

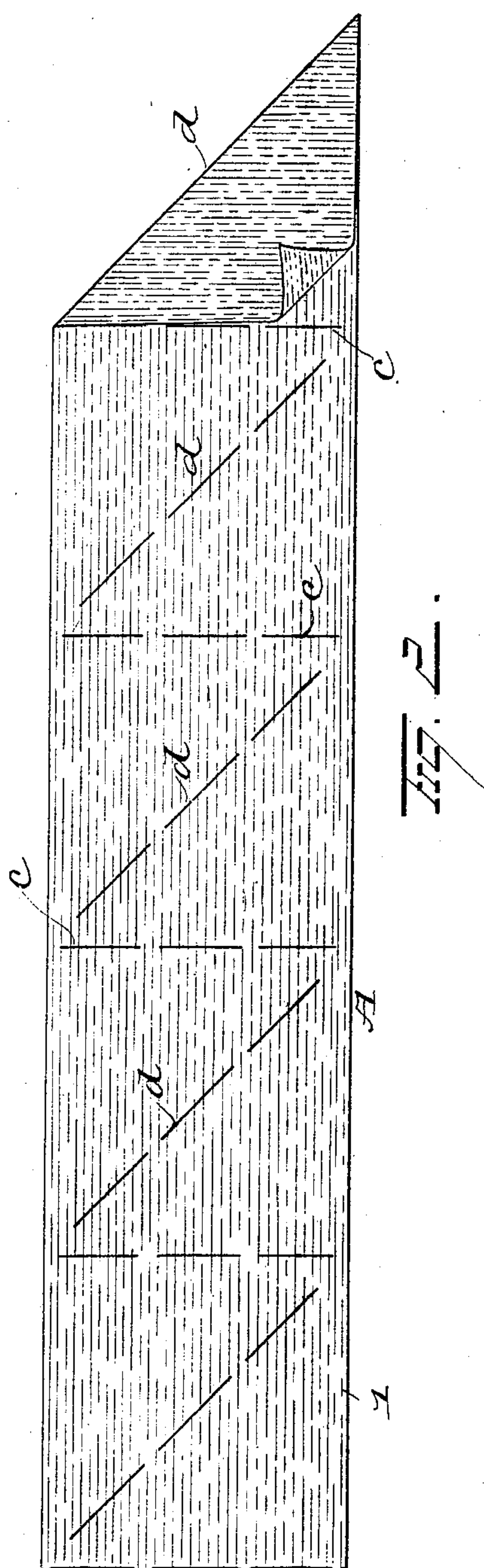
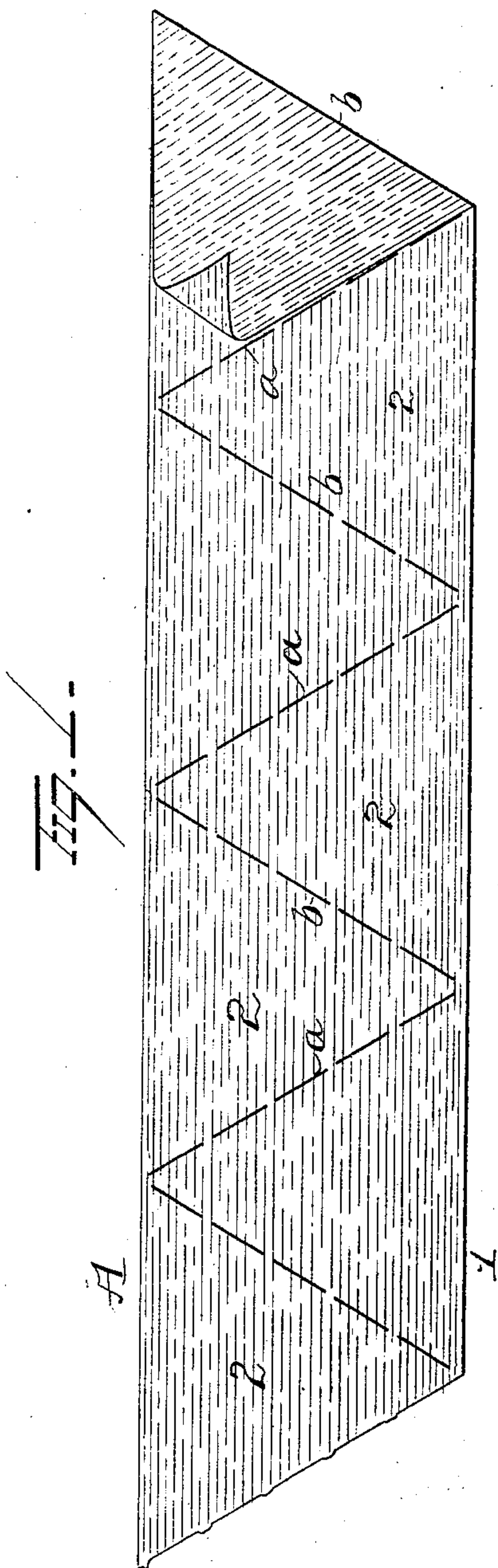
No. 607,498.

Patented July 19, 1898.

S. WHEELER.
TOILET PAPER.

(Application filed July 31, 1897.)

(No Model.)



WITNESSES
E. J. Nottingham
G. F. Downing.

INVENTOR
Seth Wheeler
By H. A. Seymour
Attorney

UNITED STATES PATENT OFFICE,

SETH WHEELER, OF ALBANY, NEW YORK.

TOILET-PAPER.

SPECIFICATION forming part of Letters Patent No. 607,498, dated July 19, 1898.

Application filed July 31, 1897. Serial No. 646,675. (No model.)

To all whom it may concern:

Be it known that I, SETH WHEELER, a resident of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Toilet-Paper; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in toilet-paper.

Toilet-paper as first manufactured in the roll form was in a continuous web. Later the web was divided by perforations or incisions into a series of more or less slightly-connected sheets, which could be readily separated without the aid of the tearing or cutting devices generally used with the continuous web. Originally one thousand sheets was the maximum number for a roll or package; but as improved machinery enabled the manufacturer to wind the paper more closely two thousand, three thousand, and four thousand sheet rolls were made, meeting with much favor from large consumers on account of the saving in first cost per thousand sheets, reduction of waste at the beginning and end of each roll, and also lessening the attendance necessary to maintain the closet-supply. To produce rolls having the greatest number of sheets, finer and thinner paper is used, and as the paper is what is technically known as "cylinder-paper" it has been found that, although doubled or trebled in the usual manner, it is too easily split. Hence more sheets are required and the advantage of the greater number of sheets in the roll diminished in like proportion, to overcome which is the purpose of this invention.

As is well known, "cylinder-paper" (so called to distinguish it from paper made on the Fourdrinier machine,) while stronger in the direction of the lay of its fiber, is much weaker in the opposite direction or crosswise of its fiber, and the object of this invention is to cross the fiber of the sheets when folded for use, which is accomplished by the peculiar form of the sheets and their arrangement in the web with respect to one another, whereby when folded there is no loss of useful area—i. e., the entire surfaces of the folded

sheets are perfectly superimposed, the edge of one never extending beyond that of another. I am aware that divisions heretofore made might partially accomplish this, as in my former patent, No. 422,866; but it will be observed that the useful area of the doubled sheet—i. e., the double portion—is much less than the area of the single sheet and that additional folds on the lines of division do not remedy this, whereas my improved sheet when folded doubles the entire area or surface and increases the strength or resistance to rupture of the entire surface area with each additional fold, crossing its fiber with that of the underlying sheet, thereby increasing its resistance to rupture over a greater number of sheets folded in the usual manner with the fiber of the sheets parallel. It will be observed that this is accomplished by folding the sheets on their lines of division, which extend diagonally across the roll, so that the sheets when folded are in the form of a triangle. The division-lines may consist of perforations or mere marking, or some of them may be made by perforations and some by marking. It is obvious that the same advantages will maintain, though in less degree, if Fourdrinier instead of cylinder paper is used.

In the accompanying drawings, Figure 1 is a view showing one embodiment of my invention. Fig. 2 is a view showing a slight modification.

A represents a strip of toilet-paper the fiber of which runs longitudinally of the same—that is to say, parallel with the edges of the paper, as indicated by the lines 1.

In the form of the invention shown in Fig. 1 the strip of paper is divided by diagonal lines forming a connected series of triangular figures 2. When the paper is folded so that one of the triangular figures or pieces will lie upon another, the fiber of the two pieces will cross, as shown in the drawings. In like manner any desired number of sheets may be thus folded before or after separation from the web and will not be liable to break or split when in use, as above explained. In the form of the invention shown in Fig. 1 alternate lines *a a*, &c., may be made by perforating or cutting, while the lines *b b*, &c., may be indicated by merely marking to denote

where the paper is to be folded. In this case the paper is folded alternately on the cutting or separating lines and the marking-lines.

In Fig. 2 the dividing-lines *c*, which run at right angles to the fiber, may be made by perforating or cutting, and the diagonal lines *d*, on which the paper is to be folded to cause the fiber to cross, may be made by marking.

Other slight changes might be made in the details or form of the invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise forms shown and described.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A roll or strip of toilet-paper having perforated or incised lines of division to permit severance of sheets and having marked lines of division to denote where the sheets must be folded to cause the fibers to cross, substantially as set forth.

2. A roll or strip of toilet-paper having its fiber running lengthwise the strip and having

perforated or incised lines of division to permit severance of sheets, and having marked lines of division to denote where the sheets must be folded to cause the fibers to cross, substantially as set forth.

3. A roll or strip divided into sheets by lines of division, said lines and sheets so arranged relative to each other that adjacent sheets lie point to base and base to point and when folded one upon another cross grain and approximately coincide at their edges.

4. A roll or strip of toilet-paper having division-lines indicated thereon whereby the strip is subdivided into connected triangular sheets, two sides of which at least are of equal length.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SETH WHEELER.

Witnesses:

EDGAR WHEELER,
WM. A. WHEELER.