

# Non-wovens

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## Introduction

**Nonwoven** textiles are those which are neither woven nor knit, for example felt. General use hyphenates the word, but industrial use spells it as one word. Non-wovens are typically not strong (unless reinforced by a backing or densified). In the recent years non-woven material has become an alternative to polyurethane foam.

**Non-woven** fabric is typically manufactured by putting small fibers together in the form of a sheet (web) and then binding them either mechanically (as in the case of felt, by interlocking them with serrated needles such that the inter-fiber friction results in a stronger fabric), with an adhesive, or thermally (by applying binder (in the form of powder, paste, or polymer melt) and melting the binder onto the web by increasing temperature).

## Raw material

Non-woven materials are nowadays mainly produced from man-made fibers. Two synthetic polymers dominate the market: polypropylene and polyesters (mainly PET). Nonwovens are often application-designated as either durable or disposable. Nonwoven used as a housewrap to prevent water infiltration is a durable nonwoven. Nonwoven used as a facing on a baby diaper is a disposable or single-use nonwoven.

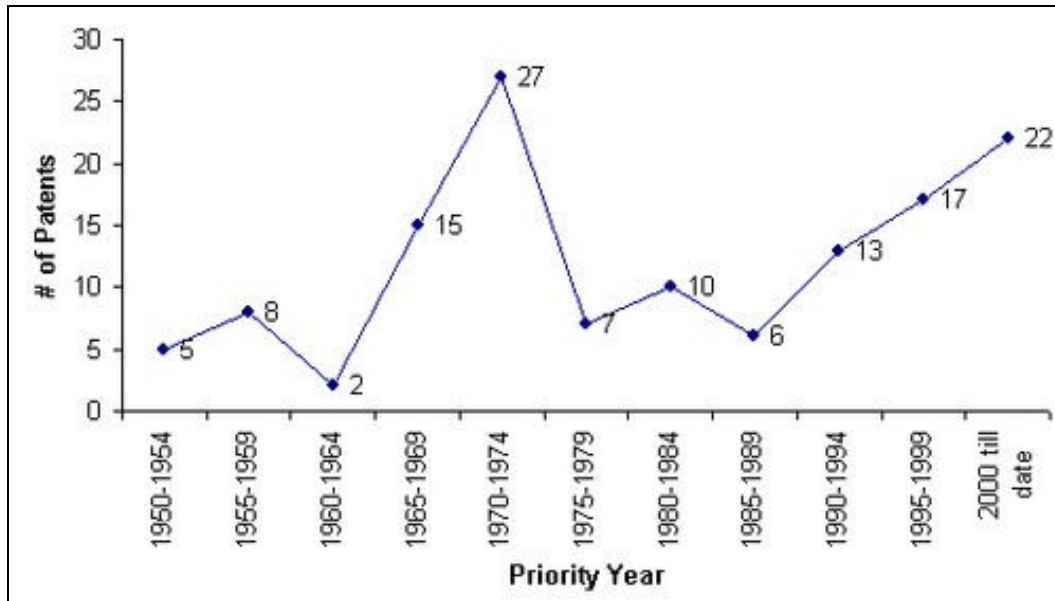
## Application

## Sample IP analysis

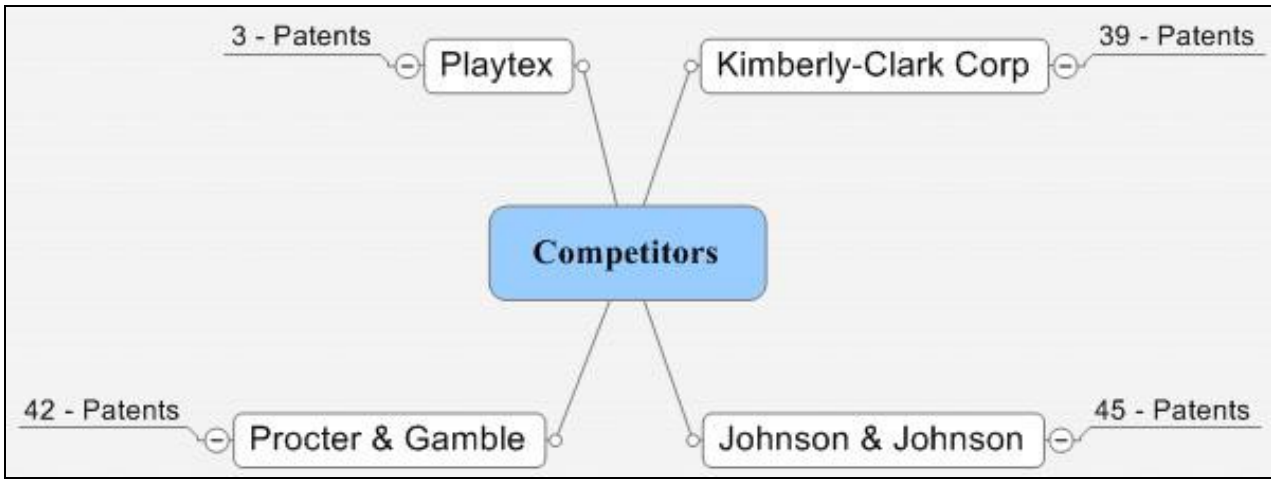
- **Area:** Baby diapers and Feminine hygiene.
- **Search:** Based on title, abstract and claims for some major companies in this field.

## Year wise IP activity

- Based on title, abstract and claims for some major companies in this field. The graph is based on the patents of Kimberly-Clark Corp, Johnson & Johnson, Procter & Gamble, and Playtex from 1836 to 2006.

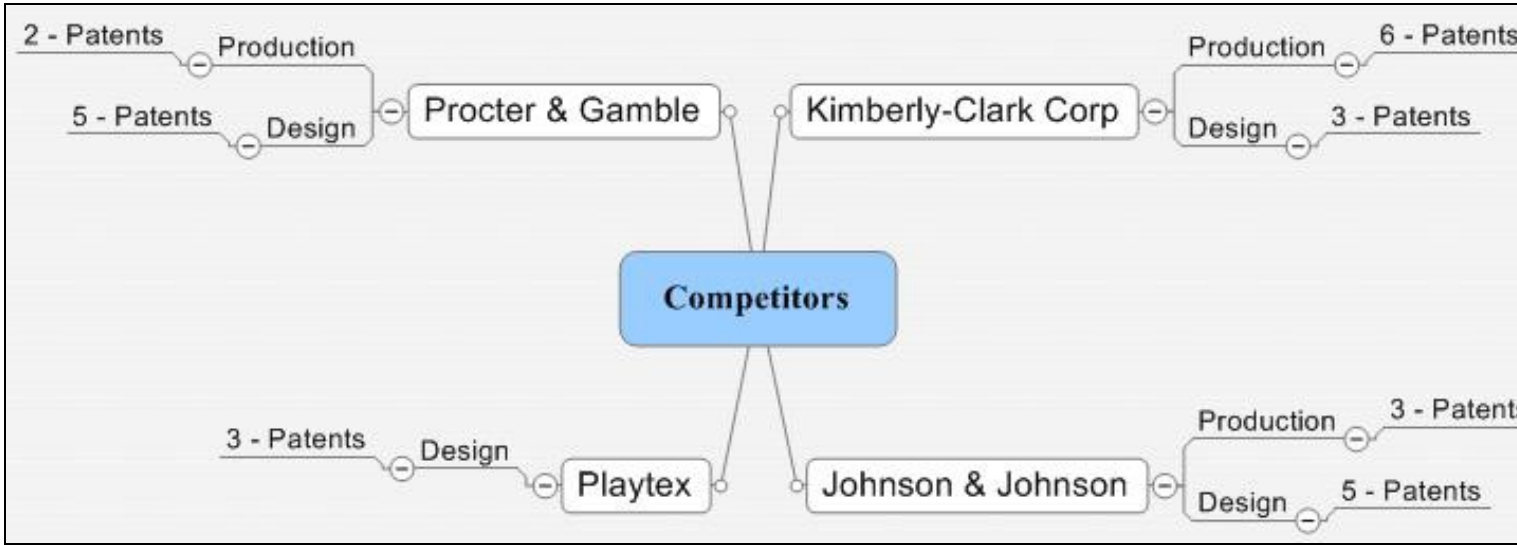


Year wise IP activity  
**Competitive analysis**



Competitive analysis  
**Sample analysis of some patents**

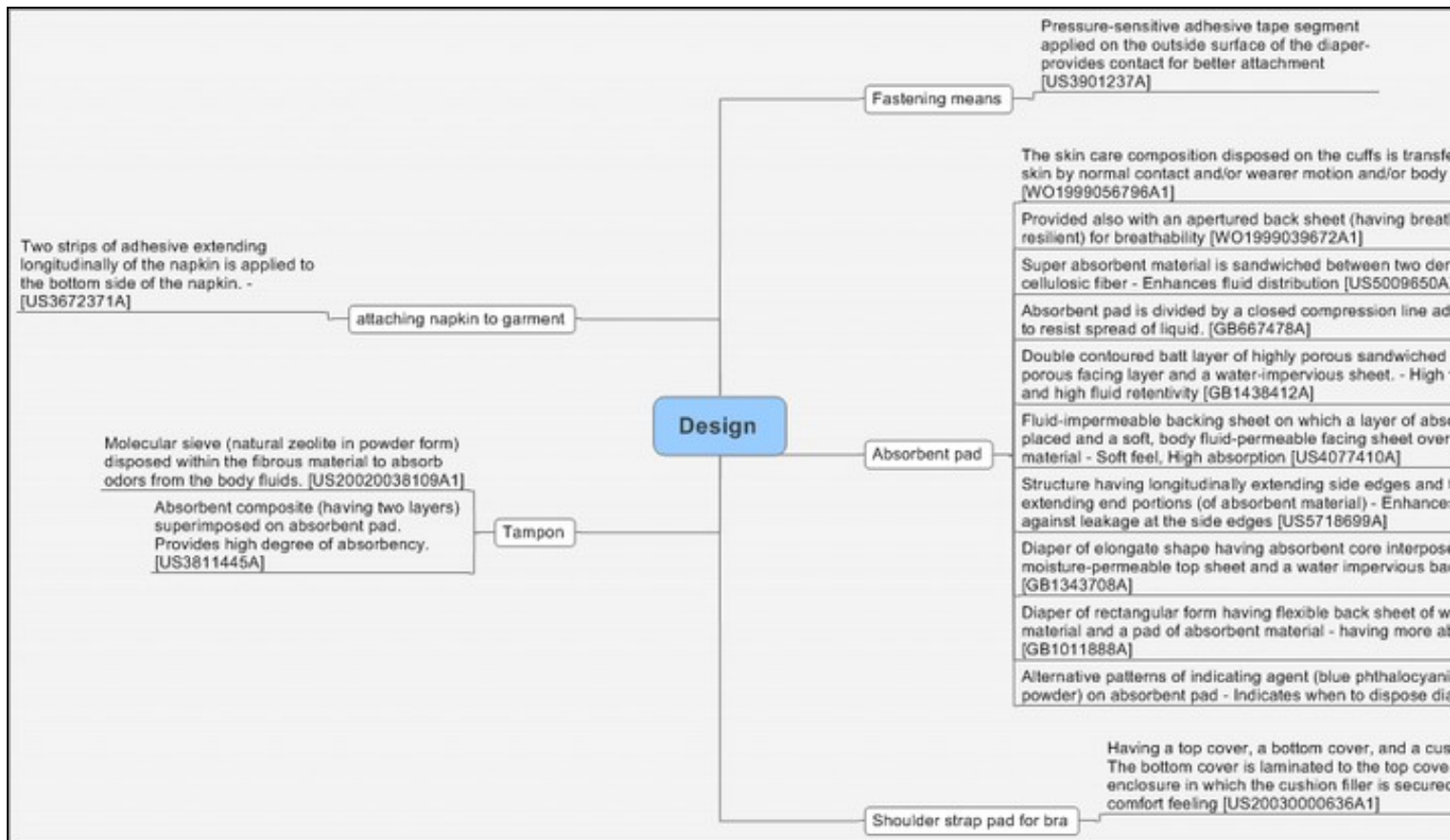
• This information is according to analysis of 27 patents.



Sample analysis  
**Design patents**

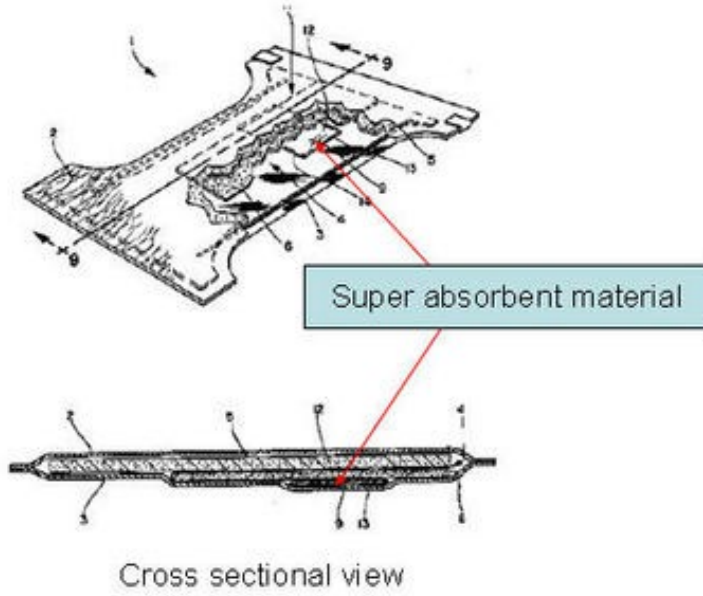
• **Classification of Design patents**

| Design                      | Total records | Kimberly Clark | Procter & Gamble | Johnson & Johnson | Playtex |
|-----------------------------|---------------|----------------|------------------|-------------------|---------|
| Absorbent pad               | 11            | 2              | 5                | 4                 | 0       |
| Attaching napkin to garment | 1             | 1              | 0                | 0                 | 0       |
| Fastening means             | 1             | 0              | 0                | 1                 | 0       |
| Shoulder strap pad for bra  | 1             | 0              | 0                | 0                 | 1       |
| Tampon                      | 2             | 0              | 0                | 0                 | 2       |



Design patents  
**Pictorial analysis**

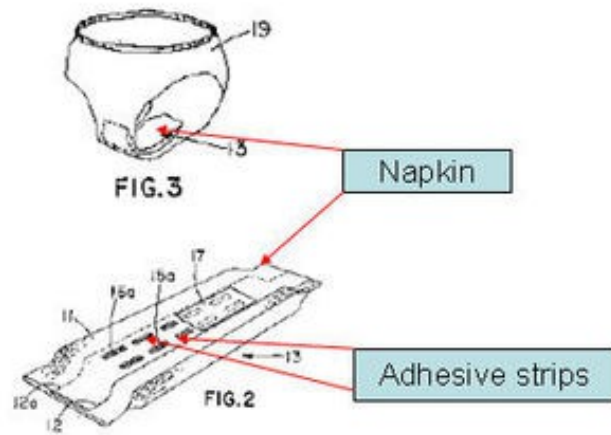
Absorbent pad



Super absorbent material (hydrocolloid materials) is sandwiched between two densified layers of cellulosic fiber - Enhances fluid distribution



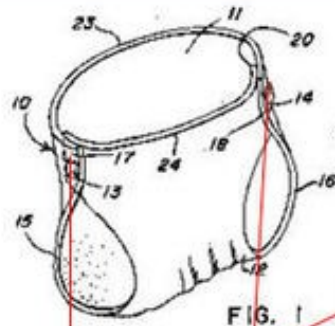
Attaching napkin to garment



Two strips of adhesive extending longitudinally of the napkin is applied to the bottom side of the napkin. – For better attachment of napkin to garment



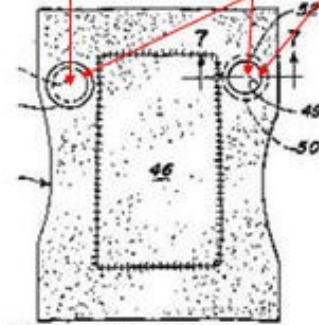
Fastening means



Closed view of diaper

FIG. 1

Pressure sensitive adhesive tap



Open view of diaper

Pressure-sensitive adhesive tape segment applied on the outside surface of the diaper. - contact for proper attachment  
Adhesive surface of the fastening means is covered with a release sheet means which is readily removable upon use and preferably is permanently attached to the diaper - Adhesive material is not in contact with skin



Shoulder strap pad for bra

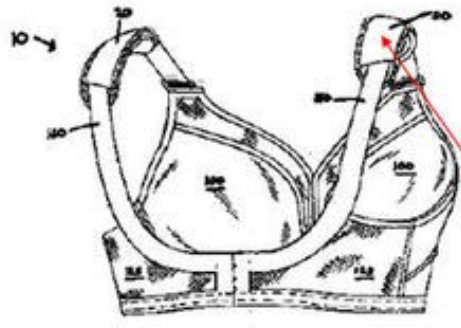


Fig. 1

Shoulder strap pad for bra

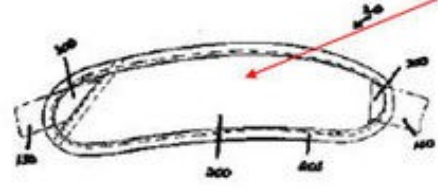
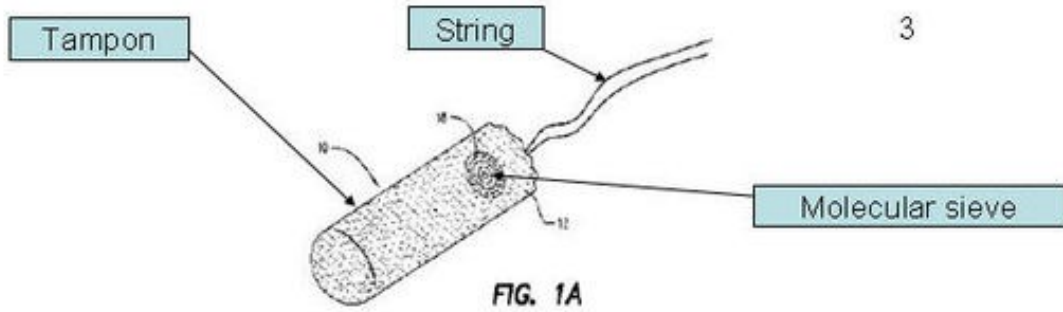


Fig. 2

Shoulder strap pad for bra having a top cover, a bottom cover, and a cushion filler. The bottom cover is laminated to the top cover to form an enclosure in which the cushion filler is secured. - For comfort feeling



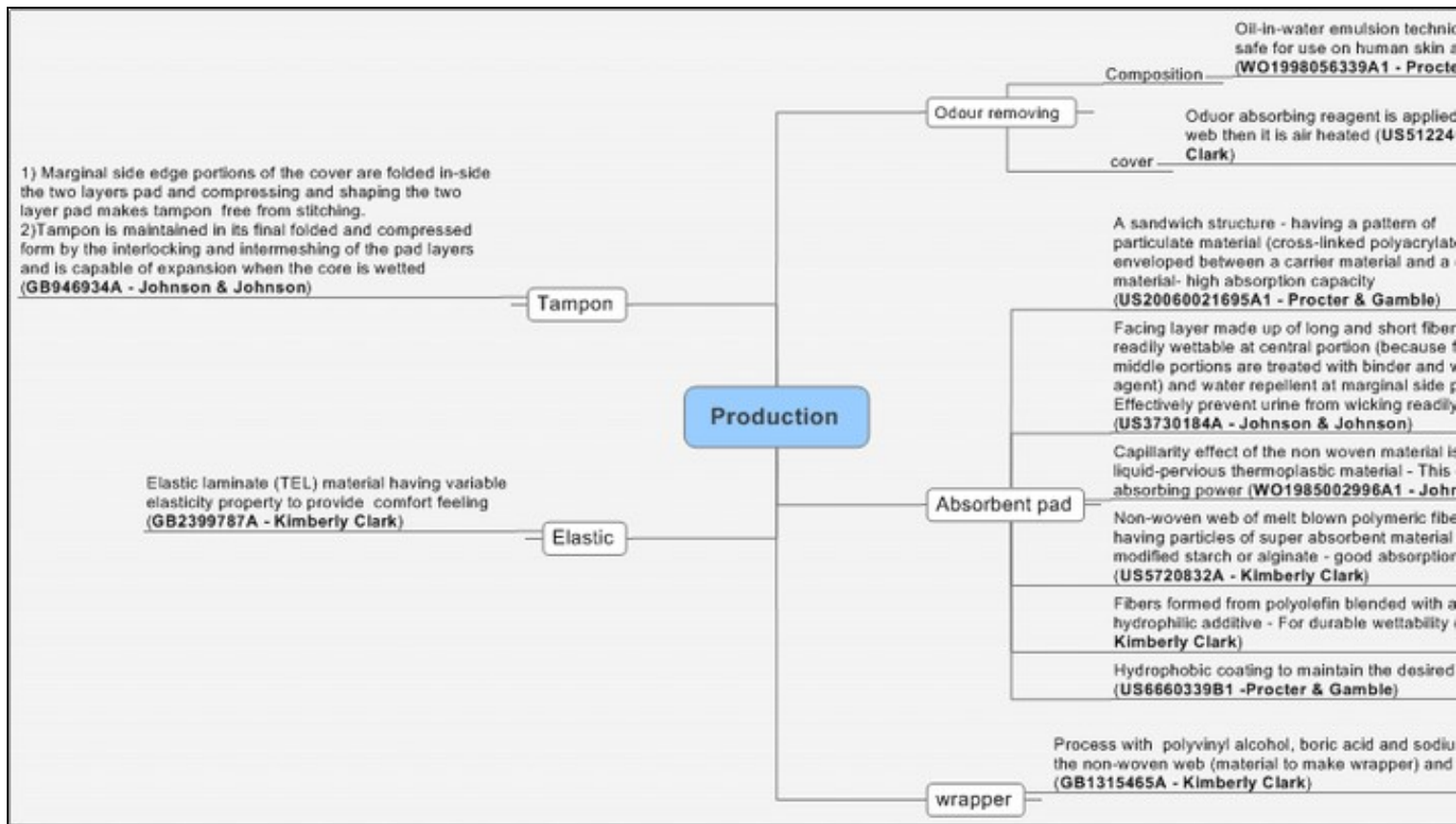
Molecular sieve (natural zeolite in powder form) disposed within the fibrous material to absorb odors from the body fluids.



**Production patents**

• Classification of Production patents

| Production                 | Total records | Kimberly Clark | Procter & Gamble | Johnson & Johnson | Playtex |
|----------------------------|---------------|----------------|------------------|-------------------|---------|
| Absorbent pad              | 6             | 2              | 2                | 2                 | 0       |
| Odour removing composition | 2             | 1              | 1                | 0                 | 0       |
| Wrapper                    | 1             | 1              | 0                | 0                 | 0       |
| Elastic                    | 1             | 1              | 0                | 0                 | 0       |
| Tampon                     | 1             | 1              | 0                | 0                 | 0       |



Production patents

## Non Wovens for Skin care wipes

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