

Dec. 25, 1951

L. T. LEITNER
TOBACCO CURING BARN

2,579,681

Filed Aug. 8, 1947

3 Sheets-Sheet 1

Fig. 1.

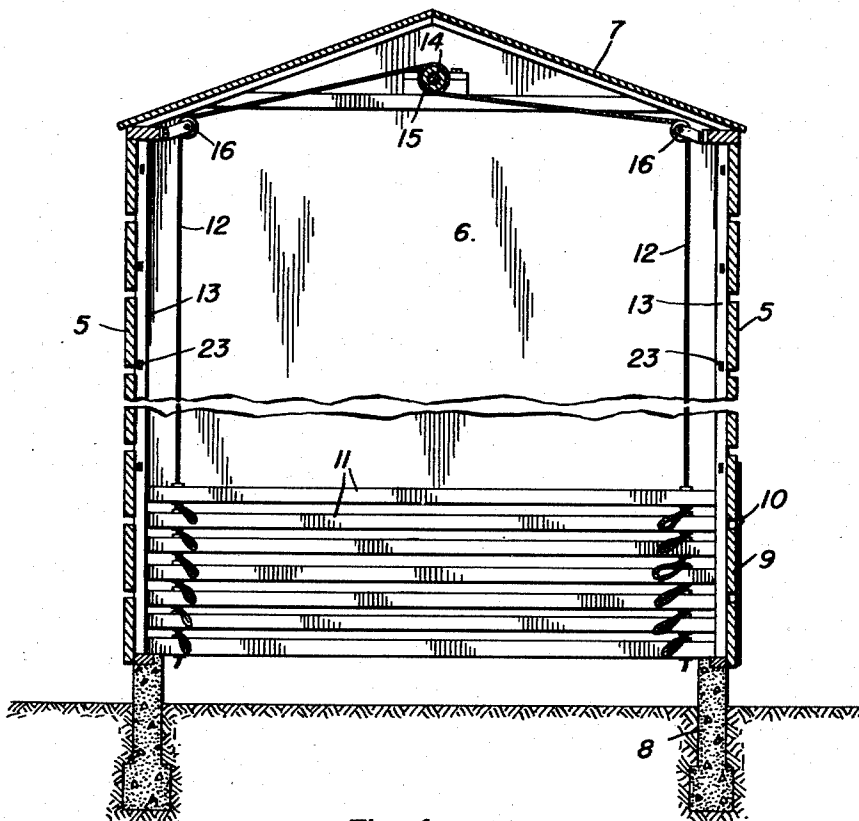
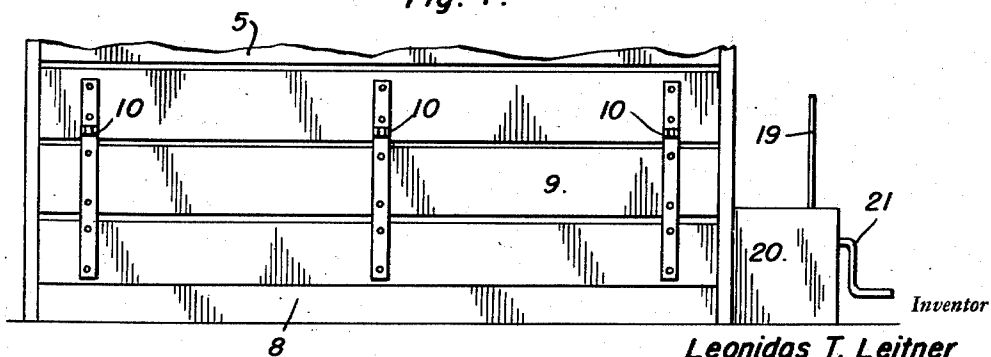


Fig. 4.



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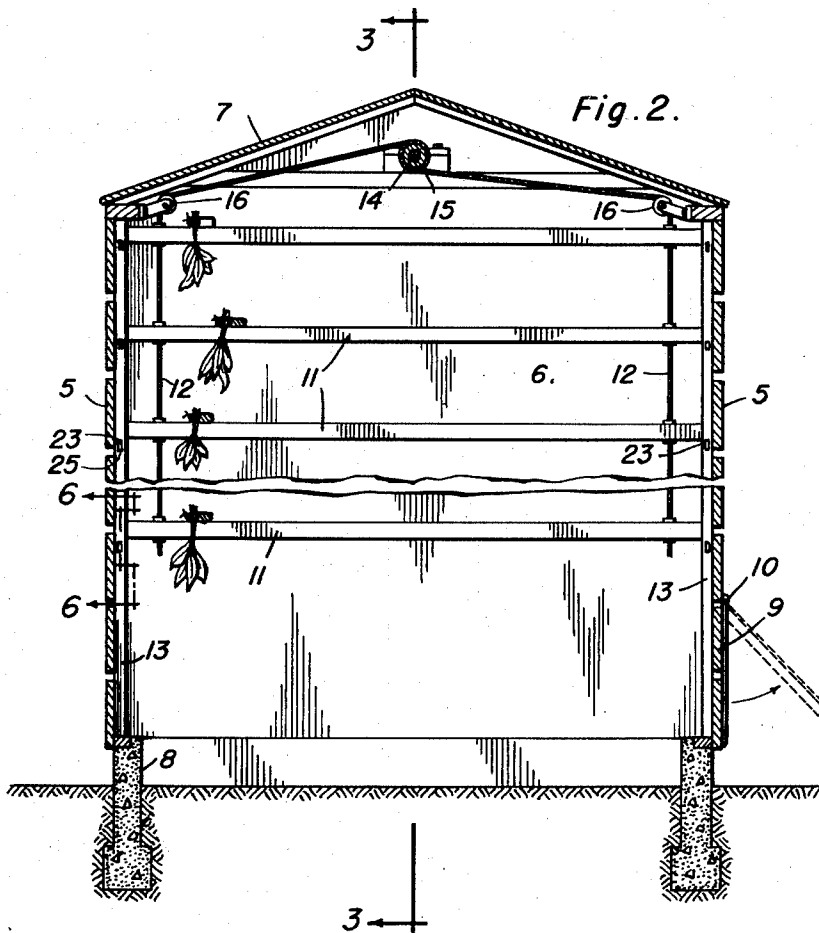
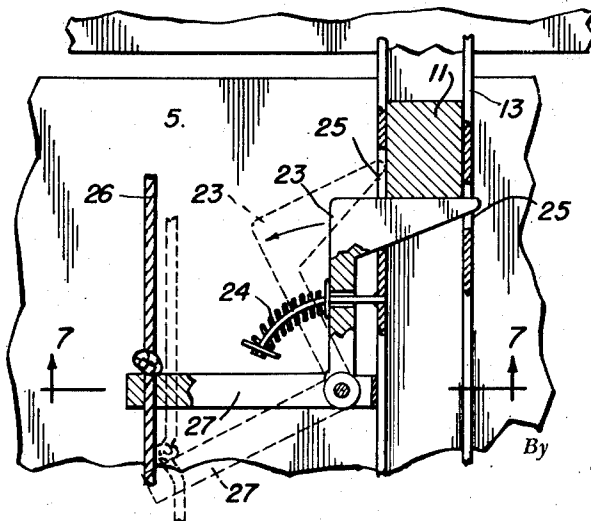


Fig. 6.

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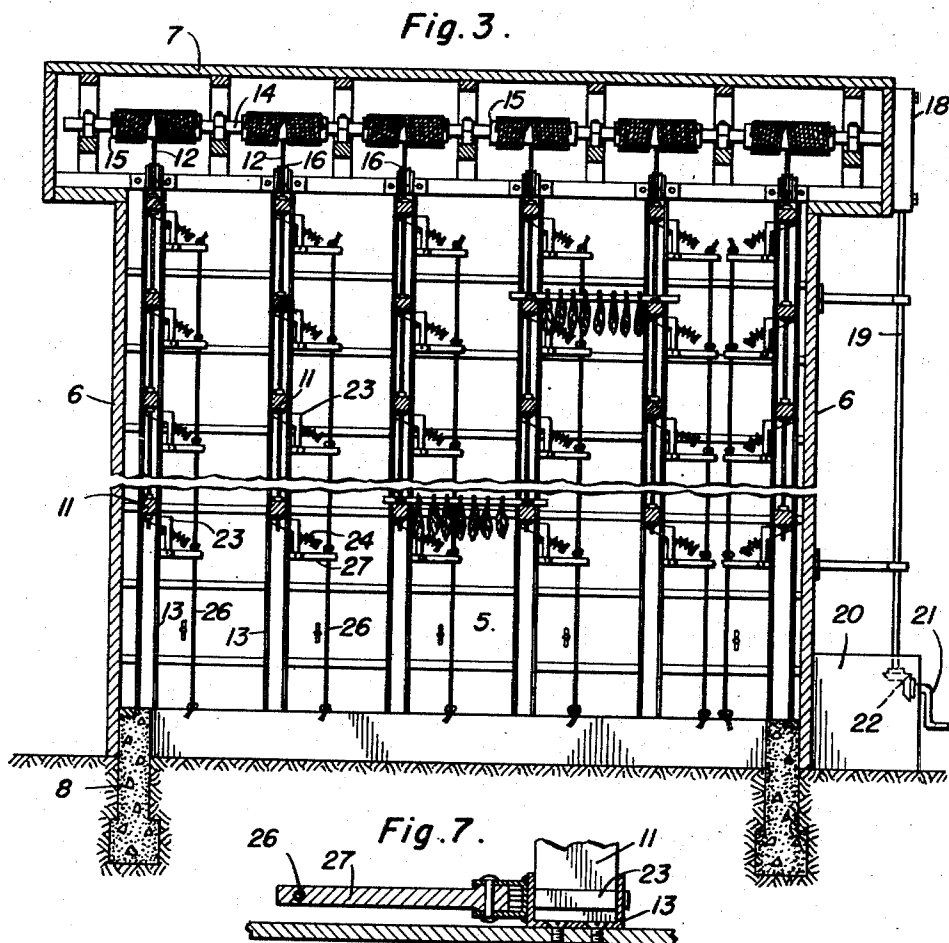
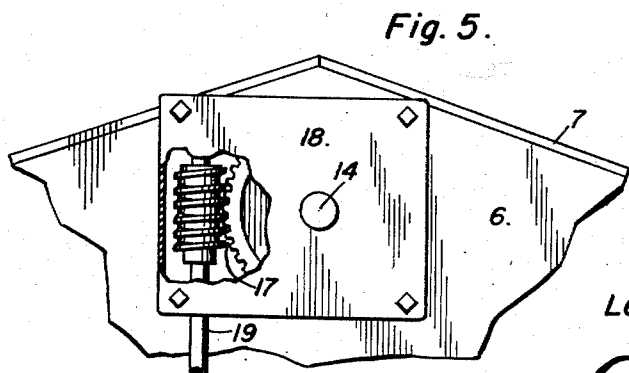
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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TOBACCO CURING BARN

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Application August 8, 1947, Serial No. 767,641

4 Claims. (Cl. 214-16)

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This invention relates to barns in which tobacco is hung for curing, and has particular reference to the provision of novel means for facilitating hanging of the tobacco sticks on and removal of the same from the tiers of tier poles while standing on the floor of the barn.

In accordance with the present invention, tier poles are arranged in a plurality of spaced tiers within the barn with a plurality of the tier poles in each tier, one tier pole of each tier being attached near its ends to flexible hoisting lines, guideways being provided to receive the ends of the tier poles and guide them for vertical movement, and winding drums being provided for the hoisting lines which are operable to lower the tier poles to a compacted position wherein the tobacco sticks may be conveniently hung thereon and to elevate them to vertically spaced positions in which they may remain until the tobacco is cured.

An object of the present invention is to provide a tobacco curing barn of the above kind which is relatively simple in construction and easy and convenient to use.

Another object of the invention is to provide manually releasable means for sustaining the weight of the tier poles when in their elevated positions, thereby relieving the hoisting lines of said weight.

The exact nature of the present invention, as well as other objects and features thereof, will become apparent from the following description when considered in connection with the accompanying drawings, in which:

Figure 1 is a vertical transverse sectional view of a tobacco curing barn constructed in accordance with the present invention, the tier poles being in completely lowered positions;

Figure 2 is a view similar to Figure 1 with the tier poles completely elevated;

Figure 3 is a central longitudinal section taken on line 3-3 of Figure 2;

Figure 4 is a fragmentary side elevational view of the barn showing the door provided in one side of the barn for the full length of the latter, which door may be opened to permit ready entrance to or exit from the barn between the vertical sets of tier poles;

Figure 5 is a fragmentary elevational view, partly broken away and in section, showing the upper portion of an end of the barn and the gearing between the vertical operating shaft and the horizontal drum carrying shaft;

Figure 6 is an enlarged fragmentary section taken substantially on line 6-6 of Figure 2 and partly broken away and shown in section; and

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Figure 7 is a fragmentary horizontal section taken on line 7-7 of Figure 6.

Referring in detail to the drawings, the barn proper may be of any well known or preferred construction and includes side walls 5, end walls 6 and a roof 7 erected upon a foundation 8. One of the side walls 5 has a lower section 9 hinged at 10 to provide a door extending the full length of the barn.

Tier poles 11 are arranged in a plurality of vertically spaced tiers transversely of the barn as clearly shown in Figure 3, there being a plurality of the tier poles in each tier. One tier pole of each tier is attached near its ends to a pair of flexible hoisting lines 12, and channel guideways 13 are vertically secured to the inner sides of the side walls 5 so that a pair of the same is provided in transverse alignment to receive the ends of the tier poles of each set for guiding them for vertical movement for substantially the entire height of the barn.

A shaft 14 is journaled within the barn centrally between the sides and adjacent the roof thereof, and secured on this shaft are a plurality of winding drums 15. One drum is provided for the hoisting lines of each set of superposed tier poles, and said hoisting lines extend upwardly and over guide pulleys 16 at the top and adjacent the sides of the barn and then inwardly to the drums 15 as shown clearly in Figures 1 and 2. The winding drums 15 are thus operable to simultaneously lower the tier poles of all of the tiers to a compacted position where the tobacco sticks may be conveniently hung thereon, as shown in Figure 1, and to elevate the tier poles to vertically spaced positions in which they remain until the tobacco is cured, as shown in Figures 2 and 3. In practice, after the tiers of tier poles are completely lowered as shown in Figure 1, they may be successively slightly elevated to have the tobacco sticks hung thereon. After the tobacco has been hung on all of the tier poles of the several tiers, they may be elevated so as to be in spaced relation to each other at the upper portion of the barn as shown in Figures 2 and 3, the uppermost tier poles being elevated to positions near the tops of the side walls 5. Any suitable means may be provided for operating the shaft 14, and a hand operated means accessible from the ground is merely shown by way of example. This particular means includes a worm gearing 17 provided in a case 18 attached to an end of the barn and having the adjacent end of shaft 14 extended into the same. The worm gearing includes a worm gear secured on the shaft 14 and a worm secured

on the upper end of a vertical shaft 19 extended into a housing 20 provided on or adjacent the ground. A hand crank 21 is operatively connected to shaft 19 by a bevel gearing 22 arranged within the housing 20. As the gearing 17 is of a self-locking nature, the shaft 14 will remain in any position to which it is turned so as to sustain the tier poles 11 in any position of vertical adjustment thereof.

After the tobacco sticks have been hung on the tier poles and the latter have been elevated to the position of Figures 2 and 3, it is desirable to sustain the weight of the tier poles by suitable means so as to relieve the hoisting lines 12 of such weight for the entire period in which curing of the tobacco takes place. For this purpose, tier pole sustaining elements 23 are pivoted to the guideways 13 and are swung by springs 24 to a position beneath the ends of the elevated tier poles 11, the side members or flanges of the guideways 13 being apertured as at 25 to permit passage of the elements 23 therethrough. In practice, the tier poles 11 are elevated slightly above the openings 25 while the elements 23 are withdrawn from the guides 13. The elements 23 are then allowed to swing into operative position beneath the ends of the tier poles, whereupon sufficient slack is provided in the hoisting lines 12 to permit the tier poles to lower slightly onto the ends of the elements 23. When this is done, the hoisting lines 12 are relieved of the weight of the tier poles 11 and the latter are sustained by the elements 23. One sustaining element is provided for each end of each tier pole 11, and all of the elements 23 associated with each guideway 13 are simultaneously retractable by means of an operating line 26 connected to horizontal arms 27 of the elements 23 and depending within convenient reach of a person standing on the floor of the barn.

It will be noted that when door 9 is opened, a person may readily enter the barn between any pair of adjacent vertical sets of tier poles. By reason of the construction and arrangement shown and described, hanging of the tobacco sticks may be easily and quickly accomplished while standing on the floor of the barn, after which the several tiers of tier poles may be elevated so as to be suspended in spaced relation within the upper portion of the barn. When the tier poles are elevated, the elements 23 are retracted out of the path of the tier poles 11 and suitably held in retracted position, such as by providing a rope holder for the lower end of each operating line or rope 26. The weight of the elevated tier poles may then be placed upon the elements 23 as previously described, after which the tobacco is left for curing in the usual way.

From the foregoing description, it is believed that the construction, operation and advantages of the present invention will be readily understood and appreciated by those skilled in the art. Modifications and changes in the details of construction are contemplated such as fall within the scope of the invention as claimed. When all of the tier poles are lowered, they can be tied together and hoisted to the top of the barn, thereby permitting use of the barn for other purposes when not being used for curing tobacco.

Having described the invention, what is claimed as new is:

1. In a tobacco curing barn, tier poles arranged in a plurality of vertically spaced tiers with a plurality thereof disposed in horizontally spaced relation in each tier, a plurality of pairs of flexible hoisting lines, one tier pole of each tier being attached near its ends to a pair of said hoisting lines, the poles being in sets with the poles of each set in the same vertical plane, a plurality of pairs of vertical guideways, each pair of guideways receiving the ends of the tier poles of each set and guiding the same for vertical movement, and winding drums for each pair of the hoisting lines operable to lower the set of tier poles attached thereto to a compacted position in the lower portion of the barn where the tobacco sticks may be hung thereon from the floor of the barn and to elevate them to vertically spaced positions in which they may remain until the tobacco is cured.

2. In a tobacco curing apparatus, a curing barn, tier poles arranged transversely of said barn in a plurality of vertically spaced tiers with a plurality thereof disposed in horizontally spaced relation in each tier, a plurality of pairs of flexible hoisting lines, the poles being in sets with the poles of each set in the same vertical plane, one tier pole of each tier being attached near its ends to a pair of said hoisting lines, a plurality of pairs of vertical guideways mounted at the sides of the barn, receiving the ends of the tier poles of each vertical set to guide the same for vertical movement, and winding drums for each pair of hoisting lines in the upper portion of and centrally between the sides of the barn, said winding drums being operable to simultaneously elevate the tier poles attached thereto to vertically spaced positions in which they may remain until the tobacco is cured and to lower them to a compacted position in the lower portion of the barn.

3. The construction defined in claim 2, wherein one side of the barn is provided in its lower portion with a door extending the full length of the barn and permitting entrance and exit between the vertical sets of tier poles.

4. The construction defined in claim 2, in combination with manually releasable elements associated with the guideways and normally projected in the path of the ends of the tier poles for sustaining the latter in the vertically spaced elevated positions when the hoisting lines are slackened.

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