

[54] **DISPOSABLE DIAPER OR THE LIKE**

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[58] Field of Search128/284, 286, 287

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[57] **ABSTRACT**

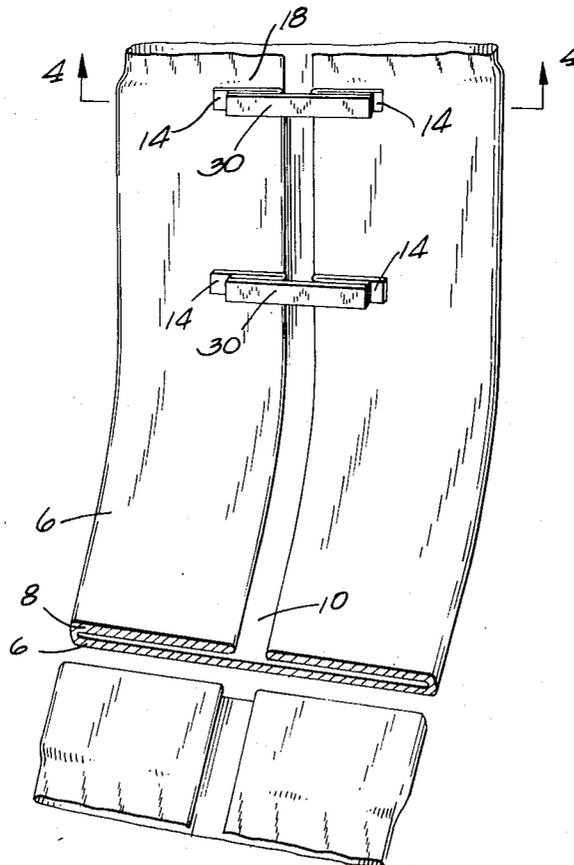
A fundamentally conventional diaper having an absorbent pad between an impervious backing material and a pervious facing has its margins folded toward each other with the backing material outermost. Each margin is provided with an adhesively coated tab for use in applying the diaper, a portion of the length of each tab being adherent to the exposed plastic backing of the diaper and another portion being folded back on itself with the coating exposed. At least one such folded back portion is held in position by a spot of hot melt adhesive which connects it to the underlying part of the tab. A strip of polyethylene releasably engages the exposed adhesive surfaces of respective tabs and preferably spans the gap between them whereby a single release facing strip of approximately half the length normally used not only protects the adhesive surfaces of both tabs but also connects two margins of the folded diaper.

[56] **References Cited**

UNITED STATES PATENTS

2,834,347	5/1958	Connally.....	128/284
3,180,335	4/1965	Duncan et al.....	128/287
3,221,738	12/1965	Ekberg et al.....	128/287
3,426,756	2/1969	Romanek.....	128/287
3,554,195	1/1971	Murdoch.....	128/284
3,561,446	2/1971	Jones, Sr.....	128/287

12 Claims, 5 Drawing Figures



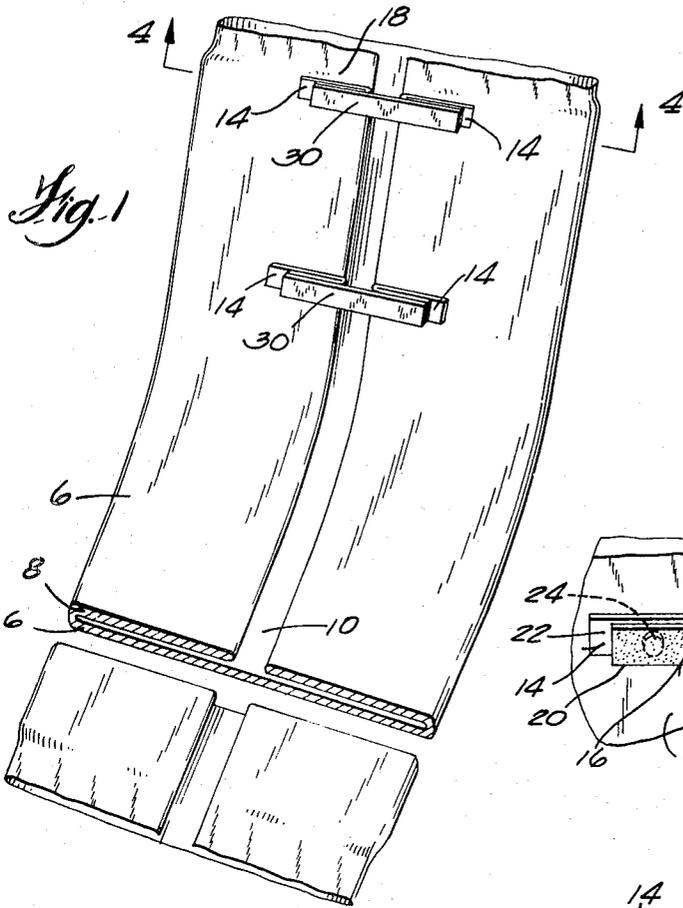


Fig. 1

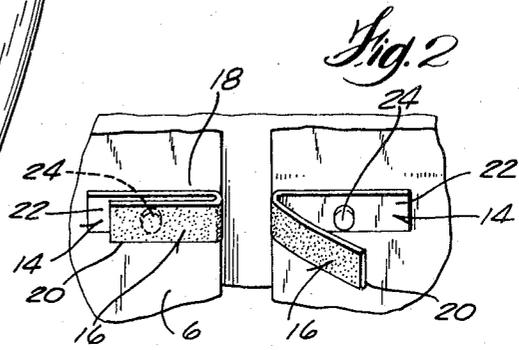


Fig. 2

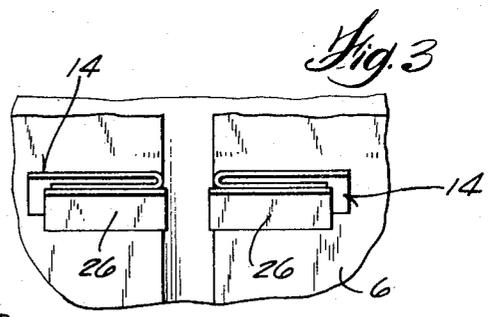


Fig. 3

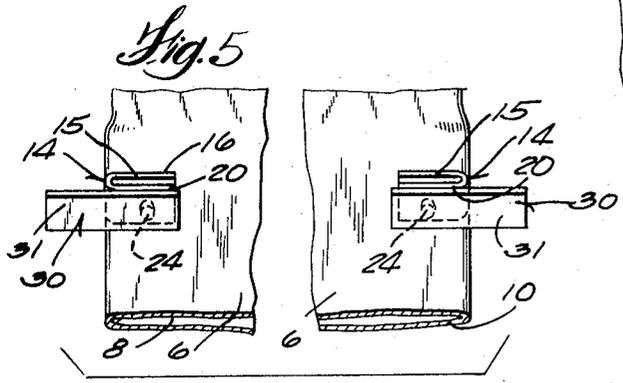


Fig. 5

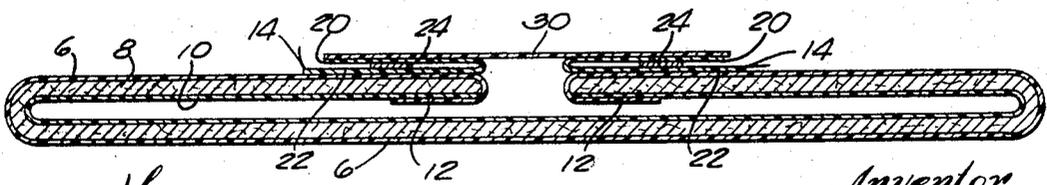


Fig. 4

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DISPOSABLE DIAPER OR THE LIKE

BACKGROUND OF INVENTION

In diapers of the disposable type, it is quite common to use adhesively coated tabs rather than pins as a means of applying the diaper. It is also common to provide temporary covering for the individual tabs.

SUMMARY OF INVENTION

It is not necessary that the diaper be folded in the particular manner shown in order to make the advantages of the invention available. It is only required that the fold be such as to bring into proximity the margins to which the anchoring tabs are attached approximately at right angles to the margin.

By releasably anchoring the free ends of a tab to the same opposed marginal portions of the diaper to which the fixed ends of the tab have already been fastened, it has been made possible to use a single strip of polyethylene to cover the otherwise exposed adhesive surfaces of both tabs and to effect the application of the protective strip in a single operation, thus achieving considerable saving both in equipment and in time required for the practice of the method. Production requires a single dispensing unit instead of four which are recommended commercially for a competitive product. Moreover, the use of a single strip of release facing material requires only about half the length of the release facing otherwise needed, thus representing a further significant saving.

In addition, the application of the protective strip across the gap between the over-folded side margins of the diaper serves temporarily to connect such margins, making the diaper easier to handle and effecting further savings in stacking and packaging.

The user has only to put a finger between the over-folded side margins of the diaper and into engagement with the under surface of the polyethylene strip, whereupon the strip may be pulled free from the tabs and at the same time the temporary spot connection between the tabs and the diaper will be pulled loose, leaving the tab adhesive exposed and the diaper in readiness for application. This represents an important time-saving item and a convenience to the mother or nurse using the diaper.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a view in perspective showing a completed disposable diaper embodying the invention, portions being broken away.

FIG. 2 is a fragmentary view in perspective showing the intermediate step of adhesively attaching the free ends of the tabs to the fixed ends thereof.

FIG. 3 shows the application of individual polyethylene protective strips to the respective tabs after the free ends of the tabs have been anchored as shown in FIG. 2.

FIG. 4 is a view taken in cross section on the line 4-4 of FIG. 1 showing how a single protective strip may be applied to both tabs simultaneously while spanning the joint between them to hold the diaper in closed folded position.

FIG. 5 is a view on a reduced scale fragmentarily illustrating a flat type of diaper equipped with adhesively coated tabs to facilitate its application.

DETAILED DESCRIPTION

The diaper is of a generally conventional type having an impervious backing ply 6 for a pad 8 which, as shown, is a conventional multilayer pad of wadding. Superposed on the pad is a pervious facing ply 10 preferably respectively lapped along respective edges by inwardly folded side margins 12 of the impervious backing ply 6. Side margins of the diaper are folded toward each other across the facing ply. The invention contemplates the optional use of other types of folds. Preferably, however, these should be of a form which will leave in proximity the corners near one end of the diaper to which the anchoring tabs are to be applied as hereinafter described. On

the other hand, the invention has aspects which make its use desirable even on a flat diaper, as hereafter described.

As a means of applying the disposable diaper for use, tabs 14 having adhesive coating 16 are applied adjacent the opposite margins 12 near one end of the diaper. Optionally there may be one or more additional tabs 140 to facilitate connection of the tabs for fitting the diaper snugly about the legs of the child. In practice about half of each tab is adhered securely to the surface 18 of the backing ply 6. The ends 20 have heretofore been left free but have had their adhesive surfaces 16 protected by individually applied strips of polyethylene or the like which can be pulled off to expose the adhesive. It is not necessary that the diaper be of the particular fold here illustrated. For example, the invention is applicable readily to the diaper shown in U.S. Pat. No. 3,386,442. Features are also usable on a flat diaper, as herein illustrated.

To avoid having the free ends 20 of these tabs dangling loose, the present invention contemplates that in most instances one or both of these free ends 20 will be anchored releasably to the underlying fixed end 22 by means of a spot of adhesive shown at 24 and preferably comprising a hot melt plastic seal. Quite apart from other features of the present invention hereinafter described, it is advantageous to use these releasable spots 24 to anchor the free ends 20. This is particularly true when the tabs are made of materials which will not lie flat during manufacturing operation. If desired, the adhesive surface 16 may be covered across each such spot by means of an individually applied protective strip 26 of polyethylene or other release facing material as shown in FIG. 3.

However, the preferred construction is that which is illustrated in FIGS. 1 and 4 wherein a single release facing strip 30 of protective resin is releasably applied across both of the strips 14 and the intervening diaper margins 12 to cover the respective adhesive surfaces 16 of the strips while, at the same time, providing a cross connection through the tabs 14 between the inwardly directed margins 12 of the folded diaper. It will be observed that the connection by means of strip 30 would not generally be as satisfactorily effective on some materials without the spot of adhesive at 24 which anchors the free ends 20 of the tabs to the diaper. The less the tabs are adapted to lie flat when transversely creased, the more important it is to use the spot adhesive.

FIG. 5 fragmentarily illustrates one end portion of a flat diaper as it appears in a position inverted from that of use; the impervious backing ply 6 is uppermost and the pervious facing ply 10 is underneath the pad. Near the end of the diaper and adjacent its side margins are adhesively coated mounting tabs 14. The end 15, representing about half the length of each tab, has its adhesive surface 16 attached to the impervious backing ply 6. The end 20 of each tab is folded near the diaper margin and extends back over the end 15 away from the diaper margin. Temporarily it is preferably anchored to the end 15 by means of adhesive spot 24 as above described. A release facing strip 30 is then applied individually across the adhesively coated ends 20 of each tab. The release facings preferably have projecting handle ends 31 which can be stripped from the tabs and at the same time the tab ends 20 can be freed from the adhesive spots 24 for use in attaching the diaper to the patient.

It will be understood that the spot adhesive can be omitted as was done in the case of FIG. 3. FIG. 3 and FIG. 5 demonstrate that the release facing strip 30 need not be applied across both tabs but can be applied individually to one tab, or separately to the respective tabs. However, the construction shown in FIGS. 1, 2 and 4 is preferred.

This procedure of equipping the disposable diaper with tabs having protected adhesive surfaces is very much simpler and more economical than any heretofore known and the equipment required is also simpler and less expensive, thus materially reducing costs. The resulting product is desirable in that it stays folded during stacking and packaging and storage for use. Yet the removal of the single protective strip is easier

than separate removal of individual protective strips. Such removal, as an incident thereof also breaks the spot seals, leaving the free end portions of the tabs fully exposed and in position for use.

I claim:

1. The combination with a diaper folded to provide proximate margins and having an impervious backing ply, of a diaper mounting tab having an adhesive coating and attached thereby for a portion of the length of the tab to the backing ply approximately at right angles to one of said margins and having an end portion onto which said coating extends and which is folded back away from said last margin and over the portion which is adhesively attached to the backing ply, and has its adhesive coating outermost, and a release facing strip detachably covering the coating on said end portion, the length of the facing strip being at least approximately as great as the length of the back-folded end portion of said tab.

2. A combination according to claim 1 in which a release facing strip detachably covers the adhesive coating on the back-folded end portion of said tab, said strip having an exposed end projecting from the diaper to facilitate removal of the strip from the tab.

3. A combination according to claim 1 in which each of said margins bears exposed surfaces of said backing ply, both of said margins having mounting tabs with an adhesive coating, adhesively attaching a portion of at least one of said tabs to exposed surfaces of the backing ply, a single facing strip spanning the said margins of the diaper and being releasably engaged with the back-folded end portions of both of said tabs.

4. A combination according to claim 3 in which the back-folded end portions of both of said tabs have spot adhesive connection to the underlying portions of the respective tabs which are adhesively attached to the backing ply.

5. The combination with a diaper folded to provide proximate margins and having an impervious backing ply, of a diaper mounting tab having an adhesive coating and attached thereby for a portion of the length of the tab to the backing ply approximately at right angles to one of said margins and having an end portion onto which said coating extends and which is folded back away from said last margin and over the portion which is adhesively attached to the backing ply, and has its adhesive coating outermost, and a release facing strip detachably covering the coating on said end portion, the length of the facing strip being at least approximately as great as the length of the back-folded end portion of said tab and a releasable adhesive spot connecting the back-folded end portion of the tab to the tab portion which is adhesively attached to the backing ply of the diaper.

6. A combination according to claim 5 in which the release facing strip is longer than said back-folded end portion of said

tab, and has a length of said strip exposed to be grasped for pulling the strip from the adhesive coating on the back-folded end portion.

7. The combination with a diaper having an impervious backing ply, a pad, and a pervious facing ply, said diaper being longitudinally folded and having side marginal portions of said backing ply disposed in proximity over said pad and facing ply, separate mounting tabs having adhesive coatings and each having an adhesively coated first end portion adherent to the diaper backing ply adjacent one of the diaper margins, each such tab being transversely folded back upon itself to expose an adhesively coated second end portion over its first-mentioned end portion, and a single facing ply detachably adherent to the adhesive coatings on the respective second end portions of said tabs and spanning the space between said tabs.

8. A combination according to claim 7 in which at least one of said tabs has a spot adhesive connection between its respective end portions.

9. The combination with a diaper having an impervious backing ply, a pervious facing ply, and an absorbent pad, of a diaper mounting tab having an adhesive coating attached for a portion of the length of the tab to the backing ply adjacent a diaper side margin and being transversely folded back upon itself to provide an end portion projecting away from said last-mentioned margin of the diaper and upon which said coating extends, and a release facing strip covering the adhesive coating extending to said last end portion of the mounting tab, said strip projecting beyond the mounting tab across the said diaper margin.

10. A combination according to claim 9 in which the back-folded end of the tab has a spot adhesive connection to that portion of the backing ply which is attached by said adhesive coating to the backing ply of the diaper.

11. A method of making for storage a disposable diaper having an absorbent pad between a pervious facing and a relatively impervious backing ply, said method comprising the steps of folding inwardly toward each other side marginal portions of the diaper with the facing innermost and the backing ply exposed, adhesively attaching to the backing ply near the said inwardly folded side diaper marginal portions first ends of adhesively coated mounting tabs with second end portions folded back over said first ends with their adhesive coatings exposed, spot-adhering at least one of said second end portions to its respective first end to hold the respective tab in folded position, and applying a release facing strip over said exposed coatings.

12. A method according to claim 11 in which the release strip spans said diaper marginal portions and is attached releasably to both tabs, whereby a pull centrally on the strip will pull it from the diaper and leave adhesive coatings of both tabs free for use.

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