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EMBOSSED LEATHER AND METHOD OF
PRODUCING THE SAMEKenneth E. Bell, Marblehead, Mass., assignor to
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The present invention relates to methods of embossing leather and to the leather produced thereby.

Heretofore where a surface pattern is desired other than the one normally obtained on the leather, it has been the practice to emboss the tanned and dried hide by placing the face of the leather which is to be embossed in contact with a suitably engraved rigid surface and subjecting the hide to heavy pressure.

Due to the fact that the leather has been tanned and the fibres more or less permanently set, very heavy pressure and heat must be employed if the leather is to be forced into the various recesses and patterns of the embossing surface. Even under such operative conditions certain configurations and designs cannot be properly reproduced.

Furthermore, it is ordinarily necessary to employ a back plate with an oppositely embossed surface to force the design through the leather, as it were. When such an embossed leather is subjected to pressure or tension the design or embossing will be destroyed to a greater or less extent, particularly if the leather has become wet.

It is the object of the present invention to provide a method of embossing leather which will not only avoid the use of heavy pressure, but which will secure an effect wholly permanent and unchanged by wetting or long use.

A further object of the present invention is to provide an embossed leather with a sharper and more accurately embossed design than heretofore obtained, and which is permanent in its character and not affected by pressure or tension even when the leather is wet.

A still further object is to provide embossed leather in which no trace of the front face embossing or design appears on the back or reverse face which, if desired, may have a distinct and different design from the front face.

Briefly, the present invention consists in applying the untanned skin to the embossing plate or roll when the skin is soft and pliable and may be easily forced into all the recesses and depressions of the embossing surface, and then tanning the skin to set its surface in the form or configuration which has been imparted to it while in the untanned condition.

While my improved process may be practiced with various tanning reagents and with different forms of apparatus, a very satisfactory manner of carrying out the process is as follows:

The skins to be embossed are given the usual preliminary treatment of soaking, dehairing and

pickling. For chrome tannage the skins are preferably pickled in an acid and salt solution. The pickled skins are then removed from the pickle, drained, set out, and slicked onto the embossing plates, the surfaces of which are cut or etched into the desired configuration. For example, the characteristic pigskin effect may be obtained on a calfskin. The pressure applied by the operator in slicking these soft, yielding skins onto the embossing plate is sufficient to force the skin into all the depressions and recesses of the plate. Either flesh or grain side may be applied to the embossing plate as desired, the opposite surface being kept smooth and free from any design or embossing.

To the exposed surface of the skin so slicked out on the embossing plate the tanning reagents are applied. With chrome tanning the first solution, basic chromium sulphate, is swabbed or sprayed onto the exposed surface of the skin until the latter is thoroughly saturated throughout its thickness. The second solution, sodium bicarbonate, is then applied which effects the tanning operation and sets the grain surface of the skin in the configuration imparted to it by the embossing plate. Several applications of the bicarbonate solution may be made with a sufficient interval of time between to permit the tanning process to take place, after which the skin may be stripped from the plate with its surface embossed in the desired manner.

With a skin so treated, the embossing is permanently fixed in the surface and will not be removed, or materially affected by subsequent wettings, or folding, or pressing, or other manipulations of the skin.

If desired, the basic chromium sulphate, which is the first solution, may be applied to the skins in the wheel where they will be drummed until thoroughly saturated with the solution. They may then be slicked upon the plate and the second solution applied, or if desired, the skins may be drummed in the second solution for a short time and slicked upon the plate before the tanning has gone far enough to set the surface.

Instead of applying the tanning reagents to the slicked skin by means of a spray or swab, the solutions may be flushed or flowed upon the skin and worked into it with the slicking tool. The skins may be retained upon the plate until dried, and if desired, may be subjected to further operations such as coloring, fat-liquoring, etc., before being stripped from the plate.

Instead of slicking the skins out upon an embossing plate, they may be subjected to the action

of an embossing roll which imparts an embossing effect to the surface of the untanned skins. By proper and careful manipulation of such an embossed untanned skin it may be subjected to the tanning process without destroying the embossing effect so that the skin will be set with the desired configuration upon the surface.

Ordinarily the grain surface of the skin will be embossed, but if desired the flesh surface may be so treated, as may be either surface of splits. Cowhides, calfskins, and sheepskins, as well as various other animal skins, may be embossed by the present process in an efficient and permanent manner, and effects may be secured which are impossible by the prior methods when applied to a tanned skin or hide.

Ordinarily the side opposite the one which is embossed will be smooth and free from any traces of the design or embossing on the opposite face. If desired, however, a distinct and different design or embossing may be produced thereon by pressing a second embossing plate with such design cut or etched in its surface into contact with such face of the skin after the tanning material has been applied, but before the tanning has proceeded far enough to set the skin. Thus a leather may be produced having different designs embossed on its opposite surfaces.

Where in the claims reference is made to "tanning" the skin or hide, this is not to be understood as limited to a full and complete tanning operation, but also to cover partial tanning sufficient only to set the design or print on the surface of the skin.

Having thus described the invention, what is claimed is:

1. That improvement in methods of embossing hides and skins which comprises treating the untanned skin with tanning material, and before the tanning has progressed sufficiently to set the surface of the skin, imparting an embossed surface to the untanned skin and thereafter continuing the tanning to set the embossed surface.

2. That improvement in methods of embossing hides and skins which comprises treating the untanned skin with tanning material, before such tanning material has set the surface of the skin applying the skin to an embossing plate, and maintaining the skin on such embossing plate until the tanning has progressed sufficiently to set the embossed surface thereof.

3. That improvement in methods of embossing hides and skins which comprises applying tanning material to the untanned skin, before the tanning has progressed sufficiently to set the surface of the skin applying the untanned skin to an embossing plate, maintaining the skin in contact with the plate until the tanning has progressed sufficiently to set the embossed surface, and then removing the skin from the plate and completing the tanning.

4. That improvement in methods of embossing hides and skins which comprises subjecting the untanned skin to the action of a reagent, imparting a surface configuration to the treated untanned skin, and while such surface configuration is retained, treating the skin to a second reagent which with the first reagent effects tanning of the skin and setting of the surface in the desired configuration.

5. That improvement in methods of embossing hides and skins which consists in slicking out the untanned skin on an embossing plate, applying tanning material to the exposed surface of the skin when held on the plate, applying a second

embossing plate to such surface before the tanning has set the same, and maintaining the plates in contact with the skin until the tanning has set the skin.

6. That improvement in methods of embossing hides and skins which comprises imparting to the untanned skin the desired embossed surface configuration, and tanning the skin beneath both the raised portion and depressed portions of the embossed surface while maintaining such embossed surface configuration.

7. That improvement in methods of embossing hides and skins which comprises imparting an embossed configuration to the surface of the untanned skin, and simultaneously tanning all portions of the skin to set the desired embossed configurations on the surface of the skin.

8. That improvement in methods of embossing hides and skins which comprises applying the untanned skin to an embossing surface corresponding to the configuration desired in the skin, and tanning the skin while the latter is in contact with such embossing surface.

9. That improvement in methods of embossing hides and skins which comprises applying the untanned skin to an embossing surface corresponding to the surface desired in the skin, and while the untanned skin is held in contact with such embossing surface simultaneously tanning all portions of the skin to a sufficient extent to set the surface in the desired configuration.

10. That improvement in methods of embossing hides and skins which comprises slicking out the untanned skin on an embossing plate and applying tanning material simultaneously to the entire surface of the skin while it is still held on the plate to tan the skin and set the embossed surface thereon.

11. That improvement in methods of embossing hides and skins which comprises slicking out the untanned skin with the grain surface in contact with an embossing plate and simultaneously tanning all portions of the skin while it is still held on the embossing plate to set the grain surface in the desired configuration.

12. That improvement in methods of embossing hides and skins which consists in slicking out the untanned skin on an embossing plate, simultaneously applying tanning material to all portions of the surface of the skin while the skin is still held on the plate, embossing the exposed surface of the skin before the tanning has progressed sufficiently to set the same, and thereafter permitting the tanning material to set the skin.

13. That improvement in methods of embossing hides and skins which comprises drumming the pickled skin with basic chromium sulphate, slicking out the untanned skin upon an embossing plate, and applying sodium bicarbonate to the slicked out skin to set the embossed surface on the skin.

14. That improvement in methods of embossing hides which comprises imparting to the untanned skin the desired embossed surface configuration, and setting such embossed surface on the skin by a tanning operation applied to all portions of the skin while maintaining such embossed surface configuration.

15. An embossed hide or skin having embossing tanned on one surface thereof, no substantial portion of such embossing being removable by wetting or manipulation of the skin, and the opposite surface free from any trace of such embossing.

16. An embossed hide or skin having embossings on opposite surfaces, said embossings being independent of each other and tanned on the surfaces, no substantial portion of the embossings being removable by wetting or manipulation of the skin.

17. An embossed hide or skin having embossings of different design on opposite surfaces and tanned thereon, no substantial portion of the embossings being removable by wetting or manipulation of the skin.

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