

J. D. TOMPKINS & F. H. FULLER.
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Fig. 1

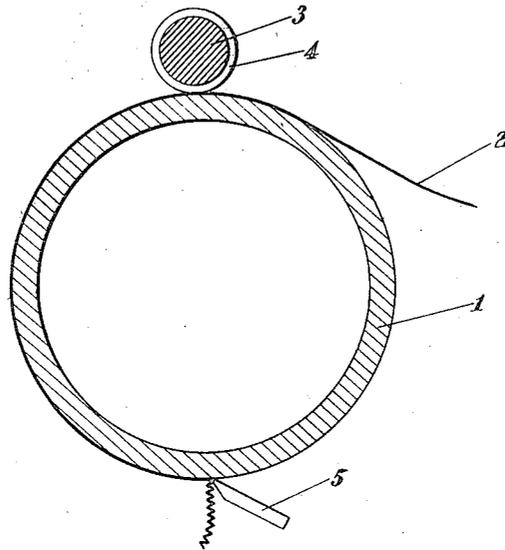
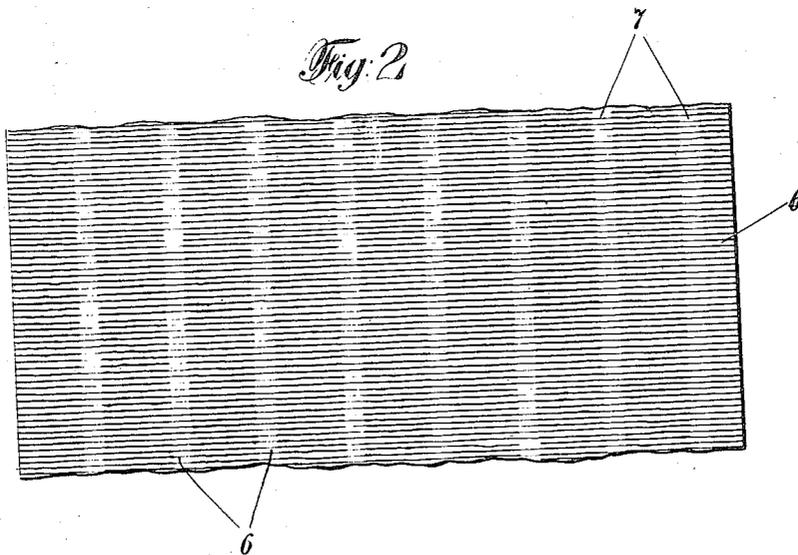


Fig. 2



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UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that we, JOHN D. TOMPKINS and FREDERICK H. FULLER, of Valatie, in the county of Columbia, and in the State of New York, and Potsdam, county of St. Lawrence, and State of New York, respectively, have invented a certain new and useful Improvement in Crimped Paper, and do hereby declare that the following is a full, clear, and exact description thereof.

Our invention relates particularly to the production of a crimped paper having many advantages and improved characteristics over crimped papers previously used.

The object of our invention is to provide a crimped paper which will hold the crimping better and for a longer period under the many uses to which crimped paper is applied, to provide a crimped paper which is stronger and tougher and more durable than that hitherto produced, to provide a crimped paper which is practically lintless yet which is highly absorbent, which has greater tensile strength than crimped papers previously produced, which is so made that the crimpings in the paper will stand jars or strains much better than other crimped papers, thus adapting the crimped paper particularly to use in stretchable paper bags, and which, because of its strength and softness is particularly adapted for use as wrapping paper, such, for example, as wrapping paper for glassware, bottles, etc.

Our invention comprises in general a crimped paper which has been given its crimping while heated and in a moist condition in such a manner that a portion of the surface of the web of paper is given a distinct glaze, the glaze being preferably produced on the entire surface of one side of the web of paper, and the web of paper being formed with compressed areas extending along the web of paper to form portions thereof having greater compactness, strength, etc.

As one illustrative manner in which the paper made in accordance with our invention may be produced, a moist web of paper is conducted over a heated roll which will give to the surface of the web next to the roll a distinct glaze. While on the roll the paper is subjected to compression, as by producing water marks, by the web being conducted upon a heated roll beneath a

weighted roll or equivalent means for compressing certain portions of the web of paper. The web of paper is thereafter removed from the heated roll by a crimping plate which crimps the web of paper while heated and in a moist condition. The paper is then dried in any suitable manner.

In the accompanying drawings we have shown an apparatus in which crimped paper may be made in accordance with our invention, and a form of the completed product made therein.

In the drawings Figure 1 represents a cross-section of an apparatus used for forming the crimped paper, shown diagrammatically; and, Fig. 2 is a plan view of a portion of a web of paper made in accordance with our invention.

This apparatus comprises a heating roll 1, over which is conducted a web of paper 2 in a moist condition. The web of paper 2 is conveyed while on the roll 1, beneath a presser roll 3 having one or more annular projections 4, although it is to be understood that the projections may be of any desired shape. Thereafter, the paper, while still heated and in a moist condition, comes in contact with the blunt edge of a crimping plate 5 which crimps the web of paper and removes the same from the surface of the roll 1 allowing it to fall and pass to any other desired apparatus to dry the web of paper.

In Fig. 2 we have shown a form of the product produced in the apparatus shown in Fig. 1, said product comprising a portion of a web of paper 6 having a series of longitudinal compressed areas 7 extending along the body of the web of paper. The product thus produced has one surface, that is to say, the surface which was located next to the heating roll, glazed to some extent, while the other surface may not be so glazed, and the body of the paper provided with a series of compressed portions 7 extending along the body thereof. The glazing and compression both impart great strength to the web of paper and maintain the crimped form of the paper which has been given to the web of paper while in the heated, moist condition. The paper stock being usually produced from wood fibers or other constituents, of which cellulose is the main element, the fibers retain the form

given to them by pressure while in a heated, moist condition, in the manner well known in connection with treatment of all articles of wood to which it is desired to give a permanent set in a bent condition. Furthermore, while a web of paper is thus produced having very great strength and toughness, and in such a manner that it will tend to retain its crimping for a longer time than was possible in the case of previous types of crimped paper, the paper is, nevertheless, very absorbent, and thus may be used to great advantage as paper toweling and for all uses to which paper is applied where it is necessary for the paper to be absorbent. Furthermore, the influence or production of the glaze on one surface extending quite through the body of the web of paper prevents the formation of lint upon the surfaces of the web of paper, and thereby reduces, by at least one half, the tendency of the web of paper to form into lint when being used. Again, the paper has such a great degree of strength and retains its set so efficiently that it is extremely well adapted for use for paper bags and in every manner in which crimped paper is used where great tensile strength is desired. The great strength of the paper and the softness of the glazed surface particularly adapts it for wrapping and packing glassware of all kinds.

While we have shown and described one form of our invention, we wish it to be understood that many changes may be made therein without departing from the spirit of our invention.

We claim:

1. A sheet of paper crimped and having glazing on a portion only of one surface, the folds of the crimping being retained in the original elevated position in the glazed portion.

2. A sheet of paper crimped as a whole and having portions thereof of greater density than the remainder thereof, the folds of the crimping being retained in the original elevated position in the more dense portions.

3. A sheet of paper crimped as a whole, having glazing on one surface, and having portions thereof of greater density than the remainder thereof, the folds of the crimping being retained in the original elevated position in the glazed and more dense portions.

4. A sheet of paper crimped as a whole and having continuous portions thereof of greater density than the remainder thereof, the folds of the crimping being retained in the original elevated position in the more dense portions.

5. A sheet of paper crimped, having glazing on one surface, and having continuous portions thereof of greater density than the remainder thereof, the folds of the crimping being retained in the original elevated position in the glazed and more dense portions.

In testimony that we claim the foregoing we have hereunto set our hands.

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Witnesses:

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