

March 9, 1937.

H. J. SCHAEFFER
SANITARY NAPKIN
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2,073,591

Fig. 1.

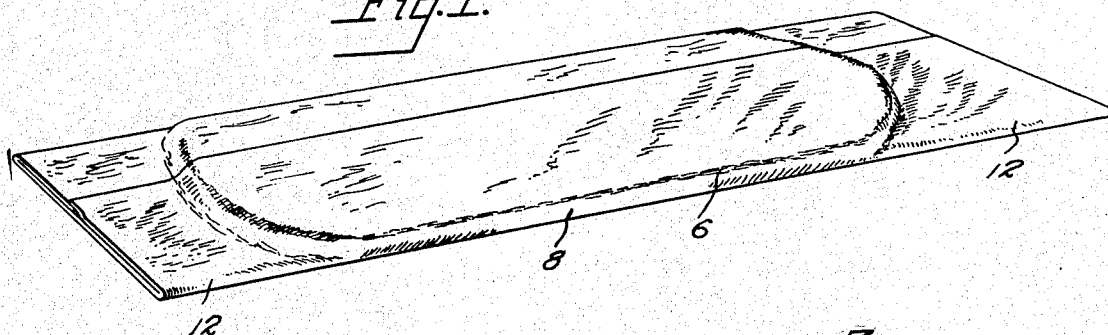


Fig. 2.

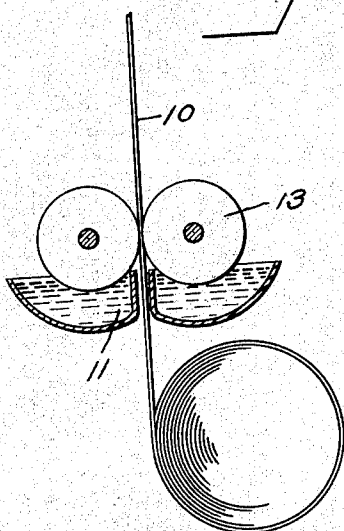


Fig. 3.

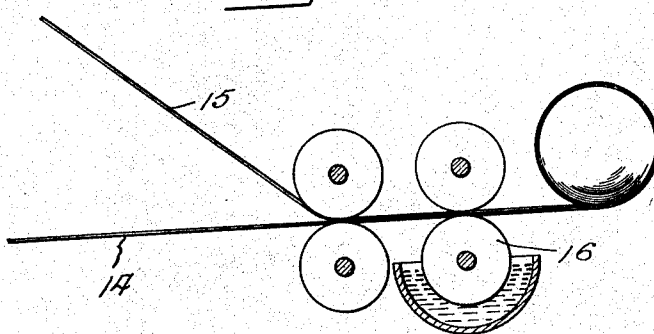


Fig. 4.

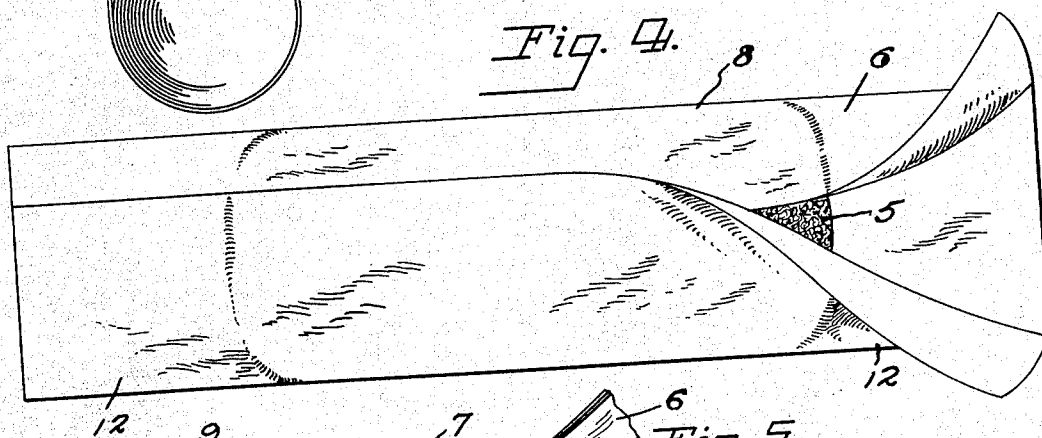
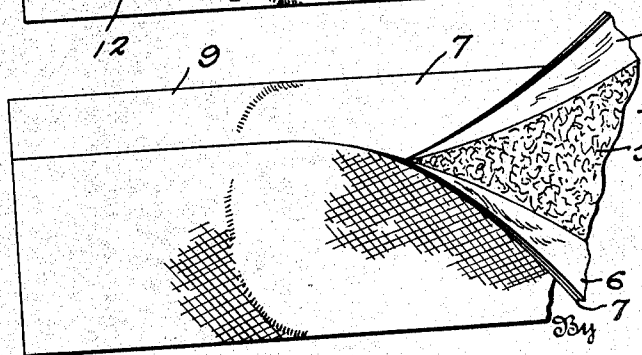


Fig. 5.



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UNITED STATES PATENT OFFICE

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SANITARY NAPKIN

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2 Claims. (Cl. 128—290)

The invention is addressed to sanitary napkins, more particularly to napkins of the disposable type, embodying a disintegrated cellulosic fiber filler having fluffy characteristics and wrapped in an envelope constituted of a layer or layers of porous sheets of cellulosic material, the jacketed filling being enclosed in the conventional gauze casing.

Structures of this general kind suffer the disadvantage of impaired efficiency due to lateral spreading of fluids by reason of the transverse creeping of the cellulosic sheets. Moreover, the cellulosic retaining sheets have a certain degree of rigidity and a certain inherent abrasiveness which practically nullifies the soft, fluffy; conformable properties of the filler and this is more or less true whether the retaining cellulosic sheets and the gauze or one or the other be covered or lined with a softening medium.

Objects of the invention are greatly to promote the efficiency of the absorbent pad or filler by eliminating conditions that make for lateral spreading of fluids; to provide for using surgical absorbent cotton, as a replacement for the retaining sheets of cellulosic material, thereby augmenting the soft and conformable properties of the fluffy filler and imparting to it qualities closely akin to the soft downy feel of a pad constructed entirely of fibrous cotton; and to impart great strength which otherwise would be lacking in the cotton film by treating it in such way as to impart strength without sacrifice of softness or other characteristics making for ease and comfort; and to provide filler retaining means having all of the advantages aforementioned plus the further merit and advantage that it is silent or quiescent in that it obviates all possibility of rustling noises or sounds so characteristic of the conventional cellulosic sheets.

The nature, characteristic features, and scope of the invention more readily will be understood from the following detailed description taken in connection with the accompanying drawing, wherein:

Figure 1 is a perspective view of an absorbent pad or filling having a retaining film embodying the invention.

Fig. 2 is a view principally in diagram indicative of the cotton treatment.

Fig. 3 is a similar view of a lay-out calculated to produce a unified structure comprising gauze casing material, and fibrous cotton.

Fig. 4 is a plan view of the absorbent pad and retaining film, the latter being partially opened

up to indicate the manner of its assembly with relation to the pad.

Fig. 5 is a plan view of the complete assembly of absorbent pad or filling, retaining film, and gauze casing, the retaining film and gauze casing being indicated as a unified structure.

In the drawing, 5 represents an absorbent pad or filling of disintegrated or fiberized cellulosic material of fluffy characteristics and readily disposable after use via the usual facilities; 6 represents its retaining medium; and 7 represents the gauze envelope.

According to the invention the relatively hard, abrasive and rustling sheeted cellulosic material, sometimes employed to prevent fugitive action of the filling medium, is replaced by material that is soft and conformable and substantially devoid of fluid spreading properties and which possesses the added merit of being soundproof. In the practice of the invention the replacement material is a thin sheet-like web or film of fibrous cotton specially treated in order to impart to it the strength which inherently it lacks and in order to reduce its capillary properties for the purpose and with the result of substantially retarding or of actually preventing spreading and eventual escape of fluids via the side margins of the filling. The specially treated cotton film or filler retaining medium may exist as a structure per se, that is to say, a structure independent of the gauze casing or it may be associated with the gauze casing in a unified structure.

In either case the film is by preference substantially the full dimension of the gauze casing. The independent structure is indicated at 8 and the unified structure is indicated at 9. The treatment of the cotton film is substantially what may be termed a sizing operation, in the performance of which a web of cotton 10 is led through a sizing bath 11 and, subsequently, dried and storage rolled for eventual use as desired or, immediately after drying, laminated with a web of gauze, the laminated structure being cut to desired length and width for ultimate duty as a casing or wrapper for a sanitary napkin. The practice may be varied (according to the napkin manufacturing facilities) by loosely enfolding the absorbent pad or filling with the cotton film of the invention of a width sufficient for its longitudinal edges to overlap in freely conformable relation and of a length to provide endwise ranging extensions 12 commensurate with the tabs of the napkin, the filmed filler being subsequently shrouded by the conventional gauze envelope.

In the treatment of the cotton film various

gums, such as are generally used in cloth finishing, may be employed so long as they insure light sizing which is essential so as not to detract from or impair the inherent softness of the film. Excellent results have followed the use of an aqueous bath carrying 40 ounces of dextrinized starch to 100 gallons of water. Under conditions in which the cotton film is independent of the gauze casing, it is preferred to pass a web of cotton of film characteristics through rolls 13 wetted with the solution. Under conditions in which the sized film and gauze casing material are formed as a unified structure any desired amount of cotton 14 can be delivered from the requisite number of cards onto a web of gauze 15, the resulting laminated structure or filmed gauze being run through a size bath 16 and subsequently dried and rolled.

Having described the invention, I claim:—

1. A sanitary napkin comprising a disposable filling, a gauze casing, and a non-rustling retaining envelope for the filling and comprising a carded sheet-like film of fibrous absorbent cotton modified by sizing throughout its surface area to interlock and lay the fibers without impairing the inherent softness of the cotton, whereby the assemblage of napkin components is substantially free from rusting tendency and leakage via the side margins of the filling is substantially inhibited.

2. A sanitary napkin comprising a filling of cellulosic material, a gauze casing, and an intervening carded sheet or film of soft fibrous cotton containing a light size to strengthen the film without impairing its inherent down-like feel, said sizing permitting normal passage of fluids but effective to prevent lateral spreading thereof.

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