A flap folder for package wrappers embodying a member having a centrally arranged flap-folding tongue and a pair of corner-turning wings projecting forwardly beyond said tongue, and an ironing surface arranged in rear of said tongue and wings.

16. The combination of a support for a package supplied with a wrapper, and a co-operative rotary member having on its periphery a flap-folding tongue, a pair of wings at opposite sides for turning the corners of such flap, corner-folding surfaces

which converge toward said tongue and incline outwardly toward the periphery of the member, and a concentric ironing surface into which said corner surfaces merge.

5 17. The combination of means for supporting a package with the ends of its wrapper projecting from the opposite sides thereof, and a pair of rotary members having means operative upon the respective ends of the  
10 wrapper to fold the same and having con-

vergent surfaces operative to turn and fold the opposite corners thereof.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LOUIS FISCHER

Witnesses:

J. T. PIRRIE,

C. T. McCUISTON.

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