United States Patent

[11] **3,575,172**

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[21] Appl. No. **773,849**
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[45] Patented **Apr. 20, 1971**

[54] **SANITARY PADS WITH END LOOPS FOR STRINGS**
3 Claims, 8 Drawing Figs.

[52] **U.S. Cl.** **128/290**
[51] **Int. Cl.** **A61f 13/16**
[50] **Field of Search** 128/284, 287, 289, 290, 291

[56] **References Cited**

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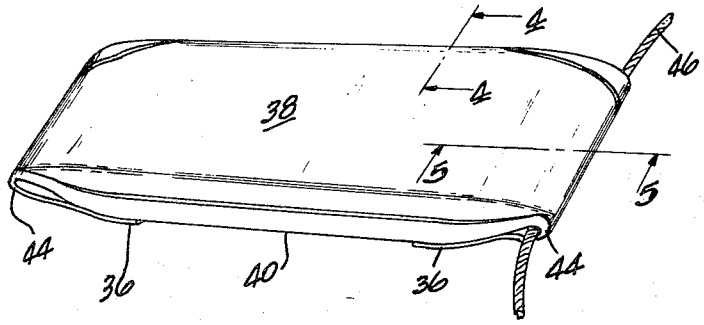
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Primary Examiner—Charles F. Rosenbaum
Attorney—Wheeler, Wheeler, House & Wheeler

ABSTRACT: Disclosed herein is an absorbent pad having a pulp filler encased within a wrapper or envelope which extends outwardly from each end of the filler forming end tabs with the end tabs heat sealed onto the wrapper by the thermoplastic material used in forming the wrapper or envelope and a string or cord provided in the loop formed by the end tabs.



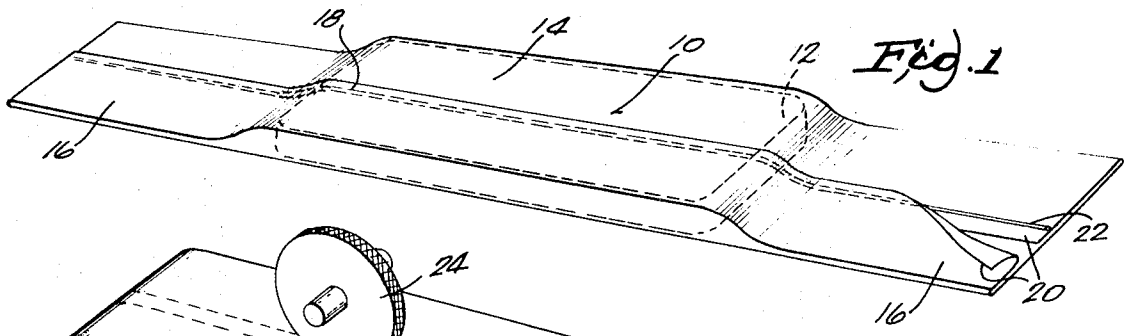


Fig. 1

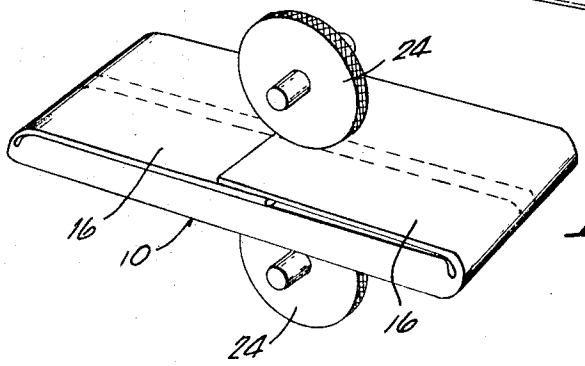


Fig. 2

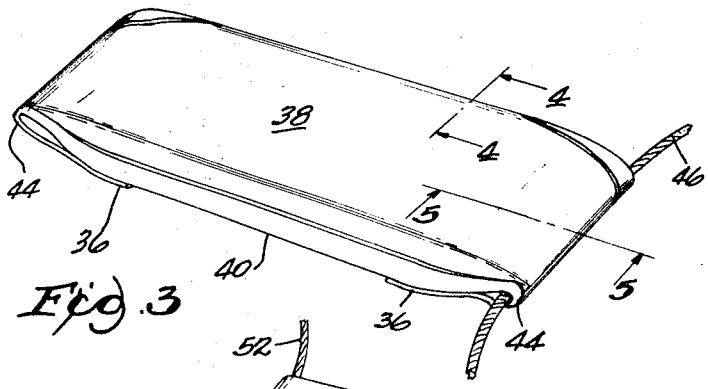


Fig. 3

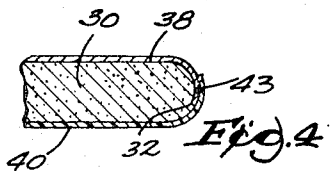


Fig. 4

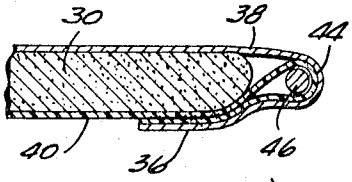


Fig. 5

Fig. 6

Fig. 8

Fig. 7

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SANITARY PADS WITH END LOOPS FOR STRINGS

BACKGROUND OF THE INVENTION

Absorbent pads such as diapers and sanitary napkins are conventionally formed by encasing an absorbent filler with a nonwoven or a combination nonwoven, moisture resistant, wrapper. The wrapper is heat sealed along the overlapped margins to encase the filler within the wrapper. The wrapper generally extends beyond the filler to form end tabs that are used for attaching the pad to the body of the user. The tabs, particularly in a polybonded pad, are quite long to provide sufficient material for attachment and are folded back onto the pad for packaging. These long end tabs often become misaligned during production presenting a poor appearance to the consumer.

SUMMARY OF THE PRESENT INVENTION

The absorbent pad of the present invention has the end tabs which extend outwardly endwise from each end of the pad, folded back against and heat sealed to the wrapper. Heat sealing of the end tabs to the pad wrapper is accomplished by heat activating the thermoplastic materials present in the wrapper. The end tabs may be releasably secured to the pad to eliminate the tendency of the end tabs to become misaligned during packaging and allowing for the easy release of the end tabs from the pad for attachment purposes. The end tabs may be permanently secured to the pad to provide a channel loop or anchorage for a string or cord to attach the pad to the body of the user. In this latter arrangement, the length of the end tabs is reduced, as compared to prior arrangements in which the end tabs function as belt attachments, thus resulting in a considerable saving of material.

Other advantages will become apparent from the following detailed description when read in connection with the accompanying drawing, in which:

FIG. **1** is a perspective view of an absorbent pad formed with a heat-sealed longitudinal seam;

FIG. **2** is a perspective view of the absorbent pad of FIG. **1** with the end tabs heat sealed to the body;

FIG. **3** is a perspective view of an absorbent pad having an attachment cord threaded through the loop formed by securing the end tab to the body of the pad;

FIG. **4** is a fragmentary section taken on line **4–4** of FIG. **3** showing the overlapped seam along the edge of the pad;

FIG. **5** is a fragmentary section taken on line **5–5** of FIG. **3** showing the end tab secured to the pad to form a loop at the end of the pad with a cord passing through the loop;

FIG. **6** is a perspective view of an absorbent pad such as a diaper having an attachment cord threaded in the loop formed by securing the end tabs to the pad;

FIG. **7** is a fragmentary section taken on line **7–7** of FIG. **6** showing the overlapped marginal edges of the wrapper;

FIG. **8** is a fragmentary section taken on line **8–8** of FIG. **6** showing the attachment cord loop formed at each end of the diaper with the attachment cord positioned in the loop.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Although the disclosure hereof is detailed and exact to enable those skilled in the art to practice the invention, the physical embodiments herein disclosed merely exemplify the invention which may be embodied in other specific structure. The scope of the invention is defined in the claims appended hereto.

The absorbent pad **10** of this invention may take a number of forms depending on the contemplated use for the pad. It typically includes a cellulose pulp-type body or filler **12** which is inexpensive and has good moisture absorbency and retention characteristics. The filler **12** is encased in a wrapper **14** which extends outwardly from each end of the filler **12** to form end tabs **16**. The end tabs **16** are folded back endwise onto the filler **12** and are secured to the portion of the wrapper **14** overlying the filler **12**. The end tabs **16** may be releasably

or permanently secured to the wrapper **14** around the filler, depending on the contemplated use for the pad.

In the embodiment of the invention as shown in FIGS. **1** and **2** means are provided to releasably secure the end tabs **16** to the portion **14** of the wrapper around the filler **12**, thus to temporarily hold the end tabs **16** in position for packaging. The absorbent cellulose filler **12** is shown encased within the wrapper **14** which is made from an absorbent material such as nonwoven fabric or gauze. As is also shown in my U.S. Pat. No. 3,289,254, the edge margins **20** of the wrapper **14** are overlapped to form a longitudinal seam **18**. A bead **22** of thermoplastic adhesive material is between the overlapped edges **20**. The thermoplastic bead **22** is heated to heat seal the marginal edges together to form the longitudinal seam **18**. The end tabs **16** are folded back endwise onto the portion **14** of the wrapper on the filler **12**, with the seam **18** in the end tabs **16** in abutting engagement with the longitudinal seam **18** across the filler **12**. Means are provided to momentarily apply heat to the overlapped seams **18**, thus to tack or heat seal the end tab **16** to the filler **12**. This means may consist of a heater roller **24** shown diagrammatically in FIG. **2** and which is rolled along the superposed seams **18** in the end tab **16** to heat activate the adhesive bead **22** in the seam **18**. The thermoplastic material of the bead **22** will permeate the wrapper material in the local area of seam **18** sufficiently to form a bond along the seam **18**. This bond will be sufficient to hold the end tab **16** in position for packaging but not strong enough to prevent the end tab **16** from being pulled away from the pad for use.

In another embodiment of the invention shown in FIGS. **3, 4** and **5**, means are provided to permanently secure the end tabs **36** to the body of the pad to form loops **44** at each end of the pad. The absorbent pad or filler **30** is encased within a wrapper **34** which extends outwardly from each end of the pad **30** to form end tabs **36**. One side of the wrapper **34** is formed from a film of absorbent sheet material such as nonwoven cellulose wadding or gauze **38** and the other side is formed of a moisture resistant film **40** of polyethylene. The moisture resistant film **40** is overlapped along the longitudinal marginal edges **32** of the absorbent material **38** to form a longitudinal seam **43** along each edge of the filler **30**. Heat is applied to the seam **43** to activate the polyethylene film and bond the edge of the absorbent sheet material **38** to the polyethylene film **40**. The end tabs **36** are then folded back endwise onto the film portion **40** of the wrapper **34** to leave transverse channels or loops **44** at each end of the pad. Heat is momentarily applied to the end tab **36** by an appropriate means to activate the polyethylene and heat seal the film **40** in the end tab to the film **40** in the filler **30**.

Means are provided in the loop **44** for attaching the pad to the user. This means may be a string, strap, or cord **46** which is threaded through the loop **44** or placed in the end tab **36** prior to securing the end tab to the pad.

In the embodiment shown in FIGS. **6, 7** and **8**, an absorbent pad **50** in the form of a diaper is shown having a filler **51** encased in a wrapper **53** with an attachment cord **52** provided in the loops **54** formed by the end tabs **56**. Except for its larger size, this embodiment is similar to the napkin embodiment of FIGS. **3** through **5** inclusive. One side of the wrapper **53** comprises an absorbent sheet **60** such as nonwoven fabric or gauze, and the other side comprises a moisture resistant film **62** of polyethylene film. The moisture resistant film **62** is overlapped with the sheet **60** along longitudinal marginal edges **65** thereof. The polyethylene film **62** is heated to bond the moisture resistant film **62** to the moisture absorbent sheet **60**. The end tabs **56** are folded back endwise onto the filler **51** with the moisture resistant film **62** in the end tab in abutting engagement with the moisture resistant film **62** over the filler **51**. Heat is applied to the overlapped end tab **56** by any appropriate means to heat seal the end tab **56** to the pad with a loop **54** formed at each end of the filler. A cord, strap, or string **52** is provided in each of the loops **54** for attaching the diaper to the user.

I claim:

1. An absorbent pad comprising a filler, a wrapper encasing said filler and extending from each end of the filler to form end tabs, said end tabs being folded endwise back onto said wrapper, and means sealing said end tabs to said wrapper, and means comprising a polyethylene film forming a part of said wrapper, said end tabs being folded onto said wrapper with said film in abutting engagement.

2. An absorbent pad comprising:

a filler;

a wrapper formed from a moisture absorbent sheet;

a moisture resistant film;

said wrapper being wrapped about said filler and extending outwardly from each end to form end tabs; and

said end tabs being folded back endwise and heat sealed to said wrapper with said moisture resistant film in abutting engagement.

3. A pad according to claim 2 including a loop formed by said end tabs at each end of said pad and an attachment means provided in each of said loops.

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,575,172 Dated April 20, 1971

Inventor(s) Ruth Joa Kiela

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 3, Line 5, "and" should read-------said---------

Signed and sealed this 24th day of August 1971.

(SEAL)
Attest:

EDWARD M.FLETCHER, JR.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents