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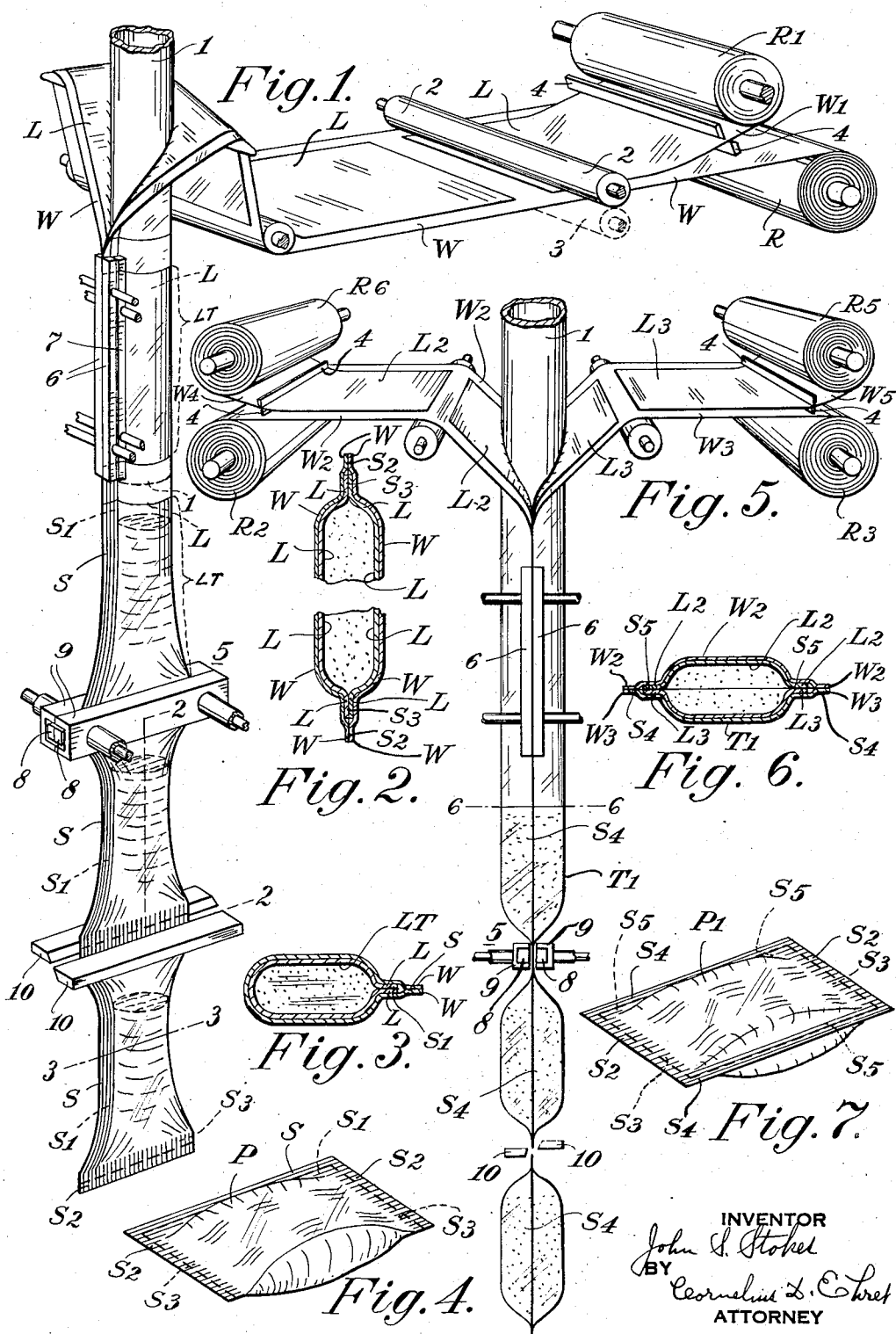
J. S. STOKES

2,257,823

METHOD AND APPARATUS FOR PRODUCING CONTAINERS

Filed Jan. 15, 1940

4 Sheets-Sheet 1



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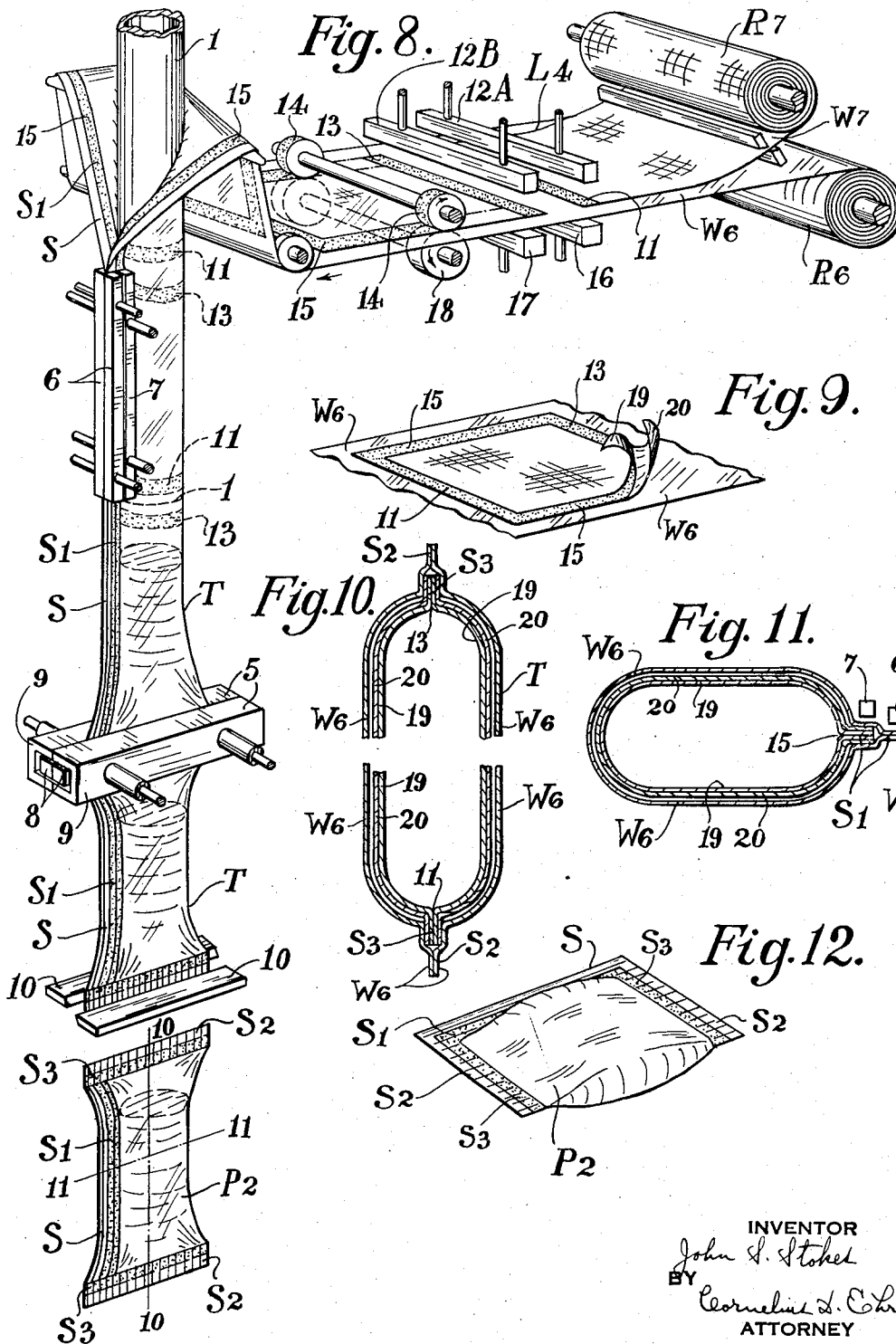
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METHOD AND APPARATUS FOR PRODUCING CONTAINERS

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4 Sheets-Sheet 2



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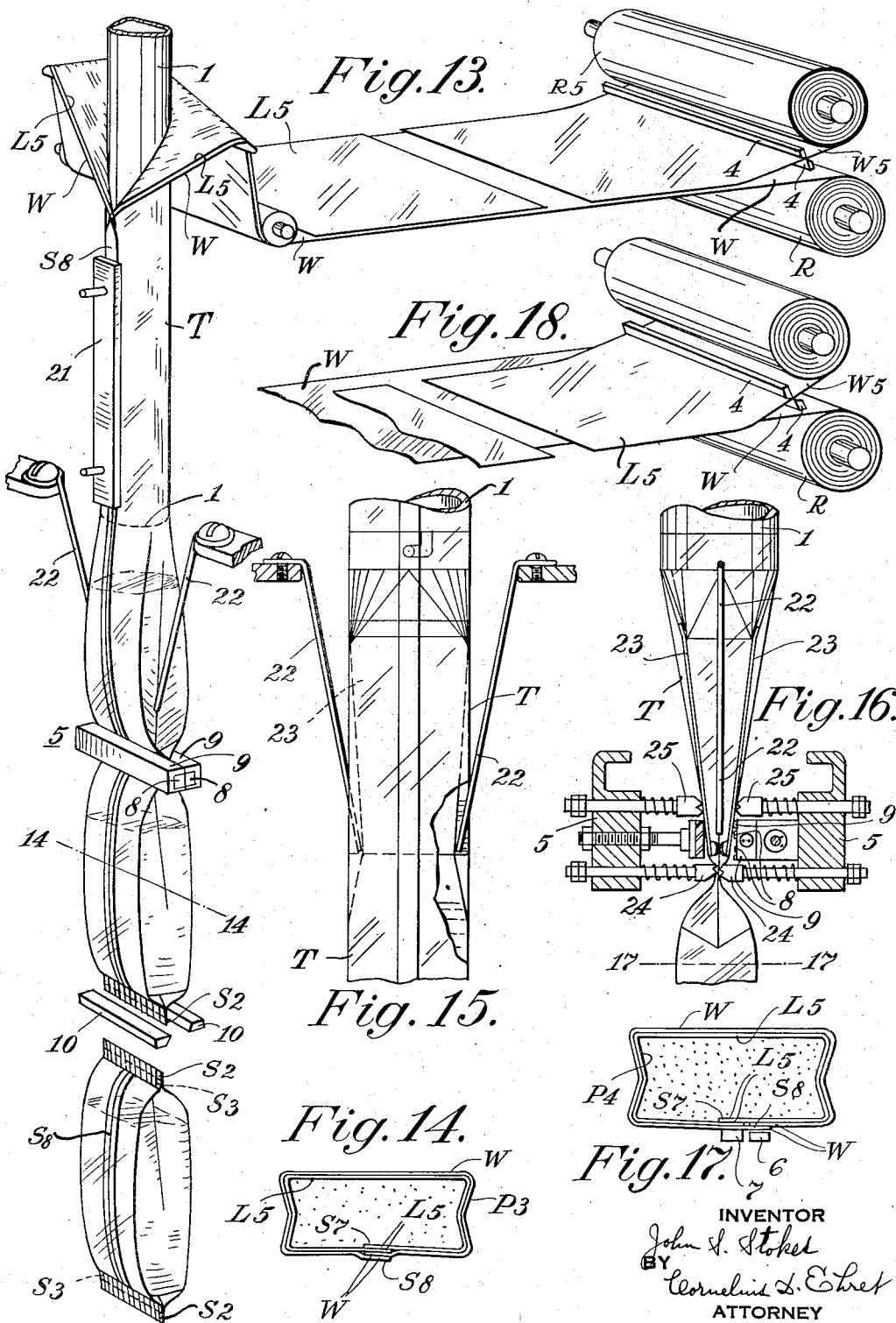
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METHOD AND APPARATUS FOR PRODUCING CONTAINERS

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4 Sheets-Sheet 3



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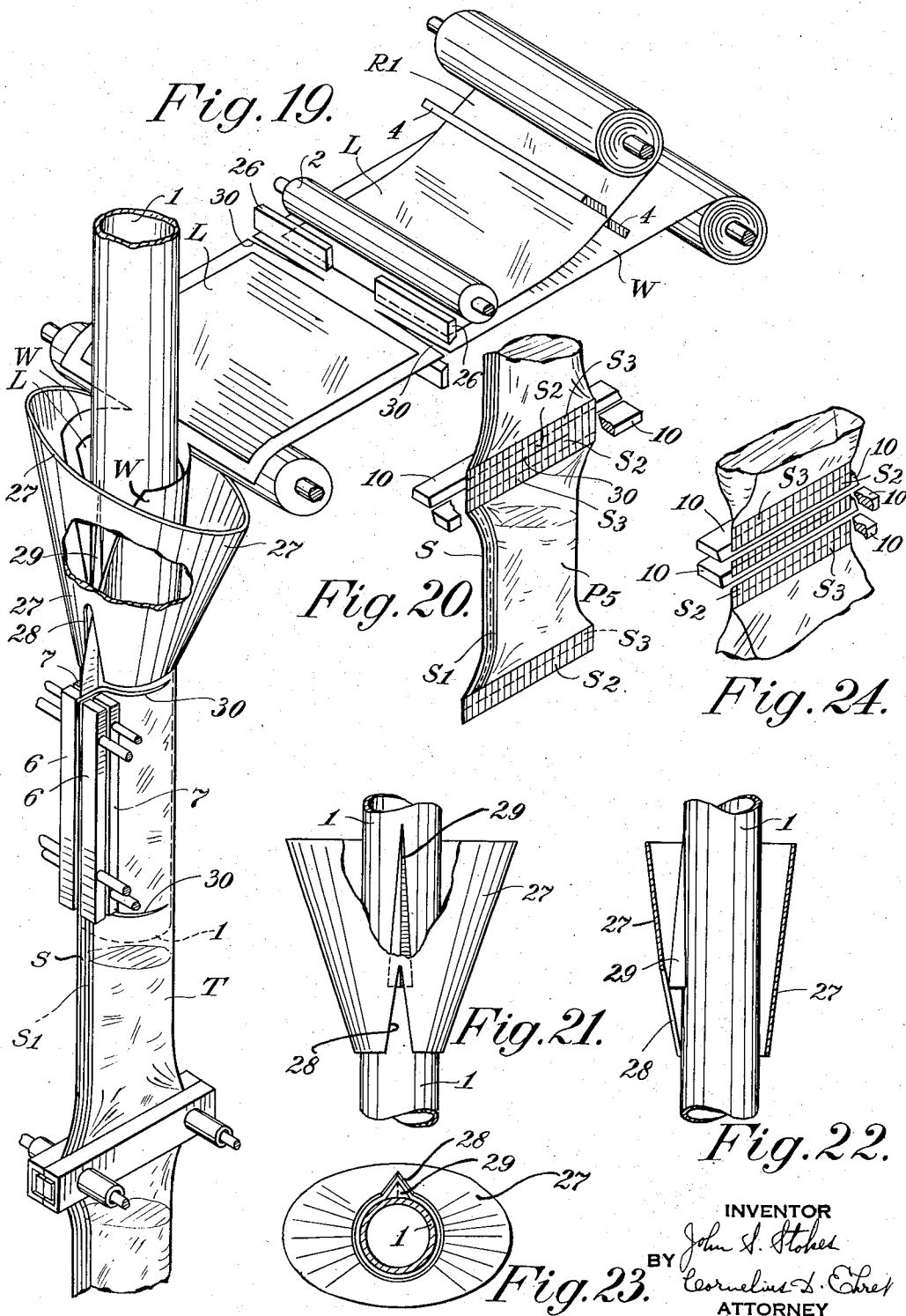
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METHOD AND APPARATUS FOR PRODUCING CONTAINERS

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4 Sheets-Sheet 4



UNITED STATES PATENT OFFICE

2,257,823

METHOD AND APPARATUS FOR
PRODUCING CONTAINERS

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Application January 15, 1940, Serial No. 313,889

18 Claims. (Cl. 93—3)

My invention relates to the manufacture of packages or containers, particularly composite, or lined, or double wall packages or containers, made from flexible sheet material, such as Cellophane, Pilofilm, paper or the like.

In accordance with one aspect of my invention, one or more lining elements are so positioned upon, with or without attachment thereto, sheet or web material from which the outer container or covering is eventually formed, and are of such dimensions that all outer seals of the container or package are formed by direct attachment to each other of portions of the covering material and the inner seals are formed by direct attachment to each other of portions of the sheet lining material; consequently, when the adhesives applied to, or comprised in the selected covering and lining materials are of different characteristics, the inner and outer seals are formed respectively under those different conditions of time, pressure or temperature, best suited for effective sealing by the different adhesives.

In a preferred method, the lining elements are spaced along the webbing of one or more continuous webs destined to form the outer container and are shaped concurrently therewith to form spaced tubular sections within a continuous outer tube; to close an end of a lined container or package, the outer tube is flattened and is individually sealed between successive tubular lining sections, and the corresponding end of one of the lining sections is individually flattened and sealed; preferably the lined containers are filled prior to their detachment from the web by introduction of filling into the innermost container or lining and each is detached from the web by transversally severing the outer tube between successive lining sections.

More particularly, each of the lining elements as applied to an individual sheet, or to continuous webbing, is suitably shorter than the outer container to provide for the aforesaid direct attachment to each other of those portions of the outer container forming end seals; direct attachment to each other of those portions of the outer container forming its side seal or seals is provided either by using lining elements which are narrower than the outer sheet or web, by offsetting the lining elements with respect to the outer sheet or web, or by suitably guiding the edges of the lining elements as they are shaped into tubular form.

My invention further resides in the methods of and apparatus for making packages herein-after described and claimed.

For an understanding of my invention, reference is to be had from the accompanying drawings, in which:

Fig. 1, in perspective, illustrates a method of and apparatus for making, filling and sealing lined containers.

Fig. 2 is an elevational view in section, taken on line 2—2 of Figure 1.

Fig. 3 is a plan view in section taken on line 3—3 of Figure 1.

Fig. 4, in perspective, shows a filled container produced by the method of Figure 1.

Fig. 5, in perspective, illustrates another method and apparatus for making, filling and sealing lined containers.

Fig. 6 is a plan view, in section, taken on line 6—6 of Figure 5.

Fig. 7, in perspective, shows a filled container produced by the method and apparatus of Figure 5.

Fig. 8, in perspective, illustrates another method and apparatus for making, filling, and sealing containers whose lining is not thermoplastic.

Fig. 9, in perspective, shows a multi-ply lining element.

Fig. 10 is an elevational view on a larger scale, taken on line 10—10 of Figure 8.

Fig. 11 is a plan view, in section, taken on line 11—11 of Figure 8.

Fig. 12, in perspective, illustrates a filled package produced by the method and apparatus of Figure 8.

Fig. 13, in perspective, illustrates a method and apparatus for making lined containers of the square type.

Fig. 14 is a plan view, in section, taken on line 14—14 of Figure 13.

Fig. 15 is an elevational view, on a larger scale, of tuck-forming mechanism shown in Figure 13.

Fig. 16 is an end elevational view of the apparatus shown in Figure 15 with addition of, in cross section, the end sealing tools.

Fig. 17 is a plan view, in section, taken on line 17—17.

Fig. 18, in perspective, illustrates the initial step of a modification of the method shown by Figure 13.

Fig. 19, in perspective, illustrates another method of and apparatus for making, filling and sealing lined containers.

Fig. 20 is a continuation of Figure 19 and il-

illustrates the final step of severance of a complete package from the webbing.

Fig. 21 is a front elevational view, with parts broken away, of web shaping structure shown in Figure 19.

Fig. 22 is a side elevational view, partly in section, of the structure shown in Figure 21.

Fig. 23 is a bottom plan view of Figure 21.

Fig. 24 illustrates a modified manner of detaching the containers.

Referring to Figure 1, the web W may be of "Pliofilm," Cellophane, paper or other sheet material coated with, impregnated with, or consisting of thermoplastic material. As it is fed from the roll R toward and about the hollow former member 1, there is deposited upon it a series of lining elements L, each shorter than the length of webbing W to be utilized for making a single container, and in this particular modification, suitably narrower than the webbing W by an amount corresponding with about twice the width of an outer side seal S.

The lining elements L are also in this modification of thermoplastic sheet material, which may be the same as, but is usually and preferably different from, the sheet material of which web W is comprised.

The lining elements L may be fed from a stack thereof onto webbing W or, preferably, they may be cut from the continuous web W removed from roll R.

To maintain the desired spacing between the lining elements and to preclude their displacement with respect to webbing W as it is fed toward the former 1, there may be employed the heated roller 2 for softening the adhesive in or upon one or both of the webs W, W' at least sufficiently to preclude accidental shift in position of the lining elements. A second roll 3, or equivalent pressure plate, provides the desired pressure upon the webs during the aforesaid application of heat by roll 2. The knives 4, 4, which cut the lining elements L from the web W' operate in proper timed relation to feed of the web W to obtain the desired spacing between the adjacent ends of successive lining elements L which spacing as hereinafter appears corresponds with the width of two outer end seals S2.

Beyond the rolls 2, 3, the web W and applied lining elements L are shaped about the hollow former member 1, the web W forming a continuous outer tube T, and the lining elements L forming a series of tubular sections LT spaced from each other within the continuous outer tube T.

The composite webbing is fed, in the particular arrangement shown, by a pair of reciprocating clamps 5, 5 which flatten the tube T between successive sections LT somewhat beyond the end of the former member 1; while the clamps maintain their grip upon the tube they are moved away from former 1 to an extent corresponding with the desired length of a container. The clamps then release the tube, and while so free of it, return to their original position.

While the webbing is at rest between successive feeding strokes, the marginal edges of web W are thermoplastically joined by the sealing tools 6, 6, one or both of which may be heated and in any event subject the edges of webbing W to a temperature suited to the heat sealing characteristic of the material forming it; the pressure exerted by the tools 6, and the duration of their engagement with the edge of the web are also selected to suit the characteristic of the ma-

terial comprising the web W so to obtain optimum sealing results.

Substantially concurrently with the formation of the outer longitudinal seal or seam S by tools 6, the longitudinal edges of one of the lining elements L is subjected to heat and pressure by a second set of sealing tools 7, 7 to form an inner seal S1.

The clamps 5 which effect feed of the webbing also comprise or carry two sets of sealing tools; tools 8, 8 heat and press into direct engagement with one another, opposite sides of the outer tube between successive lining sections LT whereas the other pair of sealing tools 9, 9 flatten and seal the adjacent ends of two successive lining sections LT.

The outer seal S2 is formed by tools 8, 8 under these conditions of temperature, pressure, and time suited to the thermoplastic applied to or comprised in web W, and the inner end seal S3 is formed by tools 9, 9 under these different conditions of temperature, time and pressure best suited to the thermoplastic material of which it is comprised or with which it is coated; when for example, the web W is of Cellophane and the lining elements are of Pliofilm, the tools 7, 7 are at elevated temperature lower than the temperature of tools 8, 8.

The completed containers are detached from the webbing by the knives 10, 10; when unfilled containers are desired, the knives 10, 10 are set to cut between the double width seal S2 and one of the seals S3. Preferably, however, the containers are filled prior to their severance from the web, as by introduction of filling material through the hollow former member 1 between the two end sealing operations performed upon a single container. To detach the filled containers or packages from the web, the knives 10, 10 are set to cut through the seals S2, approximately midway thereof. The individual completed package is shown in Fig. 4.

As more clearly appears from Figs. 2 and 3, the filling is within the inner container or lining sealed at both ends by seals S3, with the outer end seals S2 outside of or beyond the inner seals S3; similarly as appears in Fig. 3, the side seal S1 of the inner container or lining is entirely within the covering or outer container formed from webbing W, with the outer seal S outside or beyond it.

Thus, all of the outer seals of the package P, Fig. 4, are formed by direct attachment to each other of portions of the outer covering shaped from the web W, whereas all of the inner seals S3 are formed by direct attachment to each other of portions of the lining material. Whether or not there is any adhesion between the outer faces of the inner seals and the inner face of the outer covering is immaterial; and in most cases when both webs are thermoplastic, there will be at least some incidental adhesion at these areas which are not effective as seals, even though the adhesion is firm, because of their location.

Because the inner and outer seals are formed respectively by direct attachment of materials having the same heat sealing characteristics, the lining material and the outer covering may be selected and arranged in proper sequence in the layers to obtain maximum strength, resistance to moisture in liquid or vapor phase, and other desired qualities without need to match to each other the heat sealing characteristics of the different sheet materials.

Although the packages are preferably made

by a continuous method, such as exemplified in Fig. 1 and other subsequent figures, it is to be understood that any of packages P, P1, P2, P3, P4 and P5 may be made individually, in which case both the lining and the outer covering may be made from pre-cut sheets, or by other continuous methods similar to those disclosed in Fig. 11 of U. S. Letters Patent 2,160,367 or Fig. 14 of U. S. Letters Patent 2,146,831 suitably modified however, as herein disclosed, to provide for lining of the package and for formation of outer seals beyond the lining seals. A preferred apparatus, capable with modification of its sealing tools to perform the method described in connection with Fig. 1 is illustrated and described in Zwayer Patent #1,986,422.

In the modified method and apparatus shown in Fig. 5, the outer continuous tube T1, corresponding with tube T of Fig. 1, comprises two webs W2, W3 of webbing material removed respectively from rolls R2 and R3. Upon each of the webs W2 and W3 during its feed toward the former member 1, there is deposited a series of lining elements each destined to form one-half of the lining of a container. Specifically, the lining elements L3, fed from a stack thereof, or as shown, cut from web W5, are disposed in spaced relation to each other lengthwise of the web W3. Similarly, the lining elements L2 are fed from a stack or cut from a web W4 and deposited in spaced relation to each other lengthwise of the covering web W2.

As the webs W2 and W3 are shaped about the former member 1 to form the continuous outer tube T1, the pairs of lining elements disposed upon these webs are concurrently shaped to form a series of tubular sections within, and spaced lengthwise of, the outer tube T1. On each of the opposite sides of the former member 1, there are disposed a pair of sealing tools 6, 6 for pressing together and effecting thermoplastic joinder of the margins of the webs W2 and W3 to form the seams or seals S4, S4 extending lengthwise of the outer tube T1, Fig. 6.

There are also disposed on each of the opposite sides of former member 1, a pair of sealing tools 7, 7 (not shown) for effecting joinder of the lengthwise edges of a pair of lining elements L2, L3, thus to form the inner seals S5, S5.

The feed of the webs W, W3 over the former member 1 may be effected as described in connection with Fig. 1 by a pair of gripper elements 5, 5, which may also serve as end sealing elements. Specifically, as shown in Fig. 1 the grippers 5, 5 may carry or comprise two independent sets of sealing tools 8, 8 and 9, 9, the former serving to flatten the outer tube 1 between the adjacent ends of successive lining sections and apply heat and pressure thereto to produce a seal S2 transversely of the outer tube T1; and the latter pair serving to flatten and effect sealing of aforesaid adjacent ends of two successive lining sections. In cross section lengthwise of the tube T1, the individual containers are the same as shown in Fig. 2.

The other steps of filling the containers and detaching them from the webbing after final sealing are the same as discussed in connection with Fig. 1.

Referring to Fig. 7, which shows the completed package P1, each of the outer seals S2, S2, S4, S4, is formed by direct attachment to each other of portions of the webs W2, W3, which preferably are of the same material, or at least comprise, or have applied thereto, adhesives of

the same characteristics. Each of the inner seals S3, S3, S5, S5 is formed by direct attachment to each other of marginal portions of a pair of lining elements L2, L3 preferably of the same material or which at least comprise, or have applied thereto, adhesives of the same or similar characteristic.

In this, as in all other modifications herein described, the sheet materials comprising the inner and outer containers, or lining and covering, may be of the same composition or preferably and usually are of different compositions to procure desirably different qualities of the lining and covering; for example, when the filling in the packages is fluid or semi-solid, such as oil or grease, the lining is preferably of paper coated or impregnated with a substance or combination of substances rendering it liquid-proof, and the outer covering may be Pliofilm or Cellophane, whereas when the filling in a package is a solid, one or many pieces, the lining may be of Pliofilm, or equivalent, and the covering of glassine or other equivalent paper. In general, the choice of lining and covering materials will in each case be influenced or determined by the nature of the filling; this choice is not, as heretofore, restricted by any need to match the sealing characteristics of the lining and covering materials, because none of the seals are formed by attachment of the lining to the covering.

In general, the method illustrated by Fig. 8 is similar to that shown in Fig. 1, in that a series of lining elements are disposed upon a single web of a covering material as it is fed toward a former member 1; therefore, only those respects in which the methods differ are specifically discussed. The method and arrangement shown in Fig. 8 is particularly suited to those instances in which the lining elements are not made of a material which is itself a thermoplastic and to which it is necessary to apply adhesive to effect sealing of the inner container. Specifically, there is applied to each of the four edges of each lining element a band or stripe of adhesive; for example, and specifically, the stencil 12A applies the stripe 11 of adhesive to the leading end of each lining element L4, the stencil 12B applies the band or stripe 13 of adhesive to the trailing end of each lining element L4, and the transfer rolls 14, 14 apply stripes 15 of adhesive to the longitudinal edges of each of the lining elements L4.

The reciprocating bars 16, 17, movable toward and away from the stencils 12A, 12B respectively, and the rolls 18 co-acting with the adhesive-applying rolls 14, 14 are all preferably heated to soften the thermoplastic comprised in or constituting the web 6 to effect adhesion thereto of the lining elements, at least sufficiently to prevent their displacement with respect to each other, or to the web W6 during feed of the composite webbing toward and about the former member 1.

The adhesive applied by the stencils and rolls 14 may be of any suitable type; it may, for example, be a glue which remains unset during feeding and shaping movements of the lining elements, or it may be a quick-drying thermoplastic which is reactivated by sealing tools 7, 7 and 9, 9.

In any of the modifications shown in Figs. 1, 5 and 8, as well as in any of the modifications subsequently described, the lining elements may be single or multi-ply, and in the latter

case may be the same or different materials, specifically referring to Figs. 8, 9, the web W7 from which the lining elements L4 are cut is a two ply web of prestretched "Pliofilm." This webbing is made from two webs of "Pliofilm" which are stretched in different directions and pressed together while heated to suitable temperature. However, such prestretched "Pliofilm" is not suited itself to form a seal when subjected to heat and pressure and it is, therefore, necessary, as previously described, to apply thereto the aforesaid bands or stripes 11, 13 and 15 of adhesive, whose heat sealing characteristics may be the same as, or usually different from, the thermoplastic comprised in or constituting the web W6.

The steps of forming the longitudinal seals S, S1, and the end seals S2, S3, are substantially the same as described in connection with Fig. 1 and their description need not be repeated.

As more clearly appears in Figs. 10, 11, the inner container or lining comprises two layers or plies 19, 20 integrally bonded or joined to each other within an outer covering or container T. All of the outer seals S2, S2 and S are formed by direct thermoplastic attachment to each other of portions of the sheet material W6, and are all outside or beyond the corresponding seals S3, S3, and S1 of the inner container. The aforesaid seals of the inner container are entirely within the outer seals so that, as previously stated, the inner and outer seals may be formed respectively under those different conditions of pressure, temperature and time best suited to the different adhesive utilized.

In the modifications previously herein described, the lining elements are substantially narrower than the continuous webbing and are so spaced thereon as to leave clear the margins of the webbing to be joined for formation of the longitudinal seam S of Figs. 1 and 8, or of the longitudinal seams S4, S4 of Fig. 6. In the modification shown in Fig. 13, the lining elements L5 are the same width as the web W upon which they are disposed with their longitudinal edges substantially flush with the edges of web W; direct attachment to each other of the longitudinal edges of the lining elements, and direct attachment to each other or the margins of the webbing W are insured by departing from the projecting type of seal shown in the previous modification and by recourse to the type of seal shown in Figs. 13, 14 in which the overlapping margins of the linings are substantially flush with the periphery of the inner container and the overlapping margins of the outer webbing W are substantially flush with the periphery of the outer tube T. As more clearly appears in Fig. 14, the seal S7 comprises the directly attached margins of the lining element L5 which may, for example, be of "Pliofilm," and the outer seal S8 comprises the overlapping and directly attached margins of the outer container or covering which may, for example, be of a different thermoplastic material such as Cellophane. In this modification a single sealing tool 21 forms both the inner and outer longitudinal seams.

To avoid the limitation use of this single seal may impose upon the selection of materials, the lining elements whether of width equal to, greater than, or less than the width of web W may be staggered or offset; thus, to insure when the web and lining elements are shaped about former 1, stagger, or offset, of the seams S7, S8, as shown in Fig. 17.

The subsequent steps of transversely sealing, 75

filling, and detaching the filled containers may be the same as previously described in connection with Fig. 1 and, or as shown in Figs. 13, 15, and 16 the double walled tubing of Figs. 14 and 17 may be shaped into packages or containers having squared ends. A suitable arrangement for producing this type of package is disclosed and claimed in co-pending application Serial #297,484 of Sonneborn & Albertson.

As the composite webbing is fed beyond the end of the former 1, the tucking tools 22, 22 crease the opposite sides of the tube T and tend to tuck the lining and covering materials between two plates 23, 23 depending from the lower end of the former member 1. As the clamping members 5, 5 move toward each other to the position shown in Fig. 16, the lower ends of the plates 23, 23 are bent thereby toward each other, whereupon the tucking tools 22, 22 produce inturned folds or tucks in the opposite sides of the tube T in the path of the sealing tools carried by the clamping members 5, 5. The members 24, 24 grip the tubing below the seal S2 and support the previously formed packages, thus to relieve the seal during its formation from the weight of the previously filled containers. As the clamp members 5, 5 move downwardly from the position shown in Fig. 16, they continue to move closer to each other to effect engagement with the webbing of two sets of sealing tools which, in accordance with my present invention, are suited to subject the webbing and lining materials to different temperatures.

The second set of gripping tools 25, 25 are effective, as more fully described and claimed in application Serial No. 259,748 of Sonneborn & Albertson, to relieve the seal, while heated, from the web-feeding strain.

The tendency of the web, or of the lining elements, or of both of them, to wrinkle, or crease, as they are shaped about former 1 may be avoided by recourse to a modification of the method and apparatus described and claimed in my application, Serial No. 306,059, filed Nov. 25, 1939. Referring to Figs. 19 to 22 hereof, the web W is notched or slitted by the knives 26 to define a series of blanks integrally attached to the webbing and each comprising one of the lining elements L whose relation to the web W may be any of those previously described in connection with Figs. 1, 8, 13, and 18.

As each blank in turn enters the mouth of the funnel 27 and passes downwardly about former 1, it is shaped to form an outer tubular section of web W and a shorter, inner tubular section comprising one of the lining elements L.

In the particular arrangement shown in Fig. 19, the longitudinal inner and outer seams S and S3 project from the inner and outer containers, generally as described in connection with Fig. 1, but it is to be understood these seams may be of the flush type described in connection with Figs. 14 and 17.

Reverting to Fig. 19, the funnel 27 is provided with a slot 28 extending upwardly from the lower smaller end of the funnel in direction substantially parallel of the axis of former member 1. The wedge shaped structure 29 disposed between the funnel and the former member 1, preferably attached to member 1, directs the longitudinal edges of the lining elements and the margins of the web W into and through the slot 28, as shown in Fig. 19. The subsequent steps of sealing the longitudinal edges of the inner and outer containers, the filling of the containers,

the independent closure of the ends of the inner and outer containers, and the detachment of filled containers are the same as previously described in connection with Fig. 1.

The slits or notches 30 are, as shown in Fig. 20, disposed within the flattened area of adjacent end seals S2; the knives 10 in detaching a filled container from the webbing may, as shown in Fig. 20, sever the webbing along a line which in effect is a continuation of the notching and slitting; or as disclosed in Fig. 24, a double set of knives 10 may remove a narrow band of webbing whose sides are substantially parallel to and on opposite sides of slits 30.

To avoid repetition, those elements in Fig. 19 corresponding with elements of preceding modifications are identified by reference characters appearing in those modifications, to the description of which reference is made for discussion of their purposes and functions.

It shall be understood the terms "seals" and "sealing" when appearing unqualified in the appended claims are not limited to heat-seals or heat-sealing, but also comprehend seals or sealing which do not involve application of heat, for example, seals formed by application of pressure to surfaces freshly coated with cold glue or the like.

What I claim is:

1. A method of producing lined containers which comprises shaping sheet lining material and joining edges thereof to form a tubular section, shaping sheet covering material and joining edges thereof to form a second tubular section enclosing, and projecting beyond an end of, the inner tubular section, sealing said end of the inner tubular section, and sealing the outer tubular section beyond the sealed end of the inner section.

2. A method of producing lined containers which comprises concurrently shaping sheet lining material and sheet covering material to form an inner tubular section of lining material and a longer, outer tubular section of covering material, joining edges of the lining material and of the covering material to form seals extending lengthwise of said tubular section, sealing an end of the inner tubular section, and sealing the longer outer tubular section beyond said end of the inner section.

3. A method of producing lined containers which comprises shaping sheet lining material and joining edges thereof to form a tubular section, shaping sheet covering material and joining edges thereof to form a second tubular section enclosing, and projecting beyond an end of, the inner tubular section, flattening and sealing said end of the inner tubular section, and flattening and sealing the outer tubular section beyond the flattened sealed end of the inner section.

4. A method of producing lined containers which comprises concurrently shaping sheet lining material and sheet covering material to form an inner tubular section of lining material and a longer, outer tubular section of covering material, joining edges of the lining material and of the covering material to form seals extending lengthwise of said tubular section, transversely flattening and sealing an end of the inner tubular section, and flattening and sealing the longer outer tubular section beyond said end of the inner section.

5. A method of producing lined containers which comprises concurrently shaping sheet lining material and sheet covering material to form

an inner tubular section of lining material and a longer outer tubular section of covering material, joining edges of the lining material and of the covering material to form seals extending lengthwise of said sections, and transversely sealing an end of the inner tubular section and substantially concurrently sealing the longer tubular section beyond said end of the inner section.

6. A method of producing lined containers which comprises shaping sheet lining material and joining edges thereof to form a tubular section having at least one seal extending lengthwise thereof and outwardly therefrom, shaping sheet covering material and joining edges thereof to form a second tubular section longer than and outside of said first named tubular section and having at least one seal extending lengthwise thereof and outwardly therefrom, transversely sealing at least one end of said inner tubular section, and transversely sealing an end of the outer tubular section beyond the corresponding sealed end of the inner tubular section.

7. A method of producing lined containers which comprises shaping sheet lining material and joining edges thereof to form a tubular section having a seal extending lengthwise thereof and substantially flush with its periphery, shaping sheet covering material and joining edges thereof to form a second tubular section longer than and outside of said first named tubular section and having a seal extending lengthwise thereof and substantially flush with its periphery, transversely sealing at least one end of said inner tubular section, and transversely sealing an end of the outer tubular section beyond the corresponding sealed end of the inner tubular section.

8. A method of producing lined containers which comprises shaping sheet lining material and sheet covering material, of greater area than an area of said sheet lining material, to form a tubular section of lining material having a flush seal extending lengthwise thereof, and shaping a longer outer tubular section of covering material having a flush seal overlying aforesaid seal of the inner section, transversely flattening and sealing at least one end of said inner tubular section, and transversely flattening and sealing the outer tubular section beyond the corresponding sealed end of the inner tubular section.

9. A method of producing lined containers which comprises shaping sheet lining material and sheet covering material, of greater area than an area of said sheet lining material, to form a tubular section of lining material having a flush seal extending lengthwise thereof, shaping a longer outer tubular section of covering material having a flush seal staggered with respect to aforesaid seal of the inner section, transversely flattening and sealing at least one end of said inner tubular section, and transversely flattening and sealing the outer tubular section beyond the corresponding sealed end of the inner tubular section.

10. A method of producing lined containers which comprises shaping at least two lining elements of sheet material and joining edges thereof to form a tubular section, shaping at least two longer elements of sheet material and joining edges thereof to form a second tubular section outside of and extending beyond an end of said first named inner tubular section, sealing said end of the inner tubular section, and sealing the

outer tubular section beyond said sealed end of the inner tubular section.

11. The method of producing lined containers which comprise feeding web material having lining elements spaced lengthwise thereof, shaping the web-material and the lining elements to form a succession of spaced tubular lining sections within a continuous outer tube, longitudinally sealing said tube and said tubular lining sections, and therefrom defining containers by transversely sealing said tube between adjacent tubular sections and transversely sealing at least one end of each of said tubular sections.

12. The method of producing lined containers which comprises feeding a web of covering material having lining elements of sheet material spaced lengthwise thereof, progressively shaping the web and the lining elements to form a succession of spaced tubular lining sections within a continuous outer tube, progressively joining to each other the edges of the web to form a seal extending lengthwise of said tube, progressively joining to each other the longitudinal edges of each of said tubular sections to form a seal extending lengthwise thereof within said outer tube, transversely flattening and sealing the tube between the ends of adjacent tubular sections, and transversely flattening and sealing the ends of the tubular sections.

13. The method of producing lined containers which comprises feeding, shaping and joining webs of covering material progressively to form a continuous tube, concurrently feeding and shaping lining elements spaced lengthwise of said web to form a succession of spaced tubular sections within said outer tube, transversely sealing the tube between the end of successive tubular sections of lining, and transversely sealing at least one end of each of said tubular sections.

14. A method of producing lined containers which comprises concurrently shaping sheet lining material of certain sealing characteristic and sheet covering material of different sealing characteristic to form an inner tubular section and a longer, outer tubular section, closing said inner tubular section to form an inner container by sealing together portions of said sheet lining material under the conditions of temperature, pressure, or time suited to its sealing characteristics, and closing said outer tubular section to form an outer container by sealing together portions of said sheet covering material under the different conditions of temperature, pressure or time suited to its sealing characteristic.

15. A method of forming, filling and sealing lined packages which comprises feeding a web

having lining elements spaced lengthwise thereof, transversely partially severing the web between successive lining elements to define a series of blanks integrally attached to the web and each associated with one of said lining elements, thereafter shaping each of the blanks in succession simultaneously to form a tubular lining and a longer and outer tubular section of the web joined thereto by the unsevered portion thereof, attaching to each other longitudinal margins of the inner and outer tubular sections, transversely and in succession sealing the ends of each inner tubular section, filling each inner tubular section after so sealing one end thereof, transversely sealing adjacent ends of outer tubular sections throughout an area within which lie severed and unsevered portions of the web, and detaching each of the filled lined packages by severance from the web through one of said areas.

16. Apparatus for shaping webbing into tubular form comprising a former member, a funnel-like member surrounding said former member and having a slot extending longitudinally from its smaller end, a wedge-shaped member disposed between said members for turning outwardly into said slot margins of the webbing shaped about said former member, and means beyond said slot for attaching said margins to each other.

17. Apparatus for shaping webbing into tubular form comprising a former member, means for feeding the webbing with respect to said former member, a funnel-like member surrounding said former, converging in the direction of feed of the webbing, and having a slot extending longitudinally from its smaller end, a wedge shaped member disposed between said member and diverging in the direction of feed of the webbing to turn margins of the webbing outwardly from said former member and through said slot, and means beyond said slot for attaching said margins to each other.

18. Apparatus for producing lined containers from webbing having lining elements spaced lengthwise thereof comprising a former member, means for feeding the webbing with respect to the former member, means for slitting the webbing transversely between successive lining elements, structure for curling the webbing and concurrently the lining elements, in avoidance of creasing, about said former member to form a series of tubular lining sections within, and between slits extending partially across, an outer tube of webbing.

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