United States Patent

[11] 3,587,580

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[54] **TWO-PIECE SANITARY BELT**
4 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **128/291,** 24/206
[51] **Int. Cl.** **A61f 13/16**
[50] **Field of Search** ..... 128/289, 290, 291; 24/16 (PB), 30.5 (PB), 206.1 (A)

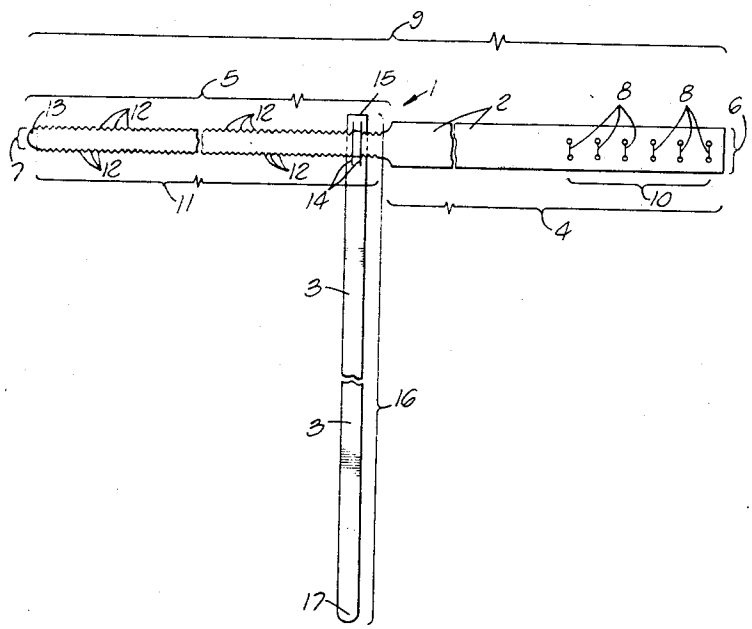
[56] **References Cited**

UNITED STATES PATENTS

2,745,406	5/1956	Kenner	128/291
2,891,545	6/1959	Teague	128/291
2,961,785	11/1960	Toepfer	24/206A
3,057,354	10/1962	Roberts et al.	128/289
3,403,430	10/1968	Steinborn	24/206A
3,461,873	8/1969	Torres	128/289

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ABSTRACT: This invention teaches a simple two-piece sanitary napkin support belt formed of elastomeric plastic film, and useful for supporting a menstrual napkin in a functional position on a female torso. A single support belt can fit a majority of female torso sizes with minimum mechanical adjustments. The belt is sufficiently low cost to be discarded after use for one menstrual period.



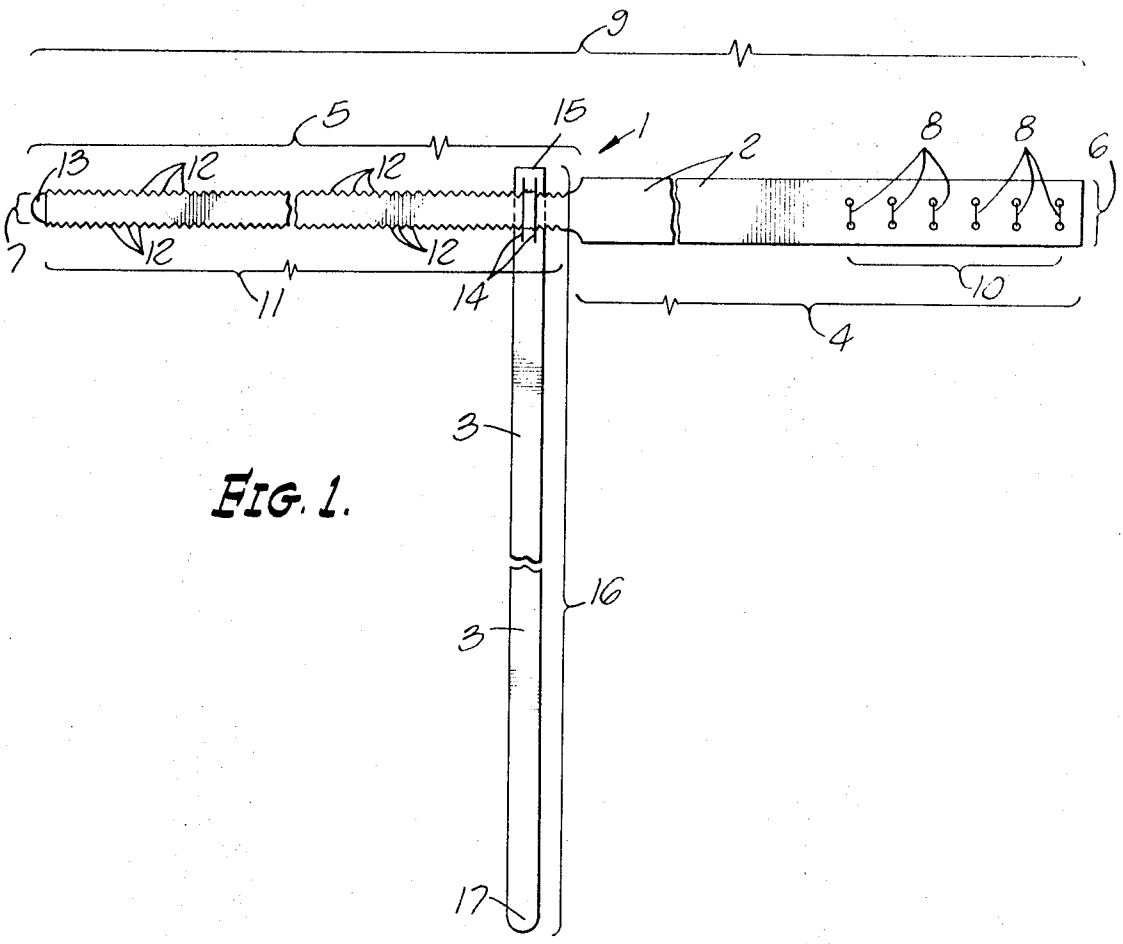


FIG. 1.

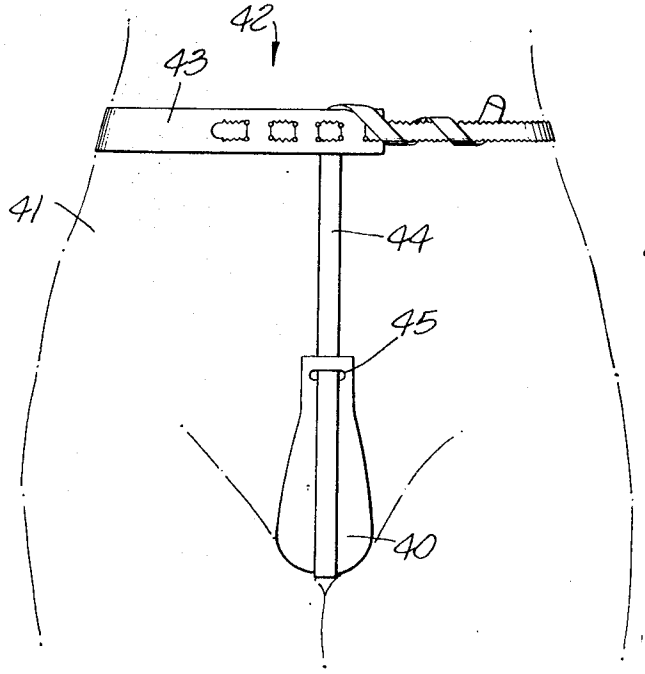


FIG. 4.

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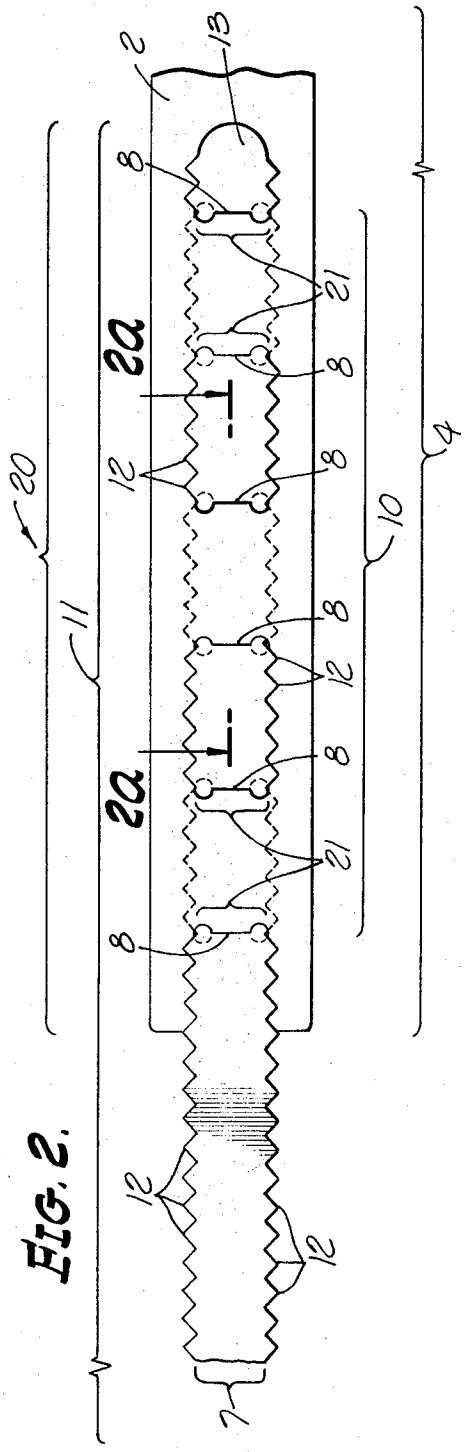


Fig. 2.

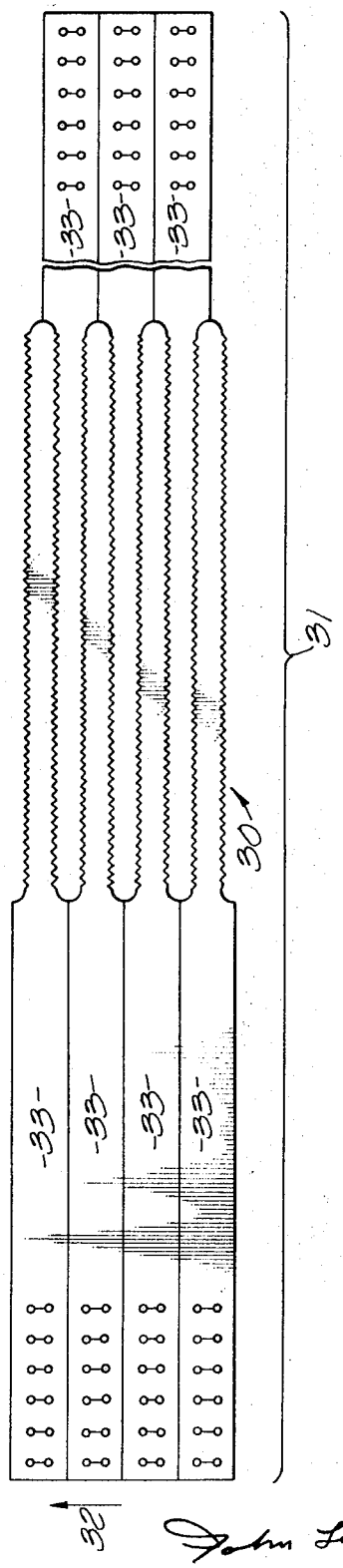


Fig. 3.

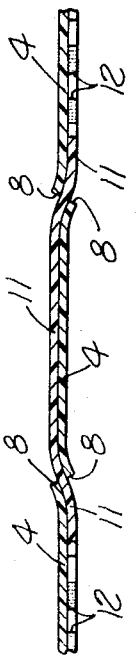


Fig. 2a.

INVENTOR

John Leslie Jones Jr.

TWO-PIECE SANITARY BELT

CROSS-REFERENCES

This patent application relates to my copending application Ser. No. 720,502 teaching a sanitary belt, and to my copending applications Ser. Nos. 720,500 and 742,922 relating to sanitary napkins. Further, this application relates to my U.S. Pat. application, filed as of this filing date, for a "One Piece Sanitary Belt."

BACKGROUND OF THE INVENTION

Sanitary belts made of rubberized elastic webbing have been conventionally used for decades, to support menstrual napkins in the functional position on the female torso. The commercial sanitary belts are constructed with separate adjustable fasteners, so the belts are adjustable over a large range of torso sizes. Before using the present commercial belt, each female must mechanically adjust the belt to her size. The belts are not extremely low in cost; hence, they are customarily bought separately from napkins and reused by females for a large number of menstrual periods. For this reason, the female user customarily keeps the belt in storage at home between menstrual periods, using it during her menstrual period.

Although menstrual napkins are widely sold at many types of retail store and other outlets for quick demand, the lack of quick access to a sanitary napkin support belt at the required time can be very discomfitting to the female. This invention teaches a very inexpensive sanitary belt which can be placed in each commercial retail package of sanitary napkins and sold as a part of the retail package.

SUMMARY OF THE INVENTION

This invention teaches a simple two-piece sanitary belt having a waist belt preferably fabricated of a thin wall, highly plasticized, glossy, polyvinyl chloride composition film. One preferred elastomeric plastic composition is polyvinyl chloride with about 40 wt. percent plasticizer or the like. The polished or glossy film cohesively adheres to a similar film when pressed into close contact, at human body temperature (98,6° F.), forming a good cohesive bond. However, the films can be parted with finger tip force. Cohesive bonding means functions to secure the two-piece sanitary napkin support belt in operational position on the female torso. The belt also secures by flexural, tensile and the like physical loading of the support belt.

The two-piece sanitary napkin support belt of thin wall, highly plasticized polyvinyl chloride film has a single napkin support strap slidably mounted on the waist belt. The two ends of the waist belt are firmly secured by belt tip and slit opening securing means and by the film cohesive bonding means. The slidable single napkin support strap is mounted on the waist belt at the rear of the female torso. The sanitary napkins taught in the copending Pat. application Ser. Nos. 720,500 and 742,922 are mounted on the napkin support strap in a functional position. The unmounted or free terminus of the support strap is then overwrapped around the waist belt at the front of the female torso, and also secured to it by cohesive bonding means.

Included in the objects of this invention are:

First, to provide an inexpensive and compact two-piece menstrual napkin support belt having no separate mechanical adjustment or securing components.

Second, to provide a simple two-piece menstrual napkin support belt, which will fit a wide range of female torso sizes without separate mechanical linkages or fasteners.

Third, to provide a low cost sanitary belt which can be enclosed in a commercial package of sanitary napkins, to be disposed of after using the package of napkins.

Fourth, to provide a cohesive bonding means for a two-piece, low cost sanitary napkin support belt.

Fifth, to provide a low cost, simple manufacturing process for fabricating menstrual napkin support belts.

Other objects and advantages of this invention are taught in the following description and claims.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is a plan view of the improvement in a menstrual napkin support belt.

FIG. **2** is an enlarged functional view of the waist belt tip and slit opening securing means in operation.

FIG. **2***a* is an enlarged sectional view through **2***a*–**2***a* of FIG. **2**.

FIG. **3** is a plan view of the potential waist belt configuration, illustrating the economical manufacturing process applicable to both waist belt and support strap.

FIG. **4** is an elevational view of a female torso illustrating the application of the two-piece sanitary napkin support belt in functional position on the torso, supporting a menstrual napkin taught by the copending Pat. applications Ser. Nos. 720,500 and 742,922.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. **1** in detail, the menstrual sanitary napkin support belt **1** is shown in plan view. A thin film, flexible, elastomeric plastic, having surface cohesive bonding to itself at 90° to 100° F., is fabricated into a waist belt **2** and a napkin support strap **3**. The waist belt **2** has a first end section **4** and a second end section **5**. The first end section **4** has a width **6** which is typically two times wider than the base width **7** of the second end section **5**. A multiplicity of parallel slit openings **8** are disposed in uniform spaced relationship normal to the belt length **9**, along the first end section **4**. The multiple parallel slit openings **8** collectively form the slit opening securing means **10**. The second end section **5** of the belt **2** has a belt tip means **11**. The base width **7** of the end section **5** is also equal to the base width **7** of the belt tip means **11**, and a multiplicity of serrated securing tips **12** are disposed along the parallel lengths of the belt tip means **11**. A rounded belt terminus **13** facilitates securing the waist belt **2** in operation. The total belt length **9**, consisting typically of one-half lengths each of sections **4** and **5**, is that necessary to girdle the waist-hip torso contours of a wide segment of the female population requiring a sanitary napkin support belt **1**.

The napkin support strap **3** is a one-piece, narrow, long length thin film, flexible, elastomeric plastic, and may have a pair of slit openings **14** disposed at one terminus **15** of the support strap **3**. The total length **16** of the support strap **3** has a second rounded terminus **17**. The pair of slit openings **14** are of sufficient length to accommodate and slide over the waist strap width **6** without distortion of **6**.

FIG. **2** illustrates, in enlarged partial plan view, the operation of the waist belt securing means **20** of waist belt **2**. The waist belt securing means **20** is shown functioning as on a female torso, the belt tip means **11** being interwoven through the individual slit openings **8** of the slit opening securing means **10**, which is disposed in the first end section **4**. The base width **7** of the belt tip means **11** is adapted to be equal to the total width **21** of each separate slit opening **8**. The serrated securing tips **12**, disposed along the length of the belt tip means **11**, are sufficiently wider than the multiple slit openings **8** that the securing tips **12** must be bent to slide through openings **8**. The engaged serrated tips **12**, when engaged in the slit openings **8**, lie flat and oppose the disengagement of the belt tip means **11**, when the tips **12** and the slit openings **8** are pulled apart. In addition to the physical engagement of tips **12** and slit openings **8**, the very important cohesive force forms a very effective temporary cohesive bond between the adjacent glossy surfaces of the belt tip means **11** and the belt first end section **4**. The temporary cohesive bond can be broken by pulling the belt surfaces apart with finger tip forces.

FIG. **2***a* illustrates the interlocking of the belt tip means **11** and the belt end section **4**, by interweaving the means **11** through the slit openings **8**. The potential for forming temporary cohesive bonding between the tip means **11** and the end section **4** is illustrated by the closeness of physical contact between the adjacent surfaces of **11** and **4**.

The female torso temperature is normally approximately 98,6° F. and the skin temperature is slightly lower. Since the

body temperature is normally quite constant, it is possible to take advantage of this fact and formulate plasticized polyvinyl chloride compositions which will have strong surface cohesive bonding between the two polished or glossy surfaces of adjacent films of the compositions. Typically, a di-iso-octyl phthalate plasticized polyvinyl chloride glossy film containing approximately 40 wt. percent ester has good cohesive bonding strength to an adjacent similar film surface and is a satisfactory thin film for this invention. Other plasticizers are equivalent, and other plastic elastomers can also be used in this invention.

Referring to FIG. 3 in detail, a thin film web 30 of a plasticized polyvinyl chloride—40 wt. percent di-iso-octyl phthalate composition of web width 31 is moved in a web motion direction 32 thorough a die cutting apparatus. The web 30 is cut into the multiplicity of waist belts 33 interlocked in a pattern, which reduces material loss, die cutting time and labor to a relative minimum. The support straps 3 may be similarly processed.

The sanitary napkin support belt 1 is fabricated from only two simple pieces of film, with no separate mechanical securing fasteners or adhesives or other separate securing devices. Thus, the product is inexpensive and simple enough to be placed in every commercial package of sanitary menstrual napkins, used during one menstrual period and then discarded.

Referring to FIG. 4, a menstrual sanitary napkin 40, taught in my earlier copending Pat. applications Ser. Nos. 720,500 and 742,922, is shown secured in a functional frontal position on a female torso 41 by the menstrual napkin support belt 42. The waist belt 43 is shown fitted on the torso 41 in a region between the waist and the hips, and the belt 43 is secured as shown in detail in FIG. 2. The napkin support strap 44 extends, as from the rear pair of slit openings 14 in FIG. 1 (not shown in FIG. 4), to the front of the waist belt 43 through the female torso crotch. The strap 44 is threaded through the two end slot openings 45 of the menstrual sanitary napkin 40. Only the frontal half of napkin 40 is shown, illustrating one oval end slot opening 45 through which the napkin support strap 44 is threaded. The support strap 44 is generally exteriorly adjacent the exterior face of the napkin 40, supporting the napkin 40 in close proximity to the menstrual flow from the vagina. The strap 44 is passed over or under the waist belt 43, pulled into a comfortable tight position, and then wrapped several times around the waist belt 43. The cohesive bonding means of the elastomeric material of the waist belt 43 keeps the multiple wrap of the support strap 44 in a securely tight position, avoiding the very embarrassing accidental loss of a napkin.

The menstrual napkin support belt 42 has the advantage of no mechanical metal or plastic fasteners which must be adjusted to fit the belt to a torso. The very simple process for applying the belt to female usage adapts the belt to the majority of women who have little interest in adjusting or using mechanical devices.

The wide range of female body torso sizes which require a sanitary napkin support belt are typified by the dress size range of misses size 7 regular to women's size 42 regular, as listed by the U.S. Department of Commerce Commercial Standard in Report CS215–58 on female body measurements. Table I below lists the corresponding bust, waist and hip dimensions, as well as other data, for the standardized dress sizes 7 regular through 42 regular, representing the typical range of female torsos which exist.

TABLE I

Female body measurements (in inches)

Measurement	Dress size			
	7 regular	20 tall	36 regular	42 regular
Bust	30½	40	39	45
Waist	22½	31½	31	38½
Hip	32	44	40	46
Crotch	25½	34	31	35
Weight (lb.)	94	180	152	200
Height	62½	70	65	66½

It is very desirable for a single sanitary support belt of this invention to be able to function properly over a reasonably large range of body sizes. Typically, a single sanitary belt 1 or 42, or the like, can function over the range of body sizes corresponding to dress size 7 regular, through size 20 tall, to size 36 regular. A sanitary belt 1 or 42, or the like, can satisfy this size requirement with a waist belt 2 or or 43, or the like, total length of approximately 40 inches and a napkin support strap 3 total length of 38 inches. The elastomeric plastic film used in fabricating the waist belts and napkin support strap can typically range from 0.008 to 0.020 inch thick. The width 6 of waist belt 2 can typically vary from 1¼ inch to three-fourths inch wide. The corresponding width 7 of belt tip means 11 must then likewise vary respectively from three-fourth to three-eighth inch or the like. Thus, a width 6 of 1¼ inch has a corresponding width 7 of three-fourths inch, and another belt width 6 of seven-eighths inch has a corresponding width of three-eighths inch.

The serrated securing tips 12 can typically be one-eighth inch deep serration tips. The napkin support strap 3 can typically be three-fourths to seven-eighths inch wide. It is quite important from a comfort and public acceptance viewpoint that the plastic film be very pliable, conforming to the female torso contours. It is likewise important the the plasticizer used in the film formulation does not produce an allergic response to the female skin.

Other waist strap and napkin support strap geometrical and planar area dimensions can be varied and utilized without departing from the scope of this invention.

Many modifications and variations of my improvements in a two-piece sanitary belt may be made in light of my teaching. It is therefore understood that within the scope of the appended claims, the invention may be practiced otherwise than is specifically described.

I claim:

1. A two piece sanitary napkin support belt comprising:

a. A one-piece waist belt comprising a thin film, flexible, elastomeric plastic having cohesive bonding means at 90° to 100° F., said waist belt having a parallel slit opening securing means disposed normal to the belt length in a first end section of said belt, and said belt having a belt tip means substantially narrower than said belt first end section disposed in a belt second end section, said belt tip means adapted to interweave into said slit securing means; and

b. a one-piece narrow, long-length napkin support strap comprising a thin film, flexible elastomeric plastic having cohesive bonding means at 90° to 100° F., said support strap having adjustable securing means in a first support strap end section secured on said waist belt, and said support strap length adapted to supporting a sanitary menstrual napkin in functional position on a female torso and to wrapping a second end section of said strap in a securing position around said waist belt.

2. The sanitary napkin support belt of claim 1 wherein the base width of said belt tip means of said second end secton is substantially equal to the width of the parallel slit securing means of said first end section of said belt, and a multiplicity of flexible, serrated securing tips are disposed along both parallel lengths of said belt second end section adjacent to the width of said belt tip means.

3. The sanitary napkin support belt of claim 1, wherein the elastomeric plastic is a plasticized polyvinyl chloride having approximately 35 to 40 wt. percent ester type plasticizer content.

4. The sanitary napkin support belt of claim 3, wherein the elastomeric plastic is formed into a glossy surface, thin film.