W. E. SWIFT.

PAPER TOWEL.

APPLICATION FILED JUNE 15, 1912.

1,167,603. Patented Jan. 11, 1916.

Fig. 1.

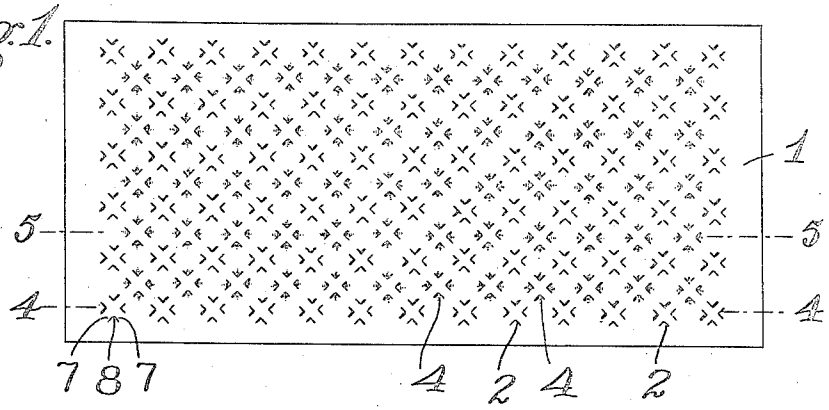


Fig. 2.

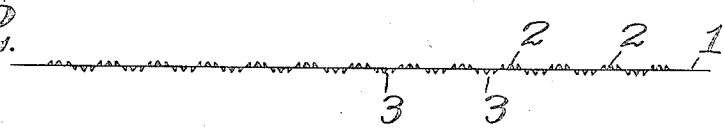


Fig. 3.

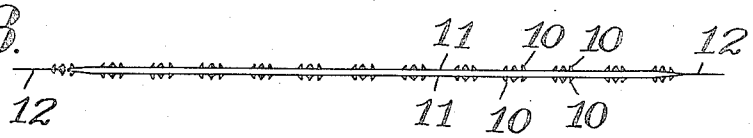
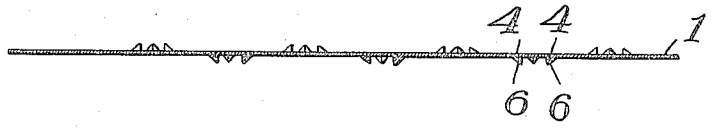


Fig. 4.

Fig. 5.



Witnesses.

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PAPER TOWEL.

1,167,603. Specification of Letters Patent. Patented Jan. 11, 1916.

Application filed June 15, 1912. Serial No. 703,877.

To all whom it may concern:

Be it known that I, WILLARD E. SWIFT, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Paper Towels, of which the following is a specification, accompanied by drawings forming a part of the same.

My present invention relates to an improvement in towels which are made from an absorbent paper fabric, and it has for its object to provide means for facilitating the transference of moisture from the surface wiped, and also to increase the friction produced by wiping. I accomplish this object in the manner hereinafter described, the novel features being pointed out in the annexed claims.

Referring to the accompanying drawings, Figure 1 represents in plan view a towel embodying my invention. Fig. 2 is an edge view. Fig. 3 represents a modified form. Figs. 4 and 5 represent sectional views of my improved towel on an enlarged scale. The section shown in Fig. 4 is taken through the center of certain projections raised upon the upper side of the towel, and Fig. 5 is a sectional view through certain projections upon the under side of the towel, said sections being taken on the planes of the broken lines 4 and 5, Fig. 1, respectively.

Similar reference figures refer to similar parts in the different views.

In the construction of my improved towel I take a paper fabric of suitable texture and by the employment of suitable means, which may consist of punches and dies, or of rollers provided on their peripheries with projections and corresponding indentations, I form on the fabric a series of projections. These projections I preferably form on opposite sides of the fabric. In forming a projection upon one side of the fabric I indent the fabric upon the opposite side. I do not wish to confine myself to any special form of projection or indentation or to any special grouping of the projections, but in the accompanying drawings I have shown a form of grouping which I consider preferable. The grouping I have illustrated in Fig. 1 and the form of projections and indentations are represented in the enlarged views in Figs. 4 and 5.

Referring to the accompanying drawings, 1 denotes a sheet of paper of suitable texture upon the opposite sides of which I form a series of projections preferably triangular in shape, said projections being formed upon opposite sides of the fabric, those formed upon one side of the fabric being represented at 2, 2, Figs. 1 and 2, and those formed upon the opposite or under side of the fabric being represented at 3, 3, Fig. 2, and by the indentations 4, 4, Fig. 1. The indentations 4, 4, form projections upon the opposite side of the fabric and the projections 2, 2 are the result of similar indentations upon the under side of the fabric.

As represented in Fig. 4 the projections 2, 2, are formed by corresponding indentations 5, 5, on the under or opposite side of the fabric, and as represented in Fig. 5 the indentations 4, 4, produce corresponding projections 6, 6, on the under or opposite side of the fabric. The projections 2, 2, and 6, 6, are triangular in form. The triangular shape of the projections 2, 2, are represented in Fig. 1 in which the two sides of the raised projections 2 are represented by the lines 7, 7, and the highest point of the projection is represented at the apex 8 of the two lines. The apex of the triangle preferably presents a wall at right angles to the surface of the fabric, as represented at 9, 9, Fig. 4. The projections are placed in groups of four symmetrically arranged so as to bring the vertical walls of each pair of projections opposite each other. This arrangement of projections upon each side of the fabric causes the vertical walls of the projections to have a scraping effect on the surface of the skin when the towel is used, thereby increasing the friction and causing the moisture to be scraped off upon the surface of the fabric. The groups of projections, as shown in Fig. 1, are arranged in rows diagonally across the fabric which improves the appearance of the towel.

In Fig. 3 I have shown a modification which consists in forming the projections 10, 10, similar to those already described, but upon one side only of two sheets 11, 11, of the fabric, which are then united at their edges 12, 12, by adhesive material, or the projections may be formed upon a single sheet of fabric which may be folded upon itself with its free edges united, thereby forming a towel of two thicknesses of paper fabric joined at their edges and having the

projections 10, 10 formed upon the outer side of the towel.

I have above described what I consider the preferable embodiment of my invention, although I do not wish to confine myself to the specific form of projections or to the specific grouping of the projections.

A towel formed in accordance with my invention consists of a towel fabric, such as paper, having a series of projections which will provide means for producing a scraping or frictional effect upon the surface of the skin when the towel is used, the benefits resulting therefrom consisting in the frictional effect and also in the scraping action which transfers the moisture from the surface of the skin to the absorbent material of which the towel is composed.

I claim,

1. A paper towel, consisting of a double sheet united at its edges and separate at its center, and provided on its outer surface with raised projections having scraping edges.

2. A paper towel comprising superposed indented sheets, united along their edges, and separated inwardly of said edges.

3. A paper towel consisting of a double sheet united at its edges and separate at its center.

4. A towel comprising a sheet of paper having a series of indentations on one side to form corresponding projections on the other side, each indented portion being joined to the body of the sheet by a wall perpendicular to the plane of said sheet, with the perpendicular walls of each series of indentations opposing each other.

5. A towel comprising a sheet of paper having oppositely disposed indentations on one side producing corresponding projections on the opposite side.

6. A towel comprising a sheet of paper having series of indentations on one side producing corresponding projections on the opposite side, each projection having a perpendicular wall rising from the plane of the sheet to provide a scraping edge, the scraping edges of each series of projections being disposed adjacent, so as to oppose each other.

Dated this 12th day of June, 1912.

WILLARD E. SWIFT

Witnesses:

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NELLIE WHALEN.