

Jan. 23, 1968

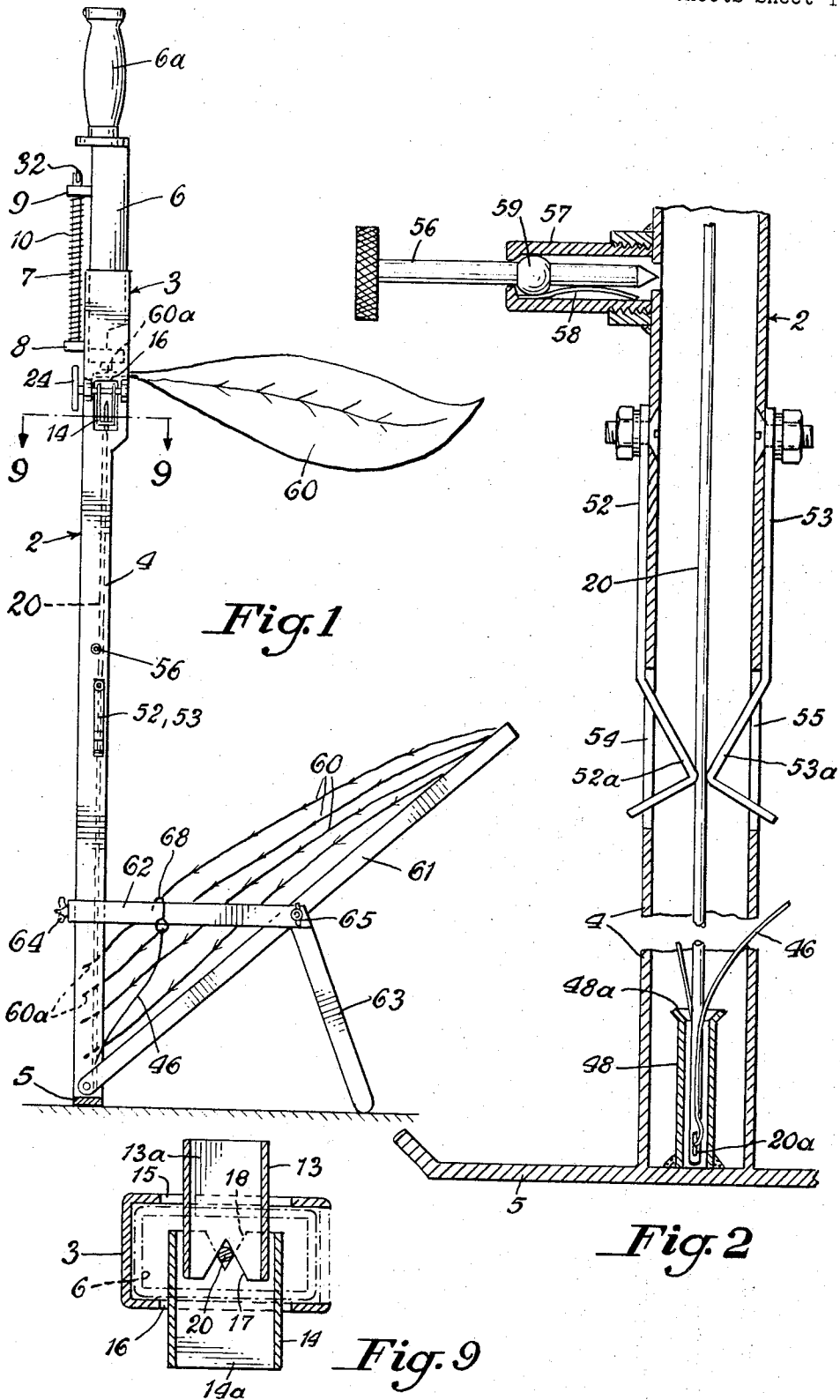
M. GARCIA

3,365,082

DEVICE FOR THREADING TOBACCO LEAVES UPON A NEEDLE

Filed May 25, 1965

4 Sheets-Sheet 1



Jan. 23, 1968

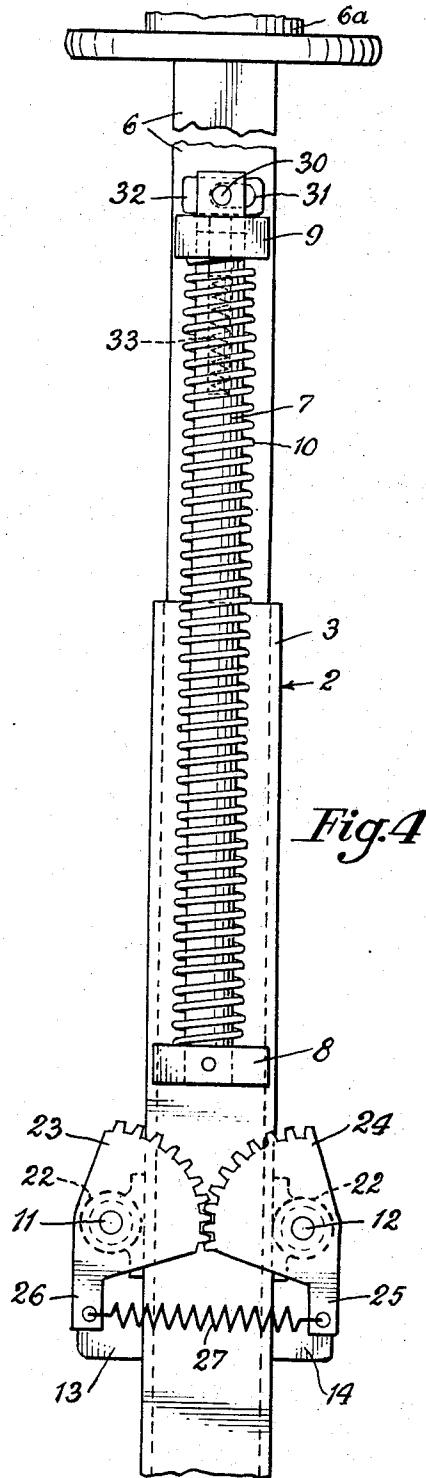
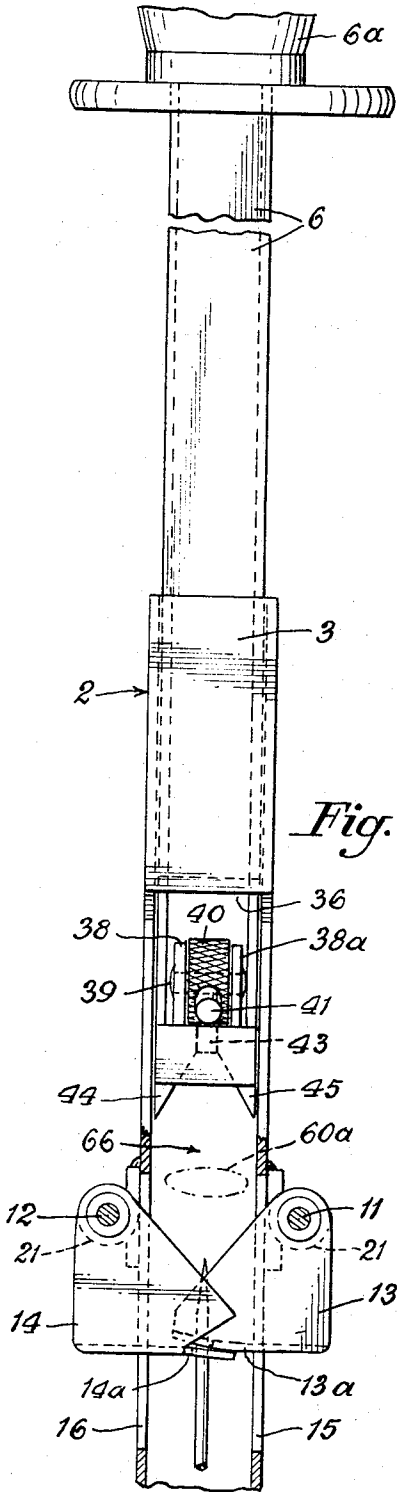
M. GARCIA

3,365,082

DEVICE FOR THREADING TOBACCO LEAVES UPON A NEEDLE

Filed May 25, 1965

4 Sheets-Sheet 2



Jan. 23, 1968

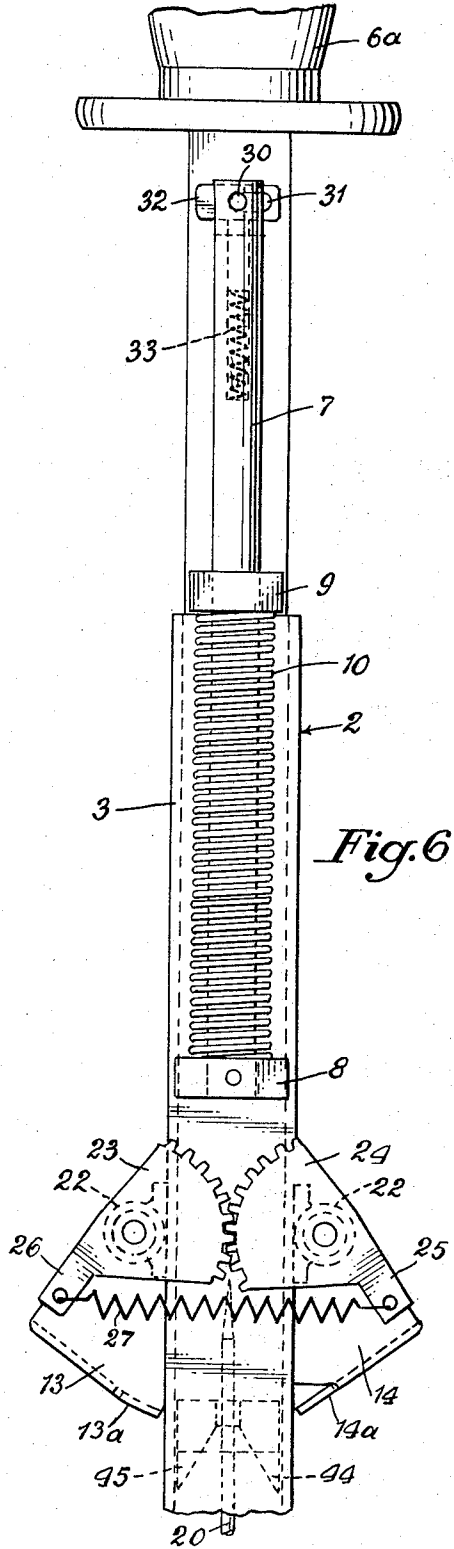
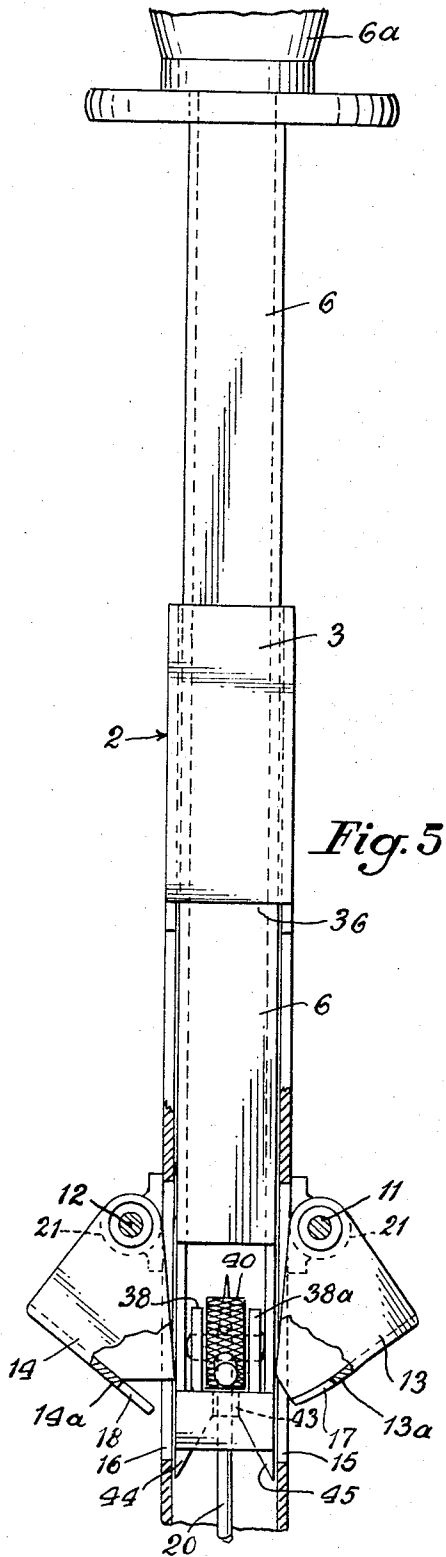
M. GARCIA

3,365,082

DEVICE FOR THREADING TOBACCO LEAVES UPON A NEEDLE

Filed May 25, 1965

4 Sheets-Sheet 3



Jan. 23, 1968

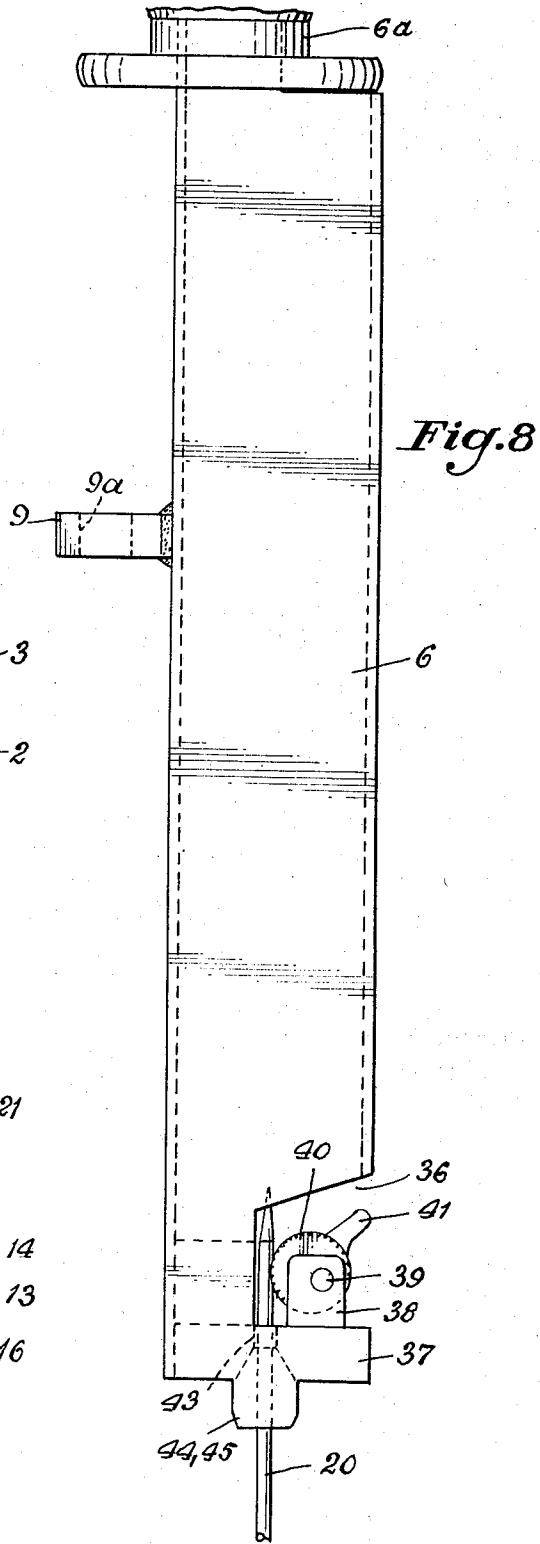
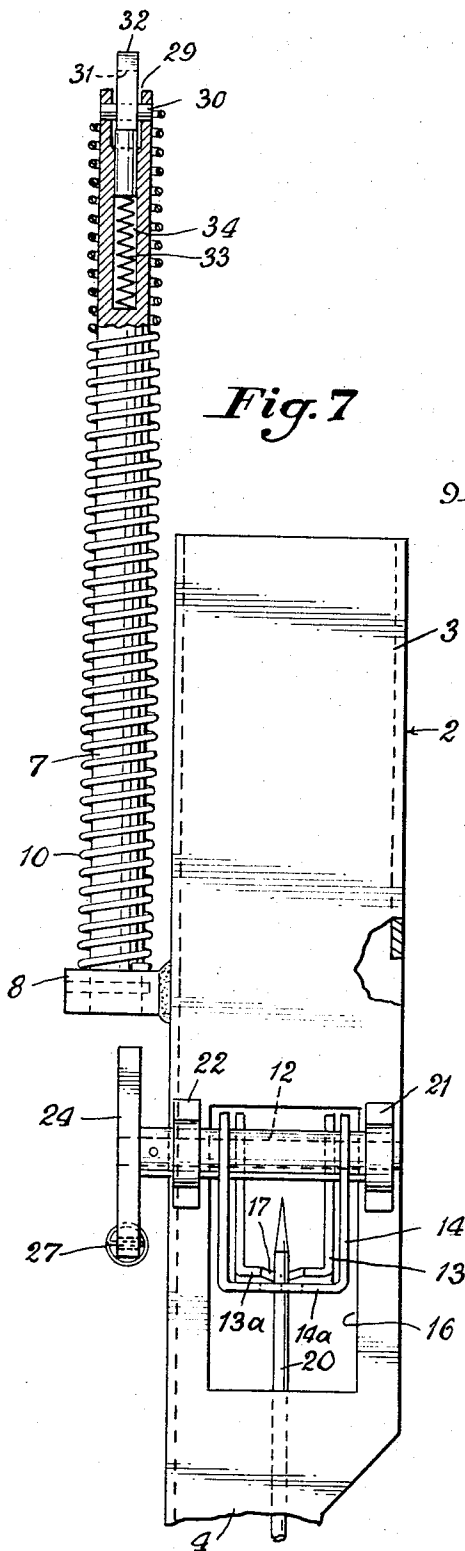
M. GARCIA

3,365,082

DEVICE FOR THREADING TOBACCO LEAVES UPON A NEEDLE

Filed May 25, 1965

4 Sheets-Sheet 4



1

2

3,365,082

DEVICE FOR THREADING TOBACCO LEAVES UPON A NEEDLE

Marcel Garcia, Rive Droite du Sebou Km 13,
Kenitra, Morocco

Filed May 25, 1965, Ser. No. 453,650

Claims priority, application Switzerland, May 29, 1964,
7,058/64

2 Claims. (Cl. 214—5.5)

The invention relates to a device for threading leaves, particularly tobacco leaves, on a needle and from the latter on a string which is threaded through an eye at one end of the needle.

It is an object of the invention to provide a manually operable device which is simple and very efficient and enables the operator to thread the leaves gathered in the field quickly on a needle until a bunch of leaves, known as hand, is formed which is transferred from the needle to a string and then is ready for immediate further processing, such as drying in a barn.

The device of the invention comprises a tubular housing closed at one end and provided with a lengthwise extending opening therein, a tubular socket within said tubular housing at said closed end, and a needle having an eye at one of its ends for threading a string there-through is adapted to be inserted into said socket. A pair of jaw members pivotally is mounted in opposed relation on said tubular housing and extends into the latter and is used for maintaining said needle centrally within said housing and parallel to said lengthwise extending opening. A plunger extends slidably into the other end of said tubular housing and spring means are provided for holding and returning said plunger in an extended position in which the lower end of said plunger is axially spaced from the pointed end of the needle in said housing. An axial bore in the lower end of said plunger receives and guides said needle when the plunger is manually moved into said tubular housing to engage a stem of a leaf inserted through said lengthwise extending opening and thread it upon said pin, said lower end of said plunger being arranged in such an axially spaced relation from said jaw members so as to engage and open the same when the needle enters said axial bore in said plunger and moves said stem of the leaf past said jaw member and along said needle, and means are provided for automatically closing said opened jaw members when said plunger returns to its initial extended position.

The invention will now be described with reference to the accompanying drawings, in which:

FIG. 1 is a side elevation view of device in operative position;

FIG. 2 is a vertical sectional view of the lower portion of the base and housing of the device;

FIG. 3 is an elevation view of the upper portion of the device when viewed from the right-hand side of FIG. 1;

FIG. 4 is an elevation view of the upper portion of the device when viewed from the left-hand side of FIG. 1;

FIG. 5 is a similar view as FIG. 3, but showing the movable parts in a different position;

FIG. 6 is a similar view as FIG. 4, but showing the movable parts in a different position;

FIG. 7 is a side elevation view of the upper portion of the housing;

FIG. 8 is a side elevation view of the plunger which is slidably mounted in the upper portion of the housing; and

FIG. 9 is a cross-sectional view along the line 9—9 of FIG. 1.

Referring to the drawings, the device comprises a longitudinal vertically extending housing 2, the upper por-

tion 3 is formed by a rectangular tube, while the lower portion 4 is provided with a lengthwise extending opening by being U-shaped in cross-section and closed by a base 5. A plunger 6 of rectangular tubular cross-section extends slidably into the upper tubular portion 3 of the housing 2 and is provided at its upper end with a handle 6a. A guide rod 7 extends parallel to the housing 2 and is fixedly attached with its lower end to a lateral projection 8 on the housing 2, while its upper end extends slidably through a bore in a lateral projection 9 on the plunger 6. A helical pressure spring 10 surrounds the guide rod 7 and bears with its ends against the projections 8 and 9 to normally keep the plunger 6 in an extended position.

As particularly illustrated in the FIGS. 3, 4, 5, 6 and 7, the upper portion 3 of the housing 2 has pivotally mounted on horizontal pivot pins 11, 12 disposed on the outside of two oppositely arranged walls of the housing 2 a pair of jaw members 13, 14 of sheet metal adapted to be simultaneously moved into and out of the housing 2 which for this purpose is provided in the respective walls with rectangular apertures 15 and 16. The jaw members 13 and 14 as shown in FIG. 7 are U-shaped in cross-section and the free ends 13a and 14a of the same are each provided with a V-shaped notch 17 and 18 as shown in FIGS. 5 and 6 to surround a needle 20 arranged within the housing 2 in a manner to be described presently. The pivot pins 11, 12 are journaled in pairs of bearing brackets 21, 22 attached to the outside of the housing and one outer end of the pivot pins 11, 12 have toothed sectors 23, 24 attached thereto (FIG. 6) which mesh with each other. Outwardly extending arms 25, 26 on these toothed sectors are connected with each other by a helical tension spring 27 which tends to rotate the sectors 23, 24 in a direction in which the jaw members 13 and 14 are moved into the housing 2. When the free ends of the jaw members 13 and 14 are in overlapping relation as shown in FIGS. 3 and 4, the notches 17 and 18 form a guide aperture for the needle 20 in the housing 2.

For the purpose of connecting the plunger 6 quickly releasably with the housing 2, the upper end of the guide rod 7 is provided with a diametrical slot 29 traversed by a pin 30 which passes through a slot 31 in a loosely mounted cross bar 32 (FIGS. 4 and 7). In FIGS. 4 and 6 the cross bar 32 extends at right angles to the guide rod 7 and prevents the removal of the plunger 6 from the housing 2. A spring 33 and loose pin 33a within an axial bore 34 in the guide rod 7 tends to maintain the cross bar 32 in this locking position. The lengthwise extending slot 31 in the cross bar 32 permits an adjustment of the latter into a position in axial alinement of the guide rod 7, as shown in FIG. 7, whereby the spring 33 and pin 33a again lock the bar 32 in this position, and since the bar 32 is of a size to be moved in the latter position through the bore 9a in the lateral projection 9, it is obvious that now the plunger 6 can be entirely removed from the housing 2.

The lower end of the plunger 6, as particularly shown in FIGS. 3 and 8 is provided with lateral recess 36 forming below the same a lateral ledge 37 upon which are mounted two bearing brackets 38, 38a which have journaled therebetween about a pin 39 an eccentric cam 40 with an outwardly extending handle 41 thereon. The circular circumference of the eccentric cam 40 is provided with serrations to provide a good gripping action for a purpose to be described hereinafter. The lower closed end of the plunger 6 is provided with a vertical bore 43 for the passage and guidance of the needle 20 which in a certain position of the plunger 6 is adapted to be engaged by the eccentric cam 40. Furthermore, a pair of spaced and opposed wing members 44 and 45 with oppositely inclined faces extend downwardly from the lower end of the

plunger and are positioned left and right from the axis of the needle 20 as shown in FIGS. 5 and 6, which show the plunger 6 in a partly descended position in which the plunger 6 has engaged the free ends 13a and 14a of the jaws 13 and 14 and has moved the same outwardly of the housing 2.

The housing 2 is adapted and provided to receive the needle 20 for piercing the stems of tobacco leaves or the like, which are to be transferred from the needle 20 to a string 46 to form a bunch of tobacco known as hand. For this purpose the lower end of the housing 2 has mounted therein a tubular socket 48 (FIG. 2) with an upper flared end 48a to receive the lower end of the needle 20 having an eye 20a through which the string 46 is threaded. The upper pointed end of the needle 20 comes to lie just above the normally closed jaw members 13, 14 ready to receive the stems of tobacco leaves as indicated in FIG. 1. For assisting in holding the needle 20 centrally within the housing 2, the lower portion thereof has mounted on the outside thereof a pair of leaf springs 52, 53 whose angularly bent free ends 52a and 53a extend through suitable apertures 54, 55 of the housing 2 into the interior of the same and in engagement with the needle 20 as shown in FIG. 2. In addition a blocking pin 56 is provided midway of the housing 2 for blocking the leaf bundle in position when the tobacco leaves 60 on the latter attain this level. The blocking pin 56 is mounted in a lateral extension 57 containing a leaf spring 58 engaging the stem of the pin 56 either in front or in rear of a ball-shaped enlargement 59 thereon to secure the pin 56 in either blocking or release position.

Referring to FIG. 1, the lower end of the housing 2 has pivotally attached thereto on end of a platform 61 extending in the operative position of the device inclined upwardly to receive in superimposed relation the tobacco leaves 60 which are threaded on the needle 20. This platform 61 is maintained in the desired inclined position by pivotally mounted braces 62 and 63 of which the brace 62 is adjustably attached by wing nuts 64, 65 to the frame 2 and platform 61 respectively, while the brace 63 is also secured by the wing nut 65 and extends downwardly from the platform 61 to engage the floor. Upon loosening the wing nuts 64, 65, the platform 61 and braces 62, 63 may be folded flat against the housing 2 for convenient transportation of the device from place to place.

The device of the invention is operated and functions in the following manner:

In the extended position of the plunger 6, as shown in FIG. 1, and with the housing 2 placed in a substantially vertical position on the ground, the operator seizes the handle 6a with one of its hands and with his other hand inserts the stem 60a of a tobacco leaf 60 into the housing 2 into the open space 66 formed between the lower end of the plunger 6 and the pointed end of the needle 20 which projects through the aperture formed by the overlapping notches 17, 18 in the closed jaw members 13 and 14 (FIG. 3). Upon a downward pressure exerted on the handle 6a, the plunger 6 slides downwardly into the housing 2; the two wing members 44, 45 surround the stem 60a in a saddle-like manner, and the lower end of the plunger 6 engages the inwardly projecting free ends 13a, 14a of the jaw members 13, 14 and move the same outwardly of the housing.

The stem 60a is pierced by the needle 20 and threaded upon the same and is moved downwardly past the opened jaw members 13, 14. At the same time, the guidance of the needle 20 is taken over by the bore 43 provided in the lower closed end of the plunger. The plunger 6 is now permitted to return under the action of the spring 10 to its extended position; the jaw members 13, 14 close under the action of the spring 27 and then another stem of a tobacco leaf is inserted into the space 66 and the just previously described threading operation is repeated until the desired number of leaves have been threaded on the needle 20 and is placed on the platform 61. At the end

of the last threading operation, the operator pushes the blocking pin 56 into leaf blocking position and rotates the eccentric cam 40 into a clamping position with the needle 20 so that when the plunger 6 is returned to its extended position, the needle 20 and the tobacco leaves thereon are taken along until the lower end of the needle 20 has been removed from its socket 48 at the base of the housing 2. The needle 20 is now removed from the housing 2 and the leaves on the needle 20, being blocked by the blocking pin 56, are strung onto the string 46. The hand of tobacco leaves so formed is transported to a curing place where it is suspended by the hook 68 attached to one end of the string 46.

What I claim is:

1. A device for threading leaves, particularly tobacco leaves, upon a string to form hands, comprising a tubular housing closed at one end and provided with a lengthwise extending opening, a tubular socket within said tubular housing at said closed end, a needle having an eye at one of its ends for threading the string therethrough, said eye containing end of the needle being adapted to be inserted into said socket, a pair of jaw members pivotally mounted in opposed relation on said tubular housing and extending into the latter and having means for maintaining said needle centrally within said housing and parallel to said lengthwise extending opening, a plunger slidably extending into the other end of said tubular housing, spring means for holding and returning said plunger in an extended position in which the lower end of said plunger is axially spaced from the pointed end of the needle in said housing, an axial bore in the lower end of said plunger for receiving and guiding said needle when the plunger is manually moved into said tubular housing to engage the stem of a leaf inserted through said lengthwise extending opening and threaded it upon said pin, said lower end of said plunger being arranged in such an axially spaced relation from said jaw members so as to engage and open the same when the needle enters said axial bore in said plunger and moves said stem of the leaf past said jaw member and along said needle, means for automatically closing said opened jaw members when said plunger returns to its initial extended position, and manually operable cam means on the lower end of said plunger for clamping said needle when the latter extends through said axial bore of said plunger so that the latter upon its movement to initial position takes the needle along and removes it from said tubular socket at the closed end of said housing.

2. A device for threading leaves, particularly tobacco leaves to form hands, comprising a tubular housing closed at one end and provided with a lengthwise extending opening, a tubular socket within said tubular housing at said closed end, a needle having an eye at one of its ends for threading a string therethrough, said eye containing end of the needle being adapted to be inserted into said socket, a pair of jaw members pivotally mounted in opposed relation on said tubular housing and extending into the latter and having means for maintaining said needle centrally within said housing and parallel to said lengthwise extending opening, a plunger slidably extending into the other end of said tubular housing, spring means for holding and returning said plunger in an extended position in which the lower end of said plunger is axially spaced from the pointed end of the needle in said housing, an axial bore in the lower end of said plunger for receiving and guiding said needle when the plunger is manually moved into said tubular housing to engage the stem of a leaf inserted through said lengthwise extending opening and thread it upon said pin, said lower end of said plunger being arranged in such an axially spaced relation from said jaw members so as to engage and open the same when the needle enters said axial bore in said plunger and moves said stem of the leaf past said jaw member and along said needle, and means for automatically closing said opened jaw members when said plunger returns to its initial extended position, said last named means comprising toothed

5

sectors fixedly attached to said jaw members and rotatable about the same axes as the latter, said toothed sectors being in mesh with each other, and spring means connecting said sectors with one another and urging the same in a direction in which said jaw members are closed.

5

References Cited

UNITED STATES PATENTS

1,650,990 11/1927 Kennedy ----- 214—5.5

6

1,893,538 1/1933 Ederer ----- 29—241
 2,087,508 7/1937 Fair ----- 214—5.5
 2,495,874 1/1950 Stula ----- 214—5.5

FOREIGN PATENTS

1,278,898 11/1961 France.

GERALD M. FORLENZA, *Primary Examiner.*

R. B. JOHNSON, *Examiner.*