

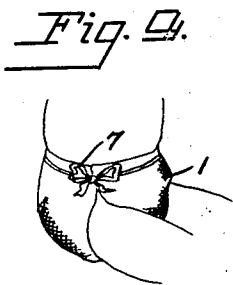
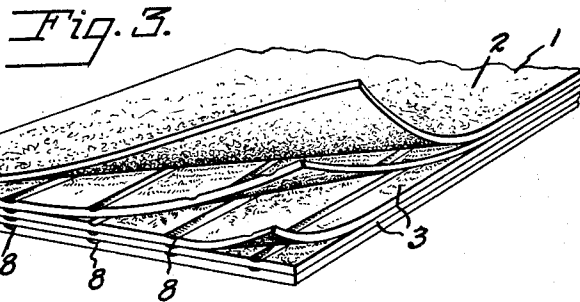
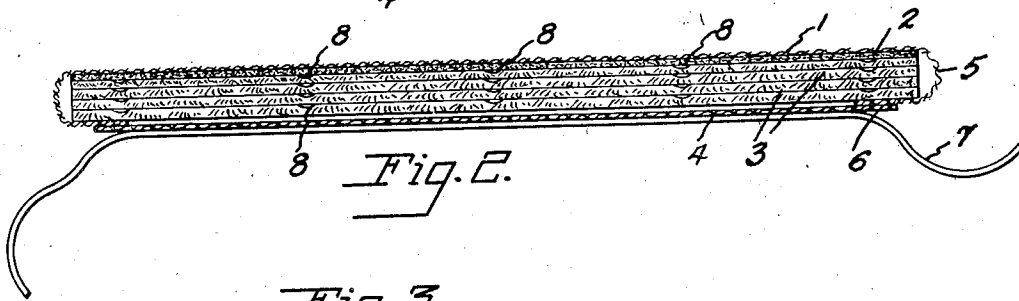
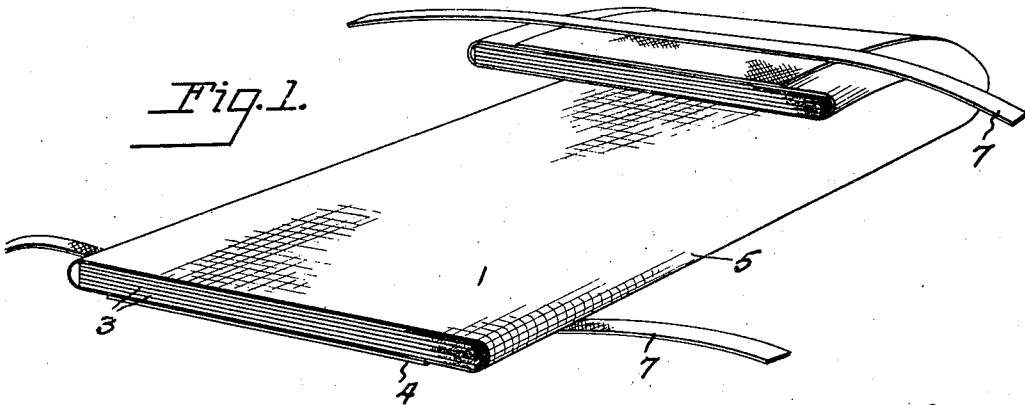
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DISPOSABLE DIAPER

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# UNITED STATES PATENT OFFICE

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## DISPOSABLE DIAPER

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3 Claims. (Cl. 128—284)

This invention is directed to an improvement in diapers of an inexpensive disposable type, constructed in a manner to be readily conformable to the body of the infant, comfortable and non-irritating to the skin, and of high efficiency in moisture-absorbing qualities.

The improved diaper is constructed to provide a form-fitting garment, with the surface next the skin of extreme softness to avoid irritation and at the same time substantially non-absorptive to prevent retention of any considerable degree of moisture next the skin. The main absorptive element within the body of the garment is provided with means whereby the voided moisture is directed along definite channels lengthwise of the garment and thus prevented from seeping through the edges of the narrower width and at the same time materially increasing the absorptive capacity.

The description is directed to a specific embodiment, more particularly shown in the accompanying drawing, wherein:

Figure 1 is a perspective view of the garment.

Fig. 2 is a transverse section of the same.

Fig. 3 is a broken perspective view showing the various layers of the garment.

Fig. 4 is a view illustrating the application of the garment.

The improved garment is constructed with an inner layer 1 of fine grade gauze which has been treated preferably for softness and non-absorbency. A film of high grade absorbent cotton 2 is applied directly against the outer surface of the gauze, the effect of which is to make the gauze materially softer upon skin contact and thus less irritating. Beyond the film of cotton there is applied several layers of absorbent cellulose 3, these layers forming the absorbent element. Beyond the absorbent element there is arranged an outer layer of waterproof paper 4. The edges of the gauze layer 1 are extended over the side edges of all layers, as at 5, except the outer layer, passed beneath or inwardly of the outermost layer of the absorbent element, and secured firmly to the outer layer of waterproof paper by adhesive or like means, indicated at 6.

Securing tapes 7 are applied to the outer side of the paper layer and extend beyond the side edges of the garment to permit securing the garment about the body of the infant as indicated in Fig. 4. The garment is applied with the longitudinal side edges passed between the legs, the respective ends of the garment encircling the body, whereby the projecting ends of the tapes may be tied to secure the garment in place with-

out liability of slipping and without the use of the usual safety pins or like fastening means. The tape connection is at the waist line and directly above each hip.

As the garment is necessarily of greater length than width it would result, in the absence of special provision, that the absorptive capacity without leakage would be governed by the width, for the moisture would saturate the absorptive element in all directions and thus reach the sides more quickly than the ends. To avoid this and to materially increase the absorptive capacity without increase in size, the respective layers of the cellulose absorptive element are provided with lines of wax or like material, as at 8, extending more or less in parallel direction longitudinally of the garment. These lines function as guides for the moisture and tend to direct it longitudinally of the garment, and thus the length of the garment rather than its width governs the absorptive capacity without leakage.

Where the absorptive element is of crepe formation, the tendency of the same is to direct the moisture toward the side edges, and this tendency is directly opposed by the lines through which the moisture does not pass, and by which the accumulated moisture is compelled to travel longitudinally of the garment.

The capacity of the garment for moisture absorption is thus materially increased without leakage, and as the outer layer is waterproof, there is no tendency to leak therethrough, and thus the usual outer garment of rubber or the like is unnecessary.

The garment is one in which the various layers may be readily assembled by machinery if desired, thus further reducing the cost, a desirable item as the garment is to be disposed of after use. It is completely soft and non-irritating; has the maximum absorptive capacity incident to its size; is generally proof against leakage through its edges even under maximum moisture conditions; is waterproof against outer garments worn next to it; and is so inexpensive to manufacture as to render it advantageous to use in comparison with other garments designed for the same purpose.

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

1. A body garment comprising a casing for that facing which comes next the body constructed of soft-textured, conformable, permeable material and having outlying portions constructed of fluid-repellent material, and a filling comprising laminated sheets of soft porous cellulosic mate-

rial, with spaced apart wax stripings extending longitudinally of the sheets for the purpose and with the result of preventing escape of fluid at the sides of the garment without impairing normal flow through the filling.

5 2. An article as defined in claim 1, in which the plies are so arranged that the wax stripings are in substantial registry.

3. A pad for absorbing body fluids having on

that side which comes next the person a sheet of soft porous cellulosic material having spaced apart stripes or rulings of a coating or impregnating material, impermeable to fluid flow, extending longitudinally thereof and of the pad and effective to direct flow along longitudinal lanes defined by the stripes. 5

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