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LEATHER FINISHING PROCESS AND APPARATUS

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Fig. 1

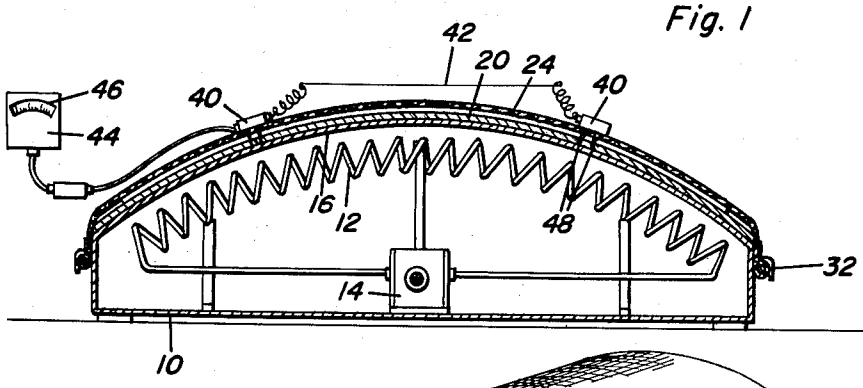
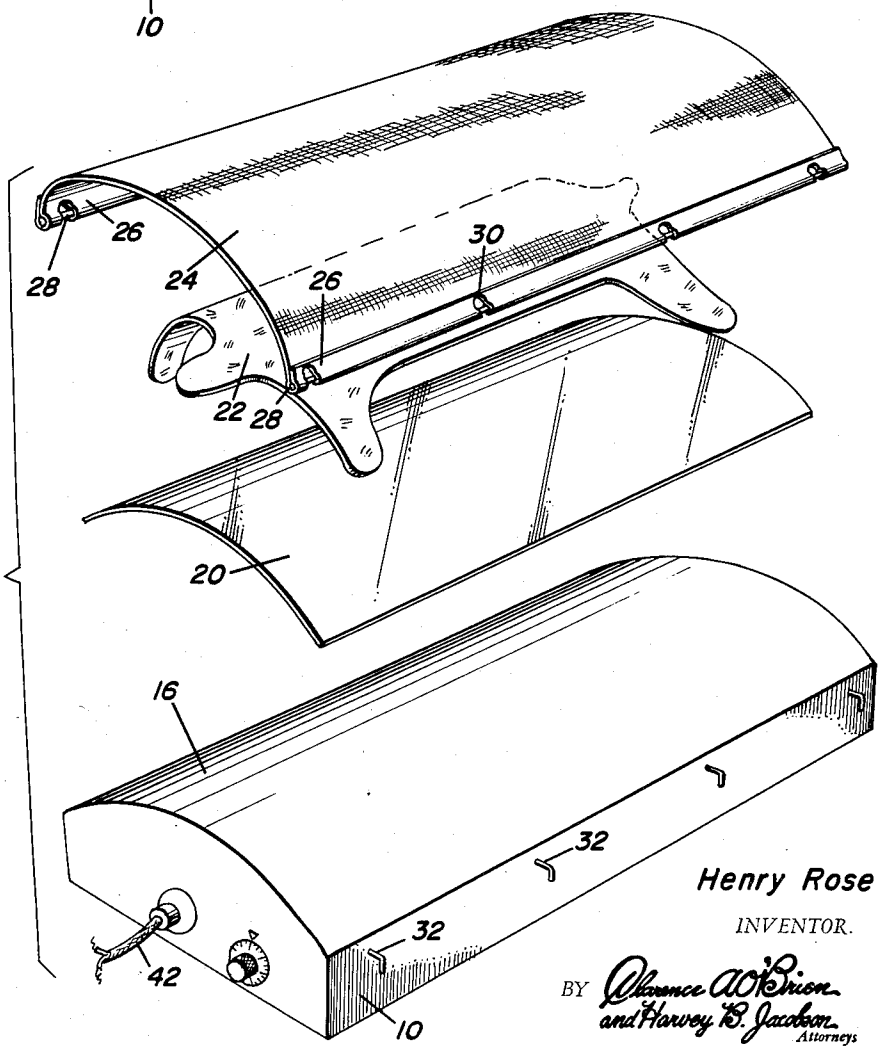


Fig. 2



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LEATHER FINISHING PROCESS AND APPARATUS

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This invention comprises a novel and useful leather finishing process and more particularly relates to an improved process for finishing leather by imparting a glazed and plated appearance thereto together with means for carrying out the process.

The primary purpose of this invention is to provide a process and a means whereby the finishing of wet skins and hides to provide a glazed plated appearance thereto may be effected with a saving of labor and time.

A further important object of the invention is to provide a process and a means which will enable the moisture content of the skins or hides to be precisely controlled during the finishing operation to thereby secure a finished product having the optimum moisture content therein.

Yet another object of the invention is to provide an apparatus and a process which will greatly facilitate and reduce the time required to finish leather and obtain a glazed and plated appearance therefor and by means of which the wet skin or hide is compressibly held against a smooth, highly polished convex metallic surface by means of a pliable porous sheet of material while sufficient heat is applied through the metallic element to dry the skin or hide with expelled moisture being evaporated through the porous sheet which retains the article during the drying operation.

It is a further object of the invention to provide a process which will enable hides to be finished with a glazed and plated appearance in a single operation and while the hides are secured to a smooth convex highly polished metallic surface.

Yet another object of the invention is to provide a process and an apparatus which will enable skins or hides which have been treated in accordance with any of the various known solutions of albumen, protein solutions or casein and the like to be directly applied to a highly polished convex metal surface and held thereagainst smoothly and without wrinkles while sufficient heat is applied by the surface to the hides to dry the same to a predetermined moisture content and to impart the glazed and plated appearance to the surface of the hides.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a view in vertical transverse section through a suitable form of apparatus for carrying out the process of this invention, the apparatus being shown in position for treating a skin or hide which has been applied; and

FIGURE 2 is an exploded perspective view of the various components which make up the apparatus of FIGURE 1.

In the finishing of leather such as skins or hides, after the same have been treated with various suitable solutions in preparation for finishing, it has been heretofore customary and necessary to dry the hides; stretch them across irons; then apply both heat and pressure to the hides in order to impart the desired glazed or plated finish thereto. During this operation it has been heretofore usually necessary to at least partially dry the hides in a separate drier and thereafter apply the hides to the irons for the stretching or staking operation and for the glazing or plating operation.

By the present invention, the number of steps heretofore required for this purpose has been materially reduced; provision has been made for expelling the excess moisture from the hides during the heating and treating of the same; and the hides are dried and treated while mounted upon the sheet or plate which serves the joint functions of drying the hides to a desired degree and imparting the glazed or plated appearance thereto in the finishing operation.

In the accompanying drawing the numeral **10** designates a member which constitutes the heater or drier of the process. As shown, heating elements **12** are disposed in the hollow body of the member **10** and are heated by electricity, steam or other suitable heating medium under the control of a thermostatic device shown at **14** which may be of any conventional design. The top surface of the heater **10** consists of a rigid transversely convexly curved plate **16** which constitutes the surface by which heat is emitted from the heating member. This surface is preferably smooth and polished and constitutes one of the pair of irons which are customarily employed for finishing hides to impart a glazed or plated appearance thereto. In some instances in accordance with this invention the surface **16** may be chrome electroplated in order to provide a highly polished mirror surface thereto. In other instances it may be of the conventional degree of finish of an iron for treating hides, in which case, there is applied thereto in heat exchange relation therewith a metallic sheet **20**. The latter sheets consists of a highly polished plate with a perfectly smooth surface and preferably has its outer or exterior or top surface of electrically deposited chromium. The plate **20** is flexible at least transversely thereof in order that it may be pressed down upon the convex surface **16** of the heater into an intimate heat exchange relation therewith as shown in FIGURE 1.

Indicated by the numeral **22** is a skin or hide which is to be treated in accordance with this process and apparatus in order to provide a finished leather having a glazed or plated appearance. In operation, the skin **22** is placed directly upon the plate **20**, is then compressibly held thereon and with the plate is flexed about the surface **16** of the heater **10** as shown in FIGURE 1 in order to effect the heating, drying and finishing operation.

A very important feature of this invention consists in the provision of a pliable sheet **24** of a porous nature. This sheet may conveniently be canvas although other woven textiles or fabrics could be employed for the purpose. The sheet **20** has its marginal edges folded upon themselves to provide longitudinal marginal beads **26** through which extend reinforcing and stiffening rods **28**. As will be observed from FIGURE 2, marginal portions of the cover on the beads are cut away as at **30** to expose the rods **28** and the opposite sides of the heater **10** have hooks or fasteners **32** beneath which the exposed portions of the rods may be engaged to thus retain the porous sheet **24** as a cover across the top of the hide **22** and the plate or metal sheet **20** to flex these members tightly upon the top surface **16** of the heating member **10**.

It will be understood that the porous sheet **24** is capable of being stretched slightly, this being an inherent property of canvas or other woven fabrics so that the sheet **24** constitutes a cover sheet which retains the plate or element **20** in uniform contact with the transversely curved convex surface **16** of the heater across the entire area of the surface and the element and also serves to retain the skin or hide **22** smooth and without wrinkling upon the element **20**.

The pressure applied by the polished surface of the element **20** to the underside of the skin or hide **22** serves to simultaneously effect the heating and drying of the hide with the expelled vaporized moisture passing through the porous material **24**; also by the pressure of the hide against the mirror smooth surface of the plate **20**, will

impart a finish thereto resembling a glazed and plated finish.

In order to obtain the best results for different skins or hides and depending upon the nature and conditions of the latter, it is very important to regulate and control precisely the proportion of moisture retained in the skins during this process. For that purpose there is provided a moisture content control means. This consists of a plurality of moisture content responsive actuators each designated generally by the numeral 40 and which are connected by electrical conductors 42 with a humidity control device 44 of any conventional design. The device 44 in turn is connected by means, not shown, to the thermostat 14 or to the source of heat for the element 12 so that when the desired moisture content has been obtained in the skins during the drying of the same, the thermostat will controllably operate to discontinue the operation of the heater. At the same time, a suitable signaling device as at 46 will be actuated or energized to produce a warning that the desired condition has been obtained in the skins.

It is to be understood that any conventional type of moisture responsive actuators now upon the market may be employed as the elements 40, it being preferred to have these elements provided with suitable contact prongs as at 48 which will penetrate the loosely woven material of the porous sheet 24 and will engage or penetrate the skins or hides 22 in order to detect the moisture content of the latter.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A leather finishing process for wet skins comprising stretching a wet skin across a flexible metal sheet having a mirror smooth highly polished surface, securing said skin in a smooth condition free of wrinkles to said surface by a porous pliable sheet, holding said metal sheet flexed upon the concave surface of a heating element, applying heat from said element to said metal sheet and from the latter uniformly throughout the area of said skin and thereby drying the skin and simultaneously glazing and plating the latter.

2. The combination of claim 1 including discontinuing the step of applying heat when the skin has been dried to a predetermined moisture content.

3. An apparatus for finishing hides comprising a metallic element having a mirror smooth highly polished convex surface for engagement by a wet hide and for drying, glazing and plating the latter, a pliable sheet of porous material, fastening means for securing the porous sheet upon said element to thereby stretch and fasten in smooth unwrinkled condition a wet hide between said surface and sheet, means for applying heat to said surface for drying the hide and evaporating moisture therefrom through said porous sheet, means controlling the temperature of said heating means, a moisture content control engageable through said porous sheet with a wet hide when compressibly held between the later and said element and connected to said control means.

4. The combination of claim 3 including a signaling means connected to said moisture content control.

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