

Sept. 20, 1971

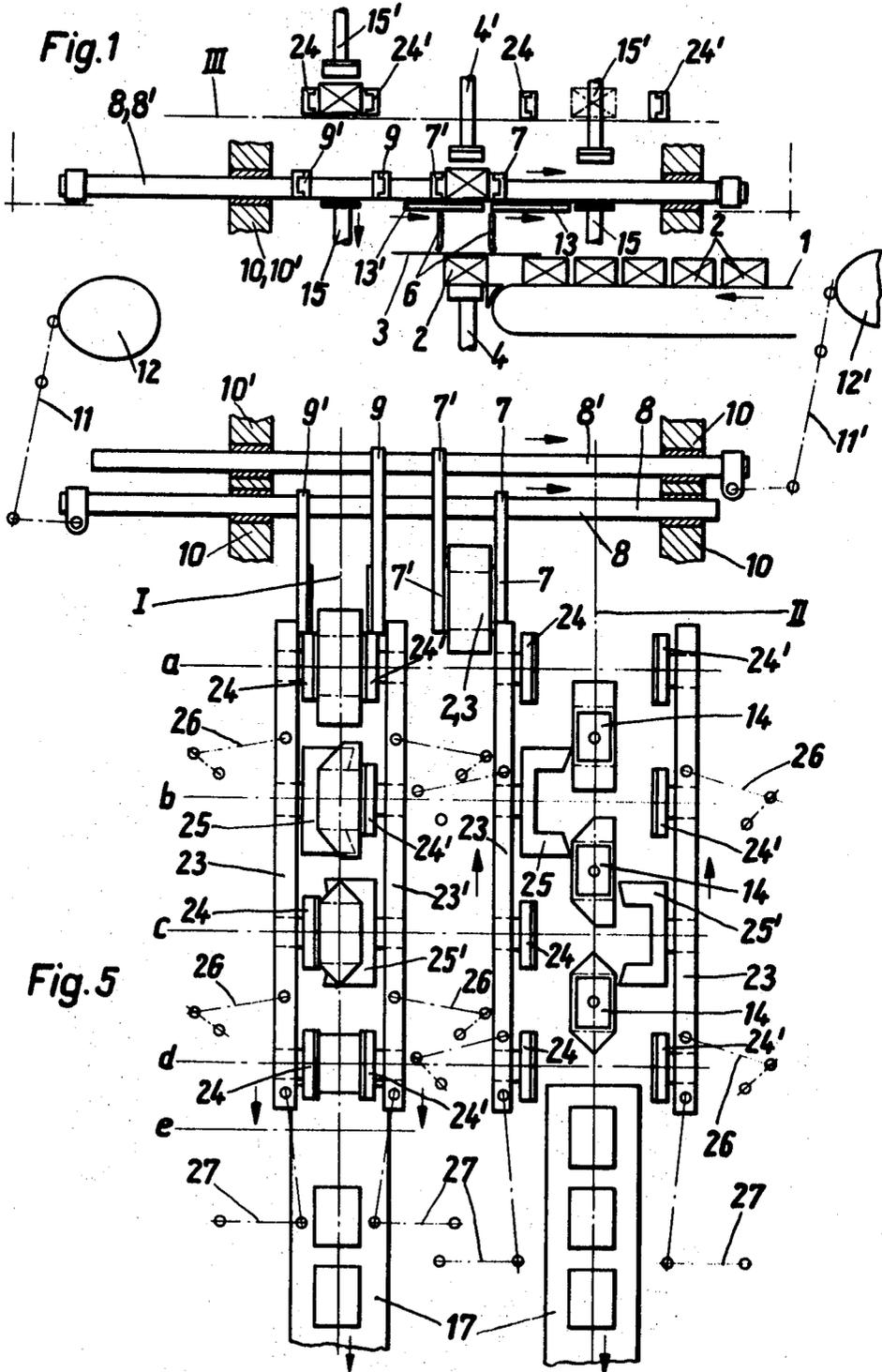
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3,605,380

APPARATUS FOR WRAPPING UP GOODS

Filed Sept. 9, 1968

8 Sheets-Sheet 1



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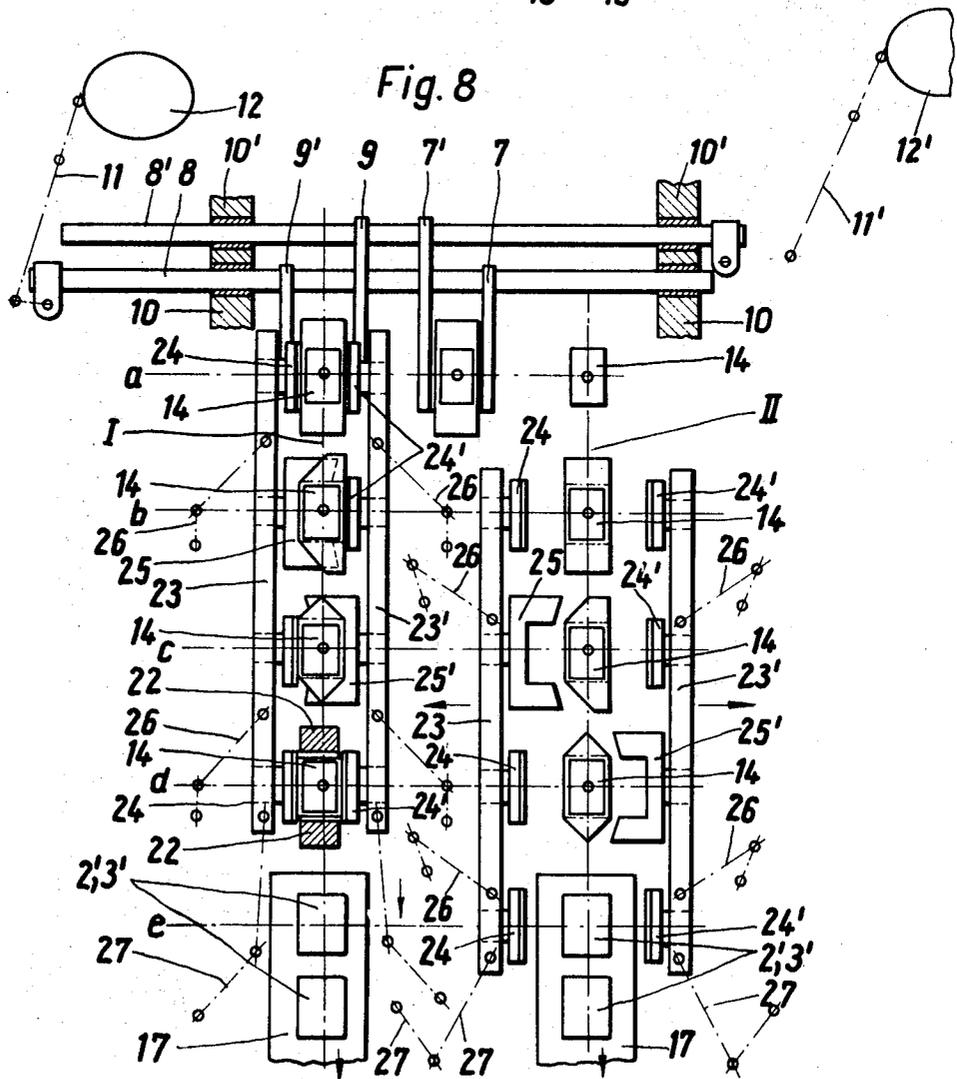
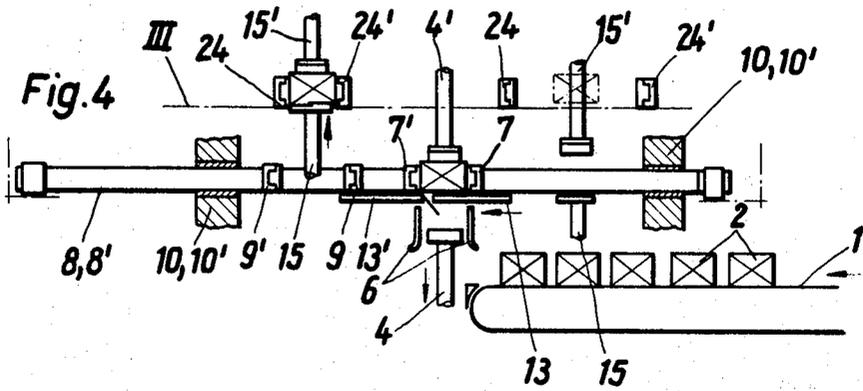
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APPARATUS FOR WRAPPING UP GOODS

Filed Sept. 9, 1968

8 Sheets-Sheet 4



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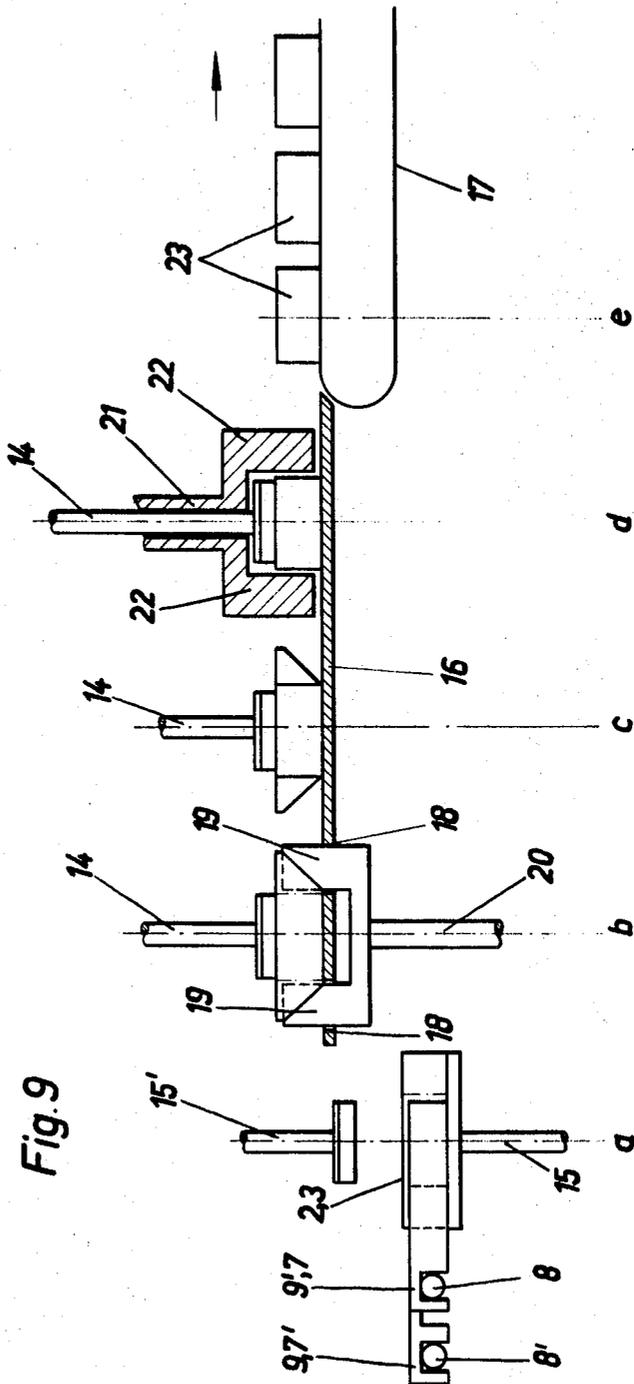
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APPARATUS FOR WRAPPING UP GOODS

Filed Sept. 9, 1968

8 Sheets-Sheet 5



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APPARATUS FOR WRAPPING UP GOODS

Filed Sept. 9, 1968

8 Sheets-Sheet 6

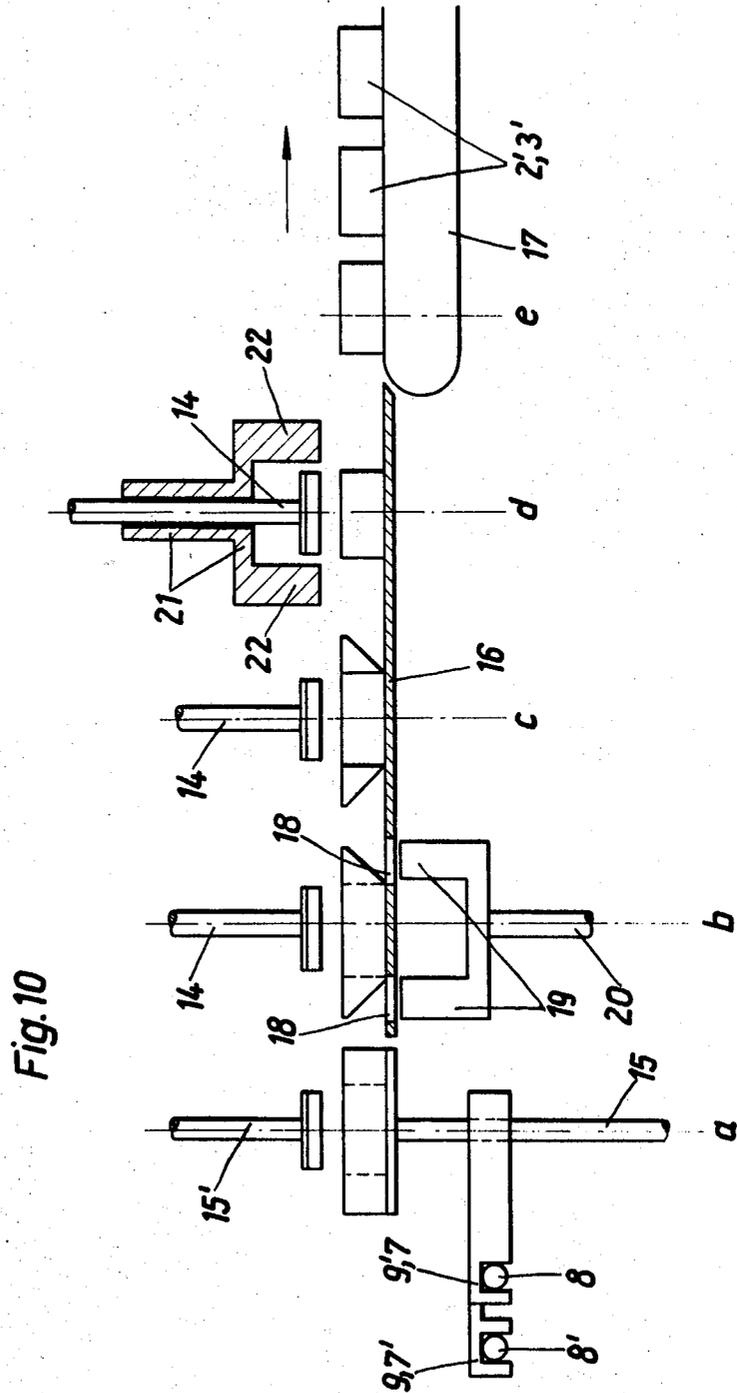


Fig. 10

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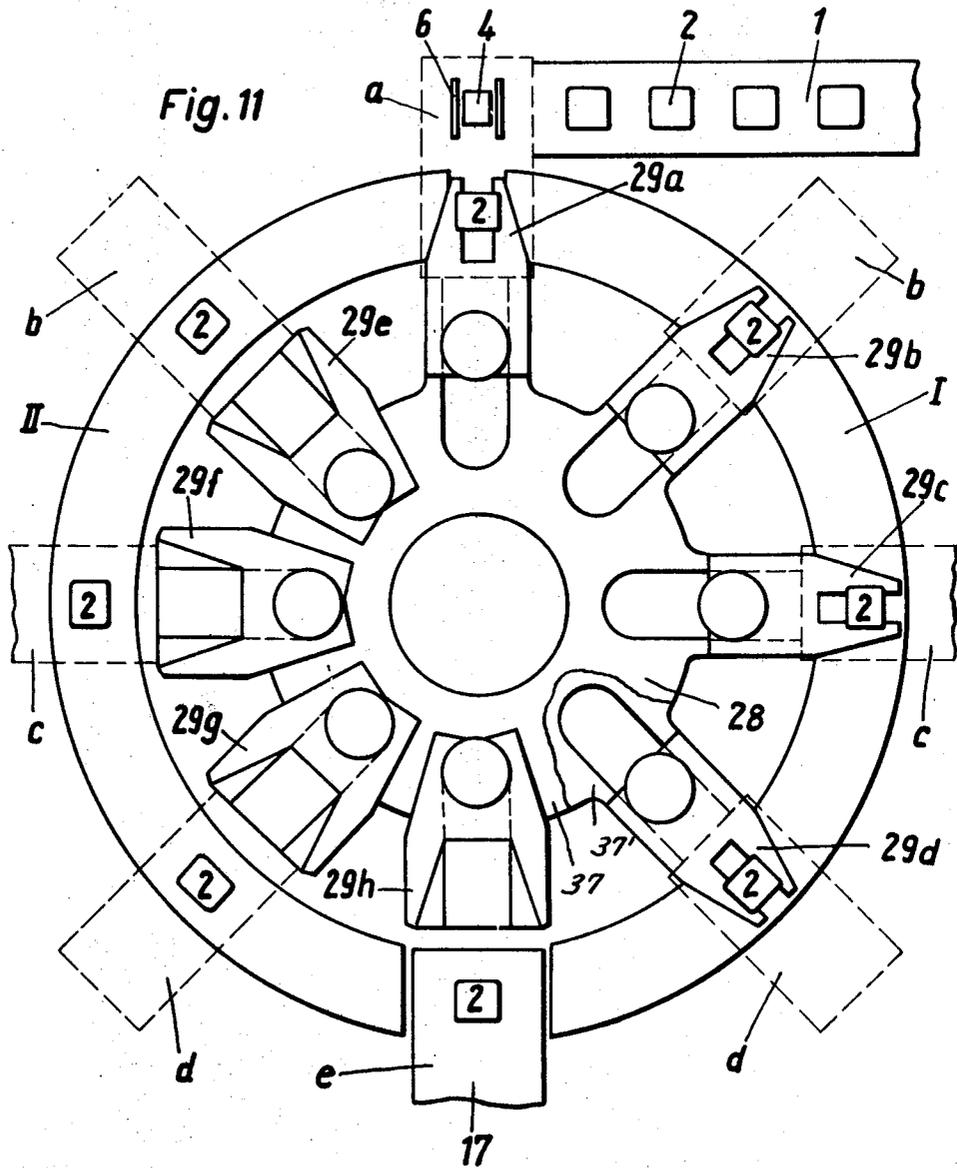
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3,605,380

APPARATUS FOR WRAPPING UP GOODS

Filed Sept. 9, 1968

8 Sheets-Sheet 7



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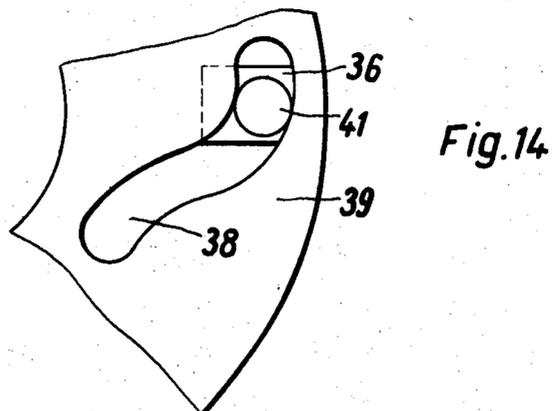
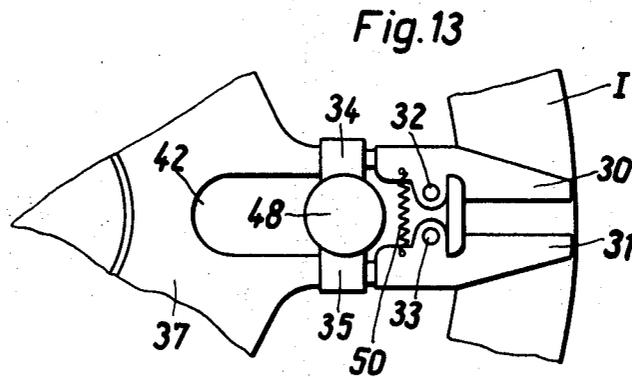
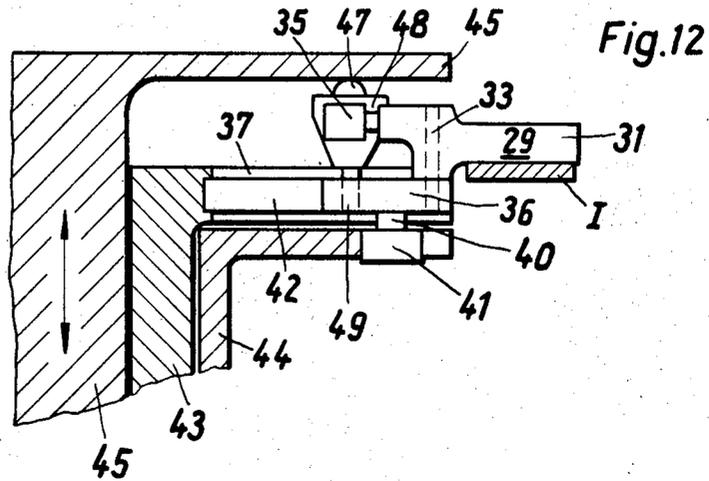
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APPARATUS FOR WRAPPING UP GOODS

Filed Sept. 9, 1968

8 Sheets-Sheet 8



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3,605,380

APPARATUS FOR WRAPPING UP GOODS

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Filed Sept. 9, 1968, Ser. No. 758,230

Claims priority, application Switzerland, Sept. 7, 1967,
12,745/67; Germany, Nov. 2, 1967, P 15 86 117.3

Int. Cl. B65b 11/22, 11/28

U.S. Cl. 53—202

29 Claims

ABSTRACT OF THE DISCLOSURE

An apparatus for wrapping of goods, particularly of the sweets industry, into a wrapping material blank by use of a lifting piston which comprises the steps of pushing a piece of goods together with a blank of wrapping material disposed above the piece of goods through a folding shaft, thereby folding the blank around the piece of goods in U-shape, performing the bottom and end face fold of the blank by application of gripping and folding members, the latter gripping the piece of goods jointly with the blank, shifting partly wrapped pieces of goods after passing through the folding shaft alternately into at least two folding paths formed by cooperating gripping and folding members, and intermittently moving through the latter for a final wrapping.

The present invention relates to an apparatus for wrapping of goods in a wrapping material blank, in general, and of such goods in the sweets industry, in particular, and relates to simultaneously particularly suitable embodiments of different apparatus performing the method. With particular advantage the present invention should find application during wrapping of chocolate pieces, bonbons of the like.

For the wrapping of such parts, wrapping devices are used in which the piece of the goods to be wrapped, lying on a lifting prop or piston, is pushed through a folding- or brush-shaft jointly with the wrapping material blank, fed separately and disposed thereabove. In the shaft the U-shaped wrapping of the wrapping material blank about the piece of the goods is gripped by grippers upon emerging from the folding- or brush-shaft and passed by the folding devices, which fold over the wrapping material projecting from the ends and the bottom, respectively, into a closed wrapping sleeve about the piece of the goods to be wrapped. In spite of the fact that the goods in a fast succession can be pushed through a folding- or a brush-shaft, the output of the entire wrapping device is relatively low, since, in addition to the folding- or brush-shaft a great number of folding members are required, which are very time-consuming in operation. A further drawback resides in the rather appreciable construction expenses of the known units, which expenses are necessary, in order to drive properly the individual folding members and to put them into operation successively.

It is one object of the present invention to provide an apparatus for wrapping of goods, wherein the unit can be manufactured easily and economically and in which, relative to known units, an appreciably higher working intensity is brought about.

It is another object of the present invention to provide an apparatus for wrapping of goods in which the partly wrapped goods after passing the folding- or brush-shaft are transmitted alternately to at least two folding paths formed of gripping and folding members cooperating together and are wrapped by the latter during an intermittent passage. Suitably, the goods are thereby alternately moved away in an opposite direction and are transmitted to one

of the folding paths which operate in turn after passing through the folding- or brush-shaft.

It is yet another object of the present invention to provide an apparatus for wrapping of goods wherein several groups of folding members are coordinated to one folding- or brush-shaft, which folding members are put into operation in separate folding paths and are fed alternately. Two different folding path types find their application thereby, namely, either a straight or a curved folding path.

It is still another object of the present invention to provide an apparatus for the wrapping of goods wherein at least two folding paths with folding members operating therein follow a folding- or brush-shaft and between the folding- or brush-shaft and the folding paths is inserted a transfer device working alternately towards one or the other folding path for the goods pushed through the shaft.

Suitably, also bottom folders, cooperating with the transfer device, and known per se, are provided for engagement of the edges of the wrapping material cut projecting downwardly to the bottom of the piece of goods. Each folding path has a plurality of working stations disposed in series for the performance of the different foldings.

With these and other objects in view, which will become apparent in the following detailed description, the present invention, which is shown by example only, will be clearly understood in connection with the accompanying drawings, in which:

FIGS. 1-4 disclose a schematic front elevation of a first embodiment of the apparatus of the present invention with particularly straight folding paths in four different working positions;

FIGS. 5-8 are top plan views of the showings in FIGS. 1-4 in order to disclose likewise four different working positions;

FIGS. 9 and 10 are side elevations at a larger scale of the embodiment shown in FIGS. 1-8;

FIG. 11 is a top plan view of a second embodiment having circular folding paths and indicating the possible use of two carriers;

FIG. 12 is a fragmentary section of the control tongue;

FIG. 13 is a top plan view of a fragmentary showing of the tongue control disclosed in FIG. 11; and

FIG. 14 is a top plan view of another feature of the tongue control.

Referring now to the drawings, and in particular to FIGS. 1-8, on a feeding band 1 moving in the direction of the arrow, the goods 2 to be wrapped, for instance bonbons, chocolate pieces or the like, are fed to a wrapping station. They reach successively a vertically reciprocating lifting prop or piston 4 disposed at the end of the feeding band 1, which lifting piston 4 pushes the piece 2 of the goods, which happens to be in that position together with a wrapping material blank 3 disposed thereabove, upwardly through a folding- or brush-shaft 6, in which the wrapping material blank 3 is wrapped U-shaped around the piece of the goods 2.

Directly above the folding- or brush-shaft 6 are arranged bottom folders 13 and 13', which engage the downwardly projecting edges of the wrapping material blank 3 at the bottom of the piece of goods 2. The wrapping material blank 3 then forms a hose-like form sheet surrounding four sides of the piece of the goods 2 and is open at the end faces. The hose-like sheet must be correspondingly turned over and folded over, respectively, for completion of the wrapping sleeve at the end sides. This is brought about in the folding paths following the folding- or brush-shaft 6.

The arrangement with the straight line folding paths will now be described as follows:

3

4

After the piece 2 of the goods is pushed through the folding shaft 6 and is partly wrapped, it is gripped from both sides by holding jaws 7 and 7', which are mounted on control shafts 8, 8', respectively. The two control shafts 8, 8', carry, in addition to the holding jaws 7, 7', a further pair of holding jaws 9, 9'. The control shafts 8, 8' are disposed axially displaceably in lateral guide bearings 10, 10'. They are axially displaced by means of control rods 11, 11', which engage at the ends of the control shafts 8, 8'. The control rods 11, 11' are driven by cam disks 12, 12', respectively, in the desired manner. In order to grip the piece of the goods 2 emerging from the folding shaft 6, initially the control shafts 8, 8', are displaced relative to each other, so that the jaws 7, 7' engage from the side the piece of the goods 2 and grip the latter. Thereafter the joint movement of the control shafts 8, 8' in one or the other direction, takes place in order to move the piece of the goods 2 laterally out of the range of the folding shaft 6 (FIG. 2).

At both sides of the folding shaft 6 are disposed lifting devices, which comprise props or pistons 15 and counter-props 15. They are disposed at the center axis of one of the folding paths I and II, respectively. The two folding paths I and II are arranged above the folding shaft 6 in the working plane III, in which the working stations with end face folders are disposed.

The folding paths I and II, respectively, have a working table 16 (FIGS. 9 and 10), on the upper side of which are disposed the working stations *b*, *c* and *d*. In front of the working table 16 is arranged the receiving station *a* and behind the table a releasing station *e*, in which the finally wrapped pieces 2 of goods are transferred to a conveyor band 17, which moves the piece of the goods 2 in the direction indicated by the arrow.

Within the range of the working stations *b*, *c* and *d* above the table 16 holding pistons 14 are provided, which move downwardly simultaneously within the working cycle of the machine and push the piece of the goods 2, which happens to be therebelow, onto the surface of the table. Within the range of the working station *b* perforations 18 are provided in the table 16, through which project lateral cheeks 19 of an end face holder 20, effective from below. In the working station *d* another end face folder 21 is provided, which is effective from above and surrounds the shaft of the piston 14, which causes with its lateral cheeks 22 the final termination of the end face folding.

In each folding path I and II, respectively, carriers 23, 23' are provided on both sides of the center plane, which carriers extend over the entire length of the folding path. On the common carriers 23, 23' are arranged holders 24, 24' and side folders 25, 25', respectively (FIG. 5) arranged in series at the spacing of the working stations. The carriers 23, 23' are arranged in pairs and are retained only by means of systematically shown rod members 26 and 27, respectively, and moved within the working cycle. These rod members 26 and 27 are connected with a control drive, which causes an opening or closing of the gripping and folding members 24, 24' and 25, 25', which members are secured to the carriers 23 and 23' and move within the working cycle of the machine. During such operation the foldings are performed. Additionally, in the closed state of the gripping and folding members a reciprocating movement in the longitudinal direction of the folding path takes place, in order to convey the pieces of the goods 2 simultaneously from the receiving station *a* into the working station *b* and into the further stations *c*, *d* and *e*.

All movable parts of the apparatus are driven by a common driving mechanism (not shown) in the required working cycle and with the necessary speed.

The operation of the apparatus having a straight line folding path is as follows:

The pieces of the goods 2 are fed by means of the conveyor band 1 and deposited successively on the lifting piston 4. Thereafter the feeding of the wrapping ma-

terial blank 3 takes place, which is set by means of an apparatus (not shown) onto the piece of the goods 2. The wrapping material blank 3 is secured by the counter-piston 4' on the piece of the goods 2. The pistons 4, 4' then move jointly with the piece 2 of the goods retained therebetween and the wrapping material blank 3 through the folding shaft 6, in which the wrapping material blank 3 is wrapped around the piece of the goods 2 in U-shape.

FIG. 1 discloses the apparatus directly after the feeding of the piston 4 with a piece of the goods 2, while FIG. 2 shows the position of the parts after the projection of the piece of the goods 2 through the folding-shaft 6. In this position the already previously described movement of the control shafts 8 and 8' towards each other takes place, so that the jaws 9, 9' grip therebetween the already partly wrapped piece of the goods 2, while the jaws 7 and 7' disposed on the same control shafts 8 and 8' are opened, in order to release the piece of the goods 2 previously conveyed by the latter to the pair of lifting pistons 15, 15' which is preset to the folding path II.

Simultaneously there takes place the return movement of the lifting piston 4 and following thereafter the advance run of the two bottom folder plates 13, 13', which bottom folders 13, 13' are controlled such, that they engage the edge of the downwardly projecting wrapping material blank 3 at the bottom of the piece of the goods 2. Due to the joint movement of the control shafts 8, 8' towards the left, i.e. towards the folding path I, the partly wrapped piece of the goods 2 gripped between the jaws 9, 9' is brought into the range of the pair of lifting pistons 15, 15' coordinated to the folding path I (FIG. 3). At the same time a pair of jaws 7, 7' is brought into the receiving position above the folding shaft 6. The arrangement of the jaws 7, 7' and 9, 9', respectively, on the control shafts 8, 8' is such that they close and open alternately during the displacement of the control shafts towards each other. This takes place after each side transportation of a piece of the goods. The pairs of pistons 15, 15' convey the pieces of the goods into the higher disposed plane III of the fold paths I and II. As soon as the partly wrapped piece of the goods 2 has arrived at the height of the working table (FIG. 10) the folding member carriers 23, 23', which are in the starting position, close, so that they grip the raised piece of the goods 2 between their jaws 24, 24' (FIG. 8, folding path I). Within the next working cycle the carriers 23, 23' which hold in addition to the newly gripped piece of the goods 2 between the folding members 25, 25' disposed thereon and the jaws 24, 24', still additional pieces of goods, run for one switching step in the direction of the longitudinal axis of the folding path up to the next working station (FIG. 3). Upon arrival at this station, all pieces of goods disposed on the folding path are pushed through the piston 14 moving downwardly towards the working table 16 and are retained. In the working station *b*, the folding members 19, 20 move upwardly and perform from below the first end face folding. Now the opening of the jaws 24, 24' and of the folders 25, 25', respectively, takes place by moving the carriers 23, 23', from each other which return thereafter in the open position for the same switching step (FIGS. 6 and 7) and then close again. By this arrangement, a new piece of the goods is gripped and simultaneously a further end face fold is performed for the pieces of goods which are in the working stations *b* and *c* by means of the side folders 25, 25' and the jaws 24, 24', respectively. In the last working station *d*, during the lowering of the holding piston 14 by the folders 21, 22 the last end face folding is performed from above, so that the carriers 23, 23' during the next conveyor stroke bring a completely wrapped piece of goods 2', 3' from the working station *d* into the release station *e*. From here the piece of the goods is transferred onto the conveyor band 17.

The two folding paths I and II, which are coordinated always to a folding- or brush-shaft 6, operate in turn. Suitably, a closing movement on the one folding path

corresponds to an opening movement on the other folding path and a transport movement corresponds to a return movement, respectively.

All units of the apparatus and tools are connected with their drives to a joint switching mechanism, which renders operative the individual parts at the right moment and in the right direction. By the working in turn of the two folding paths, the high working speed of the folding- and brush-shaft, to which both folding paths are coordinated, is completely exploited, so that a high working intensity of the entire machine is brought about. In the example just described and shown in the drawings for each folding path a separate conveyor band 17 is provided. It is likewise possible to use a singular conveyor band running crosswise to the folding paths. The arrangement with a curved, preferably circular folding path is now described below:

The feeding of this unit up to the receiving station *a* is the same as with the previously described apparatus. The piece 2 of the goods is conveyed from the conveyor band 1 to the lifting stamp 4, which pushes it through the folding shaft 6 and to the receiving station *a*. The folding paths I and II are circularly curved and have likewise at the outside a receiving station *a*, working stations *b*, *c* and *d* and a release station *e*.

In the working stations, which are here indicated schematically only, the same folds take place as in the working stations of the previous described embodiment. The conveying device comprises substantially a carrier 28 rotatable about a vertical axis, on which carrier 28 are mounted in this case eight tongues for the conveyance of the pieces of the goods 2. The tongues 29 are divided in equal angular spacings on the carrier 28. In FIG. 11 the moment is shown, in which a piece of the goods 2 is gripped by the tongue 29*a*, which has been pushed before through the folding shaft 6. The downwardly projecting edges of the wrapping material blank 3 are already folded over by the bottom folders 13, 13'. The tongues 29*b*, *c*, *d* have also gripped a piece of the goods 2 disposed on the folding path I and convey the latter upon a rotation of the carrier 28 towards the right into the next working station. During this conveyance the tongues 29*e*, *f*, *g*, *h* are open, likewise upon rotation towards the right, and are engaged in their return movement. When the tongue 29*a* has arrived in the working station *b*, the tongue 29*e* has arrived in the receiving station *a*. Thereafter the tongue 29*a* opens and transfers the piece of the goods 2 to the working station *b*, while the tongue 29*e* closes and grips thereby a new piece of the goods 2. The tongues 29*a-b*, coordinated to the folding path I, operate thus in a counter-cycle to the tongues 29*e-h* of the folding path II. After each piece 2 of the goods has passed the working stations *b*, *c* and *d*, it is transferred in the releasing station *e* to the transport band 17 in its finally wrapped state.

The closing and opening of the tongues 29 takes place during a radial movement of the tongues 29 directed towards the point of rotation of the carrier 28.

For the controlling and guiding of the tongues different solutions are possible. A particularly simple way is disclosed in FIGS. 12-14. The tongue 29 shown in FIG. 13 comprises two jaws 30 and 31, which are rotatably mounted on bolts 32 and 33. Rollers 34 and 35 are secured at the rear ends of the jaws 30 and 31. The tongue 29 is mounted on a slide 36 (FIG. 14), which is radially displaceable relative to the rotatable carrier 37 tongue carrier which includes two carriers 37 and 37' (FIG. 11) superposed relative to each other. The radial tongue movement is caused by a curve-shaped control groove 38 of a rotatable control disk 39 concentric relative to the carrier 37. A roller 41, disposed on a bolt 40 of the slide 36, enters the control groove 38. The slide 36 is guided in a slot 42 of the carrier 37. A relative rotation between the carrier 37 and the control disk 39 causes thus, depending upon the direction of rotation, a movement of the tongue 29 in or out. It

is suitable, to provide in the control disk 39 the control grooves 38 for all tongues 29 of the apparatus. In this embodiment the disk-like body 37 is secured to a hollow shaft 43 and the control disk 39 to a shaft 44 concentric to the shaft 43. By this arrangement, a tight structure is obtained.

The opening and closing movement of the tongues 29 is achieved by a liftable and lowerable plate-like disc 45, which forms the end of a rod 46 mounted in the shaft 43. This disk 45 operates by means of a ball bearing 47 on a wedge shaped or conical element 48, the latter being rotatably mounted on a pin 49. The conical element 48 in turn engages the rollers 34 and 35 with its conical face. During lowering of the disk 45 the tongue 29 closes, while during lifting of the disk 45 a spring 50 becomes effective, which opens the tongue 29 and pushes the conical element 48 upwardly. The disk 45 can be divided at will into individual controllable segments, in case the tongues should not be a simultaneously closed or opened. It is also possible for the same purpose to provide a different configuration for the conical element 48.

In certain cases, instead of an individual tongue carrier, two carriers can be provided disposed on top of each other, relatively rotatable and controlled synchronously, from which carriers, one carries the front tongue halves at a predetermined direction of rotation.

It is of course necessary in this case, to provide a separate slide for each tongue half and for each tongue jaw, respectively. Furthermore, in this case, under circumstances, a single control disk would not suffice for the production of the radial movement of the tongues.

This apparatus offers the particular advantage that essential parts of the masses to be moved during the conveyance are arranged comparatively close to the rotary axis, so that lower acceleration forces will be sufficient compared with straight line machines. By this arrangement again an increase of the working speed results, particularly in the non-linear arrangement of the stations, since in the non-linear arrangement of the stations the control of the tongue movement is simplified.

I claim:

1. An apparatus for wrapping of goods, particularly of the sweets industry into a wrapping material blank, comprising

a lifting means for raising a piece of goods to be wrapped with a wrapping material blank thereon, a folding shaft receiving said lifting means during a reciprocating movement of a latter with said piece of goods together with said wrapping material through said folding shaft for partly wrapping said piece of goods,

at least two sets of gripping- and folding-means, each set comprising members following operatively one another for further gripping and folding said wrapping material blank on said piece of goods, and each set of gripping- and folding-means defining two independent folding paths alternately initiating from said folding shaft,

a transfer means for moving successive pieces of goods passing through said folding shaft toward said at least two sets of gripping- and folding-means, in alternate sequence towards each of said folding paths in turn,

two bottom folder plates cooperating with said folding shaft and with said transfer means for engaging downwardly projecting edges of said wrapping material blank passing from said folding shaft against the bottom of said partly wrapped piece of goods, and

means for moving said folder plates.

2. The apparatus, as set forth in claim 1, wherein said folding paths are straight paths.

3. The apparatus, as set forth in claim 1, wherein said folding paths define curved paths.

4. The apparatus, as set forth in claim 1, further comprising

a plurality of working stations disposed in series behind each other for performance of respective foldings via said members, and
 said members including folding devices disposed on the sides along said folding paths corresponding with said foldings to be performed. 5

5. An apparatus for wrapping of goods, particularly of the sweets industry into a wrapping material blank, comprising

a lifting means for raising a piece of goods to be wrapped with a wrapping material blank thereon, 10
 a folding shaft receiving said lifting means during a reciprocating movement of the latter with said piece of goods together with said wrapping material blank through said folding shaft for partly wrapping said piece of goods, 15

at least two sets of gripping- and folding-means, each set comprising members following operatively one another for further gripping and folding said wrapping material blank on said piece of goods, and each set of gripping- and folding-means forming an independent folding path initiating from said folding shaft, 20

a transfer means for moving successive pieces of goods passing through said folding shaft toward said at least two sets of gripping- and folding-means, in alternate sequence towards each of said folding paths in turn, 25

a plurality of working stations disposed in series behind each other for performance of respective foldings via said members, 30
 said members including folding devices disposed on the sides along said folding paths corresponding with said foldings to be performed, 35
 a common carrier supporting said folding devices disposed on both sides of said working stations, 40
 means for moving said folding members in longitudinal and cross direction with respect to said folding paths, said moving means alternately and successively closing said common carrier with said folding devices for performance of a folding, advancing said folding devices in their closed position for the distance of one of said working stations in the direction of conveyance of said pieces of goods, opening and in their open position returning into their prior position. 45

6. The apparatus, as set forth in claim 1, which includes control drives coordinated to each of said folding paths, and said control drives operate alternately.

7. The apparatus, as set forth in claim 1, further comprising 50

a working table defining a plurality of working stations thereon which are disposed in each of said folding paths, 55
 holding means disposed above each of said working stations and being controlled within a working cycle, and
 said holding means presses said piece of goods onto said working table and retains said piece of goods during a folding operation. 60

8. An apparatus for wrapping of goods, particularly of the sweets industry into a wrapping material blank, comprising

a lifting means for raising a piece of goods to be wrapped with a wrapping material blank thereon, 65
 a folding shaft receiving said lifting means during a reciprocating movement of the latter with said piece of goods together with said wrapping material blank through said folding shaft for partly wrapping said piece of goods, 70
 at least two sets of gripping- and folding-means, each set comprising members following operatively one another for further gripping and folding said wrapping material blank on said piece of goods, and each set of gripping- and folding-means forming an independent folding path initiating from said folding shaft, 75

pendent folding path initiating from said folding shaft,
 a transfer means for moving successive pieces of goods passing through said folding shaft toward said at least two sets of gripping- and folding-means, in alternate sequence towards each of said folding paths in turn,
 said folding paths are located above and at both sides of said folding shaft,
 a pair of lifting means disposed adjacent a front portion of each of said folding paths and said pairs of lifting means receiving said partly wrapped piece of goods from said transfer means, and
 said pair of lifting means lifts said partly wrapped pieces of goods to the level of said folding paths.

9. The apparatus, as set forth in claim 7, wherein said working table of said folding path has in a first of said working stations perforations, and
 a first end face folder means effective from below said working table for projecting through said perforations for making one end face fold of said wrapping material blank on said piece of goods.

10. The apparatus, as set forth in claim 9, further comprising
 a second end face folder means effective from above said working table at a last of said working stations for making another end face fold of said wrapping material blank on said piece of goods.

11. The apparatus, as set forth in claim 1, which includes
 a receiving station for each of said folding paths, four working stations in each of said folding paths located behind said receiving station,
 lateral carriers for said gripping- and folding-means adapted to be moved in a direction of conveyance of said pieces of goods in a feeding stroke, and
 said working stations are located in said direction of conveyance of said pieces of goods and are equally spaced apart in series corresponding with the length of said feeding stroke of said lateral carriers.

12. The apparatus, as set forth in claim 1, which includes
 a conveying means operatively connected to each of said folding paths for removal of said wrapped piece of goods.

13. An apparatus for wrapping of goods, particularly of the sweets industry into a wrapping material blank, comprising

a lifting means for raising a piece of goods to be wrapped with a wrapping material blank thereon,
 a folding shaft receiving said lifting means during a reciprocating movement of the latter with said piece of goods together with said wrapping material blank through said folding shaft for partly wrapping said piece of goods,
 at least two sets of gripping- and folding-means, each set comprising members following operatively one another for further gripping and folding said wrapping material blank on said piece of goods, and each set of gripping- and folding-means forming an independent folding path initiating from said folding shaft,
 a transfer means for moving successive pieces of goods passing through said folding shaft toward said at least two sets of gripping- and folding-means, in alternate sequence towards each of said folding paths in turn,
 a conveying means operatively connected to each of said folding paths for removal of said wrapped piece of goods,
 pairs of lifting pistons which receive said partly wrapped piece of goods from said transfer means,
 carriers for said folding means,
 control drives for said carriers of said folding means,

9

holding pistons disposed above said folding paths, and a common shifting drive operatively connected with said lifting means, with said transfer means, with said pairs of lifting pistons, with said carriers as well as with said holding pistons.

14. The apparatus, as set forth in claim 1, wherein said members of said gripping- and folding-means are disposed equidistant from a common center point.

15. An apparatus for wrapping of goods, particularly of the sweets industry into a wrapping material blank, comprising

a lifting means for raising a piece of goods to be wrapped with a wrapping material blank thereon, a folding shaft receiving said lifting means during a reciprocating movement of the latter with said piece of goods together with said wrapping material blank through said folding shaft for partly wrapping said piece of goods,

at least two sets of gripping- and folding-means, each set comprising members following operatively one another for further gripping and folding said wrapping material blank on said piece of goods, and each set of gripping- and folding-means forming an independent folding path initiating from said folding shaft,

a transfer means for moving successive pieces of goods passing through said folding shaft toward said at least two sets of gripping- and folding-means, in alternate sequence towards each of said folding paths in turn,

said members of said gripping- and folding-means are disposed along a circular arc equidistant from a common center point, and

said gripping- and folding-means include holding members.

16. The apparatus, as set forth in claim 15, which includes

control- and guide-means for performing a non-translating movement of said tongue members.

17. An apparatus for wrapping of goods, particularly of the sweets industry into a wrapping material blank, comprising

a lifting means for raising a piece of goods to be wrapped with a wrapping material blank thereon, a folding shaft receiving said lifting means during a reciprocating movement of the latter with said piece of goods together with said wrapping material blank through said folding shaft for partly wrapping said piece of goods,

at least two sets of gripping- and folding-means, each set comprising members following operatively one another for further gripping and folding said wrapping material blank on said piece of goods, and each set of gripping- and folding-means forming an independent folding path initiating from said folding shaft,

a transfer means for moving successive pieces of goods passing through said folding shaft toward said at least two sets of gripping- and folding-means, in alternate sequence towards each of said folding paths in turn,

said members of said gripping- and folding-means are disposed equidistant from a common center point, said gripping- and folding-means include holding members disposed along a circular arc,

control- and guide-means for performing a movement of said partly wrapped piece of goods along said circular arc of said holding members, and

said holding members are radially movable relative to the center of said circular arc.

18. The apparatus, as set forth in claim 17, which further includes

at least one tongue carrier disposed on a vertical axis, and

said tongue carrier operatively holding said tongue members.

10

19. The apparatus, as set forth in claim 18, wherein said at least one tongue carrier includes two carriers superposed relative to each other, and rotatable with respect to each other,

means for synchronously controlling said two carriers, and

one of said two carriers carrying in a predetermined direction of rotation forward tongue halves and the other of said carriers carrying in the same direction of rotation rear tongue halves.

20. The apparatus, as set forth in claim 18, which includes

means connected to said tongue members for radial displacement of said tongue members, and control means for the control of the radial displacement of said tongue members.

21. The apparatus, as set forth in claim 20, wherein said radial displacement means comprises a radially displaceable slide, and

control curve means coordinated to said slide for production of said radial displacement movement.

22. The apparatus, as set forth in claim 21, which includes

at least one control disk,

said slide is slidable relative to said tongue carrier, and said control curve means are disposed on said at least one control disk, and said control disk is rotatable relative said tongue carrier.

23. The apparatus, as set forth in claim 18, which includes

a liftable and lowerable disk,

wedge-like elements disposed axially parallel to said disk and operatively mounted against said disk for joint movement therewith, and

said tongue members including jaws pivotable about rotary axes parallel to said wedge-like elements and including projections extending beyond said rotary axes of said jaws and said projections cooperatively slidably disposed against said wedge-like elements for opening and closing movement of said jaws depending upon the position of said wedge-like element.

24. The apparatus, as set forth in claim 23, wherein said tongue members constitute two sets thereof, and one of said sets of tongue members is adapted to perform a conveyance movement of said pieces of goods, while said other set of tongue members performs return movement.

25. The apparatus, as set forth in claim 24, which includes

a feeding station means disposed between first tongue members of each of said two sets of tongue members, said feeding station means effecting the arrival of pieces of goods to be conveyed further and conveying further alternately one piece of goods from said first tongue of one of said sets of tongue members and another piece of goods from said first tongue member of the other of said sets of tongue members.

26. The apparatus, as set forth in claim 25, further comprising

a removal device,

said two sets of tongue members each include a last tongue member arranged such that alternately one piece of goods is removed from said last tongue member of one of said sets of tongue members and another piece of goods is removed from said last tongue member of the other of said sets of tongue members to said removal device.

27. The apparatus, as set forth in claim 26, wherein said tongue members of said two sets are disposed on said at least one tongue carrier along a circular line concentric to a rotary axis of said tongue carrier such, that said tongue members of one of said sets of tongue members are disposed in relation to said tongue members of the other of said sets of tongue

11

members as mirror images on opposite sides of a straight line crossing said rotary axis, and further comprising folding station means for further folding of said wrapping material blanks on said pieces of goods, said folding station means are distributed along a circular line concentric to said rotary axis and are disposed adjacent said tongue carrier.

28. The apparatus, as set forth in claim 27, wherein said tongue members of both of said sets of tongue members and said folding station means cooperate with each and are equally distributed each along a circle.

29. The apparatus, as set forth in claim 28, wherein said removal device comprises a conveyor band directed radially relative to said rotary axis of said tongue carrier.

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