Feb. 13, 1934. A. E. JOHNSON ET AL 1,946,697

PACKAGE WRAPPING MACHINE

Filed March 19, 1931 5 Sheets-Sheet 1

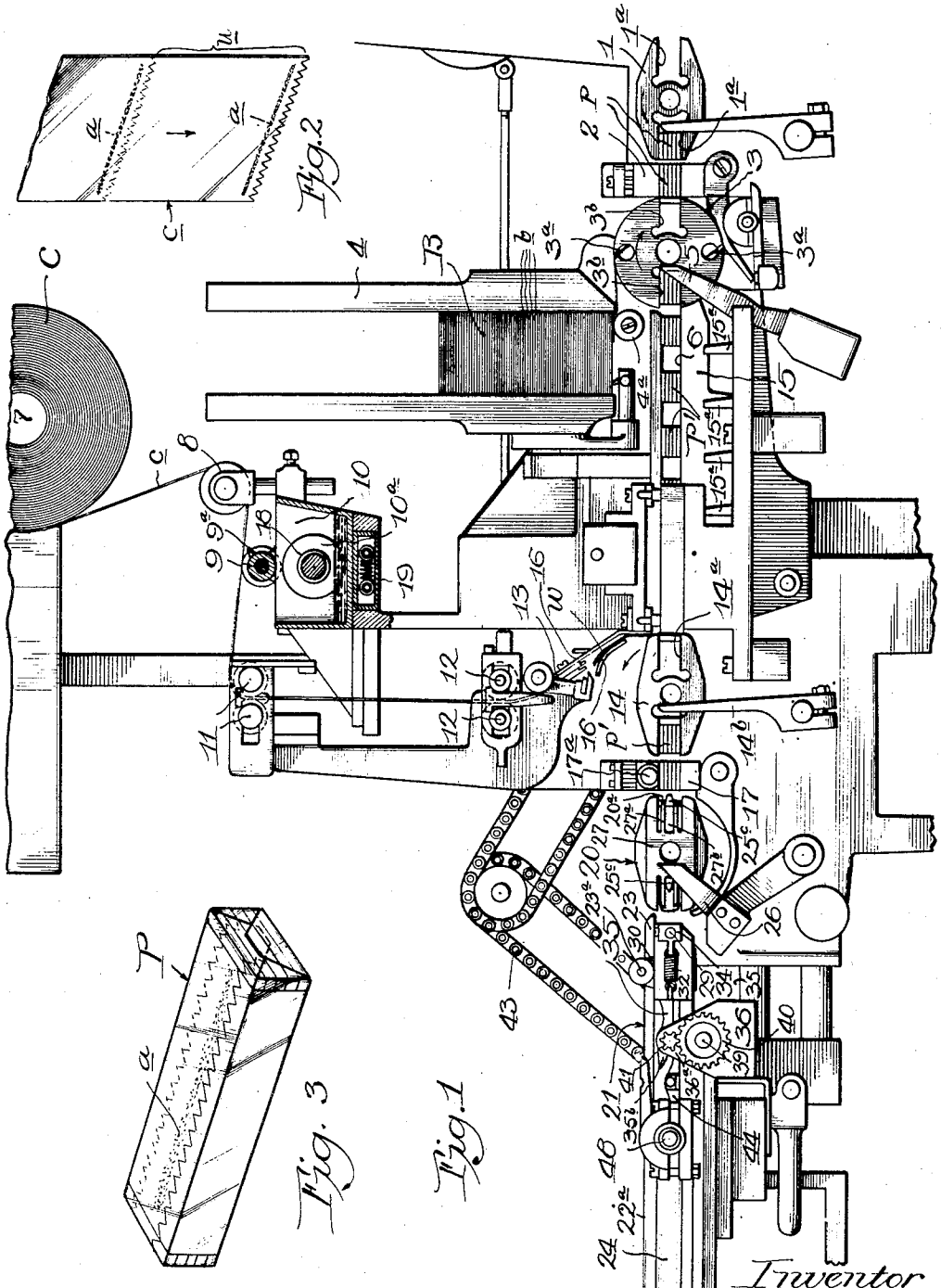


Fig. 1

Fig. 2

Fig. 3

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PACKAGE WRAPPING MACHINE

Filed March 19, 1931 5 Sheets-Sheet 2

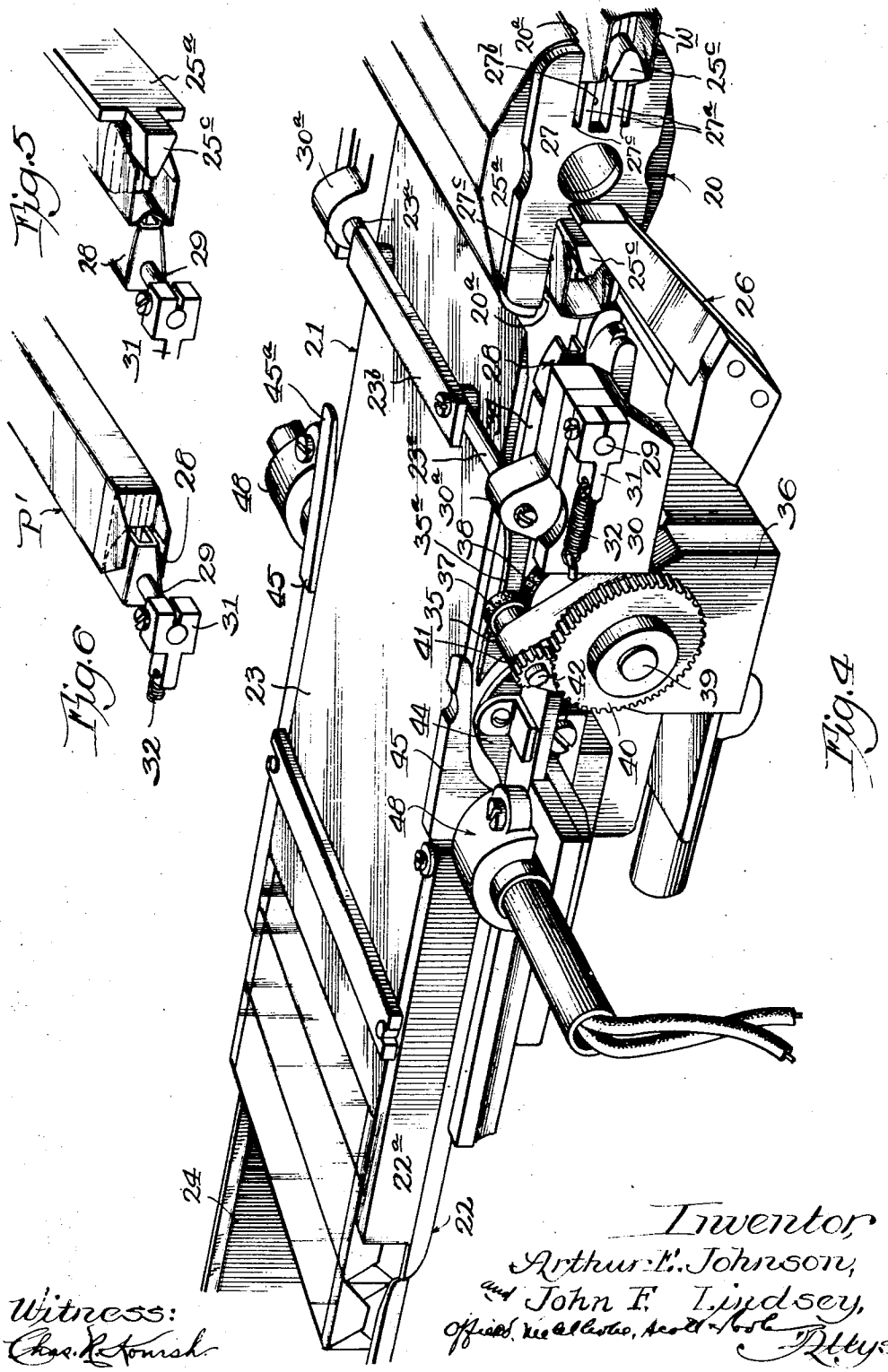


Fig. 5

Fig. 6

Fig. 4

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PACKAGE WRAPPING MACHINE

Filed March 19, 1931 5 Sheets-Sheet 3

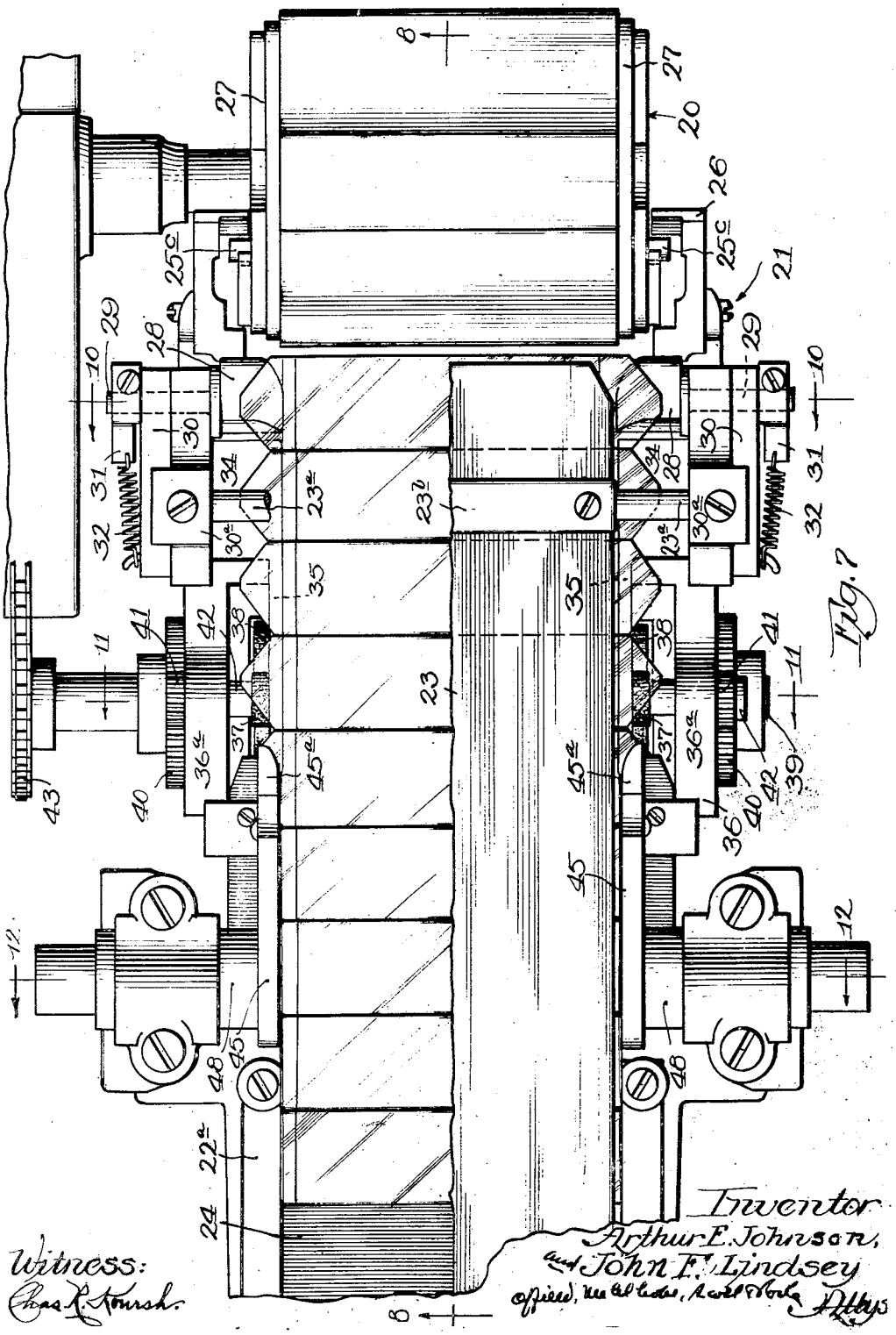


Fig. 7

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PACKAGE WRAPPING MACHINE

Filed March 19, 1931 5 Sheets-Sheet 4

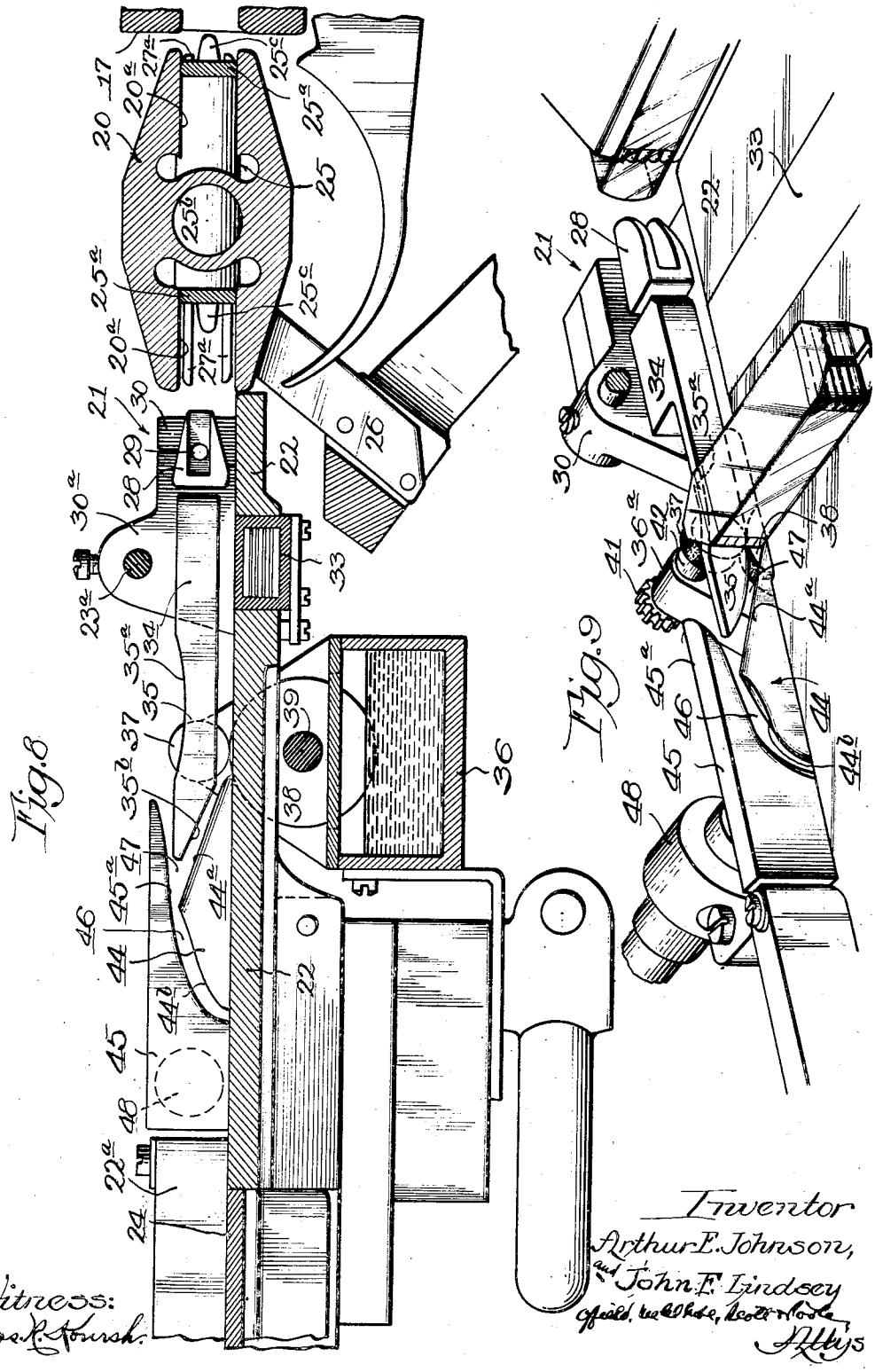


Fig. 8

Fig. 9

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Feb. 13, 1934. A. E. JOHNSON ET AL 1,946,697

PACKAGE WRAPPING MACHINE

Filed March 19, 1931 5 Sheets-Sheet 5

Fig. 10

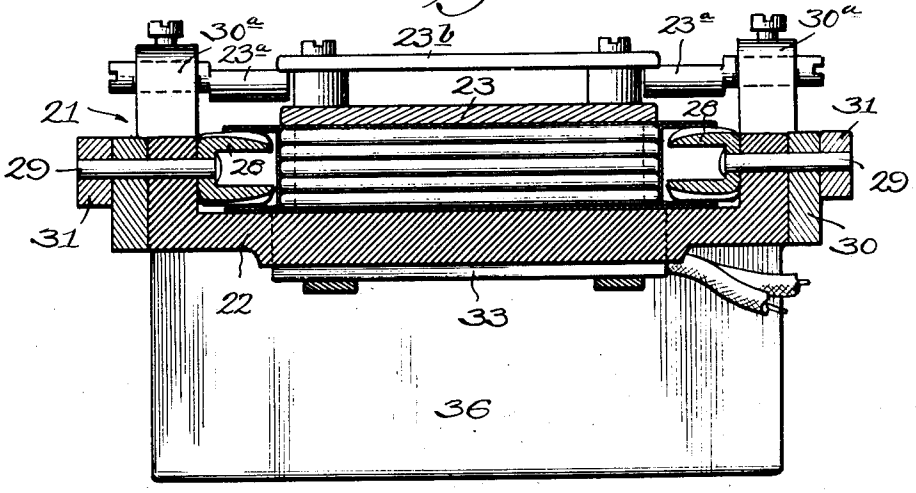
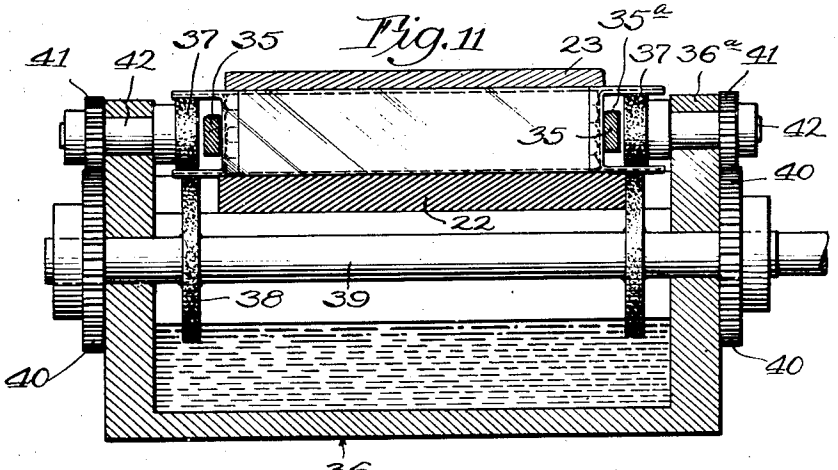


Fig. 11



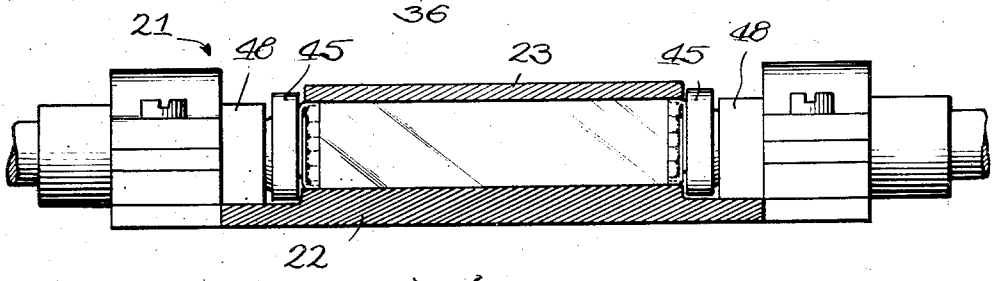


Fig. 12

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Patented Feb. 13, 1934 1,946,697

UNITED STATES PATENT OFFICE

1,946,697

PACKAGE WRAPPING MACHINE

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Application March 19, 1931. Serial No. 523,692

11 Claims. (Cl. 93—7)

This invention relates to improvements in wrapping machines, and more particularly to means for wrapping packages in an outer covering of a transparent cellulose product commonly known as "Cellophane". This material as a protective and moisture-proof wrapper for package consumable products subject to deterioration or loss of flavor under certain climatic conditions is already in extensive use, as is also the mechanism or machine for applying and sealing the wrappers to the packages.

The purpose and object therefore of the present invention is to improve upon the means and instrumentalities now available, and especially with a view to perfecting a unit which may be incorporated in or added to a hitherto well known type of wrapping machine, whereby the cellophane wrapping operation will follow directly the application of the regular inner wrappers.

The machine herein disclosed is designed for wrapping of packages of chewing gum or confections, and with the exception of the last cellophane wrapping unit, the machine follows the design disclosed in the Price Patents Nos. 1,109,461 dated September 1, 1914, and 1,491,970 dated April 29, 1924. In fact, the improved cellophane wrapping unit utilizes the basic principles of the patented machine, so that the invention resides mainly in the improved features which render the unit capable of handling cellophane and of incorporating it into a machine for producing the completely wrapped packages.

The feeding, folding and sealing of cellophane wrappers present a somewhat different problem from that of handling paper wrappers, owing to the difference in the physical characteristics of the two materials. In the first place, cellophane is relatively stiff, and therefore does not fold readily, but it does tear very readily when once ruptured, so that it requires careful handling to apply adhesive to a continuously moving web, to cut the web into wrappers and apply and seal the wrappers about the packages, and yet maintain the normal wrapping speed of the machine.

The improved features which make it possible to utilize cellophane or equivalent products in a comparatively high speed wrapping operation will now be set forth in the description which follows, and in connection with the accompanying drawings, in which:

Figure 1 is a general view in side elevation of that portion of the machine which applies the cellophane wrapper to the packages.

Figure 2 is a perspective view of a fragment of the cellophane web showing the strips of adhesive coating and the lines of cutting.

Figure 3 is a perspective view of the cellophane wrapped package.

Figure 4 is a perspective view of the mechanism which folds and seals the ends of the cellophane wrapped packages.

Figure 5 is a detail view in perspective showing the manner in which the initial end folding or tucking operation is accomplished simultaneously with the discharge of each package from the final transport drum.

Figure 6 is a detail view in perspective of the folding block which completes the second end folding or tucking operation, just as the package is discharged from the transport drum onto the discharge track.

Figure 7 is a top plan view of the discharge track and associated parts shown in perspective in Figure 4.

Figure 8 is a view in longitudinal section taken on line 8—8 of Figure 7.

Figure 9 is a perspective view of one side of the discharge track, looking downwardly and forwardly toward the transport drum.

Figures 10, 11 and 12 are cross-sectional views at several points along the discharge track as taken on lines 10—10, 11—11 and 12—12, respectively, of Figure 7.

For reasons already stated, it is not necessary in the present disclosure to describe the entire machine in detail, a general discussion of the progress of the packaged articles through the machine and up to the point of receiving the outer cellophane wrapper being sufficient.

Considering then the articles to be packaged and wrapped as sticks of chewing gum, the steps or operations performed by the machine are, first, the wrapping of the individual sticks in a wrapper of paraffined paper or metal foil; second, the application of a band or label around each individual stick; third, the grouping of the wrapped and banded sticks into bundles or stacks of package form of five (5) each; fourth, the application of a band around each bundle, and finally the application of the outer cellophane wrapper.

Figure 1 illustrates in more or less skeleton form the portion of the machine devoted to the cellophane wrapping, and which is in its general aspects an adaptation of the machine disclosed in the above-mentioned Price Patent No. 1,109,461 and which was designed for applying wrappers of paraffine paper. In this connection it may be observed that the paraffine paper wrapper may be omitted if desired, inasmuch as the cellophane

wrapper completely envelopes the contents in a sealed moisture-proof wrapper. Hence the parafine paper wrapping section of the complete machine may be omitted or, what would be the equivalent, placed beyond the counter-band applying mechanism with the required alterations for handling cellophane.

Referring then to Figure 1, the individual stick wrapping and banding section of the machine extending to the right has been omitted, so that the first element shown is a rotative drum 1 which receives the bundles P of sticks from the stick wrapping mechanism into diametrically opposed pockets 1^a, 1^a, rotates through one-half a revolution on its horizontal axis, and then discharges the bundles into a stationary guide member 2, from whence the bundles are successively introduced into a wrapping drum 3 just beyond, by which bands are applied to the bundles which thus become the packages p^1.

The bands are stacked in a pile B in a vertical magazine 4 just above and to the left of the drum 3, the bands *b* being fed from the bottom of the stack by a feed roller 4^a tangentially toward the drum 3 which is equipped with a pair of diametrically opposed grippers 3^a, 3^a operating to engage the forward edge of each band as the drum rotates in a clockwise direction and carries it on, each band being long enough to trail behind and extend across the outwardly opening radial pockets 3^b, 3^b diametrically opposed to each other.

Thus as the bundles P are successively forced into the pockets 3^b of the rotating drum, a counter-band is folded around three sides and the final overlap and fold is completed as each package is discharged from the drum after completing one-half a revolution in a clockwise direction. In short, the drum 3 revolves with an intermittent movement, receiving a package on one side and discharging another from the other side with each one-half revolution. The drum is provided with an ejector 5 which resembles a rocker arm oscillating intermittently to eject the packages P^1 onto a horizontal track 6 along which the packages are advanced toward the mechanism which applies the outer wrapper of cellophane. It is the part of the machine from this point on that embodies the novel features of the invention now to be considered in somewhat greater detail.

The cellophane is supplied to the machine from a roll C mounted on a spindle 7 located above the magazine 4 and in the form of a web *c*, having a width considerably in excess of the length of the packages so as to have ample material at each end for folding and sealing.

From the roll C the web passes downwardly to and around a guide roller 8, and thence horizontally and to the left over a positively driven adhesive applying roller 9 supplied from a tank or reservoir 10 just below, and thence to a pair of guide rolls 11, 11, where it changes direction again and continues vertically downward between a pair of feed rolls 12, 12 which are positively driven and thus govern the feed of the web thence into the path of an oscillating cutter bar 13 which cuts the web into small sheets or wrappers *w* as it passes through the feed rolls.

Immediately below the cutter 13 is a rotative transport drum 14 located at the discharge end of the track along which the packages are being intermittently advanced edgewise and in spaced relation by rotative transport members in the form of blades 15 mounted beneath the track and provided with upstanding fingers 15^a which operate through longitudinal slots in the track to advance the packages.

Thus as the web *c* of cellophane is cut into the form of wrappers *w*, they are guided by a pair of parallel guide plates 16, 16 toward the space between the transport drum 14 and the end of the track 6 to a position over the entrance to the radial pockets 14^a of a wrapping drum 14 located at the end of the track 6, so that as each package P^1 is advanced into the pocket, it carries one of the wrappers with it, folding the same around three of its sides. Then as the drum rotates clockwise through one-half a revolution, the package partially enveloped by the wrapper, is ejected from the drum 14 by the action of a rocking ejector arm 14^b and into a stationary receiving frame 17 just beyond and to the left of the drum. By this movement the wrapper is completely carried around the package lengthwise with the two cut or serrated edge portions overlapping along the top side but with the end portions projecting beyond the ends of the packages.

Now, just above the package holding space in the frame 17 is an electric heating coil 17^a having a heated surface adapted to transmit heat to the top side of the packages, thus softening the strip or line of adhesive *a* (Figure 2) which has been applied at intervals along the web *c* as it travels over the applying roller 9, and which lies immediately adjacent the forward or leading edge of each wrapper after it has been severed.

The adhesive is preferably given an opportunity to dry after application to the web, so as not to foul the cutter and transporting mechanism, artificial drying being resorted to if necessary, as by directing a current of air on the web as it leaves the applying roll 9, by means of a fan or blower. Consequently when the wrappers are applied to and folded around the packages, no adhesion takes place until the adhesive is softened by the heat of the coil 17^a as the packages come to rest momentarily in the frame 17. Thus as the wrappers are applied to the packages, the adhesive strip *a* lies between the overlapping edges at the top side of the package, so that the heat of the coil during this instant of rest is sufficient to soften the adhesive, causing the two overlapping margins to be sealed together. Figure 3 shows the manner in which the cellophane wrapper is applied and sealed lengthwise, although the ends are open and unsealed at this stage of the operation.

The means for applying the adhesive to the web of cellophane *c* is clearly shown in Figure 1. The reservoir 10 is an open receptacle and the roller 9 is mounted above the reservoir to rotate in bearings at either end. Along the roller is a short projecting blade 9^a which contacts with the under side of the moving web *c* once during each revolution, thus depositing a thin transverse line of adhesive *a* at regular intervals. The roller 9 is positively driven by suitable auxiliary driving mechanism connected with the main drive of the machine and so timed that the spacing of the transverse lines of adhesive are uniformly spaced on the web. The adhesive is supplied to the blade 9^a from a larger roller 18 mounted in the reservoir 10, with its lower portion immersed in the liquid adhesive. This roller is preferably driven from the roller 9 above as by gearing, not shown. A heater 19 is located at the bottom of or below the reservoir 10 for keeping the adhesive in a fluid or molten state, depending on the nature of the adhesive used.

Continuing with the description of the ma-

chine from the point of the package receiving and heating frame 17, another package transporting drum or carrier 20 is mounted just beyond the frame 17, and beyond this drum is a sealing frame 21 consisting of a bottom plate 22 with side rails 22^a along its rear end portion and a removable top plate 23 forming a horizontal passage of a width and height to permit the packages to slide edgewise therethrough. Along the sides of this sealing frame are several folding and heating devices which will be described in due course. And finally beyond the end and forming an extension of the sealing frame is a discharge track 24 onto which the completely wrapped and sealed packages are discharged for further disposition.

Returning to the transport drum 20, Figures 4 and 8, the same is generally similar to those used in the previous handling of the packages, all of them (including the drum 3) receiving and ejecting the packages by much the same instrumentalities. Thus the drum 20 is provided with a pair of diametrically opposed radial pockets 20^a in which an ejector is slidably mounted, consisting of a pair of ejector bars 25^a, 25^a connected back to back by a tubular member 25^b. The ejector is mounted to slide diametrically of the drum, its movement being intermittent and timed so that each stroke takes place immediately after each one-half revolution of the drum. As clearly shown in Figure 4, each ejector bar has wedge-shaped blocks or projections 25^c, 25^c at each end which extend beyond the adjacent end of the drum, these wedge-shaped members having their pointed ends projecting outwardly and toward the open ends of the pockets. Just below the drum is a rocking ejector arm 26 mounted to oscillate in the plane of said wedge-shaped projections, the movement of the same being timed so that as the drum comes to rest in package ejecting position, as shown in Figure 8, the ejector arm "kicks" the ejector bar toward the sealing frame 21 by striking the rear face of the projecting wedge 25^c, thus ejecting the package.

At each end of the drum 20 are fastened elongated plates 27 extending diametrically over the ends of the pockets and having pairs of folding fingers 27^a extending radially outward and separated by a wide central slot 27^b and narrow outer slots 27^c, 27^c. The central slot 27^b forms a guide for the ends of the ejector bars 25^a, while the narrow slots 27^c form the spaces for the initial folds in the ends of the wrapper, which operation takes place as the packages are received into the drum 20 from the frame 17 on the right, as will be presently brought out in greater detail in the discussion to follow.

Bearing in mind that the packages on reaching the frame 17 have the ends of the wrapper extended outwardly and unfolded, it follows that a series of folding operations are now necessary to close and seal the ends of the wrapper, utilizing what may be designated as the familiar package end fold shown in Figure 3, that is, the end material being first folded inwardly from opposite sides of the package, thus leaving top and bottom pointed or wedge-shaped flaps, which in turn are folded down with their ends overlapping.

Now, as already stated, the first folding operation takes place as each package is advanced into the pocket 20^a on the receiving side of the transport drum 20. In this movement the ends of the fingers 27^a of the plates 27 at the ends of the drum 20, strike the projecting end webs at the leading side of the packages and fold them inwardly against the ends of the packages as shown at the extreme right in Figure 4, the folding fingers in this operation being aided by the wedge-shaped blocks 25^c, so that the result is the beginning of the tapered flaps of double thickness at top and bottom which enter and are held within the narrow slots 27^c, 27^c.

When the package has been fully received into the pocket 20^a, the drum revolves through one-half a revolution which brings it opposite the sealing frame on the left of the drum (Figure 4) and in position to be ejected, the initial end fold being now at the rear or trailing side and held down in place by the wedge projection 25^c. This is perhaps more clearly shown in Figure 5 which illustrates the condition of the package at the commencement of its ejection from the drum by the action of the ejector bar 25^a.

At the forward or receiving end of the sealing frame 21 and on either side of the bottom plate 22 in horizontal alignment with the path of the projecting ends of the packages is a pair of folding blocks 28, 28 tapering slightly from end to end, and in a direction toward the drum 20 or from which the packages are approaching. Moreover, the blocks are channel shaped in cross section, with their open sides facing inwardly, as clearly shown in Figure 6. These blocks are not rigidly mounted but are self-adjusting or aligning in the sense that they are mounted to oscillate slightly about a horizontal transverse axis. Thus each block 28 is mounted at the inner end of a rock shaft 29 (Figure 10), which is journalled in an outlying bearing bracket 30, and having at its outer end a lever arm 31 extending horizontally and rearwardly and having its end yieldably held by a light coil spring 32 anchored at its free end to the bracket 30 beyond and in line with the lever.

As the packages are discharged from the drum, the leading portions of the wrapper ends which are vertical and unfolded, come into contact with the folding blocks 28 with the result that a second inward folding operation takes place as progressively illustrated in Figures 5 and 6. In this folding operation there is a certain coaction between the folding blocks 28 and the wedge ends 25^c of the ejector on the drum 20. As already indicated these wedge ends hold the relatively stiff cellophane in its folded position, it being again observed that the nature of cellophane is such that it does not crease readily. Hence these wedge ends advance forward with the package as it leaves the drum (Figure 5), holding the initial fold down in place until the second fold is completed to overlap the first as shown in Figure 6. In fact during this transfer and folding operation the tips of the wedge ends 25^a enter the opening ends of the channel shaped blocks 28, so as not to release the underlying fold in advance of the completion of the overlying fold, and hence one reason is made manifest for the adjustable or floating mounting for the folding blocks 28, namely, to insure the registering of the blocks and wedge ends, since otherwise the slightest looseness or lost motion in the movement of the drum would throw the ejector wedge points out of register with the folder blocks. Again, the folder blocks are made self aligning so as to accommodate any inequality or discrepancies in the partially folded ends of the packages as they are received from the drum, it being again observed that the nature of the wrapping material requires careful handling to avoid tearing or breaking.

Thus having encountered the folding blocks

28, the end folds of the package are half, or at least partially completed, leaving the top and bottom tapered flaps of double thickness projecting laterally above and below the blocks and still to be folded, as shown in Figures 6 and 9. Now having passed the blocks 28, the packages are advanced intermittently by the discharge of subsequent packages from the drum, and therefore come to rest momentarily over a heating element 33 located in a station just beyond the folding blocks 28 (Figure 9). This heater fits flush within a slot in the bottom wall 22 of the sealing frame 21 (Figure 8), and is of the ordinary type including a rectangular metal casing enclosing an electric coil. The bottoms of the packages obviously come into momentary contact with the heater, and in their present position the lengthwise overlap of the wrappers is on the under side, so that the result is an added softening of the adhesive and the application of further sealing pressure which is mounted for a limited vertical adjustment at its forward end as by eccentric pins 23^a journalled in bearings 30^a, 30^a at the top of the side brackets 30, 30 and supporting the ends of a bar 23^b extending transversely across the top of the plate (Figures 4 and 10).

Directly behind and in alignment with the folding blocks 28 are solid guide blocks 34 projecting inwardly from the inner faces of the bearing brackets 30 and spaced above the bottom wall 22 (Figures 9 and 10). These blocks are in the nature of fixed extensions of the folding blocks 28, and continue rearwardly for some distance in the form of thin blade-like guide members 35, 35. The inner vertical faces of these guide members lie in parallel planes in alignment with the ends of the packages, and as shown in Figure 8 the upper edge of each blade has a shallow concavity 35^a intermediate its ends, while at the ends of the lower edge inclines upwardly at an angle of about 60° as at 35^b, and meets the upper edge in a pointed extremity.

Associated with these guide members 35, 35 is an adhesive-applying device consisting generally of an adhesive reservoir or tank 36 suspended beneath the bottom wall 22 the end walls of said reservoir being extended upwardly on either side of said bottom wall to form tapered bearing brackets 36^a for pairs of glue-applying rollers 37 and 38 located one above the other in vertical planes just outwardly from the blades 35. The upper pair of rollers 37 are relatively small while the lower pair 38 are large discs carried on a driven shaft 39 journalled in the bearing brackets 36^a, 36^a and of a diameter such that their peripheries extend downwardly into the reservoir, and have edge to edge contact with the small rollers 37 at a point lying in the plane of the surface of the bottom plate 22, as clearly appears in Figures 8 and 11. Moreover, the upper and lower pairs of rollers are connected for driving engagement through the medium of gear wheels 40, 40 mounted at the outer ends of the shaft 39 which mesh with small pinions 41, 41 mounted at the outer ends of short stub-shafts 42 carrying the upper pair of rollers 37. A suitable drive to the shaft 39 is provided in the form of a sprocket chain 43 (Figure 1) driven from the main drive of the machine at a relatively slow rate of speed, so that the two pairs of glue-applying rollers revolve at substantially the speed of travel of the packages.

As clearly shown in Figures 9 and 11, the packages on reaching a point opposite the glue rollers 37 and 38, are traveling with their end flaps projecting outwardly above and below the blade 35, the lowermost flap being in line with the contacting peripheries of the glue rollers 37 and 38, so that they pass between the same and a coating of adhesive is applied to both sides of these flaps. At the same time the upper flap passes over and in contact with the small glue rollers 37, 37 but only receives a coating on its under or inner face.

After passing the glue rollers, the package now encounters pairs of top and bottom flap folders (Figures 8 and 9) on opposite sides of the bottom plate and comprising plates arranged along the path of the packages just beyond the pointed ends of the blades 35, and with which they cooperate in the folding operation. One of these folders has the shape of an elongated triangular-shaped plate 44 of about the same height as the tip of the blade 35 with its upwardly sloping edge 44^a arranged substantially parallel with and spaced below the inclined edge 35^b of said blade 35 and beveled on its inner side. The downwardly sloping edge 44^b of the folder blade 44 is flat for a short distance beyond the apex, but assumes an outwardly facing bevel as it approaches its lower end flush with the edge of the bottom plate 22 (Figure 9). The other folder plate 45 is mounted beyond the triangular plate 44 and has a tapering finger 45^a projecting rearwardly over the top of the blade 44 and terminates just above the tip of the blade 35, the under edge of this finger curving gradually in a forwardly and downwardly direction, thus forming a narrow slot 46 between it and the downwardly sloping edge of the blade 44 which intersects an upwardly inclined slot 47 between the upwardly sloping edge 44^a of the plate 44 and the complementary edge of the blade 35.

Thus as a package is advanced from a position opposite the glue rollers (Figure 9), the lower flaps strike the upwardly sloping beveled edge 44^a of the lower folder plate 44 and are folded upwardly against the end of the package, the adhesive on the inner face forming a sealing contact with the end portions of the wrapper already folded inward. Immediately thereafter the upper flaps strike the fingers 45^a of the plates 45 and are gradually folded downwardly and inwardly over upon the already folded lower flap, so that a complete gluing of the ends is effected and finally sealed by a pair of electric heating coils 48, 48 bearing endwise against the base portions of the folder plates 45 just beyond the points where the folding is completed.

It follows that the heat transmitted to the ends of the package from the heaters is sufficient to soften the adhesive and thus insure a complete and effective bond when it subsequently cools. As already stated, different adhesives may be used, so that the application of heat will be governed by the conditions of operation.

As pointed out at the outset, much of the mechanism herein disclosed is patterned after the design of the aforesaid Price patents, and that the improved features pertain especially to the means for applying, folding and sealing the outer wrappers of cellophane, the nature of which is such that it cannot be handled by the so-called standard Price machines. Reference may be made particularly to the application of adhesive to the web as it is being fed to the cellophane wrapping drum, the folding of the ends of the wrapper including the means for holding the folds in place including the self-adjusting

folding blades and the means for sealing the ends. These features are set forth in the appended claims in which we claim as our invention:

1. In a package wrapping machine, the combination of package feeding and wrapper applying mechanism, including means for feeding wrappers to said wrapper applying mechanism whereby the packages are discharged therefrom with the wrappers folded lengthwise around the same and with unfolded portions projecting beyond the ends thereof, means for transporting the partially wrapped packages from said wrapper applying mechanism, including folding members operative to fold the leading webs of the wrapper ends against the ends of the packages, a frame beyond said transport means having a passage adapted to receive the packages, folders loosely mounted at the entrance to said passage in line with the package wrapper ends and operative to fold the webs opposite the first folded webs against the ends of each package, and means on said frame and beyond said folders for applying adhesive to the remaining unfolded portions of the wrapper ends and folding and sealing the same against the package ends.

2. In a package wrapping machine, the combination of package feeding and wrapper applying mechanism, including means for feeding wrappers to said wrapper applying mechanism whereby the packages are discharged therefrom with the wrappers folded lengthwise around the same and with unfolded portions projecting beyond the ends thereof, means for transporting the partially wrapped packages from said wrapper applying mechanism, including folding members operative to fold the leading webs of the wrapper ends against the ends of each package, a frame beyond said transporting means and adapted to receive the packages from said transporting means, folders loosely mounted on said frame and adapted to be engaged by the package wrapper ends and operative to fold the webs opposite the first folded webs against the package webs as each package is delivered into said frame, and means on said frame beyond said folders for applying adhesive to the remaining unfolded portions of the wrapper ends and pressing the same against the package ends.

3. In a wrapping machine, the combination of mechanism for wrapping packages lengthwise in wrappers with portions projecting outwardly from the ends thereof, a transport member whereby the partially wrapped packages are successively advanced from said wrapping mechanism, said transport member being provided with folding elements adapted to fold one of the webs of the wrapper ends inwardly as the packages are received, a frame beyond said transport member having a passage into which the packages are successively ejected from said transport member, folding blocks mounted at opposite sides of the entrance to said passage and adapted to complete the folding of the opposite leading webs of the wrapper ends as the packages are ejected from said transport member, said blocks being tapered lengthwise with their narrower edges toward the advancing packages, and pivotally mounted intermediate their ends for a limited oscillatory movement about horizontal transverse axes for self-alignment with the folding elements on said transport member.

4. In a package wrapping machine, the combination of mechanism for wrapping packages lengthwise in wrappers with portions projecting outwardly from the ends thereof, a transport member beyond said wrapping mechanism and adapted to receive the partially wrapped packages, said transport member being provided with folding elements adapted to fold the leading webs of the wrapper ends inwardly as the packages are received and to hold the same against the ends of the package, a frame beyond said transport member into which the packages are successively ejected from said transport member, folding blocks carried by said frame and located in the path of the wrapper ends of the ejected packages, said blocks being wedge-shaped with their pointed ends toward the advancing packages, and pivotally mounted intermediate their ends to oscillate about horizontal axes transverse to the direction of travel of the packages, and means for holding said folding blocks against free oscillation about their axes.

5. In a package wrapping machine, the combination of package wrapping mechanism whereby said packages are wrapped lengthwise with portions projecting beyond the ends thereof, means for transporting the partially wrapped packages from said wrapping mechanism including a member for folding one side of the projecting portion of the wrapper inwardly against the ends of the package, a stationary frame beyond said transporting means, a pair of folding blocks pivotally mounted on said frame and in line with the projecting wrapper ends of the advancing packages, and adapted to have a limited free oscillatory movement about a horizontal axis transverse to the direction of movement of the packages, and tension members acting on said folding blocks to yieldingly control their oscillation.

6. In a package wrapping machine, the combination of means for feeding packages to be wrapped, a wrapping drum in the path of the packages, means for continuously feeding a web of wrapping material toward said wrapping drum, means for applying transverse lines of adhesive to said webs in its travel toward said wrapping drum, means for cutting said web into wrappers and feeding the same to said wrapping drum whereby said packages are wrapped lengthwise and sealed with portions of the wrappers projecting beyond the ends of said packages, a rotative transport member beyond said wrapping drum, a sealing frame beyond said transport drum onto which the packages are delivered from said transport drum, folding means on said transport drum and said sealing frame for folding the wrapper ends inwardly against the package ends from opposite sides leaving projecting flaps, means beyond said folders for applying adhesive to said flaps, and means for successively folding and sealing said flaps in overlapping contact against the ends of the packages.

7. In a package wrapping machine, the combination of means for feeding packages to be wrapped, a wrapping drum in the path of the packages, means for feeding a continuous web of wrapping material toward said wrapping drum, means for applying transverse lines of adhesive to said web in its travel toward said wrapping drum, means for cutting said web into wrappers and feeding the same to said wrapping drum whereby said packages are wrapped lengthwise and sealed with the ends of the wrappers projecting beyond the ends of the packages, a rotative transport member beyond said wrapping drum having package receiving pockets, a sealing frame beyond said transport drum onto which

the packages are successively delivered from said transport drum, folding means operative during the advance of the packages from said wrapping drum to said sealing frame for folding the projecting wrapper ends inwardly against the package ends from two opposite sides, leaving wedge-shaped flaps on the remaining opposite sides, and means beyond said folders for applying adhesive to all but one face of said flaps, and folding and sealing the same in overlapping contact against the ends of the packages.

8. In a package wrapping machine, the combination of mechanism for wrapping packages in wrappers sealed along overlapping margins extending lengthwise of the packages with portions projecting beyond the ends of said packages, a rotative transport member, a sealing frame beyond said transport member onto which the packages are successively delivered from said transport member, folding members on said transport members and at the adjacent end of said sealing frame for successively folding the projecting wrapper ends inwardly against the package ends from two opposite sides, leaving projecting wedge-shaped flaps at the top and bottom end edges, adhesive applying means on said frame beyond said folders including pairs of adhesive applying rollers adapted to contact edgewise with the inner faces of both flaps and the outer face of one of said flaps, and folding devices beyond said adhesive applying rollers for folding said flaps against the ends of said package.

9. In a wrapping machine, the combination of means for feeding packages to be wrapped, a wrapping drum in the path of the packages, means for continuously feeding a web of wrapping material toward said wrapping drum, means for applying transverse lines of adhesive to said web in its travel toward said wrapping drum, means for cutting said web into wrappers and feeding the same to said wrapping drum whereby said packages are wrapped lengthwise in said wrappers with portions projecting beyond the ends of said packages, a rotative transport member beyond said wrapping drum having package receiving pockets, a sealing frame beyond said transport drum onto which the packages are successively delivered from said transport drum and at the adjacent end of said sealing frame for successively folding the projecting wrapper ends inwardly against the package ends from two opposite sides, leaving wedge-shaped flaps on the remaining opposite sides, adhesive applying means beyond said folders comprising a pair of rollers adapted to extend vertically of the space between the flaps at each end of the packages, a reservoir beneath said frame, a drive shaft extending transversely of said reservoir, a pair of transfer rolls on said shaft each having edgewise contact with one of said rollers and means for driving said rolls from said shaft whereby adhesive is applied to both faces of the lowermost end flaps and to the lower face of the uppermost flaps of the advancing packages, and flap folding members beyond said adhesive applying means for folding the lower and upper flaps successively against the ends of the package.

10. In a package wrapping machine, the combination of package wrapping mechanism operative to apply wrappers lengthwise around the packages with unfolded portions projecting beyond their ends, means for transporting the partially wrapped packages and for folding one of the webs of the projecting wrapper ends against the ends of each package, folding blocks loosely mounted in the path of the packages and adapted to fold the opposite webs of the wrapper ends over upon the first folded webs, and means acting successively to apply adhesive to the inner faces of the oppositely disposed unfolded portions of the wrapper ends and to fold one upon the other against the ends of the package.

11. In a wrapping machine, the combination of package wrapping mechanism including means for discharging the packages with the wrappers wrapped lengthwise around the same and unfolded portions projecting beyond the ends thereof, a transport member beyond said wrapping mechanism and provided with folding members operative to fold the leading webs of the wrapper ends against the ends of each package, means for ejecting the packages from said transport member into said frame, folding blocks loosely mounted for limited rotative movement about a horizontal transverse axis in the path of the packages ejected from said transport member and operative to fold the oppositely disposed webs of the projecting ends of the wrapper over upon the already folded webs, thereby leaving pointed tabs arranged at right angles to the overlapping folded webs, and coating means beyond said folding blocks for applying adhesive to the inner surfaces of said tabs and folding one upon the other against the end of the package.

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