June 16, 1925. 1,542,475

R. A. RUESS

SHINGLE AND METHOD OF MAKING

Filed Dec. 14, 1922

Fig. 1.

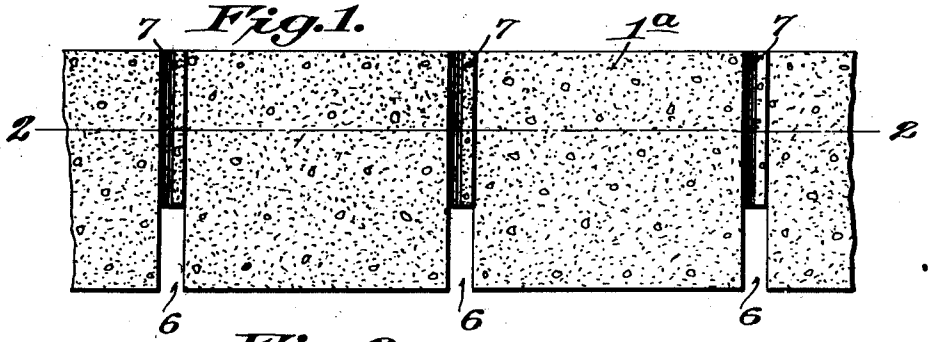


Fig. 2.

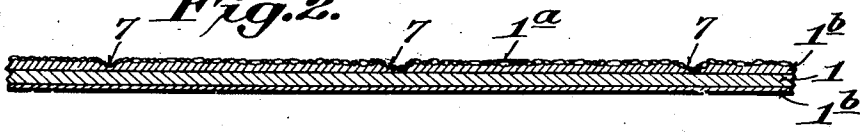


Fig. 3.

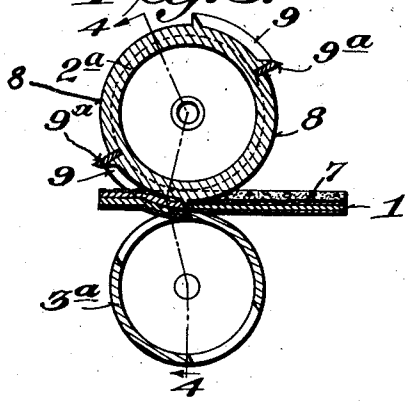


Fig. 4.

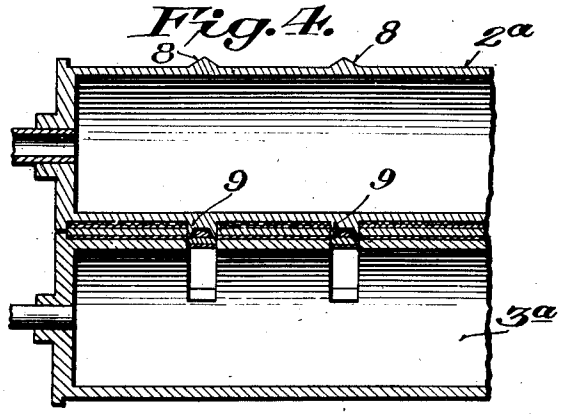


Fig. 5.

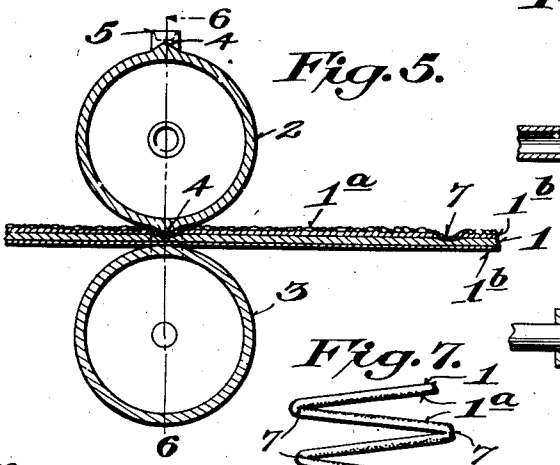


Fig. 6.

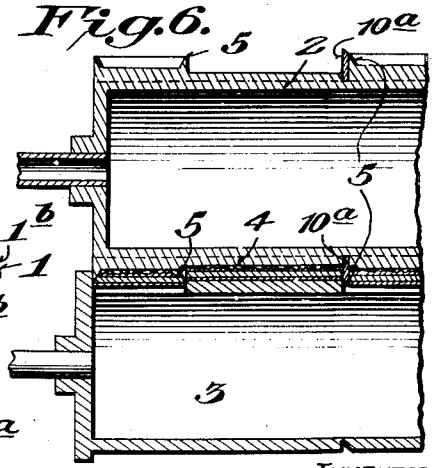


Fig. 7.

WITNESS:-

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Patented June 16, 1925. 1,542,475

UNITED STATES PATENT OFFICE.

ROYCE A. RUESS, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO THE RUBEROID CO., A CORPORATION OF NEW JERSEY.

SHINGLE AND METHOD OF MAKING.

Application filed December 14, 1922. Serial No. 606,860.

To all whom it may concern:

Be it known that I, ROYCE A. RUESS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Shingles and Methods of Making, of which the following is a specification.

This invention relates to certain new and useful improvements in shingles and method of making same and pertains more especially to shingles of the strip type involving a felt base saturated and surfaced with bituminous matter and having a coating of crushed mineral matter.

The primary object of the invention is to provide improved means for enabling folding of the shingles so as to allow the latter to be marketed in relatively long strips, folded into compact form thereby to provide a more convenient method of shipping the shingles and also a simpler and less expensive manner of laying.

It has heretofore been proposed to provide folding shingles wherein the hinging is afforded by the provision of uncoated areas or portions that are free of mineral matter and which aline with the cuts in the felt base, but attempts to manufacture the shingles with such uncoated areas, has proven difficult, and expensive to a prohibitive extent. In the manufacture of shingles of the strip type, the custom is to apply and then roll crushed mineral matter onto a felt base saturated and surfaced with bituminous matter, and to then cut or notch the product to impart the appearance of individual shingles when assembled on a roof. The present invention therefore aims to provide a strip-shingle which somewhat adheres to the present method of manufacture, and which at the same time affords a simplified manner of hinging, which latter is formed by simultaneously depressing the mineral matter in the underlying coating to form hinging means and the cutting of the slots in the base.

The invention has still further and other objects which will be later set forth and manifested in the course of the following description.

In the drawings:—

Figure 1, is a fragmentary plan view of a strip of shingles constructed in accordance with the present invention;

Figure 2, is a section on line 2—2 of Figure 1;

Figure 3, is a cross-section of a set of rollers employed in making the shingles when feeding the strip transversely of its length;

Figure 4, is a section on line 4—4 of Figure 3;

Figure 5, is a view similar to Figure 3, of a set of rollers employed when making the shingles by lengthwise feeding of the strip;

Figure 6, is a section on line 6—6 of Figure 5;

Figure 7, is an edge elevation illustrating the manner of folding the shingles.

In proceeding in accordance with the present invention the felt or other base 1 is saturated with a relatively soft bituminous mixture, then coated on both sides with a harder bituminous composition 1^b and then surfaced on the upper side with crushed mineral matter 1^a. The strip is now passed in the direction of its length between rollers 2 and 3, Figures 5 and 6. The upper roller 2 is provided with an axially extending rib 4 which may be of V-shape or semi-circular shape in cross-section and is further provided with an axially extending cutter 5, the latter being of the width which the slots 6 of the strip is to possess, the rib and cutter being in alinement. In operation, the roller 2, serves to depress the mineral matter into the underlying coating and at the same time to form the slots 6 and V-shaped indentations 7, which latter afford the hinging means. The indentations 7 extend for some distance into the coating, without however extending into the felt base, which would weaken same. The roller may be formed hollow so as to be heated by steam or other means; or if desired the roller may operate under pressure in a cold condition while the material is still warm and plastic.

In lieu of rolling, cutting and forming the hinging means by lengthwise feeding of the strip, the same result can be produced by feeding the strip transversely of its length as illustrated in Figures 2 and 3, wherein rollers 2^a and 3^a of the same length as that of the strip is employed. In this instance, the ribs 8 and the cutters 9 are of arcuate form and are arranged circumferentially of the roller and at spaced distances axially of the roller equal to the width of the shingles

or slots defining the shingles. Longitudinal or axially extending cutters 9^a are employed to longitudinally cut the strips from a single large piece of material, while as shown in Figure 6, circumferential cutters 10^a are employed to transversely cut the large piece of material into strips.

In each form of the invention it will be seen that the ribs act to form the indentations while the cutters cut or punch out the slots, the roller at the same time pressing or rolling the mineral matter into the coating, the three operations being accomplished by and upon mere rotation of the rollers.

The indentations aline with the slots 6 and are moreover coated or covered with the bituminous coating so as not to expose the underlying felt, the mineral particles being pressed into the coating, resulting in the formation of indentations.

Obviously in each form of the invention, the rollers may be made as long as desired to enable as many lengths of shingles to be cut in one operation from a single piece of material of required size, as desired.

What is claimed is:—

1. In a folding strip shingle, a flexible base having an adhesive surface coating and having spaced cuts formed in one side edge and with the inner ends of the cuts spaced from the opposite side edge, the parts of the coating between the inner ends of the cuts and the opposite side edge of the strip having indentations alined with the cuts to provide hinging means, and a coating of crushed mineral matter secured on the adhesive coating and covering the indented portions thereof.

2. The herein described method of making strip shingles which consists in coating a flexible base with an adhesive substance, then in applying crushed mineral matter on the adhesive substance and then in rolling the mineral matter and at the same time cutting slots in one edge of the base to form individual appearing though interconnected shingles and depressing the mineral matter at points alined with the slots to form indentations covered with and reinforced by the mineral matter and about which the strip may fold.

3. The herein described method of making strip shingles which consists in coating a flexible base with an adhesive substance, then in applying crushed mineral matter on the adhesive substance and then in applying pressure to the mineral matter and simultaneously forming slots in one edge of the base to form individual appearing though interconnected shingles and depressing the mineral matter at points alined with the slots to form indentations covered with and reinforced by the mineral matter and about which the strip may fold.

4. The herein described method of making strip shingles, which consists in coating a flexible base with an adhesive substance, then in applying crushed mineral matter to the substance, and then in cutting spaced slots in one side of the base, and simultaneously exerting pressure upon the mineral matter to depress the latter in to the base and to form lines of weakening covered by the mineral matter and about which the base may be folded.

5. In a folding strip shingle, a flexible base having spaced cuts formed in one side edge and with the inner ends of the cuts spaced from the opposite side edge, a coating of crushed mineral matter affixed to the base, and indentations formed in the mineral matter in the parts thereof alined with the cuts to provide hinging means.

In testimony whereof I affix my signature.

ROYCE A. RUESS.