

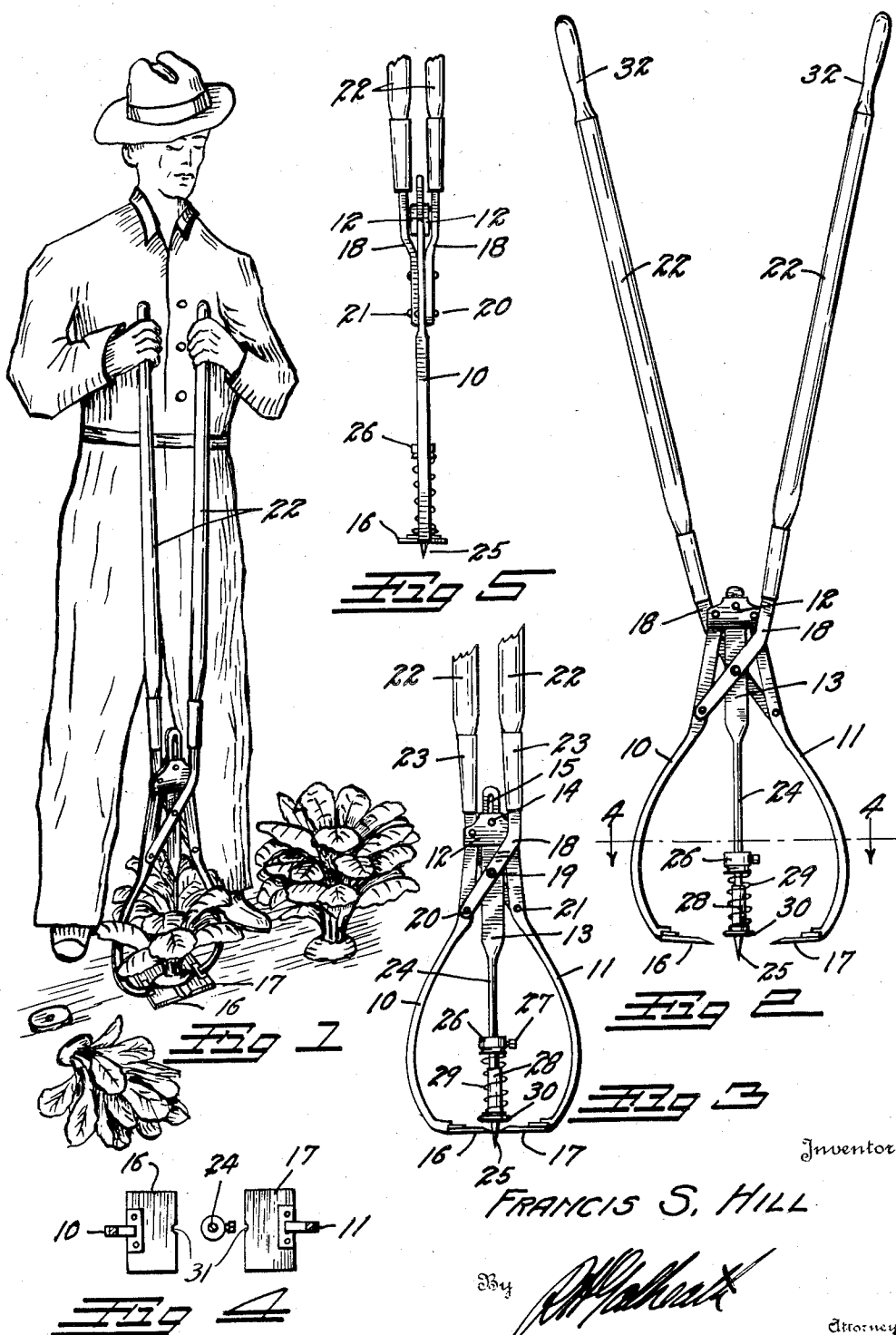
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F. S. HILL

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HAND BEET TOPPER

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HAND BEET TOPPER

Francis S. Hill, Denver, Colo.

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10 Claims. (Cl. 55—65)

This invention relates to a hand operated sugar beet topping device. The usual sugar beet harvesting operation consists of first lifting or plowing the beets from the ground so that they lie in rows thereon. The topper then moves along the row lifting each individual beet and cutting the top therefrom with his topping knife. The topped beets are left lying on the ground until loaded into the wagons for delivery to the factories. The topped beets are thus exposed to the air and sun for relatively long periods of time which greatly reduces their moisture content and weight. This reduction correspondingly reduces the beet grower's income since he is paid according to the weight of the beets when delivered.

The principal object of this invention is to provide a hand operated topping device which can be conveniently and rapidly employed to top the beets while they remain in the ground so that the beets need not be dug until the grower is ready to deliver them. This eliminates the usual exposure of the topped beets to the air and sun and the corresponding reduction in weight.

Another object of the invention is to provide a hand operating beet topping device which will make it unnecessary for the operator to pick up the beets, thereby eliminating a motion on the part of the operator and increasing his capacity.

A further object is to so construct the device that it will automatically determine the amount of top that is to be cut from each beet.

A still further object is to provide means for ejecting the beet top from the device after it has been removed from the beet.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a perspective view illustrating the invention as it would appear in use.

Fig. 2 is a front elevation of the improved topper illustrating it in the open position.

Fig. 3 is a similar view illustrating the topper in the closed position.

Fig. 4 is a detail section taken on the line 4—4, Fig. 2.

Fig. 5 is a side elevation of the improved topper showing the handles in the closed position.

The invention comprises: a pair of knife arms 10 and 11 which are hinged at their upper extremities between two yoke plates 12. The lower extremities of the knife arms 10 and 11 carry knife blades 16 and 17 respectively. The yoke plates 12 are placed on each side of a vertical guide member 13. A guide pin 14 passes through the yoke plates and through a vertical slot 15 in the guide member 13 so as to allow the plates 12 to move vertically thereon.

A bent, handle member 18 is pivoted on each face of the guide member 13 by means of a common pivot pin 19. The lower extremity of one of the handle members 18 is hinged as shown at 20 to the blade arm 10. The other handle member 18 is hinged as shown at 21 to the blade arm 11. The upper extremities of the handle members 18 terminate in handles 22, preferably secured to the handle members 18 by means of ferrules 23.

It can be readily seen that, as the handles 22 are swung apart, they will cause the handle members 18 to swing the blade arms 10 and 11 apart. As the blade arms 10 and 11 swing outwardly they will, owing to their fixed pivot 19, raise the yoke members 12 on the guide member 13. The slotted hole 15 allows for this upward movement. Since they move outwardly simultaneously and equally, however, they will lift the yoke members vertically so that the pin 14 will always be maintained over the pin 19 and the guide member will remain vertical at all times.

The lower portion of the guide member 13 is preferably formed into a spindle 24 which terminates in a pointed extremity 25 at its bottom. A set collar 26 may be set at any desired position on the spindle 24 by means of a suitable set screw 27. A slidable sleeve 28 is supported on the lower extremity of the spindle by means of a vertical spring 29. The bottom of the sleeve 28 is provided with a gage flange 30.

The inner edges of the blades 16 and 17 are sharpened, preferably on their upper sides only so that their lower surfaces will be continuous to the extreme edges. The sharpened edges are notched, as indicated at 31 to fit about the pointed extremity 25.

In use, the operator grasps one of the handles 22 in each hand, suitable hand grips 32 may be provided to facilitate the gripping operation. He then opens the handles and drops the point 25 of the spindle into the top of a beet. This causes the gage flange 30 to strike the beet and forces the sleeve 28 upwardly on the spindle 24 until it strikes the set collar 26. This limits the amount

of insertion of the point and determines the place where the knives will enter the beet.

The handles are then closed to bring the knives together and sever the top from the beet. The top is then lifted and opened. The spring 29 then expands and throws the severed top from the spindle 24 and the device is then ready for the next beet. If it is found that the top is being cut to too great a depth, the set screw 27 may be loosened and the collar 26 lowered the desired distance, or vice versa.

The topped beets can be left in the ground until desired for delivery so that they will not only be protected from loss of moisture but will gather additional moisture so that they will not lose weight while awaiting delivery.

It will be noted that the operator always maintains an upright position and is never required to stoop to pick up a beet or its top. This greatly relieves the strain upon the operator and the labor involved, besides speeding up the work and increasing the output or capacity of the operator. The spindle 24 not only serves to gage the depth of the cut but also serves to center and hold the device firmly in position during the topping operation.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:—

1. A hand operated beet topping device comprising: a pair of substantially vertical handles; a pair of blade arms operated by said handles; and a substantially horizontal blade carried by each blade arm, said blades cooperating to bring their edges together when said handles are operated to sever the top from a beet and a downwardly projecting guide spindle, having its lower extremity pointed, located midway between the said blade arms.

2. A hand operated beet topping device comprising: a pair of substantially vertical handles; a pair of blade arms operated by said handles; a substantially horizontal blade carried by each blade arm, said blades cooperating to bring their edges together when said handles are operated to sever the top from a beet; a guide spindle positioned between said blade arms said spindle being pointed at its lower extremity; and means for maintaining said guide spindle midway between said blade arms at all positions of the latter.

3. A hand operated beet topping device comprising: a pair of substantially vertical handles; a pair of blade arms operated by said handles; a substantially horizontal blade carried by each blade arm, said blades cooperating to bring their edges together when said handles are operated to sever the top from a beet; a guide spindle positioned between said blade arms; means for maintaining said guide spindle midway between said blade arms at all positions of the latter; a pointed lower extremity on said spindle; and a stop member positioned above said point to limit the amount of insertion thereof in a beet said stop member being a collar slidably mounted on the said spindle and adjustable to any fixed position by means of a set screw therein.

4. A hand operated beet topping device comprising: a pair of blade arms hingedly supported at their upper extremities; a blade carried on the

lower extremity of each arm so as to coact with each other when said arms approach each other to sever the top of a beet; a downwardly extending, pointed spindle, located midway between said blade arms; and means for causing said arms to swing toward each other.

5. A hand operated beet topping device comprising: a pair of blade arms hingedly supported at their upper extremities; a blade carried on the lower extremity of each arm so as to coact with each other when said arms approach each other to sever the top of a beet; a guide member located midway between said blade arms; and a pair of handle members pivoted together, the lower extremities of said handle members being secured to said blade arms so as to actuate the latter.

6. A hand operated beet topping device comprising: a yoke member; a pair of blade arms hingedly suspended from said yoke member; a substantially horizontal blade carried on the lower extremity of each arm so as to coact with each other; a guide member vertically slidable in said yoke member between said arms; a pair of handle members pivoted on said guide member, each of said handle members being pivoted to one of said blade arms at its lower extremity so that operation of said handle members will actuate said blade arms.

7. A hand operated beet topping device comprising: a yoke member; a pair of blade arms hingedly suspended from said yoke member; a substantially horizontal blade carried on the lower extremity of each arm so as to coact with each other; a guide member vertically slidable in said yoke member between said arms; a pair of handle members pivoted on said guide member, each of said handle members being pivoted to one of said blade arms at its lower extremity so that operation of said handle members will actuate said blade arms; and a pointed spindle extending downwardly from said guide member between said blade arms.

8. A hand operated beet topping device comprising: a yoke member; a pair of blade arms hingedly suspended from said yoke member; a substantially horizontal blade carried on the lower extremity of each arm so as to coact with each other; a guide member vertically slidable in said yoke member between said arms; a pair of handle members pivoted on said guide member, each of said handle members being pivoted to one of said blade arms at its lower extremity so that operation of said handle members will actuate said blade arms; and a pointed spindle extending downwardly from said guide member between said blade arms; and a stop member carried on said pointed spindle.

9. A hand operated beet topping device comprising: a yoke member; a pair of blade arms hingedly suspended from said yoke member; a substantially horizontal blade carried on the lower extremity of each arm so as to coact with each other; a guide member vertically slidable in said yoke member between said arms; a pair of handle members pivoted on said guide member, each of said handle members being pivoted to one of said blade arms at its lower extremity so that operation of said handle members will actuate said blade arms; and a pointed spindle extending downwardly from said guide member between said blade arms; a stop member carried on said pointed spindle; a slidable gage mounted on said spindle below said stop member; and spring means connecting said stop member to said sleeve.

10. A hand operated beet topping device com-

prising: a yoke member; a pair of blade arms hingedly suspended from said yoke member; a substantially horizontal blade carried on the lower extremity of each arm so as to coact with each other; a guide member vertically slidable in said yoke member between said arms; a pair of handle members pivoted on said guide member, each of said handle members being pivoted to one of said blade arms at its lower extremity so that operation of said handle members will actuate said blade arms; and a pointed spindle extending downwardly from said guide member between said knife blades, said blades being notched to pass about said spindle.

FRANCIS S. HILL.

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