July 26, 1966 A. S. ANDERSON 3,262,587

DEVICE FOR SPIKING TOBACCO

Filed March 9, 1965

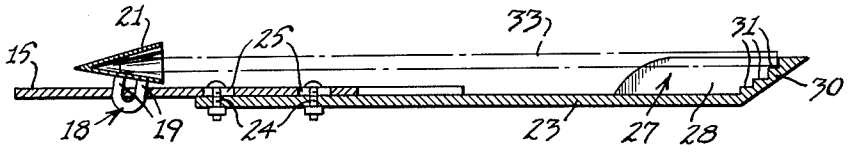


Fig. 3

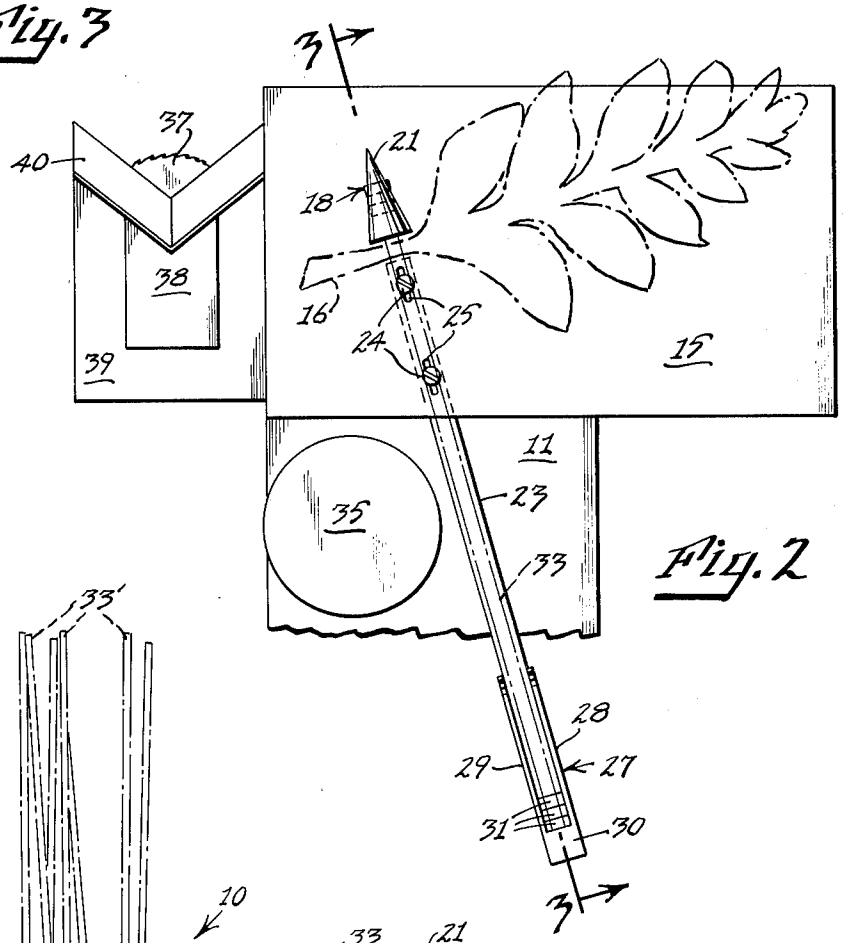


Fig. 2

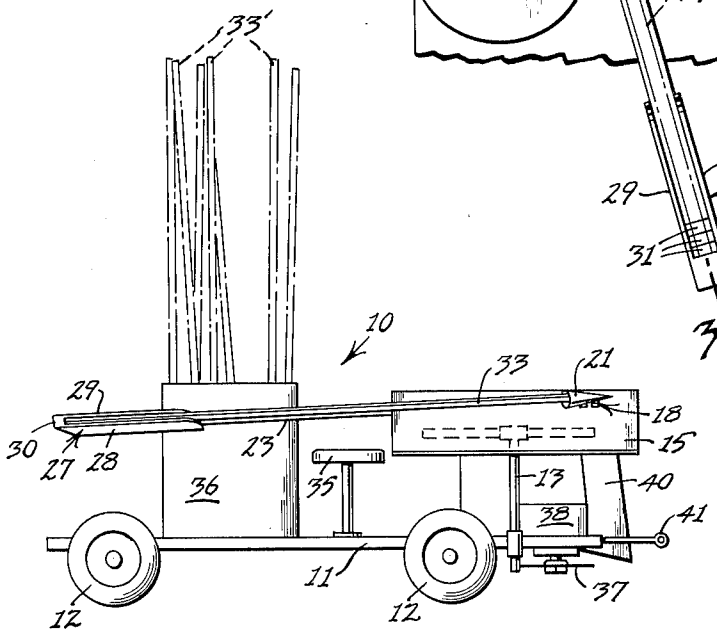


Fig. 1

INVENTOR:
ALEXANDER S. ANDERSON
BY
Harrington A. Lackey
ATTORNEY

United States Patent Office 3,262,587 Patented July 26, 1966

3,262,587

DEVICE FOR SPIKING TOBACCO

Alexander S. Anderson, Hendersonville, Tenn.

Filed Mar. 9, 1965, Ser. No. 438,262
3 Claims. (Cl. 214—5.5)

This invention relates to a new apparatus for processing tobacco, and more particularly to an apparatus for facilitating the harvesting of tobacco on stalk, eliminating much of the hazard of the job, and making it possible for motor-powered equipment to be used to relieve farmers of much dreaded, heavy, back-breaking, manual labor, and it relates most particularly to the operation known as "spiking" tobacco.

Heretofore, the most common way of harvesting tobacco on stalk has been altogether manual, requiring much walking, weight carrying, bending, stooping, lifting, blade swinging, and "spiking." The "spiking" consists of bending down, picking up one end of a tobacco stick, placing a very sharp pointed steel cone (commonly called a "spike" or a "spear") telescopingly over upper end of said stick, which is held in a perpendicular position by one hand, placing a stalk, near its end, upon the sharp point of said spike, forcing the stalk downward and over the spike, which penetrates the stalk, on to the perpendicularly held stick. When 5 to 7 stalks have been spiked upon the stick, the loaded stick is laid down or driven into the ground. Then, the same toilsome procedure is repeated over and over again till all the tobacco has been harvested.

Since farmers' tobacco sticks may be sawed or rived, or may even be lengths of round saplings, their sizes are variable and the conventional sharp steel cone, hereafter referred to as a spike, cannot be made to fit snugly upon some sticks. Such a loose fit together with the sharpness of the spike presents great hazards.

The present procedure of cutting and spiking tobacco consists of the following activities:

First, two workers bend over, pick up and place upon their shoulders arm-loads of sticks (50 to 75 pounds), walk through a field between tobacco rows, dropping the sticks, one at a time, estimating the spacing. If too few sticks are dropped to accommodate the tobacco in a row, a second trip must be made to deposit more sticks. If too many sticks are dropped, those extra must be handled again or left in field where they will be destroyed by tractor or wagon wheels.

After the sticks have been dropped, the workers walk to their starting places. One worker with a "tomahawk" (a sharp hatchet-like device) in one hand, grasps a standing stalk, pulls it over, chops off the stalk near the ground, swings its butt end up 4 or 5 feet high to be caught by the other worker. In the meantime, the second worker has bent down, picked up a tobacco stick, one end of which he has placed against the ground to resist the thrust of spiking, and the other end of which, he holds upright with one hand and telescopingly places over the other end a sharp spike. The second worker then catches the butt end of the tobacco stalk as it is swung to him, with his other hand, places the stalk over the sharp point of the spike near the stalk's end, and, with both hands, forces the stalk downward over the spike, and the tobacco stick. When the stick is loaded with the required number of stalks, the same tiresome activities must be repeated till all the tobacco has been handled. Since sharp pointed spikes cannot be held fast on some sticks, they often glance off or break out of a stalk when the stalk is forced downward, and many faces, shoulders, arms, and even eyes have been damaged by them. These spikes, so used, truly become sources of great danger.

Since conventional tobacco harvesting is done in hot weather, and since all the above mentioned bodily movements and strenuous efforts are compulsory, it is obvious that such manual harvesting of tobacco is dreaded by all and satisfactorily done only by those most physically fit.

It is therefore, an object of this invention to overcome, as much as possible, the hardship, disadvantages, and hazards of the old method of tobacco harvesting and grasp the benefits of the new, by providing an apparatus which will make it possible and practicable to harvest tobacco mechanically.

Another object of this invention is to provide a tobacco harvesting apparatus which is motor-propelled or tractor-drawn and upon which may be mounted a power-driven, circular saw for cutting the stalks.

Another object of this invention is to provide a safe and easy way for spiking tobacco.

Another object of this invention is to reduce the cost of harvesting tobacco, by reducing the time and labor usually required to do the job.

Another object of this invention is to improve the quality of tobacco, and thus increase the farmer's income, by enabling harvesting to be done more quickly, during the few days when tobacco is at its best, and when the uncontrollable weather is most suitable.

Another object of this invention is to provide magnetic means to releasably hold a tobacco spike in position for manually impaling tobacco stalks thereon.

Another object of this invention is to provide a convenient holder for a tobacco stick of variable dimensions and lengths, and substantial enough to bear the thrust from manual spiking forces.

Another object of this invention is to provide a device for spiking tobacco including a vehicle having a substantially smooth working platform or table-top for supporting the tobacco stalk and spike, and further provided with a convenient operator's station.

Further objects and advantages of the invention will be apparent from the following description taken in conjunction with the drawings, wherein:

FIG. 1 is a side elevation of the invention mounted on a vehicle;

FIG. 2 is an enlarged fragmentary plan view of the device shown in FIG. 1, including a spiked tobacco stalk disclosed in phantom; and

FIG. 3 is a section taken along the line 3—3 of FIG. 2.

Referring to the drawings in more detail, FIG. 1 discloses a mobile tobacco spiking device made in accordance with this invention, including a vehicle **10** having a floor **11** and wheels **12**. Supported by an adjustable standard **13** upon the floor **11** is an elongated table-top or platform **15**. The platform **15** is mounted adjacent the front of the vehicle **10** so that its longitudinal axis extends transversely thereof, and also slopes downwardly to the right to extend beyond the right side of the floor **11**. The platform **15** may be made of heavy plywood or any other suitable non-magnetic material. As disclosed in FIG. 2, the length of the platform **15**, must be sufficient to support a tobacco stalk **16** lengthwise of the platform **15**.

Fixed in any convenient manner in the platform **15**, is a magnet **18**, which is disclosed in the drawing as a horseshoe, or U-shaped, magnet with its arms **19** projecting upwardly above the top of the platform **15**. The magnet **18** is fixed in any convenient manner, such as by a wedge-fit in corresponding holes in the platform **15**. The spike **21** is conical and hollow, having an open rear end, and made of magnetic material such as steel. As best disclosed in FIG. 3 the spike **21** is placed upon the

projecting magnet arms **19**, so that the magnetic circuit is completed and the spike **21** is held in place.

Projecting rearwardly and toward the right of the vehicle **10** is a support arm **23**, the forward end of which is secured to the bottom of the platform **15**, by means such as bolts **24** extending through elongated slots **25** in the platform **15**. The rear end of the support arm **23** forms the bottom wall of a stick rack or channel **27**, having side walls or panels **28** and **29** and a rear wall **30**. The rear wall **30** slopes upwardly and rearwardly from the support arm **23** and is provided on its forward face with graduated abutments or steps **31**. The side walls **28**, **29** and rear wall **30**, all project upwardly approximately the same height above the bottom wall or support arm **23** to form the stick rack or channel **27**, which is of limited length and occupies a relatively small portion of the rear end of the support arm **23**.

The support arm **23** is of sufficient length, and is also adjustable, so that the distance between the conical spike **21** and the graduated rear wall **30** of the stick channel **27**, will accommodate a tobacco stick **33**. It will be noted, particularly in FIGS. 2 and 3, that the magnet arms **19** are aligned with the support arm **23** and the longitudinal axis of the stick channel **27**. Moreover, the magnet **18** is canted slightly rearwardly, so that engagement of the magnet arms **19** with the conical surface of the spike **21** will substantially align the conical axis of the spike **21** with the longitudinal axis of the tobacco stick **33**, when the stick is supported in operative position by the spike **21** and stick channel **27**, as disclosed in FIGS. 2 and 3.

The steps **31** are provided to accommodate the butt or rear ends of tobacco sticks **33**, of different lengths. The tobacco stick **33** disclosed in FIG. 3 is comparatively long, and therefore its rear end is supported upon the top step **31** of the rear wall **30**.

A seat, such as stool **35**, may be fixed upon the vehicle floor **11** in a position or station for the operator immediately behind the rear edge of the platform **15** and to the left of the support arm **23**. The stool **35** may be removed if the operator prefers working in a standing position. Nevertheless, the operator's station is confined to substantially the position of the stool **35** so the operator may work conveniently and comfortably. The magnet **18** must also be located within arm's reach of the operator or arm's reach of the rear edge of the platform **15**.

In any convenient position to the rear of the stool **35**, upon the vehicle floor **11**, may be located a receptacle **36** for a plurality of tobacco sticks **33**.

Although the tobacco stalks could be cut by hand, the vehicle **10** is disclosed with an automatic stalk cutting attachment, such as the rotary circular saw **37** driven by motor **38** mounted upon a platform **39** extending laterally from the floor **11**. A V-shaped guide **40** may also be mounted on the front of the platform **39** to guide the stalk against the cutting edge of the saw **37**.

The vehicle **10** may of course be moved in any convenient manner. It may be self-propelled, or it may be drawn by another prime mover, such as a tractor, by connection through a draft tongue **41** if desired.

The operation of the invention is as follows:

The receptacle **36** is first filled with the desired number of tobacco sticks **33'**. The operator mounts the vehicle **10** and sits upon the seat **35**, facing forward with his legs beneath the table-top or platform **15**, and with the support arm **23** at his right, as best disclosed in FIG. 2. A tobacco stick **33** is then inserted into the open rear end of the conical spike **21**, which is held in place by the magnet **18**, and the rear end is lowered upon the appropriate step **31**, depending upon the length of the stick **33**. The spike **21** and stick **33** are then in operative position for spiking the tobacco stalk **16**. The vehicle **10** is moved along the rows of tobacco either by self-propulsion or being drawn by another prime mover. If the vehicle **10** is equipped with the stalk cutting blade **37** disclosed in FIG. 2, then a stalk is directed by the guide **40** to the cutting blade **37**, and the operator reaches forward, grasps the stalk **16** as it is cut by the blade **37**, lays it across the table **15** and with both hands grasps the lower end of the stalk **16** and thrusts it rearwardly or toward the operator, so that the stalk is impaled upon the sharp magnetic spike **21**. Continued pulling of the stalk **16**, will momentarily break magnetic contact between the spike **21** and the magnet arms **19**, so that the progress of the stalk **16** may be continued until it has passed the spike **21**, and is impaled upon the tobacco stick **33**. When stalk **16** reaches the position disclosed in FIG. 2, the magnet **18** immediately draws the spike **21** back into magnetic engagement with the magnet arms **19**, and in position to receive the next tobacco stalk.

This operation is continued until the stick **23** is completely loaded with a plurality of tobaco stalks **16**. The operator then removes the loaded stick **33** from the channel **27** and the rear end of the spike **21**, releases the loaded stick **33** upon the sloping platform **15** so that the loaded stick gravitates downwardly across the table **15** toward the right side of the vehicle **10** and upon the ground. The loaded sticks **33** may then be collected by another worker.

The operator then grasps another stick **33'** and inserts it in the spike **21** and channel **27** and repeats the process of spiking and loading the stick with other stalks **16**.

It will be observed that a device for spiking tobacco has been provided which will not only facilitate handling the tobacco sticks, but will considerably improve the safety of the operation as well as expediting the entire tobacco harvesting process.

It will therefore be apparent to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof, and therefore the invention is not limited by that which is shown in the drawings and described in the specification, but only as indicated in the appended claims.

What is claimed:

1. A device for spiking a tobacco stalk comprising:

(a) a platform having an exposed top surface of non-magnetic material, unobstructed working space above said top surface, a rear edge and a longitudinal axis,

(b) the length of said top surface being sufficient to support said stalk longitudinally thereof,

(c) an operator's station adjacent said rear edge,

(d) a magnet,

(e) means for mounting said magnet in said platform to project upwardly from said top surface, and spaced forwardly of said operator's station within arm's reach of the operator,

(f) an elongated spike having a pointed end and a rear opening in its opposite end,

(g) said spike being of magnetic material and positioned substantially transversely of said platform in magnetic engagement upon said magnet,

(h) the force of said magnet being continuous and sufficient normally to retain said spike upon said magnet against displacement, but to permit separation of said spike from said magnet when a tobacco stalk is manually and positively thrust over said spike,

(i) a stick rack having a rear wall, opposed side walls, and a forward opening,

(j) a tobacco stick having a front end and a rear end, said front end being adapted to be received in the rear opening of said spike and said rear end being adapted to be received in said stick rack through said forward opening,

(k) means for fixedly mounting said stick rack behind and in alignment with said spike to permit said stick to be received within said spike and abutting said rear wall, said stick forming one side of said operator's station.

2. The invention according to claim 1 in which the rear wall of said stick rack comprises a plurality of abutments for receiving the rear ends of tobacco sticks of various lengths, said abutments being vertically arranged in steps ascending rearwardly.

3. The invention according to claim 1 in which said means for mounting said stick rack comprises an elongated support arm fixed to the bottom of said stick rack and to said platform, and in alignment with said tobacco stick extending between said spike and said stick rack, no portions of said support arm projecting above said platform surface.

References Cited by the Examiner

UNITED STATES PATENTS

1,530,939	4/1924	Hawks	214—5.5
2,495,874	1/1950	Stula	214—5.5
3,079,744	3/1963	Newswanger	214—5.5 X
3,107,018	10/1963	Mish	214—5.5 X
3,146,896	9/1964	Wilson	214—5.5
3,179,263	4/1965	Walter	214—5.5

MARVIN A. CHAMPION, *Primary Examiner.*

MORRIS TEMIN, GERALD M. FORLENZA, HUGO O. SCHULZ, *Examiners.*