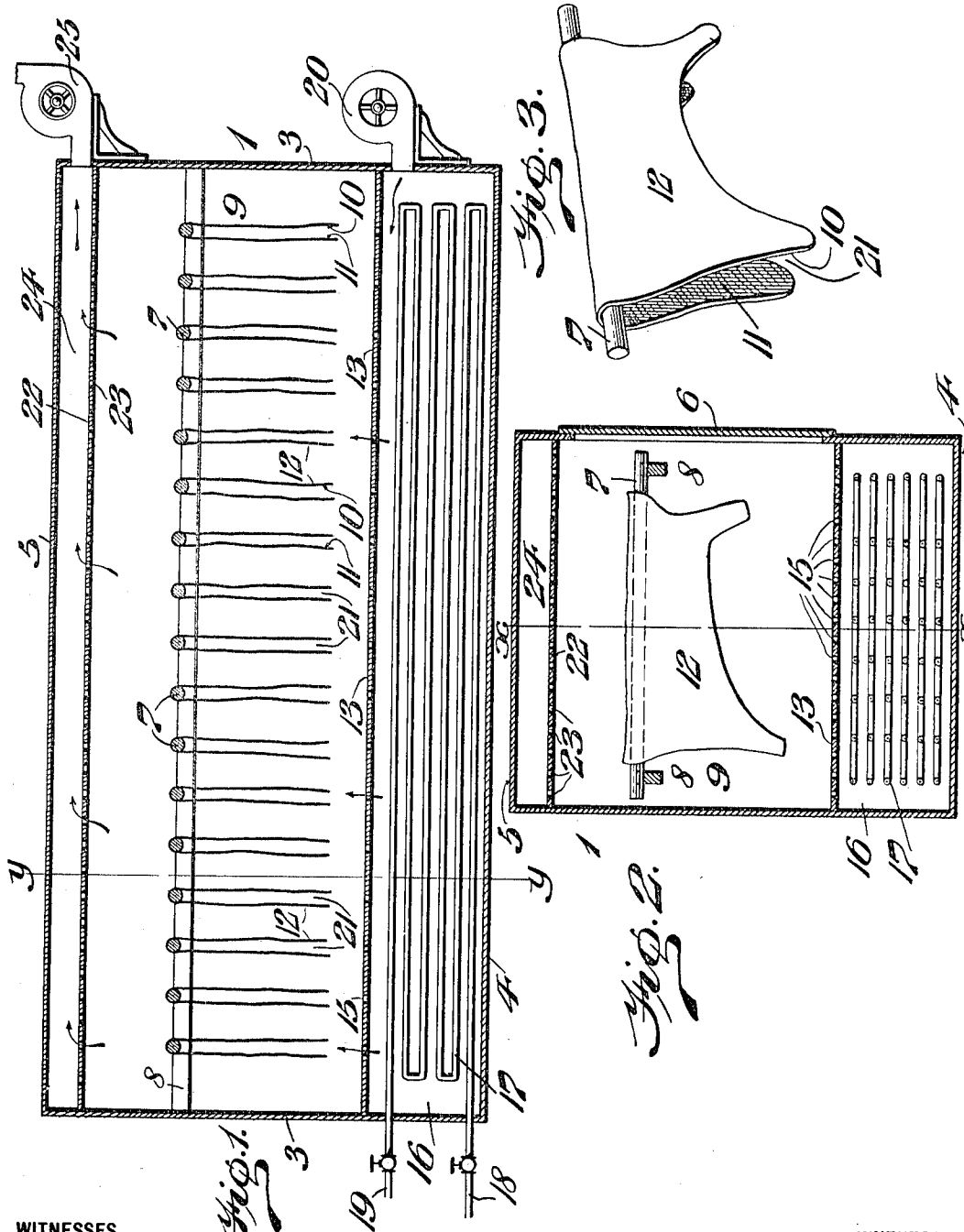


J. U. FLANAGAN.
METHOD AND APPARATUS FOR DRYING SKINS.
APPLICATION FILED JAN. 13, 1914.

1,273,598.

Patented July 23, 1918.



WITNESSES

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UNITED STATES PATENT OFFICE.

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METHOD AND APPARATUS FOR DRYING SKINS.

1,273,598.

Specification of Letters Patent.

Patented July 23, 1918.

Application filed January 13, 1914. Serial No. 811,819.

To all whom it may concern:

Be it known that I, JAMES U. FLANAGAN, a citizen of the United States, residing in the city of Wilmington, county of New Castle, State of Delaware, have invented a new and useful Method and Apparatus for Drying Skins, of which the following is a specification.

My invention relates to a novel method of drying skins wherein I employ the expedient broadly of initially subjecting the flesh side of the skin to the maximum effect of the drying agent, whereby the flesh side of the skin is dried or is acted upon by the drying agent before the grain side of the skin.

In carrying out the broad principle of my invention, any suitable apparatus or mechanism may be employed, wherein my novel method can be effected and, in the present instance, I have shown but one form of such apparatus and it will be understood that I do not desire to be limited thereto, as various other forms of apparatus may be employed to carry out my novel method, as will be apparent to those skilled in the art.

In the present process of treating or drying skins, the general practice has been to dry the oiled-off skins or hides by hanging them in the atmosphere or in still or practically still air by merely hanging them up on a hook or rod to dry without making any provision for directing a current of air at normal temperature or heated upon one side or the other of the skin and the mechanical appliances or attempts which have heretofore been made to dry oiled-off skins have uniformly given unsatisfactory results because the attempt has always been made to dry the skins grain side first, which has a deteriorating effect upon the skins for reasons which I will hereinafter explain.

To the above ends, my invention consists of a novel method of drying skins, wherein the flesh side of the skins is initially subjected to the maximum effect of the drying agent, whereby the flesh side of the skin is dried before the grain side thereof.

My invention also consists of a novel apparatus wherein the above method may be carried out.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawing one form thereof which is at present preferred by me, since the same will be found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a longitudinal sectional view of one form of an apparatus wherein my novel method for drying skins may be carried out, the section being taken on line $x-x$ Fig. 2.

Fig. 2 represents a section taken on line $y-y$ Fig. 1.

Fig. 3 represents on an enlarged scale, a perspective view of a skin and its support. Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:

In the art of treating skins prior to the drying thereof, as is well known, the raw skin prior to having the hair removed therefrom, is first put to soak for about one or two days or a suitable period, in order to get the skin back as near as possible into the condition it was before it left the animal's back. The skin is then taken and subjected to the action of the lime, arsenic or sulfite or other chemicals which may be employed, and the raw flesh is thereafter taken off by hand or machine and the skin is then bated, the effect of which process is to decay the grain to a certain extent. The skin is then put into a bath of chrome and acid and struck out from that and then put into a bath of hypo and acid and is then fat-liquored and colored after which the skin is struck out either by hand or machine and given a coat of glycerin or oil or a mixture of both. The next step is the drying of the skin and it is at this stage that the skin is subjected to my novel method to be hereinafter described, it being understood that the various steps hereinbefore named prior to the act of drying are old and well known in this art, and I make no claim thereto herein.

In carrying out my invention, I employ a suitable casing 1 having sides 2, ends 3,

base 4 and top 5 whereby a closed chamber or heating compartment is formed, which is readily accessible by means of the door or closure 6. I next suspend a row of rods or supports 7 within the drying chamber by means of supporting strips 8 or similar devices upon which rods are suspended the skins 9, special attention being directed to the fact that the flesh sides of the skin, as 10 10 and 11, face each other, the grain side 12 being on the outside. In practice, I arrange the supporting rods or their equivalents 7 at intervals of about one, two or three inches apart and below the skins, at 15 a short distance therefrom, I locate the partition 13 which has rows of air ports 15 thereon, which are spaced, so as to be in substantial alinement and directly under said supporting devices 7, so that the space 20 21 between the juxtaposed flesh sides 11 of the skin, as will be understood from Fig. 1, will be initially subjected to the maximum effect of the drying agent, as it is discharged through the rows of ports 15.

25 16 designates a heating compartment formed below the partition 13 and between the base 4 which contains the steam or other heating coil 17, the steam being conducted thereinto through the valved branch 18 and 30 out from the coil through the valved branch 19, said steam or other heating medium being supplied through any suitable or convenient source of supply.

20 designates a blower of any conventional 35 type discharging into the hot air chamber or heating compartment, whereby air is discharged into the heating chamber 16 and leaves the same through the rows of said ports 15, each now being in substantially 40 exact alinement with the support 7 which causes the current of the drying medium to be discharged initially into said spaces 21 and directly upon or against the flesh side 11 of the skins.

45 22 designates the upper partition of the drying chamber which has suitable ports 23 therein, whereby an exhaust chamber 24 is formed from which the air or moisture is exhausted through the medium of the suction fan 25.

It will now be apparent that after the skins have been placed in the position indicated and the steam or other heating medium admitted into the heating coil 17, the air in the 55 chamber 16 will become heated to the desired degree and by the action of the blower will be forced therefrom upwardly through the rows of ports 15 into the spaces 21 and will be initially received in said spaces 21 between the flesh sides 11 of the suspended 60 skins 9, so that the flesh side of said skins will be initially subjected to the maximum effect of the drying agent.

It will therefore be seen from the foregoing 65 ing that the broad principle underlying my

novel method is the directing of a current of air, preferably heated, in an upward direction initially against the flesh side of the suspended skin, whereby said flesh side of the skin is subjected initially to the maximum effect of the drying agent. It will be 70 apparent to those skilled in this art, that the grain side of the skin being much less porous than the flesh side, the drying operation is much more completely and better done, if 75 the maximum or initial drying operation is initially performed on the more porous or flesh side of the skins, since in doing this I keep the grain moist until all the moisture has been drawn out of the flesh of the skin, 80 consequently the grain can not dry or contract, whereas on the other hand if the maximum effect of the heating agent was applied initially to the grain side of the skin, the latter after being dried would crack very 85 easily.

By my novel method and apparatus, it will be apparent that since I subject the flesh side of the skin initially to the maximum effect of the drying agent, the flesh 90 side of the skin is dried before the grain side of the skin, whereby the grain is kept moist until the moisture has been dried out of the flesh side of the skin, the grain side being the last side that will be thoroughly 95 dried, whereby a skin treated by my novel process will not be drawn or contracted and after dried will not be liable to be easily cracked as is the case where the oiled-off skin has been dried grain side first, or is 100 merely suspended in the still air, as is now customarily done.

It will be apparent that any suitable suspension device for the skins may be employed other than that shown, so long as the 105 salient feature of my invention is employed, the same being the subjecting of the flesh side of the skin initially to the maximum effect of the drying agent.

While I prefer to employ the heating coil 110 17 in the chamber 16, the broad principle of my method can be carried out, if I simply force air at ordinary temperature upwardly through the rows of ports 15 initially, directly against or upon the flesh side of the 115 skins, since it is well known that a current of air at ordinary atmospheric temperature will tend to have a drying effect if directed against the object to be dried.

It will now be apparent that I have devised a novel and useful method and apparatus of drying skins which embodies the 120 features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in 125 the present instance, shown and described a preferred embodiment thereof which will be found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in 130

various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

While I have shown the skins as being dried when in a stationary condition or hung upon a stationary support, it will be apparent that the skins may be moved, if desired, without departing from the spirit of my invention, provided the maximum effect of the drying agent is directed or exerted against the flesh side of the skin to be dried.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The process of treating skins, which consists in supporting a skin in an inclosing casing, and next subjecting the flesh side of said skin initially to the maximum effect of the drying agent.
2. The process of treating skins, which consists in supporting a skin within an inclosed casing, creating a current of the drying agent, directing the maximum of said current of said drying agent initially directly against the flesh side of said skin and lastly allowing said drying agent to diffuse around the edges of said skin to act on the grain side lastly, whereby the grain is kept moist until the moisture has been dried out of the flesh side of said skin.
3. The process of treating skins, which consists in suspending the skin doubled with the flesh-side inward, and directing the drying agent within such doubled skin to act directly against such flesh-side.
4. The process of treating skins, which consists in doubling the skin with the flesh-side inward, suspending such doubled skin with the opening downward, and conveying the drying agent directly into said opening to act against the flesh-side of the skin.
5. The process of treating skins, which consists in supporting the skins with their flesh-side inward, and forcibly introducing

the drying agent between such inward flesh-side.

6. An apparatus for drying skins, consisting of a closed compartment, a heating compartment below the same and provided with means for creating air-pressure in the same and with a discharge into said closed compartment, an exhaust chamber above said closed compartment and communicating with the same, and a support in the closed compartment opposite to the inlet in the same and adapted to have a skin doubled and suspended from it with the open space between its doubled parts registering with the inlet to directly receive the drying agent.

7. In an apparatus for drying skins, a closed compartment, a heating compartment in proximity to the latter, a partition between said compartments and having a series of rows of ports therein, skin supports located in alinement with said ports and means for initially discharging a current of the drying agent to be discharged through said ports in the direction of said skin supports, whereby the flesh side of the skins to be treated is enabled to initially receive the maximum effect of said drying agent.

8. In an apparatus for drying skins, a closed compartment, a heating compartment below the latter, a partition between said compartments and having a series of rows of ports therein, skin supports located above and in alinement with said ports, and means for initially discharging a current of the drying medium upwardly through said ports in the direction of said skin supports, whereby the flesh side of the skins to be treated is enabled to initially receive the maximum effect of said drying agent.

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Witnesses:

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