Aug. 19, 1958 C. CASTELLI 2,848,046

TAPE DISPENSERS

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Fig. 1.

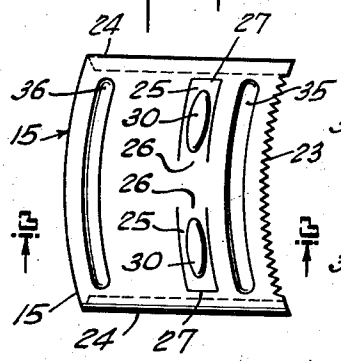


Fig. 2.

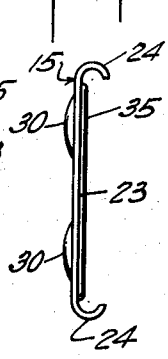


Fig. 3.

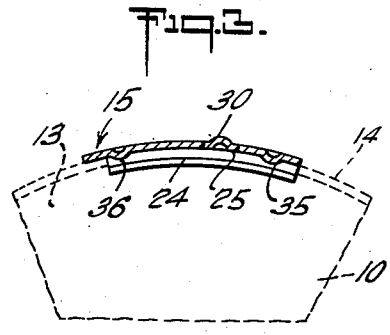


Fig. 4.

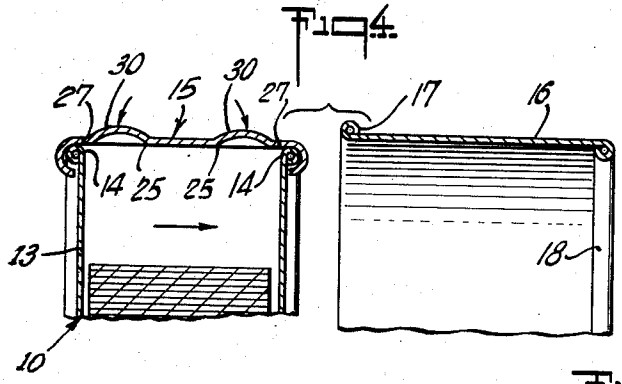


Fig. 5.

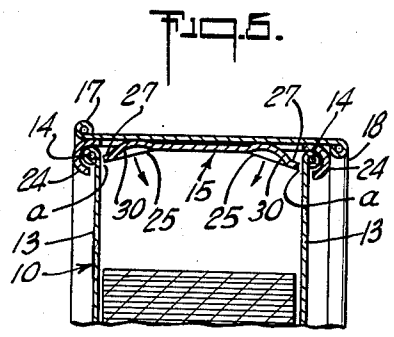


Fig. 6.

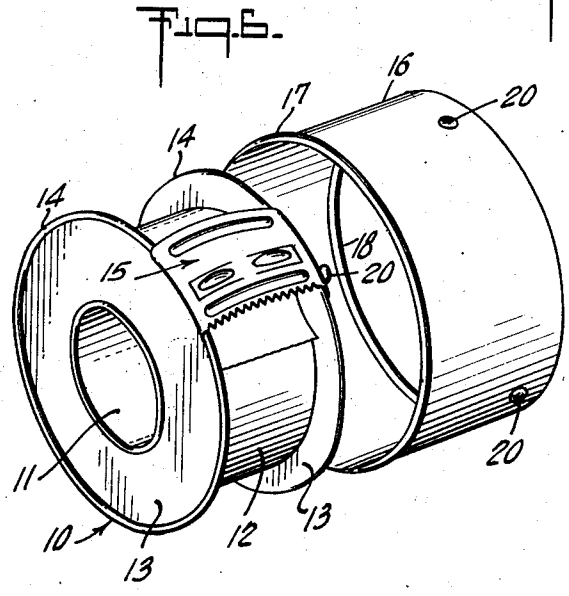


Fig. 7.

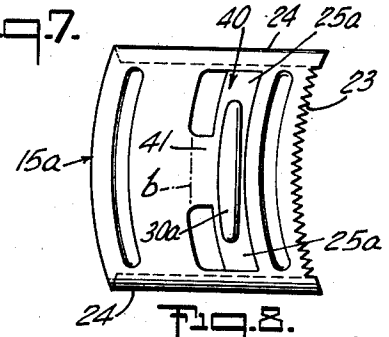
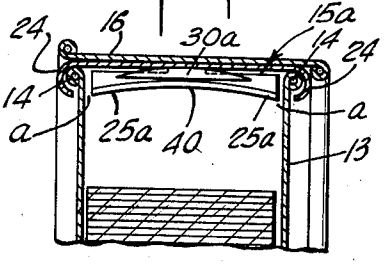


Fig. 8.



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TAPE DISPENSERS

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Fig. 9.

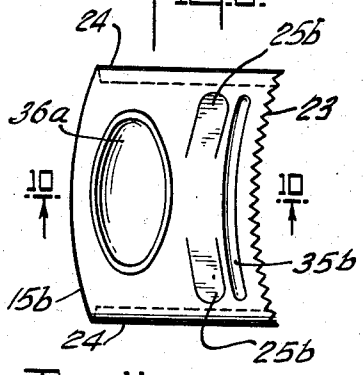


Fig. 10.

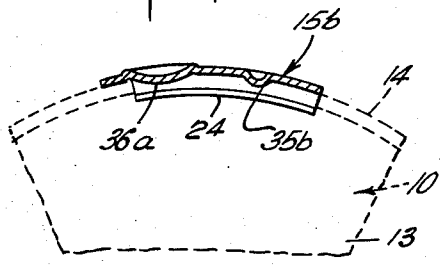


Fig. 11.

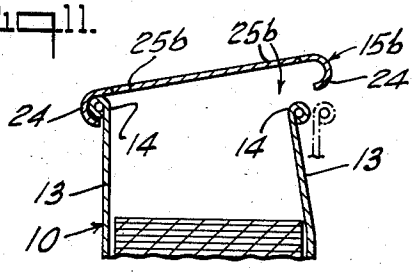


Fig. 12.

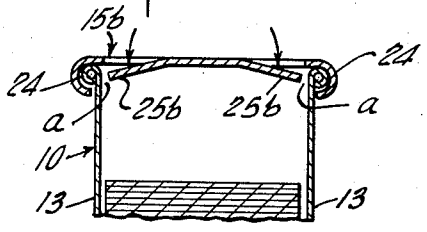


Fig. 13.

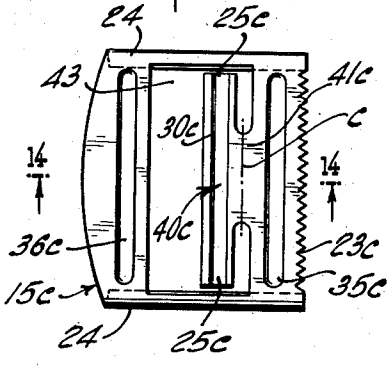


Fig. 14.

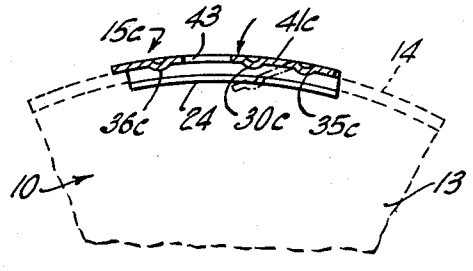
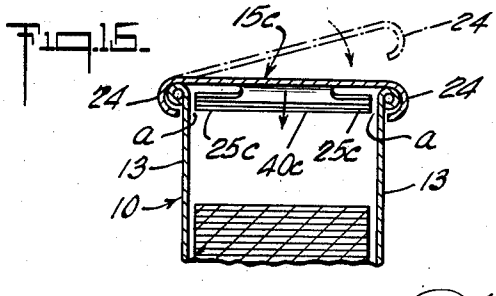


Fig. 15.



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TAPE DISPENSERS

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Application April 6, 1955, Serial No. 499,596

17 Claims. (Cl. 164—84.5)

The present invention relates to tape dispensers of the type comprising a spool for holding a roll of tape-like material, such as adhesive plaster, and a cutter slidable over the periphery of the spool for cutting off a required length of the tape unwound from the roll.

In one known form of surgical adhesive plaster dispenser, the spool comprises a central core and circular end walls connected to the ends of the core and spaced apart a sufficient distance to permit a strip of adhesive tape to be wound around the core between these end walls. The outer rim of each end wall is provided with a peripheral bead to receive slidably the corresponding end of the cutter. The tape cutter is mounted on the spool between the end walls of the spool with its cutting edge extending between these end walls, and has its ends bent to form channels to receive slidably the beaded peripheries of the end walls of the spool. The cutter slides freely around the peripheries of the end walls of the spool, so that it will not interfere with the tape during the winding or unwinding of the spool. When it is desired to dispense a section of the wound-up tape, the required length of tape is unwound from the spool, and with the thumb of the hand pressed against the upper face of the cutter to hold the cutter in position on the spool, the tape is drawn across the cutting edge to sever the unwound section of the tape.

The end walls of the spool are of comparatively thin metal and during manipulation of the dispenser, these end walls may be flexed or pressed inwardly towards each other sufficiently to cause the beads on their peripheries to become disengaged from the channels at the ends of the cutter. This condition could be partially remedied by closing the channel ends of the cutter around the beads on the peripheries of the end walls of the spool, but this requires an additional assembly operation and will tighten up the connections between the cutter and the end walls of the spool, so that the cutter will not slide so freely.

One object of the present invention is to provide a new and improved cutter, which can be easily snapped and latched on to the beaded edge of the end walls of a conventional adhesive tape dispenser and retained thereon for free slide movement thereabout, and which has simple but nevertheless strong effective stop means for preventing these end walls from being flexed or moved inwardly towards each other to the point where they become disengaged from the ends of the cutter.

Another object is to provide a new and improved tape dispenser comprising the spool and a cutter of the improved type described.

A further object is to provide a new and improved method of manufacturing and assembling, by which stop devices are formed on the cutter and then bent into operative stop position automatically by the mere procedure of slipping a casing over the dispenser.

In carrying out certain features of the present invention, the cutter is made from a metal sheet having its ends bent inwardly to form channels into which the beaded edges of the end walls of the spool are nested. These

channels are opened sufficiently therealong to allow them to be attached and retained on the spool simply by hooking one channel on to the bead on one end wall and latching the other channel onto the bead of the other end wall by a snap-on fit.

As a feature of the invention, there is cut out of the cutter sheet, a pair of substantially alined stop fingers, each having a free edge located near the corresponding end of the sheet and having one side integrally connected to the body of the sheet at a region no closer to the latter end of the sheet than said finger edge. These fingers are depressed inwardly from the general plane of the body of the cutter, so that the outer free ends of these stop fingers in assembled position of the dispenser, project into the path of inward movements of the end walls of the spool and in positions to receive substantially edgewise, pressures from the adjacent end walls of the spools upon inward movements of said end walls and to limit thereby the extent of said inward movements. The free ends of these stop fingers when so depressed are located in limiting positions to prevent the end walls of the spool from being disengaged from the ends of the cutter when said end walls are pressed inwardly towards each other. These fingers designed, constructed and located as described, will be under compression along the plane of alinement or the fingers under the pressing action of the end walls of the spools, during dispensing manipulation of the spool. The fingers have great rigidity and structural strength in this direction, and therefore resist the pressing action of the end walls of the spool effectively, without being bent back into the general plane of the body of the cutter sheet or otherwise distorted.

As a further feature, the fingers have protuberances stamped therefrom in form of ribs or the like, and projecting outwardly from the body of the cutter sheet and radially outwardly beyond the beaded peripheries of the end walls of the spool, while the fingers cut out from said body, aside from said protuberances, are still in the plane of said body. When the substantially cylindrical casing usually employed to house the spool when not in use, is slipped over the spool with the cutter attached thereto and in the condition described, the peripheral wall of said casing, by engaging the protuberances on the stop fingers, depresses these fingers radially inward into position to limit inward movement or flexing of the end walls of the spool in a manner described.

Various other objects, features and advantages of the invention are apparent from the following particular description and from the accompanying drawings, in which

Fig. 1 is the top plan view of one form of cutter for a tape dispenser embodying the present invention, the cutter being shown before attachment to the spool and before the stop fingers thereon have been depressed into operative limiting position;

Fig. 2 is a front view of the cutter of Fig. 1;

Fig. 3 is a section of the cutter taken on lines 3—3 of Fig. 1;

Fig. 4 is a radial section of the spool and the cutter of Fig. 1 attached thereto and showing the casing or cover ready to be slipped over the spool and cutter;

Fig. 5 is a radial section of the spool and cutter of Fig. 1 with the casing slipped thereover and the stop fingers depressed into operative position by the casing;

Fig. 6 is a perspective of the tape dispenser of Figs. 1 to 5, shown with the casing separated from the spool;

Fig. 7 is a top plan view of another form of cutter embodying the present invention and shown before attachment to the spool;

Fig. 8 is a section of the assembled tape dispenser with the cutter of Fig. 7 and the casing slipped in place over the spool and cutter;

Fig. 9 is a top plan view of another form of cutter embodying the present invention and shown before the stop fingers on the cutter have been depressed into operative position;

Fig. 10 is a section of the cutter of Fig. 9 taken on lines 10—10 thereof;

Fig. 11 is a radial section of the cutter of Fig. 9 shown in the process of being snapped onto the spool;

Fig. 12 is a radial section of the spool and the cutter of Fig. 9 attached thereto and shows said cutter after the stop fingers thereon have been depressed into operative position;

Fig. 13 is the top plan view of still another form of cutter embodying the present invention and shown before the stop fingers on the cutter have been depressed into operative position;

Fig. 14 is a section of the cutter of Fig. 13 taken on lines 14—14 thereof; and

Fig. 15 is the radial section of the assembled spool and cutter of Fig. 13 and shows the stop fingers on the cutter depressed into operative limiting position.

Referring to Figs. 1 to 6 of the drawings, the dispenser is shown of the type for dispensing surgical adhesive plaster in tape form and comprises a spool **10** of conventional construction having a central cylindrical core **11** around which the adhesive tape **12** is wound. Secured to the ends of the core **11** in any suitable manner are two circular end walls **13** of the same size and having center holes through which the ends of the core **11** project. The outer rims of these end walls **13** are rolled outwardly to form peripheral beads **14**, serving (1) to eliminate sharp peripheral edges which might injure the fingers of a manipulator, (2) to impart rigidity to the end walls, and (3) to form rails for a cutter **15**, as will be more fully described.

The tape dispenser also comprises a conventional tubular cover or casing **16**, which is adapted to be slipped over the assembled spool **10** and cutter **15** when not in use, to protect the adhesive tape **12** and keep it clean and to prevent injury by contact with the cutting edge of the cutter. This casing **16** is in cylindrical form except for a slight taper provided to facilitate entry of one end of the spool **10** into the casing during the process of slipping the spool into the casing. The casing **16** at its larger end has its rim rolled outwardly to form an outside bead **17** to prevent exposure of the sharp edge and to impart rigidity to the casing and has an internal diameter at this larger end large enough to receive with a snug slide fit one end of the spool **10** with attached cutter **15**. At the other smaller end of the casing **16**, the rim is rolled inwardly to form an inside bead **18** to prevent exposure of the sharp edge and to impart rigidity to the casing and has an internal diameter small enough to receive the end of the spool **10** with attached cutter **15** with a snug friction fit but large enough to permit the spool to be pushed out of the casing **16** with ease. The inturned bead **18** on the casing **16** also serves as a stop for the spool **10** in fully inserted position of the spool in the casing, limiting movement of the spool in one axial direction. A series of protuberances **20** on the peripheral wall of the casing **16** stamped inwardly from said wall near the smaller end of the casing, serve as snap catches for the bead **14** on the end wall **13** of the spool **10** near this smaller end of the casing, and thereby serve to retain the spool in the casing against accidental axial withdrawal therefrom in the opposite axial direction.

The cutter **15** is stamped from a single blank of sheet metal and is arcuately curved as shown in Fig. 3 to conform with the circular curvature of the peripheries of the end walls **13** of the spool **10**. Along its front side, the cutter **15** is provided with a serrated cutting edge **23** along which an unwound section of the adhesive tape **12** may be drawn to sever it. This cutting edge **23** has a slight concave curvature to facilitate start of the tape severance.

At its ends, the cutter **15** is rolled inwardly to form hollow beads or channels **24** adapted to receive the beads **14** on the end walls **13** of the spool **10**. The end channels **24** on the cutter **15** are opened along the length thereof sufficiently to permit the cutter to be attached to the spool **10** by the simple manipulation of hooking one channel on to the bead **14** of one end wall **13** of the spool while the other end channel is raised from the spool, and then snapping the latter end channel onto the bead **14** of the other end wall **13**. The end walls **13** of the spool **10** are thin enough to be resilient and to flex inwardly in the process of snapping the cutter **15** thereon. If desired, the end walls **13** of the spool **10** may be pressed inward to facilitate engagement of the end channels **24** with the respective beads **14** on said end walls for assembly. When the spool **10** and cutter **15** are combined as described, the cutter **15** will be attached to the spool **10**, as shown in Fig. 4.

The end channels **24** are opened sufficiently, not only to allow for assembly in the manner described, but also to permit the cutter **15** to slide freely along the peripheries of the end walls **13** of the spool **10**, using the beads **14** on the end walls as rails for that purpose. During the operation of unwinding a section of the tape **12** and drawing it across the cutting edge **23** of the cutter **15**, the end walls **13** of the spool **10** are apt to be pressed inward towards each other by the fingers of the manipulator, and due to the resiliency of these end walls **13**, they may be flexed inwardly sufficiently to cause the beads **14** thereon to become disengaged from the channels **24** on the cutter.

To avoid disengagement of the cutter **15** from the beads **14** of the spool **10** under the conditions described, the cutter **15** has cut out therefrom a stop device comprising a pair of stop fingers **25** shown of generally rectangular form, each finger being severed on three sides from the body of the cutter and being integral on its fourth side with the body of the cutter. The two fingers **25** are in longitudinal alinement between the two end walls **13** of the spool **10**, except for a slight curvature in said fingers in conformance with the curvature of the cutting edge **23**, and connect at their inner confronting ends integrally with the intermediate section of the body of the cutter **15**. These fingers **25** thereby are bendable radially inward at their inner ends **26** along respective axes extending substantially parallel to the channel ends of the cutter, to cause their outer free ends **27** to project radially inward into the path of inward flexing movement of the end walls **13**, as shown in Fig. 5.

When first cut out of the cutter blank, the fingers **25** are in the general plane of the body of the blank, as shown in Fig. 4. These fingers **25**, as far as certain aspects of the invention are concerned, may be pushed down by the use of a suitable tool from the position shown in Fig. 4 into the operative stop position shown in Fig. 5. However, in the form shown, this finger depressing operation is accomplished automatically by the operation of slipping the casing **16** over the spool **10** and cutter **15**, after the assembly thereof. To that end, each of the fingers **25** has a radial outward protuberance **30** stamped thereon, desirably in the form of a rib extending lengthwise thereof. These ribs **30** are stamped on the cutter **15** at the same time the fingers **25** are cut out of the cutter, and when the cutter is attached to the spool **10**, these ribs project beyond a circle having a diameter equal to the smallest internal diameter of the casing **16**, as shown in Fig. 4. Since these ribs **30** in radial section slope on opposite ends from the general plane of the body of the cutter **15**, as shown in Fig. 4, the passage of the casing **16** axially over the cutter and over the ribs is effected with ease, and causes the fingers **25** to be depressed radially inward about their inner ends **26** by the camming action of the casing on said ribs.

As a result, the fingers **25** will be pushed into position to cause their outer free ends **27** to lie in the path of inward flexing movements of the end walls **13** of the spool, as shown in Fig. 5.

The ribs **30** serve not only as cams for the purpose indicated, but also as means to impart rigidity to the fingers.

The casing **16** may be slipped over the spool **10** and attached cutter **15** as a final step in assembly, before storage and/or shipping. When the casing **16** is slipped off the spool **10** for use, the fingers **25** will remain depressed in limiting operative position.

In depressed operative positions of the fingers **25**, the distance *a* (Fig. 5) from each end wall **13** of the spool **10** in normal position to the free end **27** of the adjacent finger **25** is smaller than the width of the bead **14** on said end wall, to prevent the inward flexing of the end wall to the point where the bead will become disengaged from its enclosing channel **24** on the cutter **15**.

To impart additional rigidity to the cutter **15**, the cutter has stamped thereon two ribs **35** and **36** projecting radially inward and extending between the channel ends of the cutter. These ribs **35** and **36** are curved in conformance wtih the curvature of the cutting edge **23** and flank opposite sides of the fingers **25**. The front rib **35** near the cutting edge **25** imparts rigidity to said cutting edge against the pulling action of the tape **12**, as it is drawn along said cutting edge. The rear rib **36** not only imparts rigidity to the rear section of the cutter **15**, but also serves to break up the continuity of the outer surface of the cutter rearwardly of the stop fingers **25**, to afford a surface on which the thumb of the manipulator's hand can take hold in sliding the cutter **15** along the periphery of the spool **10** and in restraining the cutter in fixed position, as the unwound section of tape **12** is drawn across the cutting edge **23** for severance.

In operation, while a section of the tape **12** is being drawn across the cutting edge **23** of the cutter **15** for severance, the hand of the manipulator holding the spool **10** and the cutter may be pressing the end walls **13** of the spool **10** inwardly. These inward movements of the end walls **13**, however, are limited by the stop fingers **25**, so that the beads **14** on said end walls are confined within the end channels **24** of the cutter **15**. It should be noted that the pressures of the end walls **13** on the stop fingers **25** are transmitted to said fingers substantially edgewise thereof in a plane extending lengthwise of the fingers, so that there is little or no bending moment on these fingers about their integral connections with the cutter **15**, due to these pressures. The fingers **25**, being therefore mainly under compression as a result of the inward movements of the end walls **13** of the spool **10**, are able to withstand effectively the pressures from these end walls without distortion or deformation.

It should be noted that the improved cutter **15** of the present invention may be applied to spools **10** of conventional constructions, without any changes in these constructions.

Figs. 7 and 8 show a cutter **15ª**, which is a modification of the cutter illustrated in Figs. 1–6. In this modification, instead of cutting out two separate fingers from the cutting blank, a single stop device **40** is cut out therefrom in the form of a **T**. This stop device **40** has a center constricted rear stem **41** integrally connected to the body of the cutter **15ª** and side arms **25ª** serving as stop fingers for the end walls **13** of the spool **10** and curved in conformity with the curvature of the cutting edge **23**. A single rib **30ª**, stamped centrally of the fingers **25ª** and projecting radially outwardy therefrom when said fingers are in the general plane of the body of the cutter **15ª**, extends along said fingers and serves not only to reinforce said fingers but also as a cam by which the fingers are depressed radially inwardly about the stem **41**, when the casing **16** is slipped over the spool **10** with attached cutter **15ª**, in the final assembly operation before storing and/or shipping. The fingers **25ª** are bent radially inward by this camming operation about an axis *b* (Fig. 7) extending across the stem **41** between the channel ends of the cutter **15ª**, as shown in Fig. 8, and in depressed position, these fingers limit the inward flexing movements of the end walls **13** of the spool **10**, so that the beads **14** on said walls cannot become disengaged from the channels **24** at the ends of the cutter **15ª**.

Aside from the features of the modification of Figs. 7 and 8 described, the construction of this modification is the same as that of Figs. 1 to 6.

Figs. 9 to 12 show another modification, in which the cutter **15ᵇ** does not have the camming conformations on the stop fingers. In this modification, there are provided fingers **25ᵇ** similar to the fingers **25** in the form of the invention shown in Figs. 1 to 6, these fingers **25ᵇ** differing only in the absence of the camming ribs **30** thereon. These plain fingers **25ᵇ** lie in the general plane of the body of the cutter **15ᵇ** when detached from the spool **10** and can be depressed by means of a suitable tool, after the cutter has been attached to the spool, as shown in Fig. 12. This attachment is effected in the manner described in connection with the construction of Figs. 1 to 6, simply by hooking on one end channel **24** of the cutter **15ᵇ** onto one of the beads **14** of the spool **10** and latching on the other end channel **24** of the cutter onto the other bead **14** of the spool, as shown in Fig. 11. The end wall **13** carrying the latter bead **14** may be flexed inwardly during this assembly operation to facilitate this assembly operation, as shown in Fig. 11.

The cutter **15ᵇ** has a reinforcing rib **35ᵇ** between the fingers **25ᵇ** and the cutting edge **23** similar to the rib **35** in the construction of Figs. 1 to 6. However, in the rear part of the cutter **15ᵇ**, instead of providing a slender rib similar to the rib **36** in the construction of Figs. 1 to 6, the cutter has a substantially elliptical depression **36ª**, stamped out from the cutter and serving not only to impart rigidity to the cutter but also to provide a convenient recess for the thumb of the user in the manipulation of the dispenser.

Except for the distinctions pointed out, the cutter **15ᵇ** of Figs. 9 to 12 is similar to the cutter **15** of Figs. 1 to 6 and is similarly operated.

Figs. 13 to 15 show another modified form of cutter **15ᶜ**, which is somewhat similar to the cutter **15ª** of Figs. 7 and 8, except in certain respects to be indicated. This cutter **15ᶜ** has a straight serrated cutting edge **23ᶜ** instead of a slightly curved one, as in the case of Figs. 7 and 8, and has a **T**-shaped stop device **40ᶜ** reversed from the T-shaped stop device **40** in the construction of Figss. 7 and 8. This stop device **40ᶜ** has a center constricted front stem **41ᶜ** integrally connected to the body of the cutter **15ᶜ** and straight side arms **25ᶜ** serving as stop fingers for the end walls **13** of the spool **10**. A single rib **30ᶜ** in straight elongated form is stamped centrally of the stop fingers **25ᶜ** and extends the full length of said fingers. This rib **30ᶜ** is depressed inward in the stop fingers **25ᶜ** and therefore does not serve as a cam to bend the fingers inwardly upon slide movement of the casing **16** thereover, as in the construction of Figs. 7 and 8, but serves merely as a means of reinforcing these fingers.

The cutter **15ᶜ** has inward ribs **35ᶜ** and **36ᶜ**, similar to the ribs **35** and **36** in the construction of Figs. 1 to 6, except that the ribs **35ᶜ** and **36ᶜ** are straight, and serving similar purposes.

The fingers **25ᶜ** are substantially in the general plane of the body of the cutter **15ᶜ** before attachment to the spool **10**, as shown in dot and dash lines in Fig 15. The cutter **15ᶜ** it latched on to the spool **10** in the manner shown in Fig. 15 and described in connection with the other forms of cutters disclosed herein. After such attachment, the fingers **25ᶜ** are bent by a suitable tool radially inward into operative position about an axis *c* (Fig. 13) extending across the stem **41ᶜ** between the

channel ends of the cutter 15c, as shown in Fig. 13. These fingers 25c, when so depressed, limit the inward flexing movements of the end walls 13 of the spool 10, so that the beads 14 on said walls cannot become disengaged from the channels 24 at the ends of the cutter 15c.

Except for the distinctions pointed out, and for the fact that the cutter 15c has a comparatively large opening 43 to receive the fingers 25c, the cutter 15c of Figs. 13, 14 and 15 is similar to the cutter 15a of Figs. 7 and 8 and is similarly operated.

In all of the forms of the invention shown, the two stop fingers in each cutter extend from adjoining regions where they are integrally connected to the body of the cutter, and are located in positions to receive pressures from the walls of the spool substantially edgewise of said fingers, as said end walls are pressed inwardly. These fingers, when subjected to the inwardly pressed end walls, are thereby not under any substantial bending moment but are mainly in edgewise compression. These stop fingers, therefore, effectively resist pressing action from the end walls of the spool, without distortion or deformation of said fingers.

While the invention has been described with particular reference to specific embodiments, it is to be understood that it is not to be limited thereto, but is to be construed broadly and restricted solely by the scope of the appended claims.

What is claimed is:

1. A cutter for a tape dispenser, comprising a sheet of metal having means at its ends for engaging the peripheries of the end walls of a tape spool for attachment to said spool, means near one end of the sheet for limiting the extent of inward movement of the end wall which engages the said one end of the sheet in assembled position of the cutter and the spool, the means at the other end of the sheet for engaging the periphery of the other end wall of the tape spool affording a clearance on the inner side of the periphery of said other end wall in assembled position of the cutter and the spool permitting inward movement of said other end wall and a stop finger cut out from said sheet and having a free edge located near said other end of the sheet, said finger being integrally connected to the body of the sheet at a region no closer to the latter end of the sheet than said free finger edge when said finger is in position substantially in the general plane of the body of the sheet and being bent from the latter position about said region at an acute angle with said general plane, to cause the free edge of the finger to project from said body into position to receive substantially edgewise pressure from said other end wall of the spool engaging the latter end of the sheet upon inward movement of the latter end wall and to limit thereby the extent of the latter inward movement, said edgewise pressure being in a direction to be free from any tendency to move said finger towards said position upon inward movement of said other end wall.

2. A cutter as set forth in claim 1, wherein the finger extends lengthwise between the ends of the sheet, wherein the finger has its free edge at one end of the finger and is integrally connected to the body of the sheet at its opposite end, and wherein the finger is bent into limiting position about said opposite end along an axis extending crosswise of the cutter.

3. A cutter as set forth in claim 1, wherein the finger is integrally connected to the body of the cutter sheet along a region extending between the ends of the sheet and is bent into limiting position along an axis extending along said region between the ends of the sheet.

4. A cutter for a tape dispenser, comprising a sheet of metal having means at its ends for engaging the peripheries of the end walls of a tape spool for attachment to said spool, said means affording respective clearances on the inner sides of the peripheries of the end walls of the spool in assembled position of the cutter and the spool permitting inward movements of the end walls, and a pair of stop fingers cut out from said sheet and each having a free edge which is located near the corresponding end of the sheet and being integrally connected to the body of the sheet at a region no closer to the latter end of the sheet than said free finger edge, when the latter finger is in position substantially in the general plane of the body of the sheet, said fingers being bent from respective latter positions about said respective regions at respective acute angles with the general plane of the body of the sheet, to cause the free edges of the fingers to project from said body into positions to receive substantially edgewise pressures from the adjacent end walls respectively of the spool upon inward movements of said end walls and to limit thereby the extent of said inward movements, said edgewise pressures being in directions to be free from any tendency to move the respective fingers towards said respective positions.

5. A cutter for a tape dispenser comprising a sheet of metal having its ends rolled to form respective channels to receive with a snap slide fit the peripheral beads respectively of the end walls of a tape spool for attachment to said spool, said channels being open on their inner sides, thereby permitting limited inward movements of the end walls of the spool in assembled position of the cutter and the spool, and a pair of stop fingers cut out from said sheet and each having a free edge which is located near the corresponding end of the sheet and being integrally connected to the body of the sheet at a region no closer to the latter end of the sheet than said free finger edge when the latter finger is in position substantially in the general plane of the body of the sheet, said fingers being bent from respective latter positions about said regions respectively at respective acute angles with the general plane of the body of the sheet to cause the free edges of the fingers to project from said body into positions to receive substantially edgewise pressures from the adjacent end walls respectively of the spool upon inward movements of said end walls and to limit thereby the extent of said inward movements, said edgewise pressures being in directions to be free from any tendency to move the respective fingers towards said respective positions, the free edge of each finger in bent position of the finger being sufficiently close to the adjacent end wall to prevent the bead on the latter wall from becoming disengaged from the corresponding channel on the cutter upon inward movement of the latter end wall.

6. A cutter for a tape dispenser comprising a sheet of metal having means at its ends for engaging the peripheries of the end walls of a tape spool for attachment to said spool, means near one end of the sheet for limiting the extent of inward movement of the end wall which engages the said one end of the sheet in assembled position of the cutter and the spool, and a stop finger cut out from said sheet and integrally connected thereto, said stop finger being adapted to be bent out of the general plane of said sheet inwardly into position to limit inward movement of the other of said end walls, and a projection on the outer face of said finger stamped therefrom and serving as a cam by which said stop finger can be bent inwardly into limiting position automatically as a tubular casing is slipped over the spool and the attached cutter.

7. A tape cutter as set forth in claim 6, wherein said projection is in the form of a rib extending lengthwise of the finger and serving not only as a cam by which said finger may be bent inwardly into limiting position but also as a reinforcement for said finger to impart rigidity thereto against the pressure action of said other end wall thereagainst.

8. A cutter for a tape dispenser comprising a sheet of metal having channels at its ends respectively adapted to receive with a slide fit beads on the peripheries of the end walls of a spool to which said cutter is adapted to be attached, said channels being open on their inner sides, thereby permitting limited inward movements of the end

walls of the spool in assembled position of the cutter and the spool, said cutter having a forward cutting edge across which the tape is adapted to be drawn for severance, a pair of substantially longitudinally alined fingers cut out from said sheet and extending between said channels, the inner confronting ends of said fingers being integrally connected to said sheet in the intermediate region of the sheet, said fingers extending from said inner ends in opposite directions towards the opposite ends of said sheet, and terminating at their free ends adjacent to the corresponding channels, said fingers being bent inwardly from respective positions substantially in the general plane of the body of the sheet at respective acute angles with the general plane of the body of the sheet and about respective axes extending substantially parallel to said channels and across the inner ends respectively of said fingers, to cause the free ends of said fingers to project in the paths of inward movements of the end walls of the spool in assembled position of said cutter and the spool, and to limit thereby said inward movements, said fingers extending in directions to receive from respective end walls upon inward movements of said end walls edgewise pressure free from any tendency to move said fingers back towards said respective position.

9. A cutter for a tape dispenser comprising a sheet of metal having channels at its ends respectively adapted to receive with a slide fit beads on the peripheries of the end walls of a spool to which said cutter is adapted to be attached, said channels being open on their inner sides, thereby permitting limited inward movements of the end walls of the spool in assembled position of the cutter and the spool, said cutter having a forward cutting edge across which the tape is adapted to be drawn for severance and a stop device for limiting the inward movements of the end walls of the spool, said stop device being in the form of a T with a constricted stem extending substantially parallel to said channels and integrally connected at its base to the body of the sheet and having cross arms serving as stop fingers extending from said stem in opposite directions and terminating at their free ends near respective channels, said stop device being adapted to be bent inwardly about an axis across said stem to project the ends of said fingers in the inward paths of the end walls of the spool in assembled position of the cutter and the spool.

10. A cutter as set forth in claim 9, wherein the stem is on the rear side of the cross arms.

11. A cutter as set forth in claim 9, wherein the stem is on the forward side of the cross arms.

12. A tape dispenser comprising a spool having a core around which the tape is adapted to be wound, and a pair of circular end walls of substantially the same diameter, with their peripheries rolled to form respective beads, and a cutter comprising a sheet of metal having its ends rolled to form channels to receive said beads with a slide fit, and having a cutting edge extending lengthwise of said cutter between said ends, said channels being open on their inner sides, thereby permitting limited inward movements of the end walls of the spool, said cutter having a pair of stop fingers cut out from the sheet and each having a free edge which is located near the corresponding end of the sheet and being integrally connected to the body of the sheet at a region no closer to the latter end of the sheet than said free finger edge, when said fingers are in respective positions substantially in the general plane of the body of said sheet, said fingers being bent radially inward about said respective regions from said respective positions at respective acute angles with said plane to cause the free edges of the fingers to project from said body into position to receive substantially edgewise pressures from the adjacent end walls respectively of the spools upon inward movements of said end walls free from any tendency to move said fingers back towards said respective positions substantially in the general plane of the body of said sheet and to limit thereby the extent of said inward movements, the free edge of each finger in bent position of the finger being sufficiently close to the adjacent end wall to prevent the bead on the latter wall from becoming disengaged from the corresponding channel on the cutter upon inward movement of the latter end wall, but being spaced from the corresponding end walls to permit the cutter to slide freely over the spool.

13. A tape dispenser comprising a spool having a core around which the tape is adapted to be wound and a pair of circular end walls, a cutter engaging the peripheries of said end walls to form a unit therewith and slidable therealong, said cutter being in the form of a sheet of metal and having a pair of stop fingers cut out from said sheet and integrally connected thereto, said stop fingers being adapted to be bent out of the general plane of said sheet inwardly into positions to limit inward movements of said end walls respectively, each of said fingers having a projection on its outer face stamped therefrom, and a tubular casing for the spool and cutter unit adapted to fit snugly over said unit with a slide fit, and adapted when slid over said unit for the first time to engage and press said projections radially inwardly, whereby said fingers are cammed and bent radially inwardly from the general plane of the body of said sheet into said limiting positions.

14. A method of manufacturing and assembling a tape dispenser having a spool with end walls, a cutter made from a metal sheet blank and provided with means at its ends to engage the peripheries of said end walls respectively and to slide over said peripheries, and a tubular casing for snugly receiving said spool and said cutter, which method comprises stamping from the cutter sheet blank a pair of fingers each integral with the blank along a marginal region of the finger and having respective free ends near the corresponding ends of the cutter, said fingers lying substantially in the general plane of said blank and having respective rib projections on their outer faces reinforcing said fingers, attaching said cutter to said spool with the ends of said cutter slidably engaging the peripheries respectively of said end walls, and sliding the tubular casing over said spool and attached cutter to house said spool and cutter therein, said casing during this slide operation engaging the projections on said fingers and bending thereby said fingers radially inward to cause their free ends to move into positions to limit inward movements of said end walls.

15. A cutter for a tape dispenser comprising a sheet of metal having channels at its ends respectively adapted to receive with a slide fit beads on the peripheries of the end walls of a spool to which said cutter is adapted to be attached, said cutter having a forward cutting edge across which the tape is adapted to be drawn for severance, a pair of substantially longitudinally alined fingers cut out from said sheet and extending between said channels, the inner confronting ends of said fingers being integrally connected to said sheet in the intermediate region of the sheet, said fingers extending from said inner ends in opposite directions towards the opposite ends of said sheet, and terminating at their free ends adjacent to the corresponding channels, said fingers being adapted to be bent inwardly about respective axes extending substantially parallel to said channels and across the inner ends respectively of said fingers, to cause the free ends of said fingers to project in the paths of inward movements of the end walls of the spool in assembled position of the cutter and the spool, and to limit thereby said inward movements, each of said fingers having a rib stamped thereon and extending lengthwise thereof to reinforce said finger, said ribs projecting from the outer faces of the fingers and serving also as cams by which said fingers may be bent inwardly into limiting positions automatically by the pressing action of a tubular casing for the dispenser as the casing is slipped over the spool and attached cutter.

16. A cutter for a tape dispenser comprising a sheet of metal having channels at its ends respectively adapted to receive with a slide fit beads on the peripheries of the end walls of a spool to which said cutter is adapted to be attached, said cutter having a forward cutting edge

across which the tape is adapted to be drawn for severance and a stop device for limiting the inward movements of the end walls of the spool, said stop device being in the form of a T with a constricted stem extending substantially parallel to said channels and integrally connected at its base to the body of the sheet and having cross arms serving as stop fingers extending from said stem in opposite directions and terminating at their free ends near respective channels, said stop device being adapted to be bent inwardly about an axis across said stem to project the ends of said fingers in the inward paths of the end walls of the spool in assembled position of the cutter and the spool, each of said fingers having a rib extending lengthwise thereof and stamped therefrom for reinforcement, each of said ribs projecting from the outer face of the corresponding finger to serve as a cam by which said finger will be automatically depressed inward into limiting position by the slide action of a tubular casing over the cutter when attached to the spool.

17. A tape dispenser comprising a spool having a core around which the tape is adapted to be wound, and a pair of circular end walls of substantially the same diameter, with their peripheries rolled to form respective beads, and a cutter comprising a sheet of metal having its ends rolled to form channels to receive said beads with a slide fit, and having a cutting edge extending lengthwise of said cutter between said ends, said cutter having a pair of stop fingers cut out from the sheet and each having a free edge which is located near the corresponding end of the sheet and being integrally connected to the body of the sheet at a region no closer to the latter end of the sheet than said free finger edge, said fingers being adapted to be gent radially inward about said respective regions from the general plane of the body of the sheet to cause the free edges of the fingers to project from said body into position to receive substantially edgewise pressures from the adjacent end walls respectively of the spools upon inward movements of said end walls and to limit thereby the extent of said inward movements, the free edge of each finger in bent position of the finger being sufficiently close to the adjacent end wall to prevent the bead on the latter wall from becoming disengaged from the corresponding channel on the cutter upon inward movement of the latter end wall, each of said fingers having a reinforcing rib stamped therefrom and projecting from its outer face, said rib serving also as a cam to bend said finger radially inwardly upon slide movement of a tubular casing over said spool and said cutter.

References Cited in the file of this patent

UNITED STATES PATENTS

1,023,236	Bauer	Apr. 16, 1912
2,140,729	Atwood	Dec. 20, 1938
2,491,775	Segal	Dec. 20, 1949
2,611,431	Sherrill	Sept. 23, 1952