The present invention relates to strip moistening machines and particularly to the type of machine for subjecting a part of the strip to a wetting operation when the operator pulls on the strip to remove a part from a roll of the strip material.

In the manufacture of rubber crepe soled shoes, it is desirable to cover the outside of the shoe with a strip of crepe rubber. This crepe rubber must be treated so that it is tacky and will adhere to the sole of the shoe. Therefore it is desirable to pass the strip of material through a solvent, such as benzol, so as to cause the strip material to become tacky. Care must be taken that the rubber crepe material does not remain in the solvent for too long a period, which may cause deformation and disintegration of the strip material.

One of the objects of the present invention is to provide a machine in which the strip material is immersed in the solvent only during the period while it is being withdrawn from the supply roll, i.e., while the operator is applying the treated strip material to the sole of the shoe. The supply of strip material is not immersed in the solvent but is in the air and the solvent thereon is evaporating and creating the tackiness of the material.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred form of embodiment of the invention is clearly shown.

In the drawings:

Fig. 1 is a side view of the strip material moistening machine, part of the tank containing the solvent being broken away to more clearly illustrate the invention; and

Fig. 2 is a top plan view of the machine shown in Fig. 1.

Referring to the drawings, there is shown a work bench or table 20, the front end of which is indicated at 21 and the rear at 22. The operator faces the front end 21 of the work bench. A bracket 24 at the rear of the work bench carries an axle 25 which in turn carries a roll 26 of strip material. The strip material to be utilized in the manufacture of shoes is rubber crepe material 28, the convolutions of which are separated by a convolute strip of separating material, such as paper 29.

The rubber crepe material 28 alone is to pass through the solvent and therefore the paper 29 must be stripped from the rubber crepe 28 and for this reason there is provided a sheet metal stripper 31 which is suitably carried by the upper frame 33. The free end of this stripper 31 extends rearwardly and between the bottom side of the crepe material 28 and the upperside of the paper 29. As the materials are moved to the left, as viewed in Fig. 1, the stripper 31 will strip the paper 29 from the material 28. The rear part of the stripper 31 is provided with ears 32 on opposite sides thereof to provide a guide for the strip material 28.

A tank 34, containing a solvent such as benzol, is supported by a platform 35 midway between the front and rear of the work table 20. A portion of the crepe material 28 is to be dipped or immersed into the solvent 36 in the tank 34 whenever the operator pulls upon the strip material to withdraw the same from the roll 26. To accomplish this, there is provided a frame 38 which is pivotally mounted at the rear 39 on frame 33 by a hinge 40. The front end of the frame 38 is carried by a spring 41 which is attached at 42 to a bracket 43. Frame 38 is rectangular in top plan and is provided with bearings 45 and 46 for supporting front roller 49, and rear roller 50, respectively. Roller 50 is disposed immediately above the tank 34. The upper frame 33 is rigidly connected with the rim of tank 34 and is provided with an opening 51 to permit dipping of roller 50. When the frame 38 is swung counterclockwise about its pivot 39, the lower part of roller 50 is then dipped into the liquid 36 in the tank 34.

A guide in the form of a roller 51 is interposed between the rear of frame 38 and the stripper 31. Rear roller 51 is carried by the brackets 57 mounted on the rear of frame 33. A strip guide 53, on frame 38, is interposed between roller 51 and roller 50. It is desirable to hang the roller 50 from the frame 38 and therefore the bearing 46 thereof is carried by depending brackets 54.

A guide in the form of a roller 55, supported by the front legs 66 for platform 35, is disposed below the roller 49 and preferably forwardly thereof. Another guide in the form of a roller 58, carried by a bracket 59, is disposed above the roller 55 and preferably forwardly thereof.

The crepe strip material is threaded over roller 51 and guide 53 under roller 50, over roller 49, under roller 55 and over roller 58. By pulling forwardly on the extreme front end 61 of the crepe strip 28, the roller 26 will be unwound and due to the friction offered by the rollers 50, 51, 53 and 26, tension will be imposed on the strip of material intermediate the roller 50 and the front section 61 thereof. This tension will be sufficient to cause the frame 38 to be moved.
In a counterclockwise direction about the pivot 39 and the section of the crepe material adjacent the roller 50 will be immersed in the solvent 36. After the desired amount of material is pulled forwardly over roller 58, the operator will cut off the desired length and then remove the end section 61. The releasing of this end section will release the tension of the section between roller 50 and the end section 61 with the result that the spring 41 will lift the frame so that the roller 50 and the section, which was previously immersed, will be lifted out of its contact with the solvent 36. The time period for pulling out sufficient material to form the desired length of strip to be applied to the shoe, is of sufficient duration to adequately wet the crepe material with the solvent, and, the time period from when the material is withdrawn from the solvent, upon the subsequent pulling and cutting operations, is of sufficient duration to effect desired tackiness so that it will adhere to the crepe sole of the shoe. It will be understood that the tension of the spring 41 is such that it will support the frame and its rollers out of contact with the liquid when no tension is applied to the strip material 26 and that the spring will yield sufficiently to the tension created by the strip pulling operation to permit immersing of the lower part of the roller 50 and the strip therebelow.

From the foregoing, it will be seen that it is necessary only for the operator to pull forwardly on the strip to effect the immersing of the strip and that the immersing takes place only during the pulling operation. Thus the withdrawing of the desired length of strip from the roll 26 and the applying of solvent to the strip is carried out in one single operation.

While the form of embodiment of the present invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

I claim:

1. A strip moistening machine for strip material such as a roll of crepe rubber, comprising in combination, a tank adapted to contain liquid; a support; support mechanism carried by the support and mounted for substantially vertical movement above the tank; a strip guide carried by the support mechanism and adapted to be moved in a substantially vertical direction into and out of the liquid when liquid is contained in the tank; a second guide carried by the support mechanism above the first mentioned guide; means normally yieldingly urging the support mechanism upwardly; a third guide below the second mentioned guide, said strip material being adapted to be threaded for movement, progressively, under the first mentioned guide, then over the second and under the third mentioned guides.

2. A strip moistening machine for strip material such as a roll of crepe rubber, comprising in combination, a tank adapted to contain liquid; a support; support mechanism carried by the support and mounted for substantially vertical movement above the tank; a strip guide carried by the support mechanism and adapted to be moved in a substantially vertical direction into and out of the liquid when liquid is contained in the tank; a second guide carried by the support mechanism above the first mentioned guide; means normally yieldingly urging the support mechanism upwardly; a third guide below the second mentioned guide, said strip material being adapted to be threaded for movement, progressively, under the first and then over the second mentioned guides.

3. A strip moistening machine for strip material such as a roll of crepe rubber, comprising in combination, a tank adapted to contain liquid; a pivotally mounted support including a strip guide movable in a substantially vertical direction into and out of the liquid when liquid is contained in the tank and including a second guide above the first mentioned guide; means normally yieldingly urging the support mechanism upwardly, said strip material being adapted to be threaded for movement, progressively, under the first and then over the second mentioned guides.

4. A strip moistening machine for strip material such as a roll of superimposed strip of crepe rubber material and a strip of separating material, comprising in combination, a tank adapted to contain liquid; a support for the roll; a stripper interposed between the tank and support and adapted to be interposed between the strips of materials; a second support; support mechanism carried by the second support and mounted for substantially vertical movement above the tank including a strip guide carried by the supporting mechanism and adapted to be moved in a substantially vertical direction into and out of the liquid when liquid is contained in the tank; a second guide carried by the supporting mechanism above the first mentioned guide; means normally yieldingly urging the support mechanism upwardly, said crepe strip material being adapted to be threaded for movement, progressively, over the stripper, then under the first and then over the second mentioned guides.

5. A strip moistening machine for strip material such as a roll of crepe rubber, comprising in combination, a tank adapted to contain liquid; a support; support mechanism carried by the support and mounted for substantially vertical movement above the tank; a second support carried by the supporting mechanism and adapted to be moved in a substantially vertical direction into and out of the liquid when liquid is contained in the tank; a second guide carried by the supporting mechanism above the first mentioned guide; a support for the roll of strip material, said first mentioned guide being interposed between the roll support and the second mentioned guide; means normally yieldingly urging the support mechanism upwardly, said strip material being adapted to be threaded for movement, progressively, under the first and then over the second mentioned guides.

FORREST F. DEERING.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>842,948</td>
<td>Elliot</td>
<td>Feb. 5, 1907</td>
</tr>
<tr>
<td>1,774,042</td>
<td>Stover et al.</td>
<td>Aug. 28, 1930</td>
</tr>
</tbody>
</table>