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R. P. HAYDEN

2,120,949

SANITARY NAPKIN

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Fig. 1.

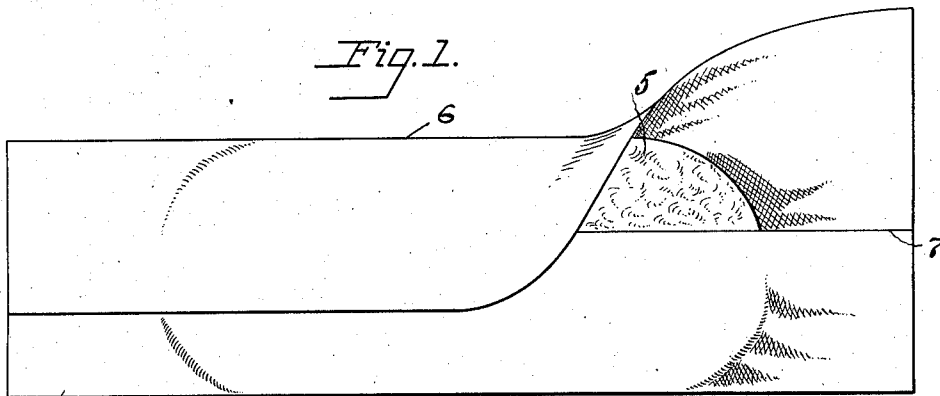


Fig. 2.

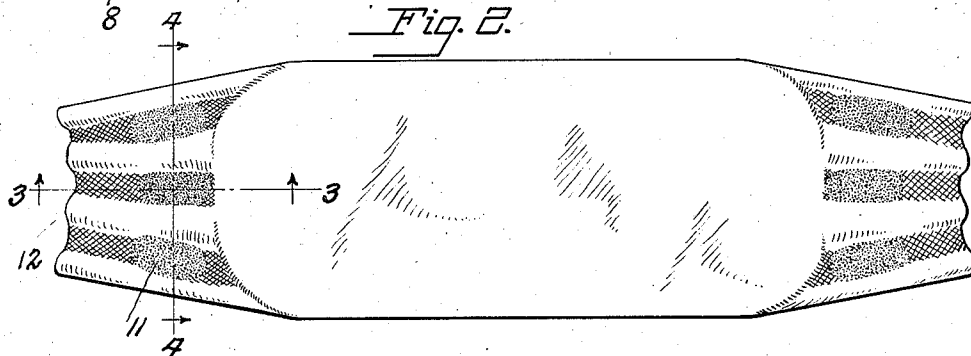


Fig. 3.

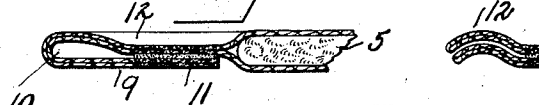


Fig. 4.



Fig. 5.

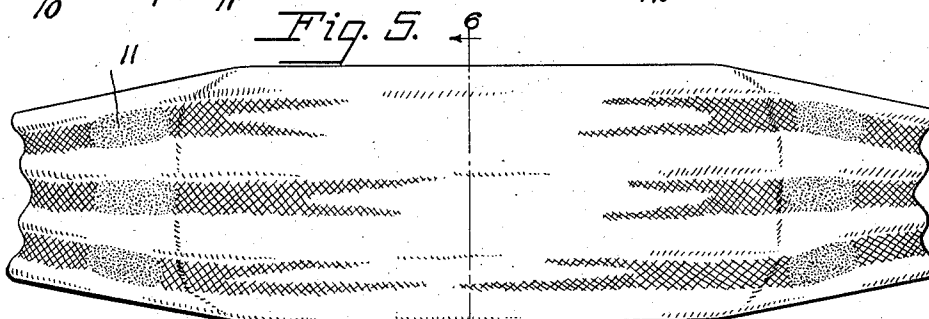


Fig. 6.



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UNITED STATES PATENT OFFICE

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SANITARY NAPKIN

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7 Claims. (Cl. 128—284)

The invention relates more particularly to sanitary napkins of the looped end type, although it also has utility when embodied in sanitary napkins of the conventional type.

Sanitary napkins with looped ends long have been known and are known to have certain advantages but they have not gone into extensive use because the types heretofore proposed are incapable of mass or machine production and for various and sundry other reasons cannot successfully compete with napkins of the conventional type. It is the purpose of this invention to make them so in order to supply the constantly increasing demand.

The achievement of this purpose and the perfecting of the invention were resolved only after long experimentation and by the elimination of a number of factors heretofore regarded as essential or as being practically insurmountable. Considered from the standpoint of cost of material and cost of manufacture, it was necessary to simplify the construction of the article so that it would embody only the essential components, namely, the pad or filling and the gauze casing.

There, likewise, were problems attendant from a commercial as well as service standpoint in that in order successfully to cope with the highly competitive market, the article should be of the throwaway and readily disposable type. This required the elimination of sewing, stapling, and the like expedients necessarily resorted to under the old practice. And this greatly aggravated the problem from a service point of view because it was necessary to overcome conditions tending to roping or bunching of the tabs and other sources of discomfort and vexation, particularly the hazard of the gaping or casual opening-up of the folded sides of the gauze with consequent loss or spilling of the filling.

The nature, characteristic features and scope of the invention more readily will be understood from the following description of the preferred embodiment as shown in the accompanying drawing wherein:—

Figure 1 is an elevational view of a sanitary napkin assembly, comprising pad and casing elements, before treatment according to the invention.

Figure 2 is an elevational view of the assembly with the tabs or end extensions treated according to the invention.

Fig. 3 is a section on line 3—3 of Fig. 2.

Fig. 4 is a section on line 4—4 of Fig. 2.

Fig. 5 is an elevational view showing how, when the article is under tension as in service, lines

of stress, due to the treatment of the end tabs, range endwise of the napkin and prevent gaping or opening-up of the gauze casing folds and ensuing spilling of the pad.

Fig. 6 is a section on line 6—6 of Fig. 5.

The improved napkin, essentially speaking, is a two-component assembly comprising a pad and a gauze casing. These elements, save in respect to the particulars of the improvements hereinafter stated, are or may be as usual, that is to say, the pad may be of the conventional readily disposable type and the casing or envelope may be a strip of gauze folded along longitudinal lines, as at 7, and having tabs or end extensions 8.

In the practice of the invention the tabs 8 are doubled back upon themselves, as at 9, on the longitudinally folded side of the gauze and secured in that wise in order to establish tubular hems or loops 10 whereby the napkin may be secured to a belt either directly or through the intervention of conventional attaching devices.

This, as stated at the outset, is well known and usual so that, as premised, the essence of the present invention is the improved method and resulting structure whereby it is possible to manufacture and merchandise sanitary napkins of the looped end type so that they successfully can compete with sanitary napkins of the conventional throwaway type. Hence, it is a merit of the invention that the looping or doubling of the tabs is so designed that it readily lends itself as a sequence in the machine or mass production of the napkins. For example, after the doubling operation the lapping portions of the gauze are relatively tied together by a cementing operation. The specific composition is unimportant in itself as long as it is quick drying, stable over long periods, moistureproof and flexible. There are a number of avails which meet such specifications such as, for example, latex, cellulose ester, phenolic resinoids, etc. Obviously, these are mentioned merely by way of illustration and not as limitations. Whatever the cement composition may be, although latex is preferred, it is applied by deposition, as at 11, in longitudinally spaced intervals stopping short of the pad and, of course, of the tab ends in order to establish the tubular hems or loops 10. The relatively low thread count of the gauze simplifies the bonding operation which is not just a matter of cohesion or adhesion but is an actual interlocking of the goods by filamentary process of the latex or other cementing medium as will be clearly apparent upon inspection of Figs. 3 and 4. Notwithstanding

ing that the impregnant extends from surface to surface, it does not undesirably stiffen the tabs because the latex or equivalent bonding medium is inherently flexible; and, yet, it is a merit of the invention that the cementing areas constitute stays, reinforcing elements or stiffening ribs ranging longitudinally of the tabs and alternating with soft and untreated puckered areas 12. A merit of this alternate construction is that it inhibits bunching or roping of the tabs while permitting the napkin, as an entity, readily to conform or adapt itself to the person. This means that there will be no conspicuous or marked bulging or offsetting where bulging or offsetting ought not to be. A further and highly important function, from a service standpoint, as when the article is under tension, is that the stayed and puckered structure of the tabs sets up lines of stress, as at 13, ranging from end to end of the article and which, in fact, are inaugurated by and constitute continuations of the puckers. The merit of this is that it prevents gaping or opening-up of the longitudinal folds or lapped edges of the gauze casing with possible escape of the pad.

Having described the invention, what is claimed as new is:—

1. Method of making throwaway sanitary napkins with looped ends, which consists in longitudinally folding a strip of gauze around a pad or filling thereby leaving end tabs, turning the tabs back on the longitudinally folded side, and securing them in that relation by a flexible adhesive bonding operation which defines lengthwise ranging spaced apart relatively stiff and limp areas in alternate order of arrangement inwardly of the loops for the purpose and with the result of inhibiting roping tendency of the tabs and gaping of the gauze casing.

2. Method of making throwaway sanitary napkins with looped ends, which consists in longitudinally folding a strip of gauze to enclose a pad or filling and to form end tabs, doubling the tabs on the longitudinally folded side to provide marginal loops, and securing them in that rela-

tion by filamentary process of latex along definitely spaced longitudinal lines limited to the areas between the loops and the pad.

3. Method of making throwaway sanitary napkins with looped ends which consists in longitudinally folding a strip of gauze to enclose a pad or filling and to form end tabs, forming end loops by doubling the tabs on the longitudinally folded side and securing them in that relation by spot cementing which defines relatively stiff and limp areas in alternate order of arrangement inwardly of the loops and which in service set up definite lines of stress lengthwise of the gauze casing for the purpose and with the result of inhibiting gaping thereof and consequent escape of the pad.

4. Method of forming sanitary napkins with looped end tabs which consists in doubling the tabs and bonding the lapping portions at spaced intervals inwardly of both the end margins to provide a tubular hem and stiffening ribs and potentially puckered areas in alternate arrangement substantially at right angles to the hem.

5. A sanitary napkin having end tabs doubled upon themselves, and spaced deposits of bonding composition to define end loops and longitudinal stiffening ribs and intermediate potentially puckered areas inwardly of the loops.

6. A sanitary napkin having end tabs doubled upon themselves and secured in that relation by an impregnant to define end loops and longitudinally spaced stays.

7. A sanitary napkin comprising a pad and a strip of gauze folded longitudinally about the pad and having end tabs doubled upon themselves on the longitudinally folded side to provide end loops, and transversely spaced apart deposits of a flexible bonding composition inwardly of the loops and serving to establish relatively stiff and limp panels calculated to prevent roping or bunching of the tabs and to set up lines of stress effective to prevent gaping of the casing with consequent loss of the pad.

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