## F. G. ORANE.

PAPER TOWEL.
APPLICATION FILED DEC. 21, 1910.
1,033,992.
Patented July 30, 1912.



Fig. 2.


Fig. 3.

WITNESSES:


Krank GUVTrane.
Siaikerlerituenden

# UNITED STATES PATENT OFHICE. 

## FRANK G. CRANE, OF WEST COLEINGSWOOD, NEW JERSEY.

## Specification of Letters Patent. Patented July 30, 1912.

Application fled December 21, 1910. Serial No. 598,637.

To all whom it may concern:
Be it known that I, Frank G. Crane, a citizen of the United States, residing at West Collingswood, in the county of Cam$\checkmark$ den and State of New Jersey, have invented certain new and useful Improvements in Paper Towels, (my post-office address is as above,) of which the following is a specification, reference being had to the drawings 0 annexed.

The object of my invention is a towel having a large part of its surface composed of raised absorbent material held together by strands formed of the same material as the 15 rest of the towel, but compressed and condensed into strength and consistency and running through the body of the towel and maintaining its form.

These towels are convenient for use in
cases where for any reason laundrying is undesirable. They can be used until soiled after which they can be burned or otherwise disposed of.
Figure 1 is a plan view of the towel. Fig. 2 is a sectional view on an enlarged scale of a portion of same along the line $2-2$ of Fig. 1. Fig. 3 is a roll towel.
$5,5,5,5$, are the parts of the towel which absorb the moisture. They are composed of soft absorbent paper and flexible as possible. These soft absorbent portions are preferably about one sixteenth of an inch thick, but this dimension is given rather as a guide than for any other purpose. The towel is intersected by a series of fine lines of condensed material $6,6,6,6$, running throughout the towel and giving to it the needful strength, and also making it as flexible and capable of manipulation as any linen towel. These intersecting lines of condensed material can either run in a plain square or diagonal as shown in Fig. 1 , or else in a fanciful pattern, 7,7 , as shown in Fig. 3.

The lines of condensed material lie depressed below the surface of the towel (see Fig. 2) and are sized and preferably finished so as to be but slightly affected by water and to continue to give the required strength to the towel while it is being used to wipe with.
The towels are conveniently provided in a single piece (see Fig. 3) attached end to end and marked off from each other by a perforation 8,8 , so that they can be drawn down from a roller, detached, used and discarded. The process of making them that I employ in practice is as follows: I pass the stock through the rolls which have on either or both small pockets or depressions in which the pulp can lie, and nar- 6 row raised lines between these pockets to compress and condense the material where the strengthening lines are to be lying intermediate between the portions intended to project and be absorbent. At the same time 65 I size and finish these depressed portions.
The ends of the towels 3,3 , are conveniently made of the condensed calendered material and a broad cross strip, as 9 , can be placed across the towel if desired.

Having now described my invention what I claim and desire to secure by Letters Patent is-

A paper towel having a body composed of soft absorbent paper intersected by narrow depressions of greatly compressed and sized paper.

In testimony whereof I have affixed my signature in presence of two witnesses subscribing.

FRANK G. CRANE.

Witnesses:
Edwin Smith,
Chas. T. Smithe.

