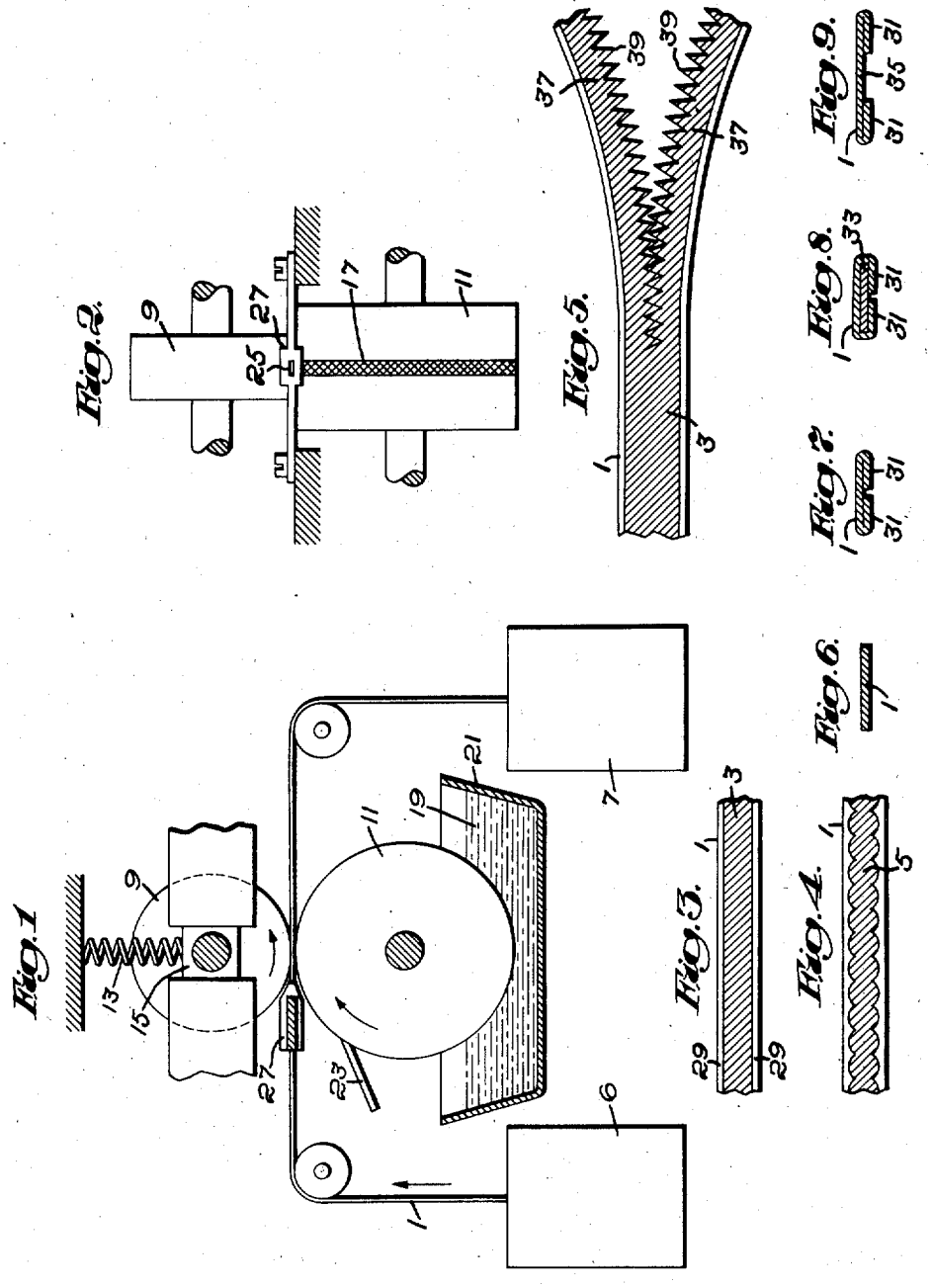
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METHOD OF MAKING SHOE TRIMMINGS AND THE LIKE

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METHOD OF MAKING SHOE TRIMMINGS AND THE LIKE

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Original application November 17, 1932, Serial No. 643,037. Divided and this application December 6, 1934, Serial No. 756,343

1 Claim. (Cl. 91—68)

According to the present invention the strip constituting the body of the trimming has formed thereon a design consisting of a continuous or interrupted thin layer or coating of flaccid material, that is to say a layer which can be bent or crumpled without fracture, so that when the trimming is bent this layer will not fracture, nor will it act to prevent bending of the trimming or destroy its flexibility.

The present application is a division of my pending application Serial No. 643,037, filed November 17, 1932.

In the drawing:—

Fig. 1 schematically shows a form of apparatus for use in fabricating the trimming;

Fig. 2 is a schematic elevation of the print rolls of Fig. 1 with the associated guide for the trimming;

Figs. 3 and 4 show two trimmings with different forms of ornamentation;

Fig. 5 shows one form of ornamented piping in the process of fabrication;

Figs. 6, 7 and 8 show various forms of cross-sections of the trimming shown by Figs. 3 and 4; and

Fig. 9 is a section on the line 9—9 of Fig. 5.

Referring to the drawing, the shoe trimmings illustrated each consist of a body portion 1, which preferably is formed of a strip of leather or leather substitute, and either a plain strip as indicated in Fig. 6 or a folded strip as indicated in Figs. 8 and 9, the strips being of suitable width, usually about $\frac{3}{16}$ of an inch.

The ornamentation may be of various designs as, for example, a simple band 3 as shown in Fig. 3, or a beadlike band 5 as shown in Fig. 4, and although these figures show examples of ornamentation in which the band is continuous it will be understood that it may be interrupted. Best effects however it has been found are usually secured by a continuous band the edges of which are slightly spaced from the edges of the strip.

Best results it has been found ordinarily are secured with the ornamented finish on the grain side of the leather, and to secure a uniform covering, and to prevent a spotted appearance due to failure of the color to fill the surface pits on the leather, preferably the latter is first buffed or otherwise mechanically treated to make this side of the leather as smooth as possible, after which it preferably, but not necessarily, is coated with a thin layer of flaccid material, preferably waterproof, such, for example, as flaccid pyroxylin, to form a surface to which the color will adhere. Conveniently this buffing operation and the application of the coating just referred to are done prior to the strip being cut to size and folded, the coating being applied to the full width of the leather. Where the natural color of the leather or color applied thereto by the leather manufacturer is not desired this coating may be colored, and when a suitable coating is applied by the leather manufacturer it is obvious a further base coating need not be applied.

As one example of a way in which the ornamentation may be applied to the prepared strip, but without limitation to this example, the strip may be fed from a can or other receptacle 6 to a can 7, passing between the suitably driven upper print roll 9 and the lower print roll 11, the former of which preferably is urged toward the latter under high pressures in any convenient manner, say by heavy springs 13 acting on the vertically sliding bearings 15 for the upper print roll. This high pressure causes the rolls to exert a heavy pressure on the strip and causes the rolls to follow any irregularities in the thickness of the leather.

As illustrated, the lower print roll is formed with a circumferential band 17 preferably formed by a photogravure process or by knurling to cause the band to consist of a multitude of closely spaced more or less minute depressions. The particular band 17 shown is that used for printing the continuous ornamental band shown in Fig. 3. It will be understood of course that if the ornamentation to be formed is in the nature of an interrupted strip the band 17 will likewise be interrupted.

In operation, the lower roll 11 dips into a body of ink 19 in a container 21, the ink being wiped off the roll, except that contained in the minute depressions of the band 17, by a suitable doctor knife 23. This ink preferably has a flaccid pyroxylin base, that is to say preferably it is of the same nature as the coating on the leather. The high pressure exerted by the rolls on the strip causes this coating to come into contact with the entire circumference of the individual depressions constituting the band 17, with the result that the droplets of ink (which contain a pyroxylin solvent) in these depressions are drawn from the latter and adhere to the coating, integrally uniting with the latter and spreading to unite with each other without any material spreading at the edges of the design so as to secure a sharply delineated design. Whenever possible, say when printing a band like that shown in Fig. 3, the strip is passed at least twice through the rolls to insure complete coverage,

and where this cannot be done preferably a somewhat thinner ink is employed so as to secure a minute spreading of the droplets of ink applied to the strip by the print rolls and cause said droplets to unite.

As shown, the strip passes through the perforation **25** of a stationary guide member **27** cooperating with the print rolls **9** and **11** so as to center the strip with the band **17** on the print roll **11**. When printing a band like that shown in Fig. 3, where it is necessary that the edge spaces **29** are of equal width to present a pleasing appearance, after the strip has been once run through the guide and print rolls the strip may be transversely reversed and again run through the print rolls one or more times. In this way the printed band will be accurately centered with the strip and any inaccuracy in the position of the guide will be compensated for.

After the ink dries the strip preferably, but not necessarily, is coated with flaccid pyroxylin to prevent wearing of the printed surface, and if desired this final coating may be applied by the same print rolls as those used to apply the ink when the band printed is like that shown in Fig. 3. The final coating which contains a pyroxylin solvent integrally unites with the portions of the ink and first coating with which it comes in contact, and, as a result, the leather is finished with a waterproof coating of pyroxylin in which is embedded the colored ornamental design.

It will be understood that besides pyroxylin other cellulose base lacquers, such as cellulose acetate and mixtures of the latter with nitrocellulose, may be employed for the first and final coatings above described. Also for this purpose it is possible to employ various gums such as shellac, copal, or sandarac base lacquers. In all instances however the lacquer preferably contains a suitable plasticizer for rendering it flaccid, such as diethyl phthalate, castor oil, or triacetin in the case of cellulose base lacquers, or alcohol phthalate for the gum lacquers, as will be understood by those skilled in the art. Preferaby the ink or other color, applied by the print rolls or otherwise, is of the same nature as the base coating in respect to it containing a solvent for this coating causing it in substance integrally to unite therewith and in effect to secure a homogeneous coating or finish on the leather, and preferably for the same reasons the final coating is of the same nature.

In general, the colored coatings contain sufficient pigment to insure proper "coverage", while these and the other coatings contain sufficient nitrocellulose to insure a proper bond or adhesion, and sufficient plasticizer to make the coatings flaccid and of the desired degree of stretchability hereinafter referred to. As an example of a suitable colored material for coating leather, but without limitation thereto, the same may contain about 4 pounds pigment, 10 ounces nitro-cotton, and 2 pounds castor oil, the nitro-cotton being first dissolved in a solvent containing about 90% ethyl acetate and 10% ethyl alcohol, the amount of this solvent being just more than sufficient to hold the nitro-cotton in solution. Conveniently the color is first mixed with enough of the castor oil to make a thin paste, after which the remaining castor oil, the mixture of pigment and castor oil, and about 0.6 of a pound of ethyl acetate (the latter to prevent possibility of precipitation of the nitro-cotton when the castor oil is added) are mixed with the nitro-cotton solution, and then the resulting mixture is thinned with a mixture consisting of 25% ethyl acetate, 10% ethyl alcohol, and 65% benzol to secure the necessary fluidity to enable the material to be applied. The uncolored coatings may contain about 10 ounces nitro-cotton mixed with enough of the above mentioned solvent to hold the nitro-cotton in solution, after which about 1 pound castor oil and 0.3 of a pound of ethyl acetate may be added, and the mixture thinned with the above mentioned thinner to the desired fluidity. It will be understood in this connection that equivalent amounts of the other plasticizers herein mentioned may be substituted for the castor oil, and that other known solvents of nitrocellulose and other known thinners for the same may be substituted, and that the amount of pigment may be varied depending largely upon the color as some pigments are more effective than others in respect to their action as coloring mediums.

Preferably the leather or other material employed has a minimum amount of stretch, it being observed that if the material should stretch to any great extent the printed surface will check and permit the body of the strip or other contrasting color below the printed surface to show through the printed design and give it a speckled appearance. The relative non-stretchability of the leather may be secured by judicious selection of the leather, or may be secured by making the strip in cross-section as indicated in Fig. 7 in which a rather wide strip has its edge portions **31** folded over the body of the strip and secured thereto with flaccid cement or flaccid glue. This latter construction ordinarily permits the use of a thinner piece of leather than the construction shown by Fig. 6. As a further means to secure relative non-stretchability of the strip, the opposite edge portions **31** thereof may be folded over and cemented to a textile web **33**, which latter is connected to the body of the strip. It will be understood however that to a certain extent the coating permits some stretching, say several inches in a strip a yard long, without checking of the coating, and in general this degree of stretch is not objectionable under ordinary conditions of use of the material.

In forming piping, a relatively wide strip **1**, having a cross-section shown by Fig. 9, in which the opposite edge portions **31** are folded over the body of the strip and cemented thereto in such a way as to leave a rather wide space **35** between the edges of the folds at the center of the strip, may be printed with a band **3** as above described, after which the strip may be operated upon to split it down the central portion of single thickness to form the two strips of piping **37** having the serrated edges **39**. These serrated edges, as will be understood by those skilled in the art, permit the strip to be readily bent transversely.

It will be understood that where the ornamentation is in the form of finely divided material, such as granular, powdered, or flocculent material, adhering to the surface of the strip, the latter may be first printed with flaccid pyroxylin or other flaccid adhesive in place of pyroxylin ink, the drier commonly employed in the latter being purposely omitted in this case to secure a slow drying of the uncolored pyroxylin. When the pyroxylin design so printed is still tacky the granular, powdered, or flocculent material may be applied to the printed side of the strip in any of the common manners known to the art, say by the process which consists of dusting flocculent ma-

terial, such as cotton flock, upon the strip, pressing it, and then blowing or brushing off the excess material, so as to coat the tacky printed design.

It will be observed that in all the above examples of the article the ornamentation is in the form of a continuous or interrupted layer of flaccid material permitting the strip to be applied to a shoe without fracture or checking of the ornamentation, the layer being of appreciable thickness above the surface of the strip as distinguished from a mere stain or dye.

It will be understood that within the spirit of the invention wide deviations may be made from the forms thereof above described, and that the invention is not limited to the use of the apparatus and materials mentioned.

I claim:

The method of making ornamented shoe trimmings and the like which comprises forming a thin narrow strip of flaccid leather or leather substitute having a coating of flaccid cellulose base material, operating upon said strip to place the material thereof under pressure in the direction of the thickness of said strip and, while under pressure, to place upon said coating a multitude of droplets of liquid cellulose base material, which latter is of contrasting color to said coating and contains a solvent therefor and is flaccid when dry, said droplets being arranged to form a sharply delineated design and being sufficiently closely spaced to unite with adjacent droplets upon relief of said pressure, relieving said pressure, and drying the united droplets.

ALBERT C. MURRAY.

CERTIFICATE OF CORRECTION.

Patent No. 2,098,969. November 16, 1937.

ALBERT C. MURRAY.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, first column, before line 1, insert the following paragraph:

My invention relates to methods of making ornamental trimmings for shoes and the like.;

and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 25th day of January, A. D. 1938.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)

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