

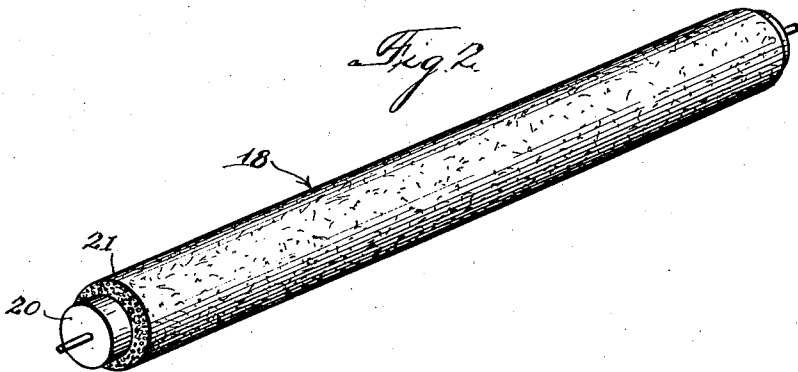
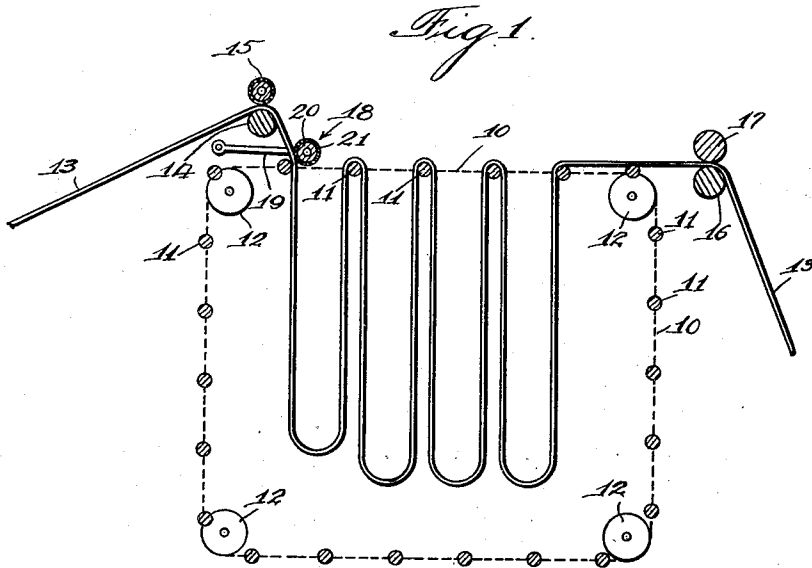
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LOOPER APPARATUS

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LOOPER APPARATUS

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2 Claims. (Cl. 91—55)

This invention relates to web treating apparatus, more particularly to web handling rolls for use in looper apparatus adapted to provide storage means for a continually progressed web, and has for an object the provision of an inexpensive and highly efficient roll of this character.

More specifically, it is an object of the invention to provide an improved looper roll for handling a continuously progressed web of composition roofing material while the material is in a relatively warm soft condition, which roll operates efficiently with a minimum amount of attention, which has an extremely long life, which carries out its web handling function without sticking to the web, and without marring or scarring the web, and which is capable of retaining moisture for a relatively long period when subjected to intermittent compression and release.

For a complete understanding of the invention reference should be had to the drawing in which:

Figure 1 illustrates somewhat diagrammatically looper apparatus provided with looper rolls embodying the present invention; and

Fig. 2 is a detailed perspective view of one form of roll for use in the looper apparatus shown in Fig. 1.

In the manufacture of prepared roofing materials, resort is usually had to continuous processes in which a web or foundation sheet of felt or other material is saturated or impregnated with an asphalt or other substance having a relatively low melting point, and is thereafter coated on one or both faces with an asphalt or other substance having a relatively high melting point, this coating being provided in order to withstand the heat of the sun and the action of other elements. Subsequent to this saturating and coating process, the continuous web may be treated in any desired manner; for example, it may be wound into rolls for sale as sheet roofing, or it may be fed to suitable coating apparatus where it is cut into shingles.

Regardless of the character of the treatment to which the processed web is subjected after it has passed through the impregnating and coating equipment, it is ordinarily necessary to provide storage space for the web intermediate the processing equipment and the additional equipment. Such storage space permits variations in the rate of feeding the processed sheet and, in addition, permits cooling of the sheet. In order to provide this storage space, resort is usually

had to what is commonly known in the art as "looper apparatus."

As shown in Fig. 1, this looper apparatus consists of a pair of endless chains or belts 10, only one of which is shown, which chains or belts carry a plurality of transversely extending looper bars 11, the chains or belts 10 being supported on and driven by suitable cogs or pulleys 12. As viewed in Fig. 1, these cogs or pulleys 12 rotate in a clockwise direction so that the looper bars 11 are driven from left to right across the top of the looper apparatus. The looper apparatus when used to provide storage space for a continually progressed web, as referred to above, is disposed adjacent the outlet end of the processing equipment, and the continuously progressed web 13 is fed to the looper apparatus by means of a looper drum 14 over which the web passes, a suitable idler roll 15 being disposed above the drum on the opposite side of the web 13. From the looper apparatus the web is fed by means of suitable feed rolls 16 and 17 to the additional winding or cutting equipment. Since the processing equipment and the winding or cutting equipment form no part of the present invention, it is not believed necessary to illustrate the same, but it will be understood that the web 13 is fed directly from the processing equipment to the looper apparatus and, accordingly, is in a relatively warm soft condition when it passes over the looper drum 14 to the looper bars 11.

In order to insure that the web is deposited on the looper bars 11 in loops of predetermined length, the looper apparatus, as will be well understood by those skilled in the art, is provided with a stop roll 18 resiliently mounted adjacent the path of movement of the looper bars 11. As shown, this stop roll is rotatably mounted on one end of a pivoted arm 19. It will now be apparent that as the looper bars move across the top of the apparatus, the web 13 will be fed downwardly between two successive bars so as to form a loop until such time as the rear one of the two bars approaches the stop roll 18. This stop roll 18 extends transversely across the looper apparatus and, accordingly, as soon as the rear one of the two looper bars begins to pass underneath the stop roll 18, the web 13 will be caught between the looper bar and the roll 18 so as to prevent further feeding of the web into that particular loop.

As the looper bar continues to move, the roller 18 is forced upwardly and passes over the top of the bar, thereby guiding the web 13 into the

space between that bar and the next successive bar so as to begin the formation of another loop. It is believed that the operation of the stop roll 18 and the looper bars 11 with respect to the web 13 will be fully understood by those skilled in the art without further description.

In the past, various types of materials have been used for forming the stop roll 18 in looper apparatus of this character. Thus, steel, aluminum, and wood have been used, and in many cases the rolls have been wrapped with materials, such as blanket, burlap, or other cloth. Considerable trouble has been encountered in handling the roofing materials in this manner since the roofing materials, as stated above, are relatively warm and soft at this point of the manufacturing operation, and it has been found that the stop roll, when formed of the materials indicated above, mar or scar the surface of the roofing material. Because of this marring action of the stop roll, the cloth wrappings referred to above have been resorted to, but even this construction has not been found satisfactory as these cloth materials do not hold moisture for any length of time and, when dry, wrinkle and stick to the asphalt coated web and thus further mar the appearance of the roofing material. Due to this faulty and inefficient operation, considerable scrap and waste has, in the past, been encountered in the manufacture of roofing materials, and it has been found necessary to station a man at this point of the manufacturing equipment to keep the stop roll moist and to remove any asphalt which might collect on the roll. Even with this additional expense, however, the manufacturing process has not been entirely satisfactory since an excess application of water would often occur and this water running down over the roofing sheet would seriously mar its appearance.

By means of the present invention, it has been found possible to eliminate completely this faulty operation by forming the stop roll or the web engaging surface of the stop roll of a resilient material capable of retaining moisture over long periods, such, for example, as sponge rubber. As shown best in Fig. 2 of the drawing, the stop roll 18 preferably consists of a cylindrical core 20 formed of wood and a relatively thick cover 21 of sponge rubber or other similar material. In actual practice it has been found that the use of a sponge rubber roll of this character completely eliminates sticking of the roll and also dispenses with the necessity of stationing a man at this point in the manufacturing equipment to keep the roll moist.

While various types of sponge rubber or other

suitable material may be used, it has been found that a preferred material is a sponge rubber of very fine grain having minute interstices, which rubber is capable of retaining moisture over a long period when subjected to intermittent compression and release, as is the stop roll 18 in the looper apparatus shown in Fig. 1. Sponge rubber of this type is commercially available on the market and is commonly used in the manufacture of automobile and bus seats. In addition to its moisture retaining properties, sponge rubber of this character has been found to have much greater wearing qualities than coverings heretofore used, such, for example, as blanket, burlap, or cloth.

In addition to the difficulties heretofore encountered with the stop roll 18, considerable difficulty has also been encountered with the idler rolls 15, due to the fact that these rolls, if formed of materials such as wood or steel even though covered with cloth materials, pick up asphalt from the surface of the web and eventually stick to the web. It has therefore been found highly desirable to form the idler roll 15 from the same sponge rubber material as is used in forming the stop roll 18, this material completely eliminating sticking.

While a particular embodiment of the invention is shown and described, it will, of course, be understood that the invention is not limited thereto since many modifications may be made, and it is therefore contemplated by the appended claims to cover any such modifications as fall within the true spirit and scope of the invention.

I claim:

1. In a looper apparatus of the type having a plurality of movable looper bars for handling a continuously progressed web of impregnated asphalt-coated material while in a relatively warm soft condition, the combination of a stop roll cooperating with said movable bars to control the length of said web deposited between successive bars, the web engaging surface of said stop roll being formed of sponge rubber capable of retaining moisture for relatively long periods whereby sticking of said roll and scarring of said web thereby is substantially prevented.

2. The combination with looper apparatus of the type having a plurality of looper bars movable in a predetermined path, and means for feeding a web thereto to form loops in said web extending between and supported on said bars, of a stop roll cooperating with said movable bars to determine the length of each of said loops and comprising a body of sponge rubber.

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