Aug. 7, 1923. 1,464,348

E. B. AYRES

APPARATUS FOR DRYING SKINS, ETC

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Fig. 1.

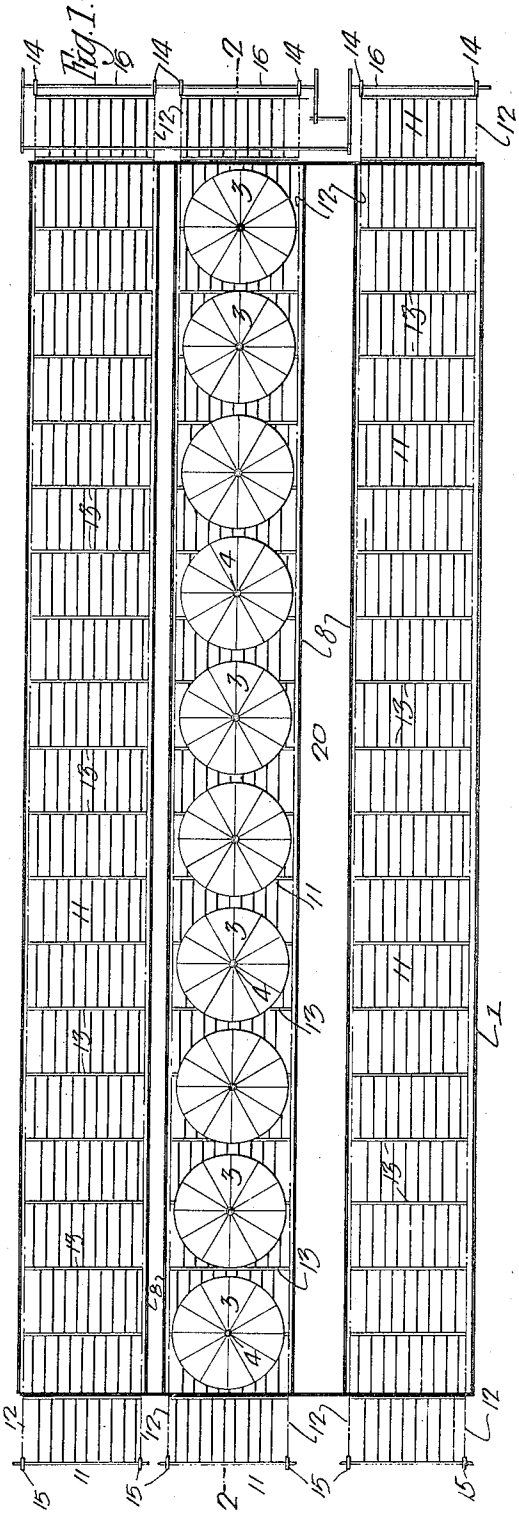


Fig. 2.

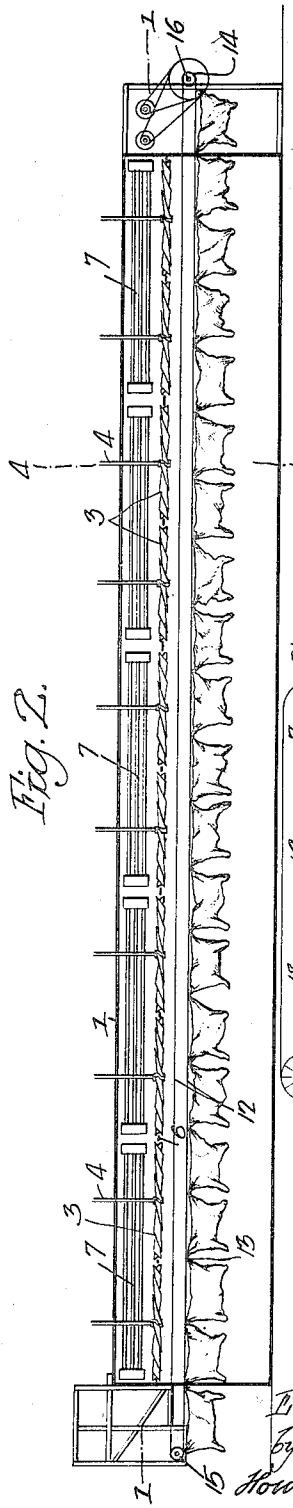
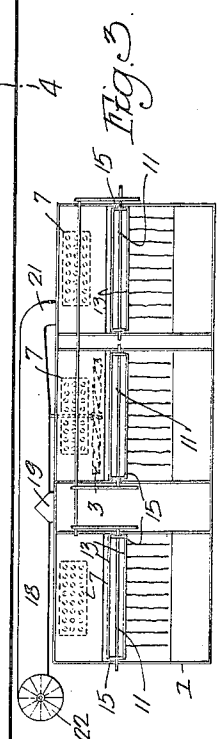


Fig. 3.



Inventor.
Elwood B. Ayres
by his Attorneys
Howson & Howson

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Fig. 4.

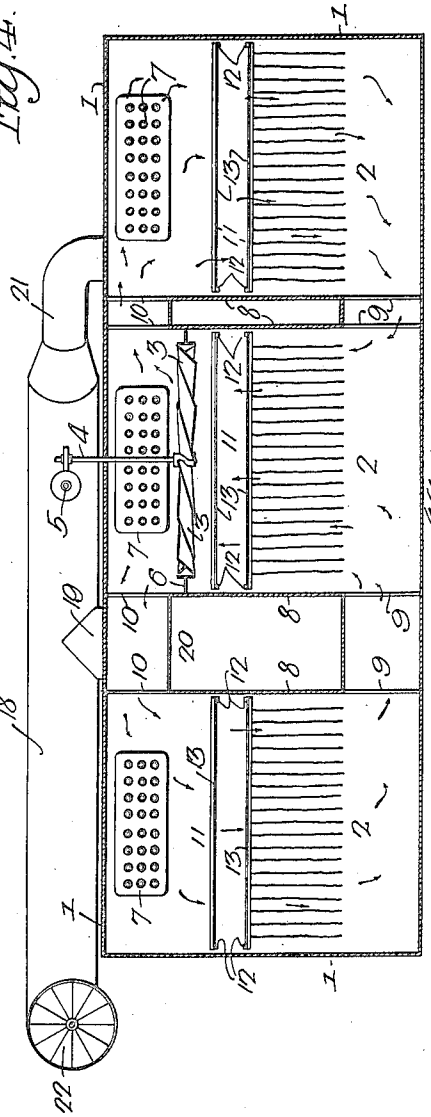
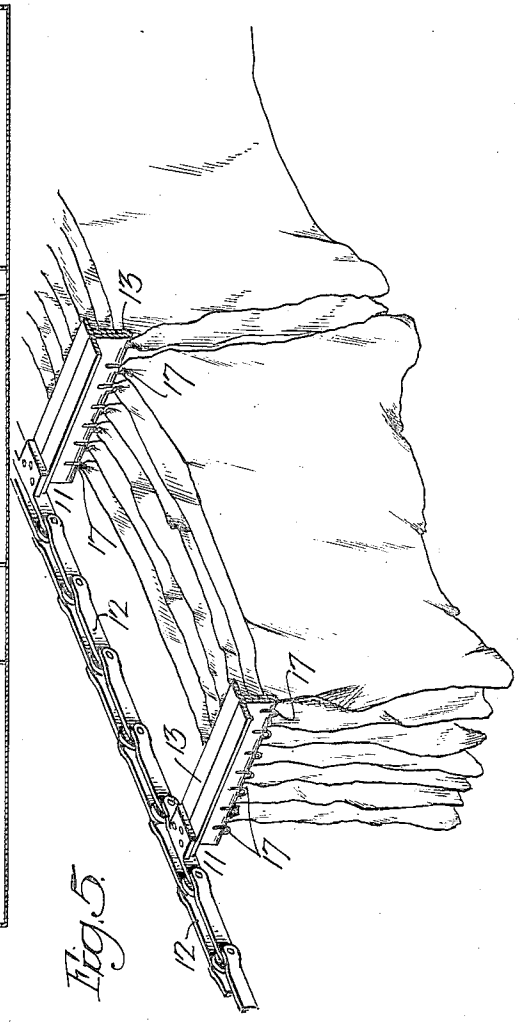


Fig. 5.



Inventor—
Elwood B. Ayres.
by his Attorneys—
Howson & Howson

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UNITED STATES PATENT OFFICE.

ELWOOD B. AYRES, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO PROCTOR & SCHWARTZ, INCORPORATED, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

APPARATUS FOR DRYING SKINS, ETC.

Application filed February 16, 1922. Serial No. 536,990.

To all whom it may concern:

Be it known that I, ELWOOD B. AYRES, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Apparatus for Drying Skins, Etc., of which the following is a specification.

One object of my invention is to convey skins to be dried through a drying chamber, the skins being arranged in planes substantially parallel with their lines of movement and to subject the skins to vertical currents of air as they are traversed through the drying chamber.

A further object of the invention is to provide an apparatus for carrying out the process and also to provide an apparatus in which a large number of skins can be dried and in which the skins can be arranged comparatively close together.

These objects I attain in the following manner, reference being had to the accompanying drawings, in which:

Fig. 1 is a diagrammatic sectional plan view on the line 1—1, Fig. 2, illustrating a drier made in accordance with my invention and for carrying out the process;

Fig. 2 is a longitudinal sectional view on the line 2—2, Fig. 1;

Fig. 3 is an end view;

Fig. 4 is an enlarged transverse sectional view on the line 4—4, Fig. 2; and

Fig. 5 is a detached perspective view showing a method of hanging the skins from the hooks of the cross bars of the conveyer.

In apparatus for drying skins, the common practice has been to provide a comparatively long chamber in which heated air is circulated and to suspend the skins from an overhead conveyer, the plane of the skins being at right angles to the line of travel of the conveyer. In this type of apparatus, the skins can not be placed close together, which limits the capacity of the drier.

By my invention, the skins are arranged in groups, the plane of each skin being substantially parallel with the line of travel of the conveyer. Therefore, the skins in each group can be arranged comparatively close together, materially increasing the capacity of the apparatus. This arrangement does not interfere with the free passage of air through the spaces between the skins.

Referring to the drawings, 1 is the casing of a drier made in the ordinary manner. In the present instance, within the casing are three drying chambers 2, arranged side by side. In the upper portion of the central chamber is a series of fans 3 mounted on vertical shafts 4 driven from a longitudinal shaft 5, in the present instance. The fans extend through openings in a horizontal partition 6 in the upper part of the central drying chamber, as shown in Fig. 4. In the upper part of this drying chamber is a series of steam pipes 7. These pipes can be arranged in any manner desired, depending somewhat on the particular construction of the drier. The longitudinal partitions 8, separating the drying compartments, have openings 9 at the bottom and openings 10 at the top to allow for the free circulation of air in the drier, as indicated by the arrows, Fig. 4.

11 is an endless conveyer consisting of chains 12 at each side and cross bars 13. These cross bars are arranged a distance apart equal to the length of the skins to be dried. The chains pass around sprocket wheels 14 and 15 at the ends of the drier. The sprocket wheels 14 are mounted on the driven shaft 16, which can be driven in any manner desired.

It will be noticed that the conveyer extends beyond the end walls of the drier, both at the feed end and at the discharge end, as clearly shown in Fig. 2, so that an operator can place the skins on the hooks 17, which are secured to the cross bars 13, before the skins enter the drier, and can remove the skins from the hooks after they leave the drier and before the bars pass around the sprocket wheels on the return run.

It will be noticed that in a drier of this type, the conveyer moves more slowly than is usually the case, so that the operators have sufficient time to place the skins on the hooks and to remove the dried skins from the hooks. The hooks are arranged close together, as shown in Fig. 5, and, consequently, the skins of each group can be arranged close together.

18 are exhaust flues communicating with the space 20 through a pipe 19 and with one of the heating chambers through a pipe 21. 22 is an exhaust fan. These exhaust flues can be arranged at any convenient

point throughout the length of the drier and the number of the exhaust flues will depend upon the character of the material being dried.

By the above construction, it will be seen that the skins can be arranged in groups throughout the length of the drier. The plane of the skins of each group is substantially parallel with the movement of the conveyer. The skins can be arranged comparatively close together so that a large number of skins can be accommodated in a drier of a given length. The number of cross bars is considerably reduced as the length of the skins being dried determines the distance apart of the bars.

It will be noticed that the air circulates in a vertical direction in the spaces between the skins and the longitudinal travel of the skins does not affect the direction of movement of the air in circulation.

I claim:

1. The combination in an apparatus for drying skins, of a casing enclosing a drying chamber; a longitudinal chain conveyer located in the upper portion of the drying chamber; hooks on said conveyer on which the skins are suspended in lines parallel with the longitudinal line of movement of the conveyer, said conveyer extending beyond each end of the drying chamber a distance substantially equal to the length of a skin so that each skin can be hooked onto the conveyer from the under side and also removed from the conveyer from the under side; and means for imparting a slow movement to the conveyer.

2. The combination in a casing enclosing a drying chamber; means for circulating air in a vertical direction within the chamber; an endless conveyer consisting of two chains spaced apart and a series of cross bars having hooks thereon, the bars being spaced apart so that the ends of the skins can be attached to the bars, the plane of the skins being parallel with the movement of the conveyer and the hooks being arranged close together in order that a number of skins can be located in the same group; and means for traversing the conveyer slowly through the apparatus.

ELWOOD B. AYRES.