

S. D. LANE.
CORRUGATED OR LIKE PACKING MATERIAL.
APPLICATION FILED AUG. 26, 1915.

1,189,140.

Patented June 27, 1916.

2 SHEETS—SHEET 1.

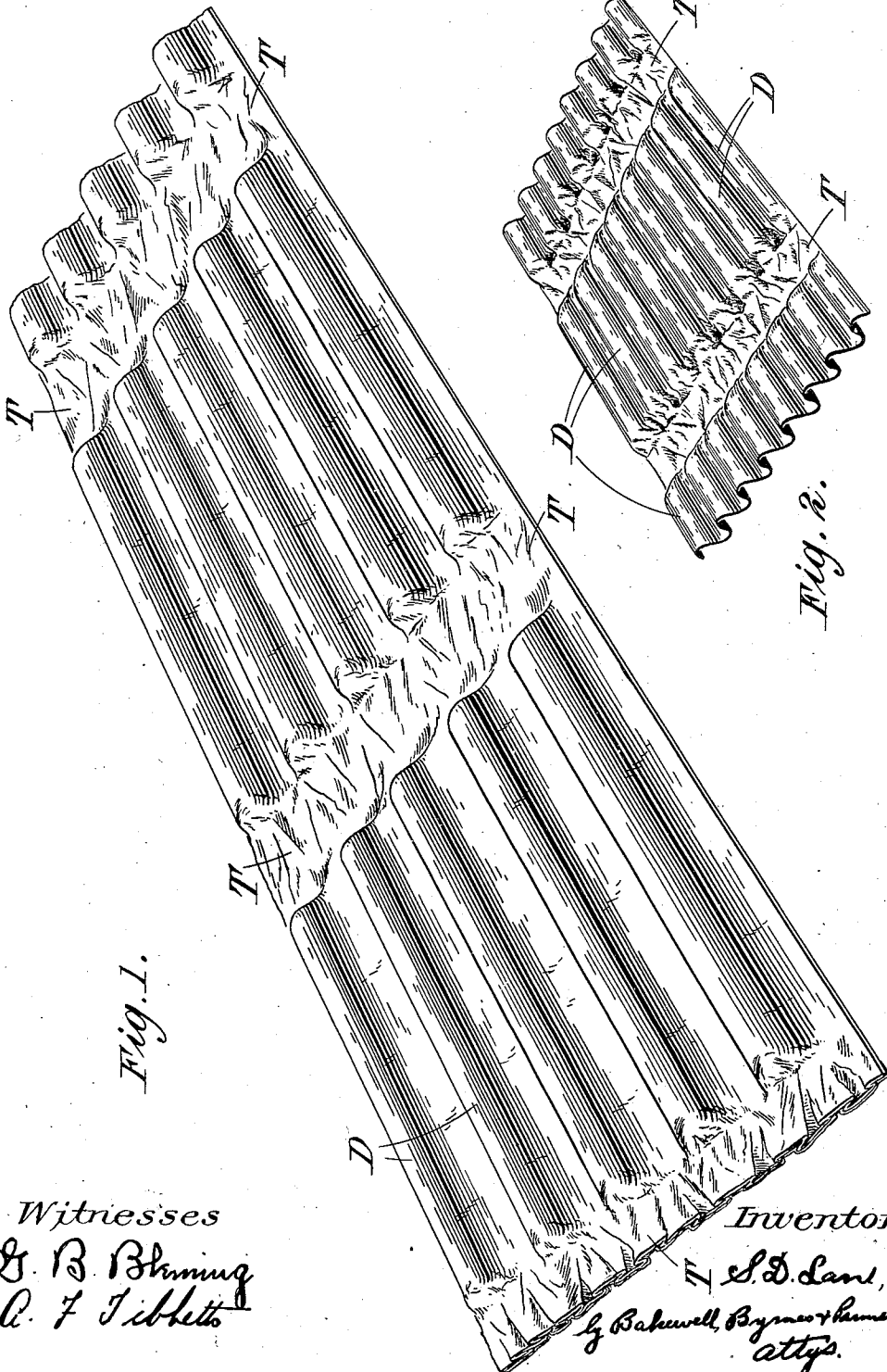


Fig. 1.

Fig. 2.

Witnesses
G. B. Blumling
C. F. Tibbels

Inventor.
S. D. Lane,
by Bakerwell, Byrne & Hamaker,
attys.

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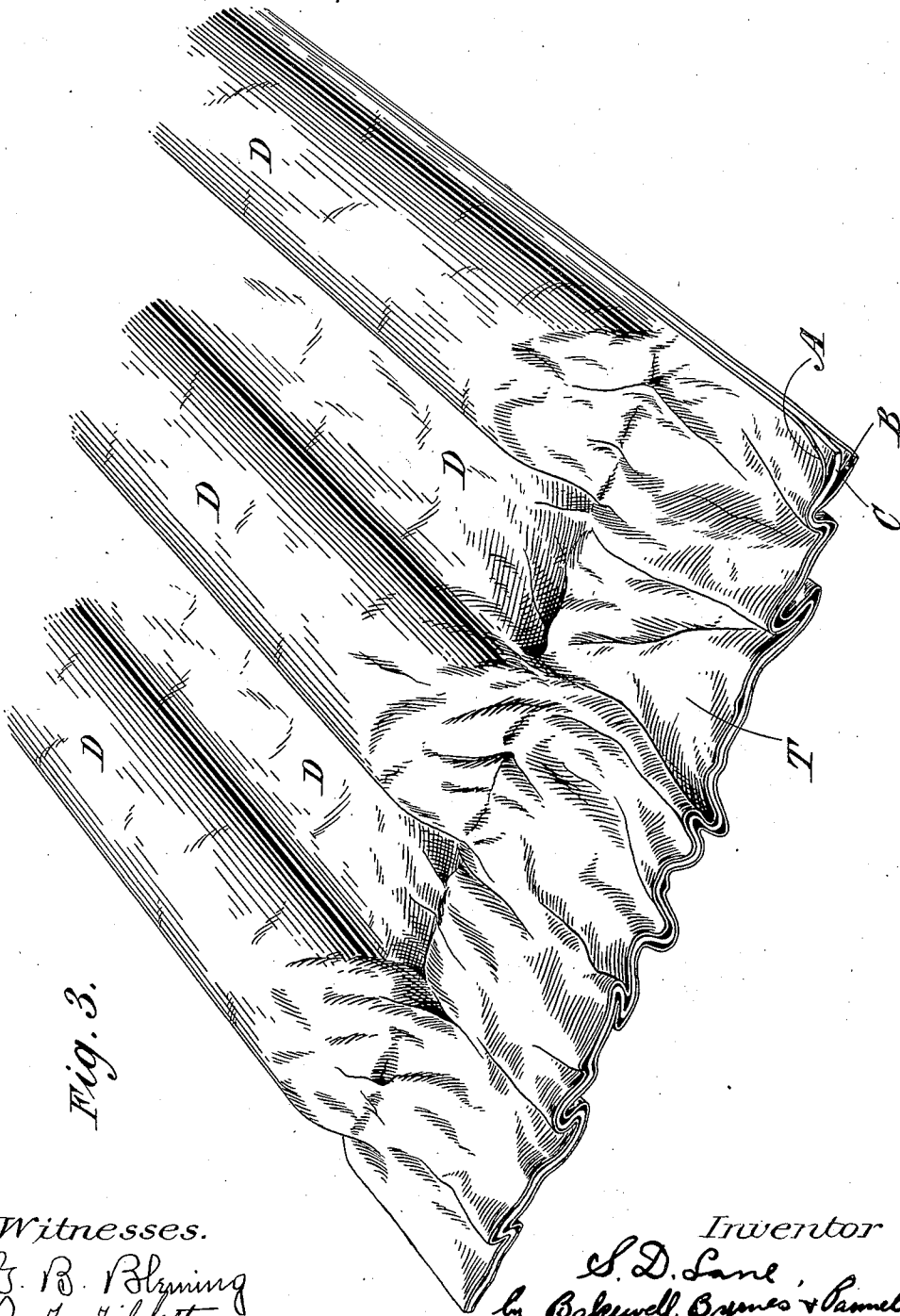


Fig. 3.

Witnesses.
E. B. Blanning
O. F. Tibbels

Inventor
S. D. Lane,
by Bakerwell, Byrnes & Samuels,
attys.

UNITED STATES PATENT OFFICE.

SIDNEY DAVID LANE, OF HUCCLECOTE, ENGLAND.

CORRUGATED OR LIKE PACKING MATERIAL.

1,189,140.

Specification of Letters Patent. Patented June 27, 1916.

Application filed August 26, 1915. Serial No. 47,475.

To all whom it may concern:

Be it known that I, SIDNEY DAVID LANE, a subject of the King of England, residing at Hucclecote, in the county of Gloucester, England, have invented certain new and useful Improvements in Corrugated or Like Packing Material, of which the following is a specification.

This invention is for improvements in or relating to corrugated or like packing material, and it has for its object to provide a form of packing material which is inexpensive to manufacture and will not easily crush.

Corrugated material made of sheets wherein the corrugations extend from one edge to the opposite edge, is easily deformed or crushed as there is nothing to prevent the bases of the corrugations from splaying apart when pressure is put upon them. To overcome this objection, packing sheets are often made up from two sheets of material, one of which is corrugated and the other flat, the two being glued or otherwise secured face to face. This prevents the aforesaid splaying of the corrugations but adds to the expense of manufacture.

Corrugated packing material has also been proposed in which the corrugations are comparatively short in a linear direction and are arranged in horizontal and vertical rows with blank spaces between the vertical rows, said corrugations being produced by passing the material, as for example paper preferably damped, between a pair of rolls each provided with recesses or projections which fit corresponding recesses or projections on the opposite roll.

According to the present invention, a corrugated or like packing material is made in the form of a composite sheet composed of two or more layers out of which corrugations or other projections rise, such corrugations or projections being formed by bending the composite sheet without substantially increasing its curvilinear length, and being bordered by adjacent parts of the sheet serving as tie-portions formed by folding or crumpling and crowding and flattening the folds so as to render them comparatively inextensible.

A convenient form of composite sheet according to this invention is composed of three layers, the outside layers consisting of a thin soft paper, such as tissue paper, and the inner layer of thicker soft paper, such

as blotting paper. This form of packing material consisting of a composite sheet of two layers of tissue paper with a thin layer of blotting paper between is particularly resilient and soft, and especially suitable for packing such articles as chocolates, where a soft resilient material is required which will not scratch the articles, while at the same time having sufficient substance and resilience to protect them. The blotting paper is found to be sufficiently stiff to hold up the tissue paper, while at the same time the tissue paper presents a soft surface to the articles packed, whereby in case of shock they are not abraded or damaged in any way.

A corrugated packing material has been proposed consisting of a single sheet of stiff paper out of which corrugations or other projections rise, as described above. Such a packing material has, however, been found unsuitable for packing confectionery, such as chocolates, the sheet being too stiff, and damaging the said articles.

Conveniently the sheets or composite sheets are provided with one or more series of parallel corrugations crossed by tie-portions of the sheet formed by crowding and flattening; for example, the corrugations may extend all in one direction across the whole breadth of the sheet, but may be traversed at intervals, say of $1\frac{1}{4}$ inches, with flattened portions of say $\frac{1}{4}$ inch breadth, which portions are formed by crowding up the same amount of material as is used to make the corrugations, but flattening it out instead of molding it into corrugated form. These transverse flattened parts of the sheet thus constitute ties at intervals across the whole of the corrugations, which prevent the corrugations from splaying under pressure, as they prevent the whole sheet from stretching in a direction transverse to the corrugations, unless such tension is put upon it as to straighten out the crowded flattened parts of the sheet.

The packing sheets may be made of various materials and the corrugations or other projections may be variously arranged without departing from the spirit of the present invention.

One form of corrugated or like packing material according to this invention will now be described with reference to the accompanying drawings, in which:—

Figure 1 shows a perspective view of a

small piece of a sheet of the composite packing material in which the series of corrugations are crossed by tie-portions formed by crowding and flattening the corrugations; the separate elements of the composite sheet are not illustrated in this figure as this feature is clearly shown in the larger scale, Fig. 3; Fig. 2 shows a perspective view of a small piece of a composite sheet of the composite packing material in which the series of corrugations are crossed by two tie-portions formed by crowding and flattening the corrugations, the separate elements again not being shown in detail; and Fig. 3 shows a small section of the composite sheet of corrugated packing material shown in Figs. 1 and 2, and much enlarged to show the form of crowding and flattening in the tie-portions.

20 The composite sheet of packing material shown in the figures is formed with three layers of material (see Fig. 3) the top and bottom layers, A and B, consisting of tissue paper and the middle layer, C, of thin blotting paper. The three sheets of paper are placed together and are corrugated to form a sheet of packing material. The total length of the tie-portions T, if fully extended or stretched out, is the same as that of the corrugations D, but the crowding or flattening of the tie-portions is effected in such a way that the flattened folds and creases in the tie-portions are indiscriminate and are not alined or in register with the corrugations, whereby the tie-portions tend to prevent the splaying of the corrugations.

What I claim as my invention and desire to secure by Letters Patent is:—

1. Packing material having a plurality of corrugations and flat tie-portions, said tie-

portions being formed by crumpling and flattening portions of the corrugations to prevent the corrugations between the flattened portions from spreading.

2. A corrugated packing sheet composed of a plurality of layers of sheet material and provided with corrugations formed by bending all the layers together to the corrugated form without substantially stretching the material, and flattened tie-portions which extend across the corrugations and are formed by crushing the corrugations.

3. A corrugated packing sheet composed of three layers, the outside layers consisting of thin soft paper and the inner one of thicker soft paper, and provided with corrugations formed by bending all the layers together to the corrugated form without substantially stretching the material, and flattened tie-portions which extend across the corrugations and are formed by crushing the corrugations.

4. A corrugated packing sheet composed of three layers, the outside layers consisting of tissue paper and the inner one of blotting paper, and provided with corrugations formed by bending all the layers together to the corrugated form without substantially stretching the material, and flattened tie-portions which extend across the corrugations and are formed by crushing the corrugations.

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

SIDNEY DAVID LANE.

Witnesses:

E. J. RUSSELL,
G. R. TAYLOR.