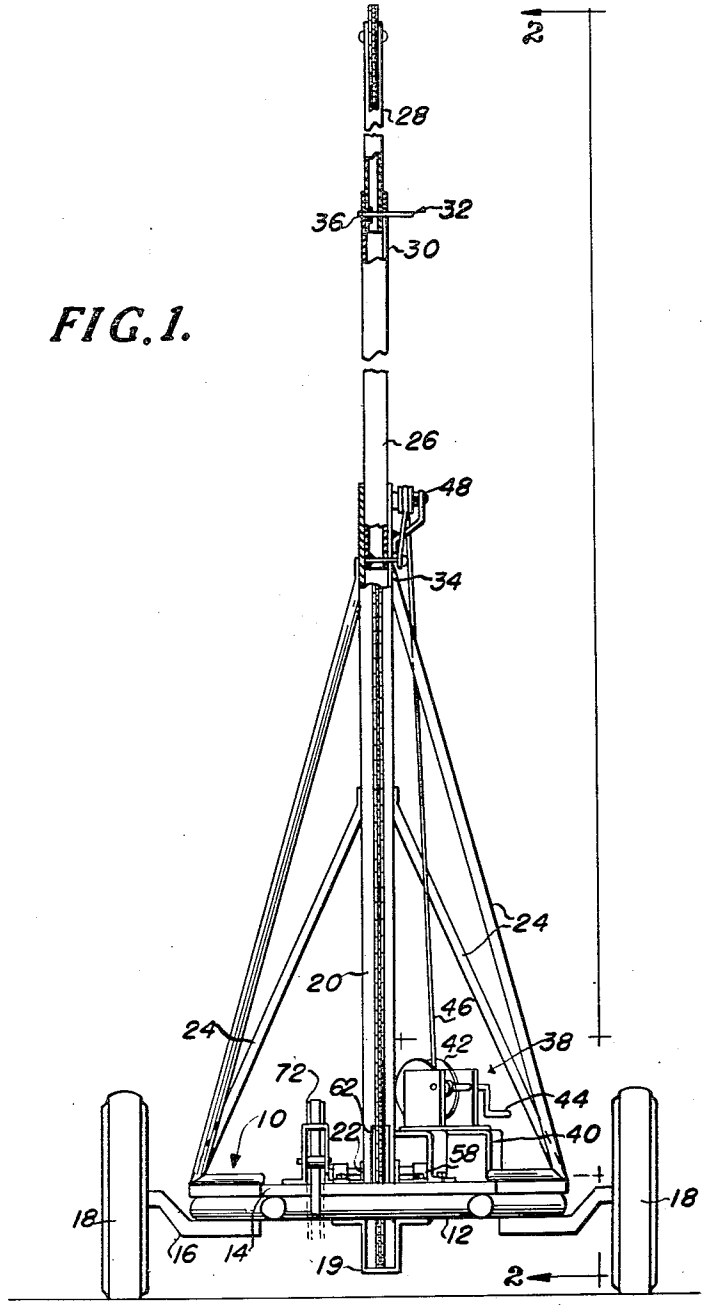
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TOBACCO ELEVATOR

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FIG. 1.



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FIG. 2.

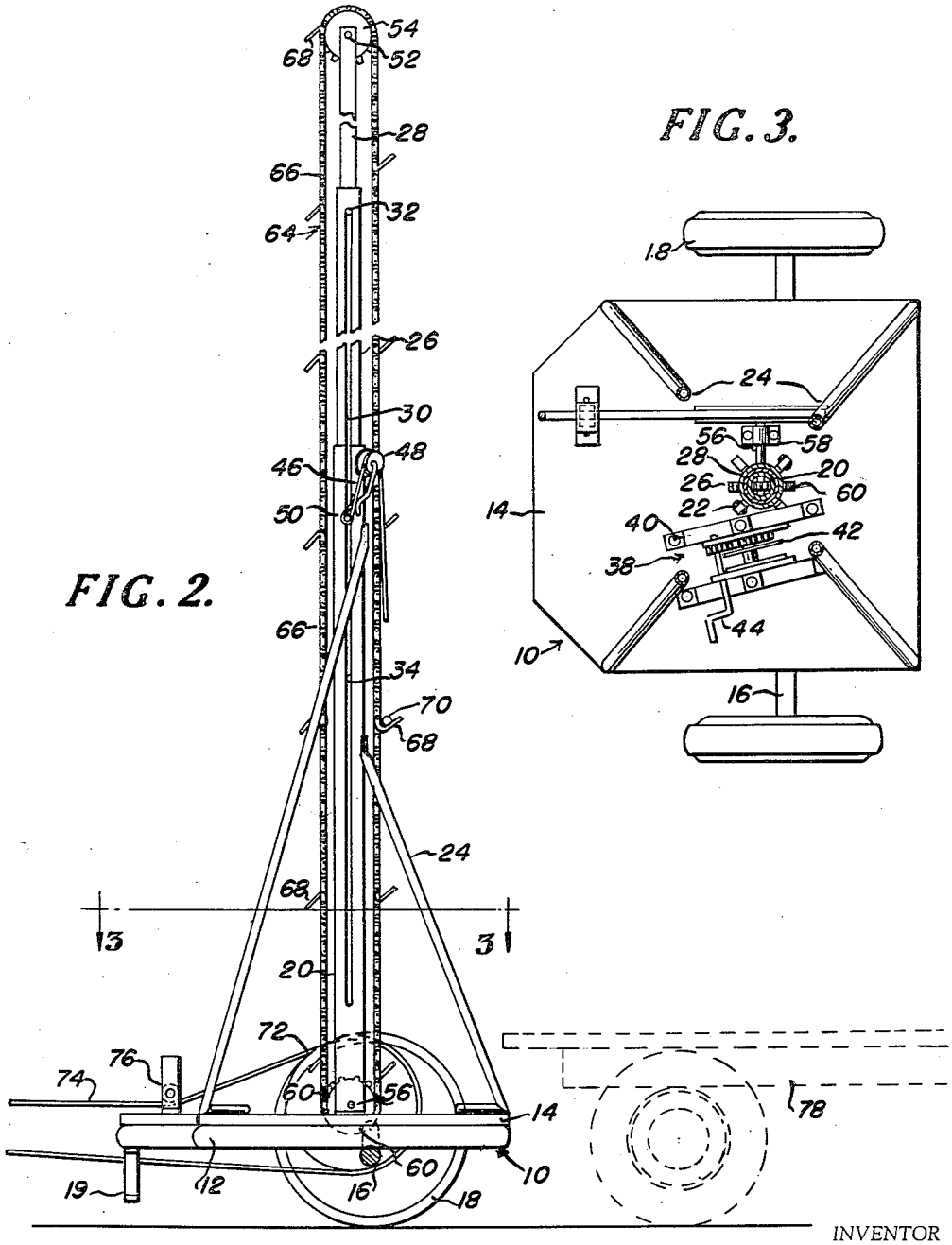


FIG. 3.

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2,774,461

Patented Dec. 18, 1956

2,774,461

TOBACCO ELEVATOR

Stanley Oral Young, Cooper, Ky.

Application March 22, 1954, Serial No. 417,790

1 Claim. (Cl. 198—139)

My invention relates to elevators and the like and more particularly to a tobacco elevator which is adapted to elevate tobacco sticks in a barn.

It is well known in the tobacco growing art that when the tobacco plants have ripened in the field they are cut and speered on elongated sticks for convenient storing in the drying barn. It is usual to store a great number of the sticks in the extreme upper portion of the barn and since each stick usually contains six or eight plants with each plant having fifteen or twenty leaves, the sticks weigh in the neighborhood of thirty or forty pounds each. Consequently, is is a dangerous and laborious task, requiring several laborers, to manually elevate the tobacco sticks from the ground up to the top of the storing barn.

The primary purpose of my invention is the provision of a power actuated elevating mechanism which will perform the laborious task of elevating the tobacco sticks from the ground to the top of the barn so as to overcome the dangers and difficulties mentioned above.

A further object of my invention is the provision of a tobacco stick elevating mechanism which may operate at various adjusted vertical positions so that it may be utilized throughout the entire area of a barn having a slanted roof.

A still further object of my invention is the provision of a tobacco elevator which may be easily operated, is simple in construction and can be economically produced.

A still further object of my invention is the provision of an elevator having an adjustable chain conveyor which is adapted to be operated at different heights by adjusting the length of the chain conveyor.

Still another object of the invention is the provision of a tobacco elevator which is adapted to be powered by the conventional power take-off of a tractor.

These and other objects of my invention will become more apparent during the course of the following description and appended claim.

The invention may best be understood with reference to the accompanying drawings wherein one illustrative embodiment of the invention is shown. In the drawings:

Figure 1 is a front elevational view illustrating the preferred embodiment of my invention;

Figure 2 is a view taken along the line 2—2 of Figure 1; and

Figure 3 is a view taken along the line 3—3 of Figure 2.

Referring now to the drawings, 10 indicates a portable frame upon which the tobacco elevator of my invention is mounted. The frame 10 preferably includes an undercarriage 12 composed of a plurality of metal tubes welded together to form a generally rectangular base having its forward corners cut off. Mounted on top of the undercarriage 12 is a wooden platform 14 extending in substantially a horizontal plane. Extending from opposite sides of the undercarriage are a pair of crank axles 16 having mounted on the outer ends thereof a pair of supporting wheels 18. The forward portion of the undercarriage 12 is provided with a clevis 19 which is adapted to be hitched to the draw bar of a conventional tractor.

Fixedly mounted on the central portion of the platform 14 is an upwardly extending elongated tubular support 20. The lower end of the support 20 is fixedly secured to the platform 14 preferably by means of angle brackets 22 bolted or otherwise secured to the support 20 and platform 14. In order to steady the upper end of the support 20, a plurality of braces 24 may be secured between the corners of the platform 14 and the upper end of the support 20.

Mounted within the elongated tubular support 20 for raising and lowering movement with respect thereto is a pair of elongated, tubular telescoping members 26 and 28. The lower tubular telescoping member 26 has its outside diameter slightly less than the inside diameter of the tubular support so as to set snugly therein. The upper tubular telescoping member 28 has its outside diameter slightly less than the inside diameter of the member 26 and is adapted to telescope therein. The lower tubular telescoping member 26 has an elongated longitudinal slot 30 extending substantially throughout the length thereof and a transverse handle 32 extends outwardly from the lower end of the telescoping member 28 through the slot 30. Tubular support 20 also is provided with a longitudinal elongated slot 34 which extends substantially throughout its length and is aligned with the slot 30 of the lower telescoping member 26 for extension of the handle therethrough. The handle 32 serves as a means for preventing rotation between the telescoping members and the support and also as a means to extend and retract the upper telescoping member 28 within the lower member 26. For the purpose of holding the telescoping members in extended relationship, the lower telescoping member 26 is provided with aperture 36 in its upper portion opposite the slot 30 which is adapted to receive the inner end of the handle 32. The handle 32 is mounted in the member 28 for transverse sliding movement for the purpose of permitting the inner end thereof to enter aperture 36. While the holding means, above described, is the preferred embodiment, it is to be understood that other means may be utilized to maintain the telescoping members in extended position.

Means generally indicated at 38 are provided for raising and lowering the telescoping members 26 and 28 together with respect to the support 20. Such means preferably include a cable, pulley and winch assembly, however, other means may be utilized. Mounted on the platform 14 is a winch frame 40 carrying a conventional winch device which includes a cable spool 42, a crank 44 and a conventional ratchet and gear, not shown. A cable 46 has one end wrapped around spool 42 and then extends over a pulley 48 mounted on the upper end of the platform 20 from where opposite end is secured to a pin 50 mounted on the lower end of the lower telescoping member 26 and extending through slot 34 in support 20.

The upper end of the telescoping member 28 has mounted thereon a horizontal shaft 52 which carries a sprocket wheel 54. A lower shaft 56, journaled in bearings 58 mounted on platform 14, extends through the lower end of the support 20 and has a sprocket wheel 60 mounted thereon so as to be disposed within slots 62 cut into the lower end of the support 20 and platform 14 respectively. Extending around the sprocket wheels 54 and 60 is an endless chain conveyor 64 composed of a series of detachable links 66. Spaced along the links 66 are a plurality of angularly extending hook-like elements 68 which are adapted to engage conventional tobacco sticks 70 so as to elevate the same.

Mounted on one end of the shaft 56 to extend through a suitable slot in the platform 14 is a pulley 72 carrying one end of a belt 74, the other end of which is adapted

to be mounted on the conventional power take-off of a tractor, not shown. A belt tightener **76** may be provided to maintain the belt in a taut condition.

Operation

As was mentioned above, my elevator is particularly adapted for use in elevating tobacco sticks to the upper portion of a barn utilized to store the tobacco. It will be readily understood that the upper portion of a barn is a great deal higher than any entrance thereto and consequently, in order for the elevator to be moved into and out of the barn, it must be capable of being retracted into a position such that its vertical height will permit its entry through the doorway. It is also essential that the elevator, once it is inside the barn, be capable of extension to a height sufficient to reach the uppermost portion of the barn. Likewise, since it is a common construction to slant the roof of the barn for proper drainage, it is essential that the operating height of the elevator be vertically adjustable between the position whereby the elevator may pass through the doorway and the fully extended position so as to render it operable at intermediate heights for working in areas where the roof of the barn is lower than the fully extended height of the conveyor.

With the above in mind, it will be readily understood that my tobacco elevator is drawn through the doorway of a barn by a tractor with the telescoping members **26** and **28** fully retracted with respect to each other and with respect to the support **20**. Once the elevator is moved inside the barn, the winch, cable and pulley raising and lowering means are actuated to raise the telescoping members together to a suitable working height. The endless chain conveyor **66** is then adjusted by removing or adding a suitable number of links and the conveyor is then ready for rotation to be imparted to the pulley **72** by the operation of the tractor power take-off mechanism in engagement with belt **74**. As the endless chain conveyor **64** travels around the sprockets **54** and **60**, the tobacco sticks **70** are taken one by one from a carrying trailer, such as trailer **78** illustrated in Figure 1, and placed in engagement with the elements **68** during their upward flight. The tobacco sticks **70** are carried upwardly by the elements **68** where they are grasped by a workman in the upper portion of the barn and placed in position for storing.

When it is necessary to reach the upper portion of the barn at a point where the roof is highest, the telescoping members **26** and **28** are first fully extended by an operator grasping the handle **32** and raising the telescoping member **28** until the handle **32** moves into engagement with the aperture **36** where it is held in extended position. The telescoping members may then be raised together into any vertical position by the raising and lowering means **38**. After a suitable position is reached, the endless chain conveyor is then prepared for operation by removing or adding appropriate links.

It is to be noted that the raising and lowering means is such that the endless conveyor **66** can be made taut at any given length thereof depending on the number of links connected together. Consequently, the elevator may be operated at any adjusted vertical position corresponding to the number of links in the chain between the limits of the extended and retracted positions of the telescoping members and support **20**.

I am familiar with the tobacco elevator disclosed in U. S. Patent No. 2,533,813, issued to J. M. Jones on December 12, 1950, however, my tobacco elevator provides many distinct advantages over the tobacco elevator described by Jones. For example, my elevator overcomes the limitations apparent in the Jones tobacco elevator which is adapted to operate in only one vertical position wherein the conveyor is fully extended and accordingly, is useful only in that area of a slanted roof barn where the height of the roof is sufficient to permit the conveyor to fully extend. With my elevator, as can be seen from the above description, operation may take place in any area of the barn and is not restricted to that area where the roof is higher than the full extent of the conveyor.

From the above, it can be seen that I have provided a tobacco conveyor which is capable of operation in a plurality of vertical positions and which overcomes the difficulties of tobacco elevators heretofore known. The elevator includes a minimum number of parts which may be easily and economically assembled and operated with a minimum of workers with maximum safety.

It is to be understood, however, that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same and that various changes may be made without departing from the spirit of the invention or the scope of the appended claim.

I claim:

A tobacco elevator comprising a wheeled frame, an elongated tubular support fixed to said frame and extending upwardly therefrom, said support having a longitudinal slot extending downwardly from the upper end thereof, upper and lower telescoping members mounted within said elongated tubular support for raising and lowering movement with respect thereto, said lower telescoping member being tubular and having a longitudinal slot formed therein intermediate its ends in alignment with the longitudinal slot of said tubular support, a pin extending transversely outwardly from the lower end of said lower telescoping member through said support slot, said upper telescoping member being tubular and having a transverse handle extending from the lower portion thereof outwardly through said aligned slots, aperture means on said lower telescoping member cooperating with said handle for holding said upper telescoping member in vertically adjusted position with respect to said lower telescoping member, means on said frame connected with said pin for raising and lowering said telescoping members within said support while said telescoping members are held in a relative adjusted position and an endless chain conveyor extending between the bottom of said support and the top of said upper telescoping member, said endless chain being adjustable in length so as to operate at different heights within a slanted roof barn in accordance with the relative adjustment of said telescoping members and their vertical position with respect to said support.

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