

F. C. SMITH.
 AUTOMATIC SLACK TAKE-UP AND COOLING DEVICE.
 APPLICATION FILED MAY 28, 1913.

1,226,713.

Patented May 22, 1917.
 2 SHEETS—SHEET 1.

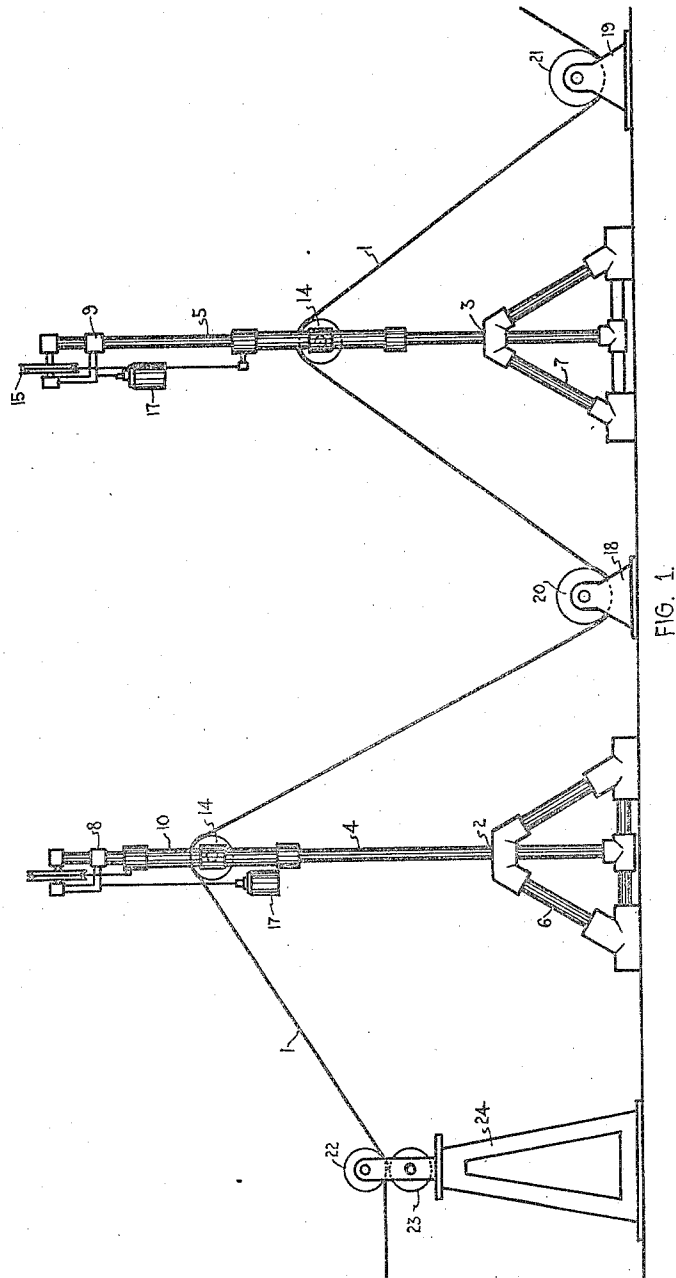


FIG. 1.

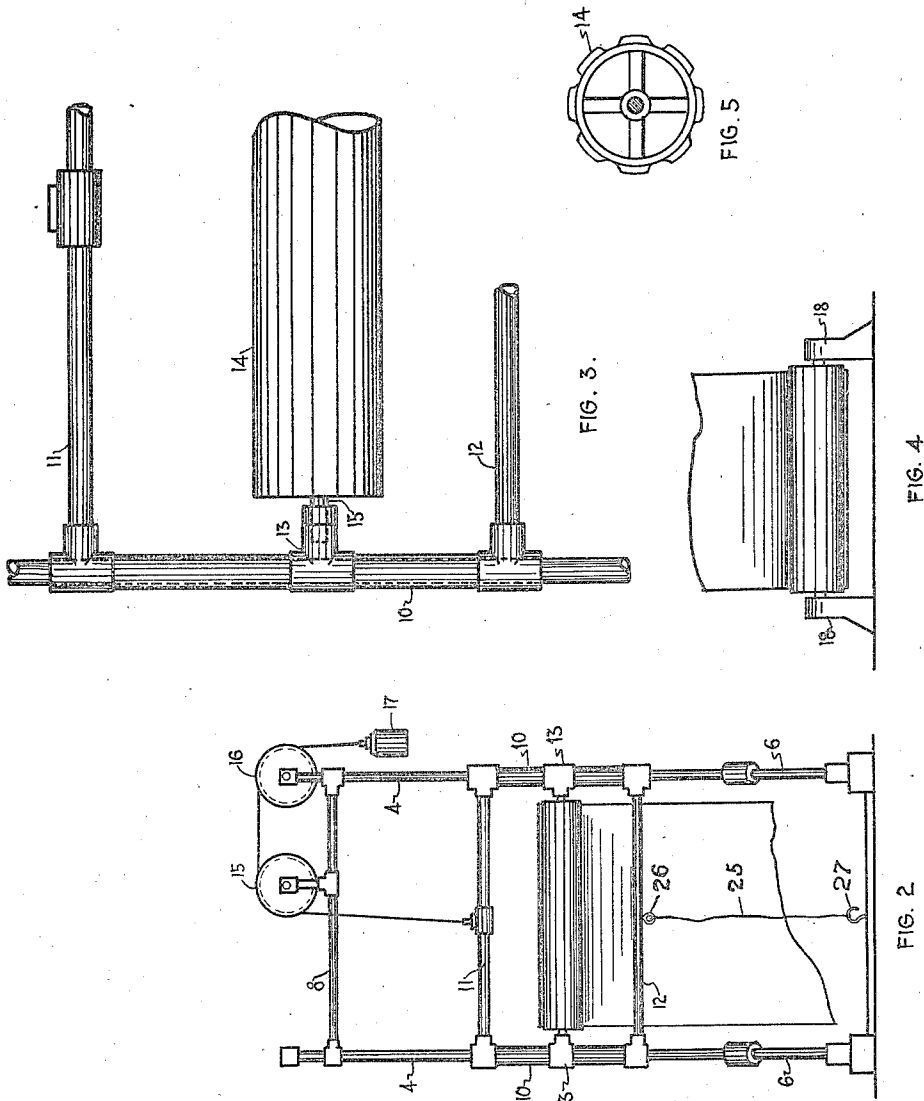
WITNESSES:
W. G. Pauling
E. M. Lockwood

INVENTOR
Frederick C. Smith
 BY
Gifford D. Bell
 HIS ATTORNEY

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UNITED STATES PATENT OFFICE.

FREDERICK C. SMITH, OF PORT ARTHUR, TEXAS.

AUTOMATIC SLACK-TAKE-UP AND COOLING DEVICE.

1,226,713.

Specification of Letters Patent.

Patented May 22, 1917.

Application filed May 28, 1913. Serial No. 770,309.

To all whom it may concern:

Be it known that I, FREDERICK C. SMITH, a citizen of the United States, residing at Port Arthur, in the county of Jefferson and State of Texas, have invented certain new and useful Improvements in Automatic Slack-Take-Up and Cooling Devices, of which the following is a specification.

This invention relates to new and useful improvements in automatic slack take-up and cooling devices.

The object of the invention is to provide a mechanism of the character described, designed to be used particularly in the manufacture of flexible roofing or of other similar flexible material.

In the manufacture of this character of roofing, felt or fabric is usually used as a body and this body is saturated with waterproofing material, and then coated on each side with some waterproof coating material, such as asphaltum, and in the process of manufacture is passed between rollers by means of which it is partially dried and it is delivered from the rollers ready for use.

In preparing the roofing for market, however, it must be rolled into a compact roll by means of a suitable rolling machine. In the process of rolling, when a roll has been completed, the rolling machine is stopped until the roll is taken therefrom and the mandrel replaced therein preparatory to the formation of another roll.

While the roll is being taken from the rolling machine and the mandrel is being replaced in said machine, the forming rollers, through which the roofing passes, and by means of which it is finished, are in constant movement and the roofing is being continually delivered therefrom. It is therefore necessary to provide means for supporting the roofing as it is being delivered from the forming rollers while the rolling machine is idle, in order that the same will not be delivered from the forming rollers and fall to the floor in a mass and thus become injured and not in position to be readily rolled by the rolling machine. The object of this invention is to take care of the roofing delivered from the forming rollers and form a support therefor at all times, whether the rolling machine is in operation or idle.

Another object of the invention is to provide a device of the character described

whereby the material may be cooled before it is wound into a permanent roll.

With the above and other objects in view, the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is described in this specification and illustrated in the accompanying drawings, wherein—

Figure 1 is an end view of the mechanism described herein, constituting an exemplification of my invention;

Fig. 2 shows a side elevation of one of the supporting rollers and the mounting therefor;

Fig. 3 is an enlarged fragmentary view of the mechanism shown in Fig. 2;

Fig. 4 shows a side elevation of one of the stationary rollers forming a part of the device, and

Fig. 5 is an end view of one of the supporting rollers.

In the drawings, neither the forming machine nor the rolling machine is shown, but the device shown is arranged between said machines and receives the formed roofing from the former and delivers the same to the latter.

The numeral 1 designates the web of roofing shown in Fig. 1 in the position it will occupy in passing from the forming machine to the rolling machine. Arranged at suitable intervals apart between the forming machine and the rolling machine are supporting frames 2 and 3, preferably stationary, and each frame consisting of upright side posts or standards 4 and 5, braced at the bottom by means of braces 6 and 7 and connected at the top by means of the cross-braces 8 and 9 respectively.

In Fig. 1, only two of these supporting frames are shown, but any number may be used, depending upon the capacity of the forming rollers and the rolling machine. Usually a greater number than two is actually used, each supporting frame being provided with a sliding frame work consisting of vertical parallel end members 10, 10 of tubing through which the side posts 4 pass. The upper and lower ends, respectively, of these end members 10, 10 are connected by upper and lower cross rods 11 and 12. Each of the end members 10 is provided with a centrally located bearing 13, and a roller 14 is provided which is rigidly mounted upon

the shaft 15, the ends of which shaft are supported by the bearings 13, 13. It is thus obvious that the frame work and the roller 14 supported thereby are movable vertically upon the supporting frame.

The rollers 14 have their peripheries formed of slats or strips spaced apart, as shown in Fig. 5 so as to permit the free circulation of air therethrough to cool the material passing thereover. This form of roller also prevents the sticky coating of the partially cooled roofing from adhering to the rollers, and conduces to lightness of construction.

The top of the supporting frame is provided with two pulleys 15 and 16, and a cable is attached to the cross rod 11, which cable passes up over said pulleys 15 and 16 and the free end of said cable carries a weight 17, the weight being sufficiently heavy to lift the frame work and the roofing supported thereby when the roofing is not under the stress or tension exerted by the rolling machine when the roofing is being formed into a roll. However, the tension on the roofing thereon will be sufficient to lower the rollers 14 and elevate the weights 17 while the roll is being formed.

Secured between the supporting frames, by means of stationary end bearings 18, 18, and 19, 19, are rollers 20 and 21. As the material to be rolled passes from the forming machine, it passes between the rollers 22 and 23, the former of which is arranged above the latter, and both of which are rotatably mounted upon a stationary support 24. The material is then passed over the vertically movable rollers 14 and under the stationary rollers 20 and 21, and its free end is passed on to the rolling machine and formed into a roll around a mandrel driven by said machine. As the roll is being formed the pull exerted on the material will operate to lower the movable rollers 14. When the roll has been completed the rolling machine must be stopped and the roll removed therefrom and the mandrel replaced. While this is taking place the forming machine is delivering material which must be taken care of. As this material is being delivered, the downward pull of weight 17, being relieved of the pull

of the material, elevates the rollers 14, and lifts the material supported by said rollers, and thus the roofing or other material to be rolled is taken care of during the temporary suspension of the operation of the rolling machine, and when the rolling machine is in position to form the next succeeding roll, the material from which it is to be formed will be suspended from the rollers 14 and ready to be rolled.

Means may be provided for limiting the vertical movement of the roll-carrying frame, said means preferably consisting of a flexible connection 25, secured at one end, as at 26, to the cross-bar 12, and at the other end, as at 27, to the base of the frame, said connection hanging slack as shown in Fig. 2, when the roller-carrying frame is pulled down by the material passing over the roller, but being of such length as to limit the upward movement of the frame to the extent desired.

It is obvious that the number of supporting frames, such as 2 and 3, and supporting rollers 14 may be varied at will in accordance with the capacity of the roofing forming machine, and it is further obvious that the mechanical structure shown may be varied and accomplish the same result, and while I have shown only one form of the device, I hereby reserve the right to vary the construction thereof, so long as I do not depart from the scope of the appended claim.

What I claim and desire to secure by Letters Patent of the United States is,

In a device of the character described, a plurality of spaced supports, a frame mounted for vertical movement upon each of said supports, a supporting roller journaled in each of said frames, means carried by each frame for counterweighing its roller, and a fixed guide roller located intermediate and at a substantial distance below said frames.

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

FREDERICK C. SMITH.

Witnesses:

I. FREUNDLICH,
WM. F. CRAIG.