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L. KIRSCHBRAUN

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WATERPROOF COVERING AND PROCESS OF MAKING SAME

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Fig. 1.

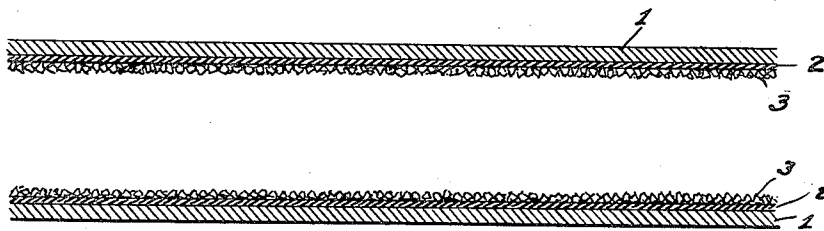
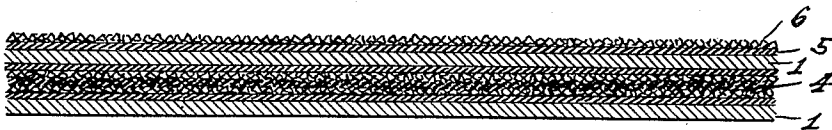


Fig. 2.



Witness,
S. D. Mann

Inventor,
Lester Kirschbraun.

By *Frank L. Belknap* atty.

UNITED STATES PATENT OFFICE.

LESTER KIRSCHBRAUN, OF CHICAGO, ILLINOIS.

WATERPROOF COVERING AND PROCESS OF MAKING SAME.

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Among the salient objects of this invention are to provide a product which while made of very thin caliper felt is nevertheless particularly characterized by its strength and stiffness; to provide a product which has a minimum amount of the expensive fibrous constituents, and a maximum amount of the relatively cheap grit and asphalt constituents; to produce a product in which the saturated felt is advantageously made by my novel process of forming waterproof paper such as set forth in my pending application, Serial No. 339,690, filed Nov. 21, 1919, but which if desired can be made from ordinary felt; to produce a product which because of the very thin caliper felt, can be made from fibrous constituents other than rag stock, as for example, mixed papers; to provide a product formed of plies between which is embedded grit such as crushed gravel, quartz, bricks, tiles or the like cheap waste material or cork, sawdust, limestone shells or the like; to produce a product particularly adapted for roofing elements as strip shingles, or the like; to provide a novel process for producing this product and in general to provide an improved product and process of making same as referred to.

Fig. 1 is an edge view of plies in position to be united.

Fig. 2 shows the united plies with the surfacing on the upper surface.

The process may be carried out as follows: Waterproof felt 1 may be formed in accordance with the invention disclosed in my said earlier application, or dry felt may be made and then saturated in the usual way. The caliper of this felt may be about 15 points. This felt is then coated with asphalt 2 and a grit surface 3 applied as in the usual way. This may be very cheap grit as color and appearance are of no importance. Two such sheets of this finished grit surface roofing are brought together with their grit covered surfaces opposed. To one or both of the grit surfaces must be first applied a coating of hot asphalt or the emulsified matrix 4 referred to in said prior application. These are then run between pressure rolls for the purpose of firmly uniting the two sheets with their opposed grit covered surfaces together. This forms a unitary structure of a sandwich like character.

This structure may be then run beneath

a coating roll and one or both of the outer surfaces coated as shown at 5 and a granular facing 6 applied in the usual way. The sheet may then be cut up into shingles or shingle strips to form what may be called stiff sandwich shingles. The caliper of the finished shingle made in this way without the final coating and final granular facing may be as high as 60 to 80 caliper.

Instead of embedding grit or the like between the sheets, iron filings, short pieces of metal, wood or other reinforcing materials may be used. If desired, more than two plies may be united in this way and by using sufficient number of plies, a built-up structure of tile or block like character can be made.

On account of this novel mode of uniting these plies with their grit surfaces opposed and their particles interlocked, there results a high degree of structural stability which has not been possible to obtain in heretofore known felted roofing compositions. This construction lends itself especially to the formation of roofing elements having a surface other than flat structure, usual to prepared roofing. For example, it is possible to prepare a semi-rigid tile shaped element which will maintain a curved structure similar to that of clay tiles and which will retain its original form under the influence of the summer sun.

The tile-like covering has the advantage of being somewhat resilient, and especially adapted to withstand rough handling in transportation without injury.

I claim as my invention:

1. A waterproofed covering comprising a plurality of bitumen-saturated felted fibrous plies, opposed surfaces thereof having an adhesive coating and a granular surfacing, and being adhesively united by a bituminous coating rigidly combining the granular surfacing material of the plies, a coating and a granular surfacing on an exposed surface of said sheet.

2. A waterproofed covering comprising a plurality of bitumen-saturated felted fibrous plies coated with an adhesive substance and a granular surfacing, the opposed surfaces of the plies being adhesively united by a bituminous coating, the granular surfacing acting as interlocked reinforcing particles between said plies.

3. A process of making a waterproof covering having inherent structural stiffness

consisting in adhesively uniting by means of a bituminous binder, two relatively thin bitumen saturated felted fibrous sheets having embedded comminuted reinforcing particles between the opposed faces of said plies.

4. A process of making a waterproof covering consisting in forming a plurality of bituminous saturated felted fibrous plies adhesively applying comminuted reinforcing particles to one face of each ply, uniting the faces of the plies to which said comminuted particles are embedded by means of a bituminous binder and forcing the plies together so that the angular projections of the comminuted particles of one ply will enter the interstices between the comminuted particles of the other ply, thus producing a product having inherent structural stiffness.

5. A waterproof felted plied covering

formed of bitumen-saturated fibre, and non-bituminous reinforcing particles embedded in the opposed surfaces of the plies, the whole having inherent structural stiffness.

6. A waterproof covering consisting of a plurality of fibrous plies impregnated with a waterproofing substance, the opposed surfaces of the plies coated with an adhesive coating and a granular surfacing affixed thereto, said plies united with an adhesive medium.

7. A waterproof covering consisting of a plurality of fibrous plies impregnated with a waterproofing substance, the opposed surfaces of the plies coated with an adhesive coating having a granular surfacing affixed thereto, said plies united with a bitumen medium.

LESTER KIRSCHBRAUN.