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⑤④ **Apparatus for dragging skins or hides for their chemical and physical treatment.**

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**US-A-2 474 884**

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## Description

The present invention relates to an apparatus with improvements introduced in an apparatus for the chemical and physical line treatment of skins or hides, described in Spanish Patent Number 474,197, so that the improvements have as their purpose the achievement of a higher profitability of the procedure cited in the Spanish Patent Number 474,197.

In order to understand clearly the characteristics or improvements claimed in the invention to which the subject of the present invention precisely relates, first an exposition will be made of what Spanish Patent No 474,197 consists of, and from its characteristics, the scope of the invention in hand, or what is the same thing, the improvements introduced in that Patent, will be perfectly understood.

The purpose pursued and achieved in Spanish Patent number 474,197 was to improve the conditions of treatment of skins or hides by liquids, for their later industrial commercialization, based on a procedure by which the interaction of skins and liquid is achieved by pouring the latter on to the skins themselves, which would remain stationary or move according to a movement of transfer which will be commented upon later. In this way an intimate contact was achieved by homogenizing and penetrating actions of a chemical and physical-chemical nature.

In order to carry into effect the procedure mentioned above, naturally an installation is required, which always according to the subject of Spanish Patent 474,197, was based on an endless chain on which a number of transporting bars were mounted, and on these the skins to be treated were placed, in such a way that the said chain on its travel dragged the skins placed on the above mentioned bars, at the same time that the suitable treatment liquid was sprayed towards the skins by sprinklers, all this with mechanism and suitable valves to effect a recycling of said liquid or treatment products, and also other elements to heat, homogenize, etc. the said liquid or liquids.

Because the subject of the invention to which this patent application relates is focussed solely towards the mechanical means which constitute the dragging chain, the structure of this, as conceived and described in Spanish Patent number 474,197, will be explained.

The main dragging chain runs between the intake and output ends of the machine. At the output end there is a secondary raising chain which raises the empty bars to a return chain situated in a higher horizontal plane. Said bars when returning and reaching the intake of the machine are lowered by a lowering chain and reincorporated into the main dragging chain loaded with skins for transport.

This system of transporting chains is dual, and each of them is mounted on the side chassis of the machine, in order to support the transporting bars in a synchronized way at both their ends.

In the said chains, their links are provided with

short fins which push the transporting bars, so that the latter rest freely by their ends on the chain itself or on support-guides fixed in the chassis of the machine and placed parallel to the travel of the chain.

Well, the subject of the invention proposed or improvements introduced in the above mentioned Spanish Patent number 474,197, has the purpose of simplifying the mechanism or mechanisms mentioned in the preceding paragraph, achieving a twofold objective, as in the first place a greater economy in the construction of the installation is achieved, and in second place a greater simplicity of construction and operation is achieved, all of which is with a view to preventing the jamming of the bars and breakdowns in the operation of the chain which frequently cause it to break, or the bars to bend. It must also be considered that by simplifying the transport mechanism, by the suppression of the raising and lowering sections, the power rating of the operation electric motors will be reduced, and consequently a considerable energy saving will be made.

In short, the subject of the invention in hand consists of replacing the transport mechanism provided in Spanish Patent number 474,197, by a single continuous chain which by itself will effect the transport of the loaded bars, the raising, return and lowering of the empty bars. For this the links of the chain are provided with fins, the length of which is considerably longer than that of the link itself, for example 15-25 cm. Furthermore, in this case the transporting bars are not free and independent with respect to the chain but are fixed to this at the end of the fin. However, said bars are inserted-into orifices in the fins with sufficient clearance to pivot freely in them.

There is no doubt that the said improvements achieve a considerable simplification of the installation, a better operation of the mechanism, etc., independently from the fact that all the advantages and results achieved and commented upon in the description of Spanish Patent number 474,197, persist.

In order to facilitate a better understanding of the characteristics of the invention, a detailed description will be made, based on some drawings attached to this description, forming an integral part of it, and merely for guidance and not limiting in character, represent the following.

Figure 1 shows a side elevation and schematic view of the mechanism improved according to the invention.

Figure 2 shows the same mechanism mounted only between a pair of end axles.

Figure 3 shows a section of chain with the respective emerging fins among which the transporting bars will be mounted.

The numerical references in these figures correspond to:

1. Chain.
2. Front roller or gear axle to drive chain (1).
3. Rear roller or gear axle to drive chain (1).
4. Upper rear roller or gear axle to drive chain (1).

5. Upper front roller or gear axle to drive chain (1).
6. Fins emerging from links of chain (1).
7. Orifices of fins (6).
8. Transport bars mounted on fins (6).
9. Skins suspended from bars (8).

On the basis of the figures mentioned, the mechanism of the improvements to the invention, is formed by an endless chain (1) running between the rollers or turning and gear axles (2), (3), (4) and (5), in such a way that each link of said chain (1) has one emerging fin (6) of considerable length and provided with an orifice (7) into which is inserted the corresponding end of the transporting bars (8), each bar (8) pivoting freely in its respective orifice (7).

In this way, the skins (9) to be treated will be placed on the bars (8) in the loading zone corresponding to the end of the roller or turning and gear axle (2) so that said skins (9) are taken between that roller or gear axle (2) and the roller or gear axle (3) corresponding to the output or discharge of treated skins end, as embodied in Spanish patent 474,197, so that when the treated skins have been discharged, the chain (1) will continue its travel from the roller or gear axle (3) to the beginning or gear roller (2) again, after passing over the upper rollers or gear axles (4) and (5), as seen in figure 1.

Figure 2 shows an example using the same principle of operation but in which the chain (1) is mounted only between one pair of rollers or gear axles (2) and (3).

In any case, the mechanism is extremely simple and effective, as the bars (8), as can be observed, both in the loading area or end and the discharging area or end, acquire greater separation, as they diverge from each other in these areas, which allows the loading and discharging of the skins (9) with greater ease and convenience.

Lastly, it should be noted that the height or length of the fins (6) must be considerably greater than the separation between them.

#### Claims.

1. Apparatus for dragging skins or hides for their chemical and physical treatment, comprising an endless, chain mounted between at least one pair of rollers or gear axles, characterised in that each link of the chain is provided with an emerging fin of a length considerably greater than that of the link itself, each fin is provided with an orifice at its free end, and transporting bars are housed in said orifices of the fins with a certain clearance allowing the former to pivot.

2. Apparatus according to claim 1, characterised in that the chain is mounted between four rollers or gear axles, two lower and two upper,

suitably separated between themselves, so that the lower roller or gear axle of one of the ends corresponds to the loading area of the skins or hides, whereas the lower gear axle or roller of the other end corresponds to the discharging area of the treated skins or hides.

#### Patentansprüche

1. Vorrichtung zum Schleppen von Häuten oder Fellen zu ihrer chemischen und physikalischen Behandlung, mit einer zwischen mindestens einem Paar von Rollen oder Kettenrädern angeordneten endlosen Kette, dadurch gekennzeichnet, daß jedes Kettenglied mit einem ausragenden Lappen versehen ist, dessen Länge wesentlich größer als die des Kettengliedes selbst ist, wobei jeder Lappen an seinem freien Ende mit einer Bohrung versehen ist und in den Bohrungen der Lappen Transportstangen frei drehbar gelagert sind.

2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Kette zwischen vier Rollen oder Kettenrädern, und zwar zwei unteren und zwei oberen angeordnet ist, die in einem geeigneten Abstand voneinander angeordnet sind, sodaß die untere Rolle oder das untere Kettenrad eines Endes dem Beladungsbereich der Häute oder Felle entspricht, wogegen das untere Kettenrad oder die untere Rolle des anderen Endes dem Entladebereich der behandelten Häute oder Felle entspricht.

#### Revendications

1. Appareil pour transporter des peaux ou dépouilles en vue de leur traitement chimique et physique, comprenant une chaîne sans fin, montée entre au moins deux cylindres ou axes de transmission, caractérisé en ce que chaque maillon de la chaîne possède une saillie dont la longueur est considérablement plus grande que celle du maillon lui-même, que chaque saillie est munie à son extrémité libre d'un orifice et que des tiges de transport sont disposées dans lesdits orifices des saillies avec un certain jeu pour permettre le pivotement de ces tiges.

2. Appareil selon la revendication 1, caractérisé en ce que la chaîne est montée entre quatre cylindres ou axes de transmission, deux cylindres supérieurs et deux cylindres inférieurs séparés de manière à ce que le cylindre ou axe de transmission inférieur d'une des extrémités corresponde à la région de chargement des peaux ou dépouilles, tandis que l'axe ou cylindre de transmission de l'autre extrémité correspond à la région de déchargement des peaux ou dépouilles traitées.

