Oct. 9, 1951 R. ANDERSON 2,571,003

TOBACCO LOOPER

Filed June 24, 1947 2 Sheets-Sheet 1

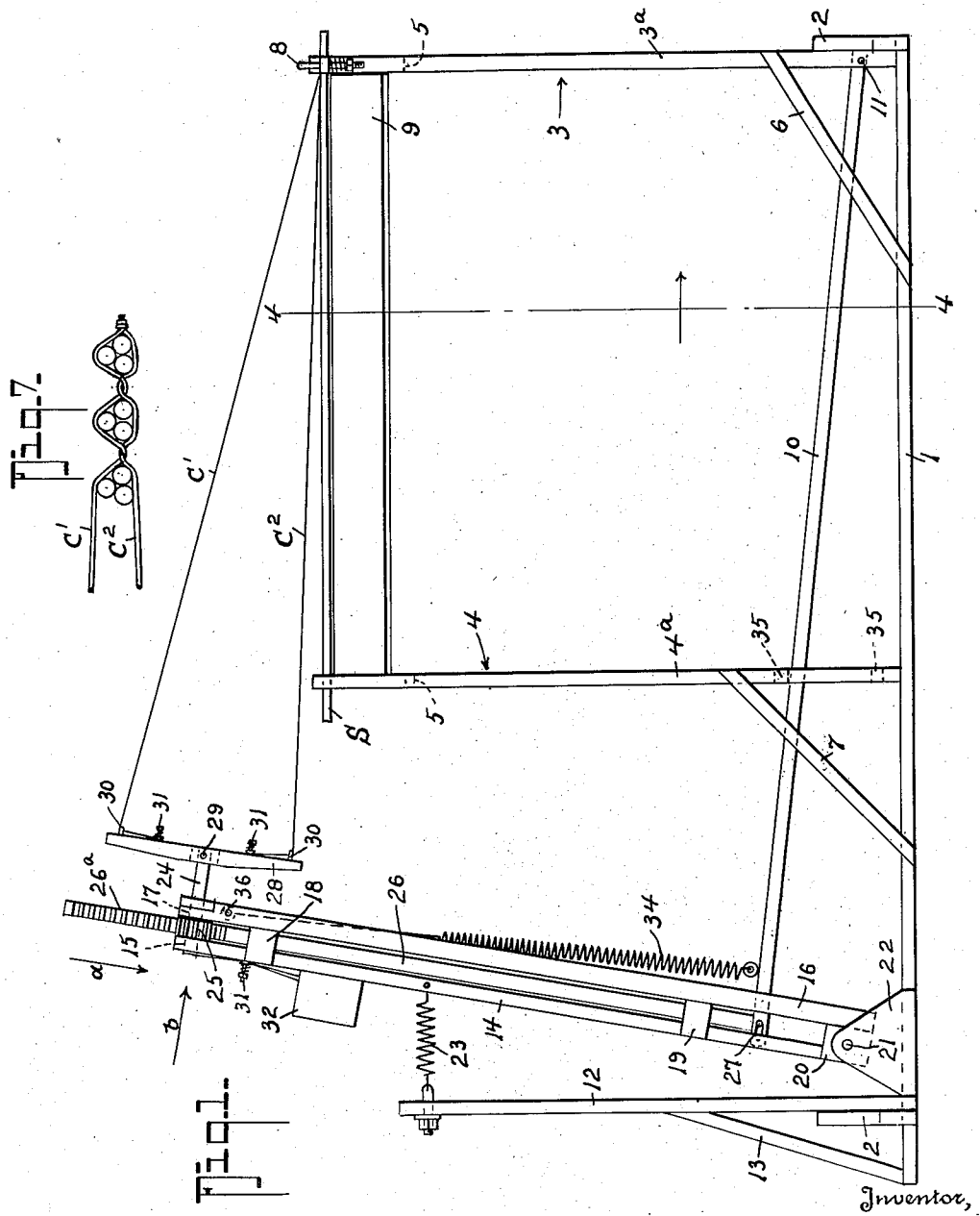

Fig. 7.

Fig. 1.

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Fig. 2.

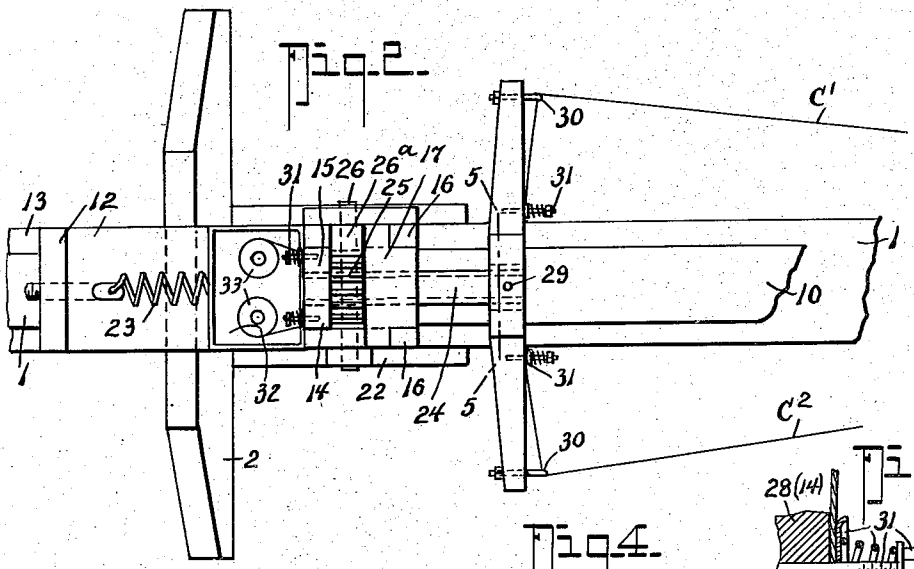


Fig. 6.

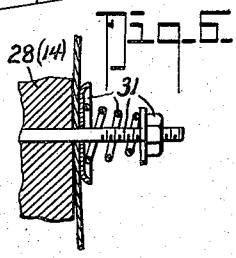


Fig. 4.

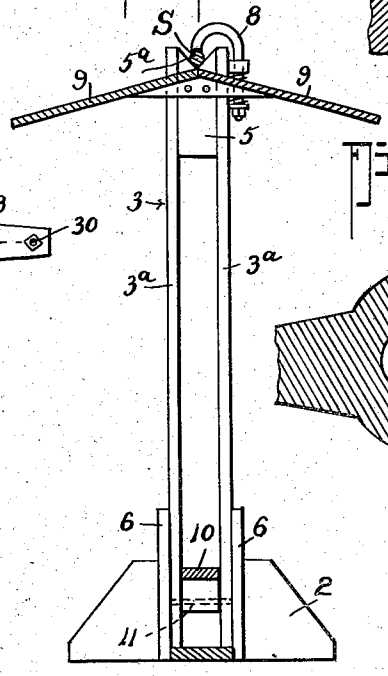


Fig. 3.

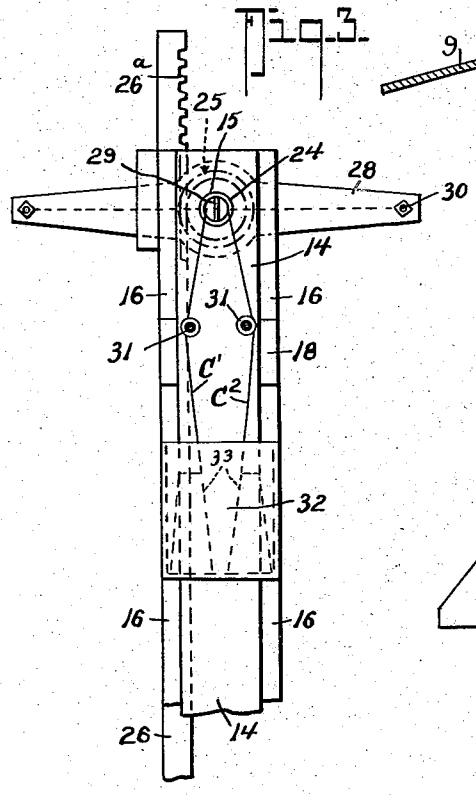
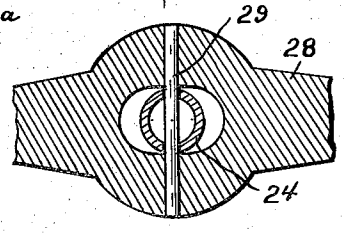


Fig. 5.



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Patented Oct. 9, 1951

2,571,003

UNITED STATES PATENT OFFICE

2,571,003

TOBACCO LOOPER

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Application June 24, 1947, Serial No. 756,767

9 Claims. (Cl. 214—5.5)

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In preparing tobacco for the market, the tobacco is brought from the field in the green state, strung on sticks, and hung in a tobacco barn where it is cured by artificial heat. It takes about a week to cure out a barn. About six hundred sticks of tobacco are hung in a barn about sixteen feet square and fourteen feet high. The barn is fitted inside with tier poles, set about four feet apart and arranged in "rooms" so that the tobacco rests in layer above layer, extending from about six feet above the floor to the eaves of the barn. The tobacco is strung on the sticks in bunches of about three leaves to the bunch. The bunches, called "hands," are arranged about sixteen hands on either side of a stick. The conventional method is to place a stick in a "horse," i. e., a frame that support the ends of the stick. Ordinary wrapping string is used, and the hands are secured to the stick by making a turn or wrap around the stems.

My invention has to do with the securing of the hands together and to the stick, and it has for its objects:

1. To provide a simple, inexpensive apparatus for looping the cord about the hands and locating the hands on the stick.

2. To provide a tobacco looper by whose use the hands are so held on the stick that, no matter how the stick is held in transferring it from the looper to the tier poles, the tobacco will remain on the stick.

3. To provide a means to secure the hands to the stick in such position that the lower ends of the hands are held out away from the stick so that heat is permitted to pass through them and thus effect a better cure than with other methods of looping.

To the attainment of the aforesaid objects, my invention resides in the novel features of construction, combinations, and arrangements of parts, which will hereinafter be described in detail and will then be specifically pointed out in the appended claims, reference being had to the accompanying drawings in which—

Fig. 1 is a side elevational view of a tobacco looper embodying my invention.

Fig. 2 is an enlarged detail plan view of a portion of the same, looking in the direction of the arrow *a* in Fig. 1, and with the cross arm rotated 90° from the position shown in Fig. 1.

Fig. 3 is a detail elevation of a portion of the looper, looking in the direction of the arrow *b* in Fig. 1, and on the same scale as Fig. 2.

Fig. 4 is a cross section on the line 4—4 of Fig. 1.

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Fig. 5 is a detail section on the line 5—5 of Fig. 2.

Fig. 6 is a detail section of one form of cord-tensioning means that may be used in my apparatus.

Fig. 7 is a diagrammatic view illustrating the kind of loop that can be made by the use of my invention.

In the drawings, in which like numerals and letters of reference indicate like parts in all the figures, 1 represents a base board to which cross pieces or feet 2 and standards 3 and 4 are suitably secured. The standards 3 and 4 are each composed of a pair of parallel bars 3^a, 4^a between whose upper ends is secured a saddle block 5. The standards 3 and 4 are suitably braced as at 6 and 7 respectively. The stick S is held in the V-shaped top end, 5^a, of the saddle blocks 5 by a spring latch 8 suitably mounted on the standard 3.

Tables 9, right and left sides, are mounted on the standards 3 and 4, on which the tobacco leaves may rest while the looping takes place.

A foot pedal 10 lies between the bars 3^a, 3^a and 4^a, 4^a and is pivoted to the bars 3^a, as at 11 for a purpose presently to appear.

The posts 3 and 4 are spaced apart a suitable distance to hold the stick S, the post 3 being located adjacent one end of the base board 1. Adjacent the other end of the base board 1 is a post 12, braced at 13, and secured to the adjacent foot 2.

Between the post 12 and standard 4 and adjacent post 12 are bearing ears 22, between which is pivoted, at 21, a supporting post 14 having a shaft bearing 15. A pair of spaced pedal-guide bars 16 are held parallel to the post 14 by the blocks 18, 19 and 20 and support a second shaft bearing 17.

The pedal 10 projects between the bars 16 and has a suitable pivotal connection 27 to rack-rod 26 whose rack 26^a engages a pinion 25 on a hollow shaft 24 that is mounted in the bearings 15 and 17. The post 14 and its carried parts are held in an inclined position by an adjustable tension spring 23 connecting it with post 12.

A cross arm 28 is mounted on the shaft 24 by means of a pivotal connection 29 and has a cord-guide eye 30 adjacent each of its ends and adjustable cord-tensioning devices 31 located at suitable places between the ends of the cross arm and the adjacent end of shaft 24.

A cord holder box 32 is mounted on post 14 in which two cord spools or bobbins 33 are suitably held. The cords C^1 and C^2 pass from the

bobbins 33 through cord-tensioning devices 31 that are located on the post 14 and from thence the cords pass through the hollow shaft 24 where they divide, one cord C^1 passing through one tensioning device 31 on the cross arm and through one eye 30, while the other cord C^2 passes through the other tensioning device 31 on the cross arm and through the other eye 30.

The rack 26a and pinion 25 are so designed that the shaft can turn through one revolution only, back and forth. To this end the movement of the pedal 10 is limited by suitably located stops 35 secured between the bars 4a (see Fig. 1). A return spring 34, secured to the pedal and anchored at 36 to the bars 16, returns the pedal to its elevated position with the cross arm 28 in vertical (normal) position.

Operation

In operating my machine, two persons (called feeders) are provided, one at either side of the machine. The first operator (the feeder at one side of the machine) takes a tobacco stick and fastens strings or cords C^1 and C^2 to the stick about six inches from one end. This is best done by knotting the ends of the cords or strings together and then making a noose over the end of the stick, thus providing a knot for the first hand of tobacco to rest against.

The stick is then placed on the standards 3 and 4 and the knotted end of the cord and the stick are held down securely under the spring clamp or latch 8 so that proper tension may be applied to the cord. The tensions should be so adjusted as to just hold the tobacco in place and keep the cords from flopping as the cross arm turns.

The other operator (the feeder at the other side of the machine) now inserts a hand of tobacco and steps on treadle 10. This causes cross arm 28 to make one complete revolution, thereby putting a twist on strings or cords C^1 and C^2, close up to the tobacco. The first mentioned operator (hereinafter called operator A) now inserts a hand, pushing it up tight against the first hand and the second mentioned operator (hereinafter called operator B) releases the treadle 10. Spring 34 causes the treadle to rise and thereby return cross arm 28 to its initial position, placing another twist on the strings and securing the second of the hands in place. These operations are repeated until the stick contains the desired amount of tobacco. Operator B then pulls out enough string to tie the tobacco to the stick, breaks the string and hands the loose ends to operator A, who knots them together and gets the next stick ready while operator B finishes tying the string to the loaded stick.

As operator B lifts the loaded stick from the standards 3 and 4, operator A inserts or places a new one in position.

By pivoting the cross arm to the shaft, provision is thereby made for the arm to give with any unusual strain on the strings and still hold both strings tight.

In adjusting the inclination of supporting post 14 it should be so tilted that the axis of shaft 24 will line up with the stick at latch 8 and the cross arm should lie normal to this axis, as shown in Fig. 1. Spring 23 should be adjusted so that its pull will not be too strong. In case an operator, in feeding the machine, should strike one of the strings harder than the other or thrust his hand in hard enough to cause the strings to pull through the guides, the spring 23 should give and permit the cross arm to swing forward and ease the strain. This arrangement holds the strings at the proper tension, where otherwise a violent move on the part of an operator could cause one or both strings to feed through the tensioning devices and become slack and catch on the tobacco stick.

While I have shown and described my machine as manually operated by foot pedal, it is possible for it to be motor driven by interposing any suitable known means for translating the rotary motion of the motor into reciprocating motion in rod 26, all without exercising more than mechanical skill.

While I have shown the arm 28 as pivoted to the shaft 23, the arm could be made fast to the shaft 24 although it probably would not operate as satisfactorily as the pivoted arm. Furthermore the spring tension device 31 on one side of the arm for one of the strings can be omitted and the corresponding spring tension device 31 on the post made to perform the required tension. In other words, for each string one tension device 31 on the post and one tension device on the arm can be employed and adjusted so that the tensions on the two strings will be equalized, though I prefer to use the two sets of tension devices as shown.

Other modifications will be obvious to those skilled in the art without departing from the scope of the appended claims.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, operation and advantages of my invention will be clear to those skilled in the art.

What I claim is:

1. In a tobacco looper, a support, a stick holder mounted on said support, a rotatable shaft mounted on said support adjacent one end of said stick holder and carrying a cross arm having a pair of spaced-apart string guides, two string bobbins carried on said support, whose strings are passed through said string guides respectively, the free ends of the strings being adapted to be tied at a place remote from said cross arm to a stick held in said stick holder, and means for imparting 360° oscillations to said shaft.

2. In a tobacco looper, a stick holder, a stick in said holder, two strings one end of each of which being tied to one end of said stick, means to hold said strings lengthwise of said stick and separated to receive between them hands of tobacco, and means to turn said strings back and forth about one another after each hand is inserted between the strings to secure the hands together on said stick.

3. In a tobacco looper, a base, two stick-receiving and holding standards mounted in spaced relation on said base, means to secure a stick in place on said standards, an upright support mounted on said base in line with and spaced from said standards, a hollow shaft mounted in bearings in said upright support, a cross arm on said shaft and having cord guides at its ends, a cord holder on said upright support, two cord bobbins in said holder, the cords from which are passed through said hollow shaft, and, respectively, through said cord guides, means securing the ends of said cords to the end of a stick, which end is farthest from said cross arm, and means to turn said shaft first 360° in one direction and then 360° back in the reverse direction alternately to twist the cords together between each two hands of tobacco placed between the cords.

4. In a tobacco looper, a base, two stick-receiving and holding standards mounted in spaced relation on said base, means to secure a stick in place on said standards, an upright support mounted on said base in line with and spaced from said standards, a hollow shaft mounted in bearings in said upright support, a cross arm on said shaft and having cord guides at its ends, a cord holder on said upright support, two cord bobbins in said holder, the cords from which are passed through said hollow shaft and, respectively, through said cord guides, means securing the ends of said cords to the end of a stick, which end is farthest from said cross arm, means to turn said shaft first 360° in one direction and then 360° back in the reverse direction alternately to twist the cords together between each two hands of tobacco placed between the cords, and tables located at each side of said standards and adjacent the stick supported on the standards to hold the tobacco leaves while the looping operation continues.

5. In a tobacco looper, a base, two stick-receiving and holding standards mounted in spaced relation on said base, means to secure a stick in place on said standards, an upright support mounted on said base in line with and spaced from said standards, a hollow shaft mounted in bearings in said upright support, a cross arm on said shaft and having cord guides at its ends, a cord holder on said upright support, two cord bobbins in said holder, the cords from which are passed through said hollow shaft and, respectively, through said cord guides, means securing the ends of said cords to the end of a stick, which end is farthest from said cross arm, means to turn said shaft first 360° in one direction and then 360° back in the reverse direction, alternately to twist the cords together between each two hands of tobacco placed between the cords, means pivotally mounting said upright support on said base, and spring means holding said upright support in an inclined-toward-the-stick position.

6. In a tobacco looper, base, two stick-receiving and holding standards mounted in spaced relation on said base, means to secure a stick in place on said standards, an upright support mounted on said base in line with and spaced from said standards, a hollow shaft mounted in bearings in said upright support, a cross arm on said shaft and having cord guides at its ends, a cord holder on said upright support, two cord bobbins in said holder, the cords from which are passed through said hollow shaft and, respectively, through said cord guides, means securing the ends of said cords to the end of a stick, which end is farthest from said cross arm, means to turn said shaft first 360° in one direction and then 360° back in the reverse direction alternately to twist the cords together between each two hands of tobacco placed between the cords, a stationary post, a spring connection between said stationary post and said upright support, and means pivoting said upright support to said base.

7. In a tobacco looper, a base, two stick-receiving and holding standards mounted in spaced relation on said base, means to secure a stick in place on said standards, an upright support mounted on said base in line with and spaced from said standards, a hollow shaft mounted in bearings in said upright support, a cross arm on said shaft

and having cord guides at its ends, a cord holder on said upright support, two cord bobbins in said holder, the cords from which are passed through said hollow shaft and, respectively, through said cord guides, means securing the ends of said cords to the end of a stick, which end is farthest from said cross arm, and means to turn said shaft first 360° in one direction and then 360° back in the reverse direction alternately to twist the cords together between each two hands of tobacco placed between the cords, said cross arm being pivoted to said shaft.

8. In a tobacco looper, a base, two stick-receiving and holding standards mounted in spaced relation on said base, means to secure a stick in place on said standards, an upright support mounted on said base in line with and spaced from said standards, a hollow shaft mounted in bearings in said upright support, a cross arm on said shaft and having cord guides at its ends, a cord holder on said upright support, two cord bobbins in said holder, the cords from which are passed through said hollow shaft and, respectively, through said cord guides, means securing the ends of said cords to the end of a stick, which end is farthest from said cross arm, means to turn said shaft first 360° in one direction and then 360° back in the reverse direction alternately to twist the cords together between each two hands of tobacco placed between the cords, said cross arm being pivoted to said shaft, means pivotally mounting said upright support on said base, and spring means holding said upright support in an inclined-toward-the-stick position.

9. In a tobacco looper, a base, two stick-receiving and holding standards mounted in spaced relation on said base, means to secure a stick in place on said standards, an upright support mounted on said base in line with and spaced from said standards, a hollow shaft mounted in bearings in said upright support, a cross arm on said shaft, said cross arm having cord guides, a cord holder mounted on said upright support, two cord-carrying bobbins in said holder, the cords from which bobbins are passed through said hollow shaft and, respectively, through said cord guides, means securing the ends of said cords to the end of a stick, which end is farthest from said cross arm, means to turn said shaft first 360° in one direction and then 360° back in the reverse direction alternately to twist the cords together between each two hands of tobacco placed between the cords, said cross arm being pivoted to said shaft, means pivotally mounting said upright support on said base, spring means holding said upright support in an inclined-toward-the-stick-position, and cord tensioning devices carried by said upright support in a position to engage said cords after they leave the bobbins.

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