Feb. 21, 1928. 1,659,827

J. W. MAY

BOX TOE BLANK AND MATERIAL FOR USE IN MAKING THE SAME

Filed Feb. 26, 1927

Fig. 1.

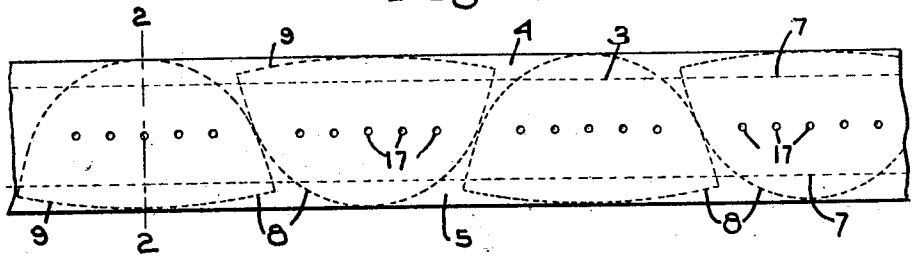


Fig. 2.

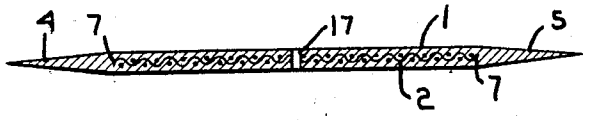


Fig. 3.

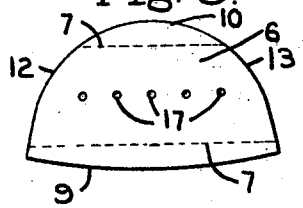


Fig. 4.

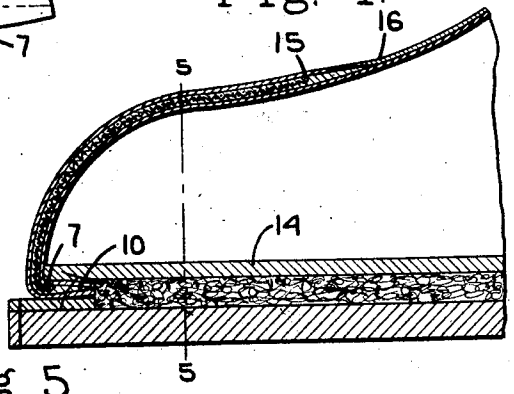
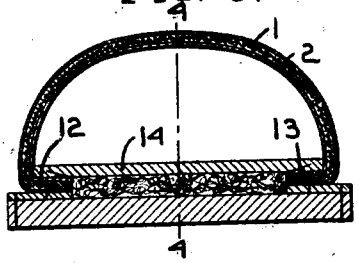


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BOX-TOE BLANK AND MATERIAL FOR USE IN MAKING THE SAME.

Application filed February 26, 1927. Serial No. 171,093.

This invention relates to a box toe blank for use in making box toes of shoes and also to a material for use in making such a blank.

One object of the invention is to provide a box toe blank which can be incorporated in a shoe without any preliminary treatment such as heating or softening. This is highly advantageous as it reduces the number of operations in the making of the shoe and also eliminates the time required for softening the toe blank and subsequently allowing it to dry. When box toes embodying my invention are used, therefore, the different operations involved in the making of a shoe may proceed without any delay such as is occasioned by the steaming or softening of a box toe before it is lasted around the toe.

Another object of my invention is to provide a novel toe blank which is of such a character that when it is incorporated in the shoe it will yield as the shoe is worn but will not become injured or broken down by being flexed or bent.

Another object of the invention is to provide a novel box toe blank which is so constructed that when incorporated in a shoe there will be no visible line indicating where the box toe terminates.

Still another object of the invention is to provide a novel box toe blank which when incorporated in a shoe will portray the true character of the last and which will have a steel truss effect which adds materially to the strength of the box toe.

Still another object of the invention is to provide a novel material from which box toes having the above characteristics may be made.

In order to give an understanding of the invention I have illustrated in the drawing one embodiment thereof which will now be described after which the novel features will be pointed out in the appended claims.

Fig. 1 illustrates a strip of the box toe material embodying my invention from which box toe blanks may be cut;

Fig. 2 is an enlarged section on the line 2—2, Fig. 1;

Fig. 3 is a view of a box toe blank after it has been cut from the strip;

Fig. 4 is a section through a shoe having my improved box toe blank embodied therein, said section being taken on the line 4—4. Fig. 5;

Fig. 5 is a section on the line 5—5, Fig. 4.

The material from which my improved box toes are formed has a body 1 of rubber or rubber compound in which is embedded a fine wire mesh or wire fabric 2. This material can conveniently be made in strips 3 of considerable length from each of which a number of box toes may be cut. The wire fabric or wire mesh may be embedded in the rubber in any suitable way. The central or body portion of the strip 3 is of substantially uniform thickness and the marginal portions 4 and 5 are bevelled or thinned to a relatively sharp edge. The wire mesh or wire fabric 2 is of less width than the entire strip so that the edges 7 of the wire fabric are spaced from the edges of the completed strip, thus making the marginal portions more flexible than the body. The difference in width between the wire fabric 2 and the strip 3 may vary without departing from the invention but preferably the reinforcing wire fabric will extend throughout the portion of the strip 1 which is of substantially uniform thickness, the marginal portions of the strip outside the wire fabric being the portions which are bevelled or tapered.

This strip is made of a width so that box toe blanks 6 can be died out therefrom as shown by dotted lines 8 in Fig. 1, the adjacent box toe blanks being reversed in position as is the usual practice in making box toe blanks because of the economy thus effected in the material.

Each box toe blank 6 is so cut from the strip 3 that the curved edge 9 (which is commonly referred to as the "sweep") is located entirely outside of the wire fabric and in the flexible marginal bevelled portion of the strip which is not reinforced by the wire. while the toe 10 of the blank is formed from the other flexible edge of the strip, the body of the blank having the reinforcing wire 2 embedded therein. By having the strip 3 made with both edges 4 and 5 free from the wire mesh and bevelled as shown the box toe blanks 6 when cut from the strip as shown by dotted lines in Fig. 1 will all be alike notwithstanding the fact that adjacent blanks are reversed in position in the strip relative to each other.

A box toe blank made as above described has a body of rubber or rubber compound having a reinforcing wire mesh embedded

therein except at the sweep 9 and the toe 10. these latter portions of the blank being free from the reinforcing wire and thus being flexible.

The wire mesh which is preferably used is of such a character that when it is bent or molded into any shape it will retain said shape and hence when the box toe is incorporated into the shoe and is moulded to the shape of the last it will retain the shape given to it. Owing to the character of the box toe blank this moulding of it into the desired shape can be performed without any preliminary operation such as is necessary in some other box toe blanks which have to be heated or softened before they can be molded and then have to be allowed to dry and harden before they will retain their molded shape.

My improved box toe blank can be incorporated in the shoe in its natural state, because of which fact both the number of operations and the time required for making the shoe are reduced. Moreover, the equipment which is required for softening or heating the box toe blanks that require this treatment is not necessary with my invention and can, therefore, be dispensed with.

When the box toe is incorporated in the shoe the toe portion 10 and the edges 12 and 13 are folded in around the insole 14 which lies on the bottom of the last, a sufficient portion of the toe being folded under the last so that the edge portion 7 of the wire mesh will be bent around the toe of the last. The wire mesh 2, of course, extends clear to the sides 12 and 13 and hence when the box toe is incorporated in the shoe the edge of the wire mesh in the box toe will be folded under the last and anchored in the shoe around the toe and along the side edges 12 and 13 of the box toe. The truss structure which is thus produced is exceedingly strong and provides a box toe which will not readily break down and will retain its shape as the shoe is used. Moreover, because of the character of the wire mesh the original shape may be readily restored to the box toe in case it becomes dented or deformed in any way.

It will be noted that the edge or sweep 9 of the box toe blank which extends across the top of the shoe is formed from one of the flexible marginal edges 4 and 5 of the strip 3 which is free from the wire mesh and which is tapered from the full thickness of the box toe blank to a thin edge. As a result of this construction when the box toe is incorporated in a shoe there is no line across the top of the shoe where there is a sudden change in the stiffness of the shoe upper such as would result if the stiffness of the box toe extended clear to the sweep 9. In a shoe having my improved box toe the upper will have the full thickness and strength of the box toe at the point where the wire mesh is, as shown at 15, and from the point 15 to the point 16 where the box toe terminates the stiffness of the shoe upper will gradually decrease to that of the stiffness of the upper leather alone. Hence when the shoe is worn the box toe does not present a stiff edge at the sweep along which the upper is liable to crack.

From the above it will be seen that a box toe blank embodying my invention is of a permanently flexible character, the characteristic of the blank not being changed any during its incorporation into the shoe. Since the body of the blank is of rubber which is more or less impervious it may be desirable to construct said blank with openings or perforations 17 which provide a degree of ventilation through the box toe when the latter is incorporated in the shoe. These ventilating openings may either be formed in the blank after it is cut from the strip or may be formed in the strip as shown in Fig. 1.

I claim:

1. A box toe blank formed of rubber material having a reinforcing wire mesh embedded therein, the marginal portions of the blank at the sweep and at the toe being free from the wire mesh and being tapered to a thin edge.

2. A box toe blank formed of rubber material having a reinforcing wire mesh embedded therein and extending from one side edge thereof to the other, the marginal portions of the blank at the sweep and at the top being free from the wire mesh and being tapered to a thin edge.

3. Material for making box toe blanks comprising a strip of rubber having a wire mesh embedded in the central portion thereof and extending from one end to the other, the marginal portions of the strip being free from the wire mesh and being of progressively decreasing thickness from the edges of the wire mesh to the edges of the strip.

4. A box toe blank formed of rubber material having a reinforcing wire mesh embedded therein, the marginal portions of the blank at the sweep and at the toe being free from the wire mesh.

5. A box toe blank formed of permanently flexible rubber material having a reinforcing wire mesh embedded therein, the marginal portions of the blank at the sweep and at the toe being free from the wire mesh.

6. A box toe blank formed of permanently flexible rubber material having a reinforcing wire mesh embedded therein, the marginal portions of the blank at the sweep and at the toe being free from the wire mesh and being tapered to a thin edge.

In testimony whereof, I have signed my name to this specification.

JOHN WALTER MAY.