

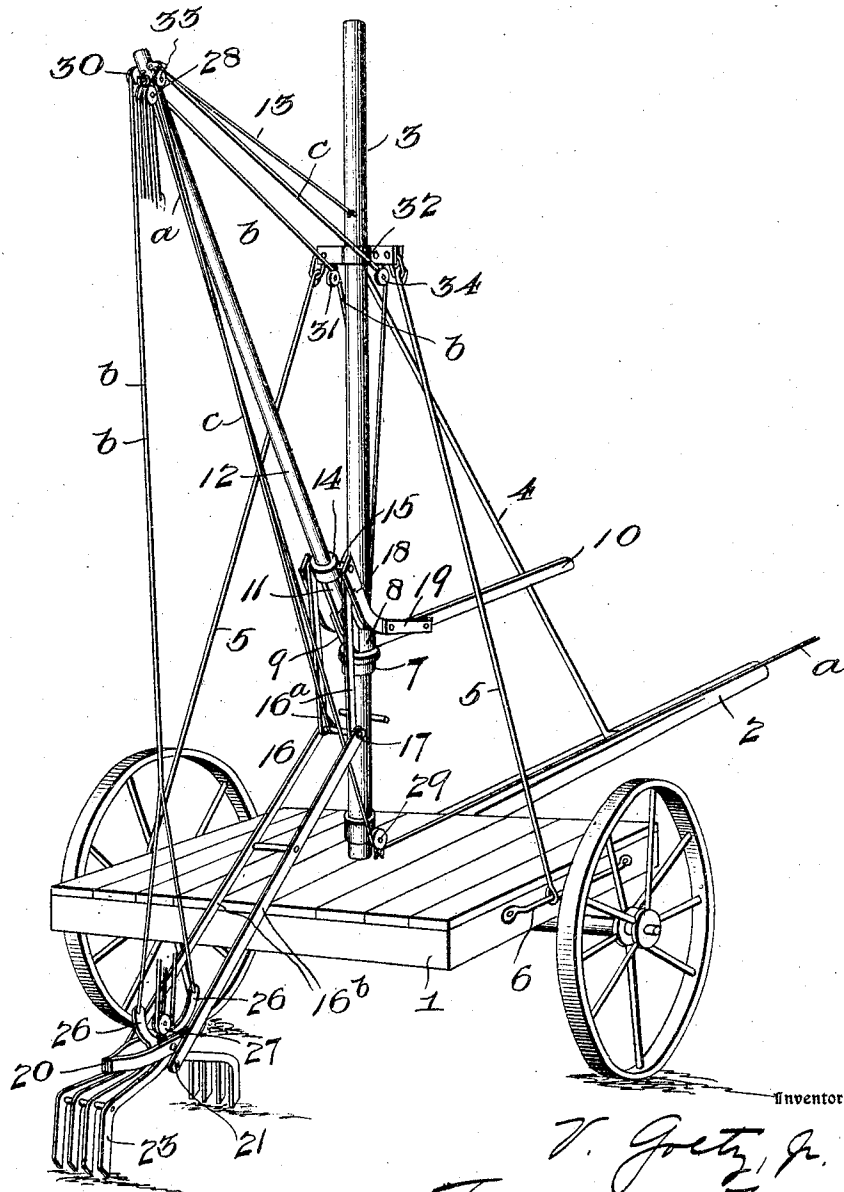
No. 790,826.

PATENTED MAY 23, 1905.

V. GOETZ, JR.
CANE LOADING APPARATUS.
APPLICATION FILED AUG. 11, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



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Witnesses

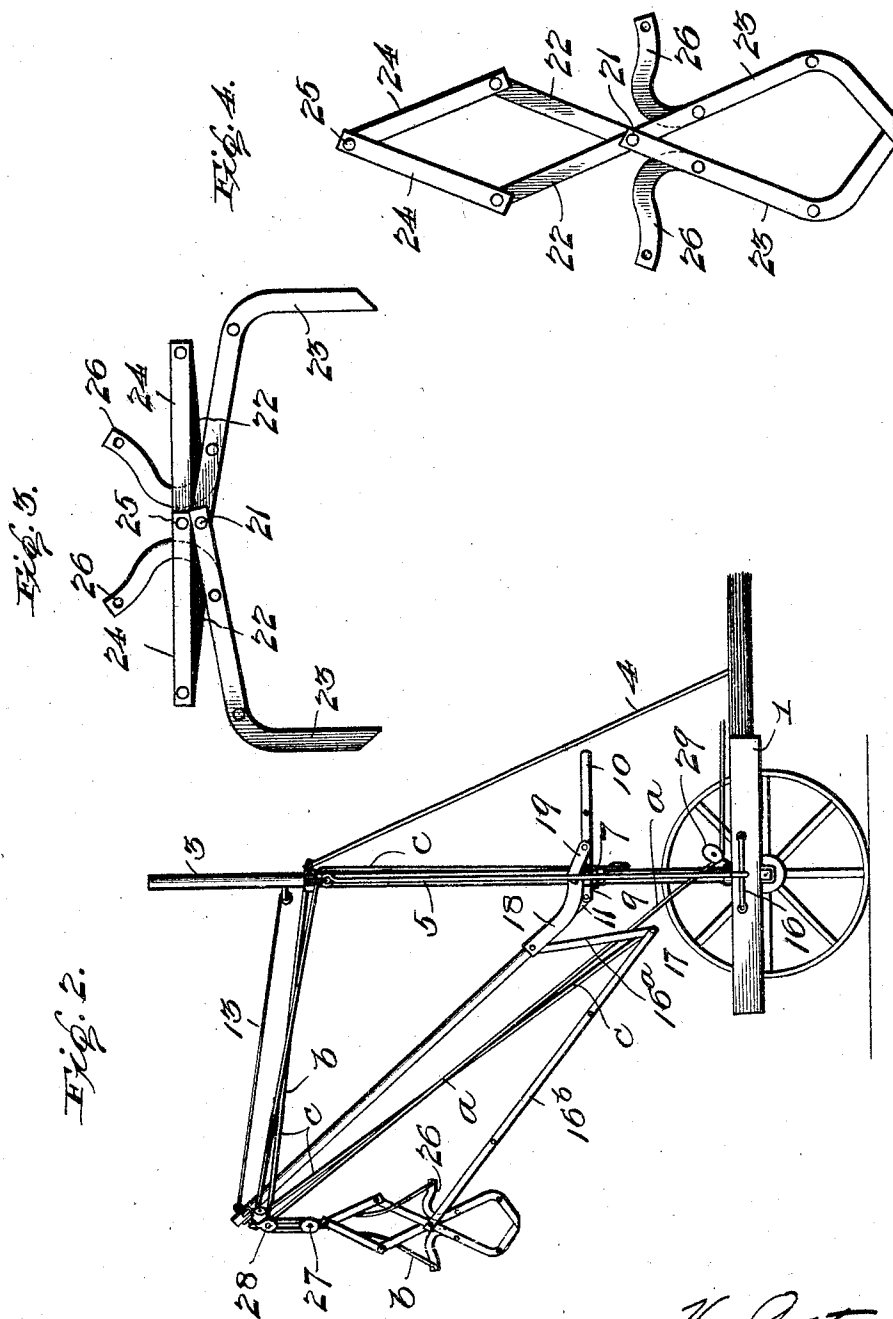
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UNITED STATES PATENT OFFICE.

VALENTINE GOETZ, JR., OF NAPOLEONVILLE, LOUISIANA.

CANE-LOADING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 790,826, dated May 23, 1905.

Application filed August 11, 1904. Serial No. 220,432.

To all whom it may concern:

Be it known that I, VALENTINE GOETZ, JR., a citizen of the United States, residing at Napoleonville, in the parish of Assumption and State of Louisiana, have invented certain new and useful Improvements in Cane-Loading Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in loading apparatus for the field, and is especially designed as a vehicle or cart provided with coöperating apparatus for hoisting and depositing cut cane from the ground to the cane-carts.

The principal object of my invention is to provide a cane-loader adapted for use with large or small fields which although of an efficient and durable nature may be cheaply constructed and which, owing to its lack of complicated parts or mechanism and its partially-automatic workings, is easy and quick in its operation, requiring no skilled operatives to operate same.

Another feature of the invention is to provide a means for mounting the grab or grapple whereby the same will be held rigid in whatever position it rests and which at the same time is supported in such a manner that it may be moved toward or away from a central support carried by the vehicle and may be elevated and swung around said central support transversely to load carts on either side of the loading-vehicle. By this construction the grab or grapple is allowed a fuller play, so that it may be moved toward or away from the loader to pick up cane within a reasonable area thereto, as will be hereinafter more fully described.

Other objects and advantages will appear from the following specification, and the particular points of novelty will be more distinctly pointed out in the claims.

In order that the said invention may be more clearly understood, reference is had to the accompanying drawings, illustrating the preferred embodiment of the same, in which

like letters designate corresponding parts in the several views, and in which—

Figure 1 is a perspective view of my loading apparatus mounted on a suitable vehicle, the grapple-hooks being shown in their open position ready to gather a bunch of cane and parts of the tackle of the operating double block and tackle being broken away for clearness. Fig. 2 is a side elevation of the apparatus with the grappling-hooks closed and elevated ready to be swung with its load to the cane-cart. Fig. 3 is a detail view, in side elevation, of the grapple in its open position; and Fig. 4 is a detail view, in side elevation, of the grapple in its closed position.

In carrying out the invention I provide a vehicle propelled by suitable motive power; but for the convenience of description I have illustrated this vehicle as comprising a two-wheeled cart or platform 1, provided with a tongue 2 and a central upright or mast 3, provided with the stay-rods 4 and 5, the stay-rod 4 being rigidly affixed to the tongue portion and the rods 5 being movably connected at their lower ends to the guide-bar or traveler 6, whereby they may be moved therealong, so as to allow a fuller curve or sweep of the boom and operating-lever hereinafter referred to.

The central upright or mast 3 is provided with a fixed collar 7, and above said collar 7 on said central upright is rotatably mounted a loose sleeve or spider 8, provided with spaced extension-plates 9 and the operating lever or handle 10, disposed on the opposite side of the sleeve. Between the spaced plates 9 of said sleeve or spider is pivotally supported the flattened end 11 of the swinging boom 12, which is stayed at its upper end by the stay-rope 13. This boom 12 is provided with a fixed collar 14, and pivotally secured to said fixed collar by the pivot-pin 15 is suspended the short arms 16^a of the extensible and collapsible support 16, the long arms 16^b of which are pivotally secured at their inner ends by the pivot-pin 17 to the lower ends of the short arms 16^a. The outer end of the long arms 16^b of said support is adapted to carry the grapple hereinafter described.

The arms 16^a and 16^b of the extensible sup-

port 16, as clearly shown in Fig. 1, are spaced apart, forming a frame-like structure, and on each side of the upper ends of the arms 16^a are arranged the curved brace-plates 18, pivotally secured at their upper ends to the pivot-pin 15 and pivotally connected at their lower ends to auxiliary plates 19, secured to said operating lever or handle 10. This construction forms a rigid brace for the lower end of the swinging boom and the inner end of the extensible support and at the same time by the pivotal connections allows the boom to be readily raised or lowered in a vertical plane independently of the lever 10, but rigidly secured against lateral movement independently of the operating-lever.

Between the spaced arms 16^b of the extensible support and at the outer end thereof is pivotally supported the cane grab or grapple 20 on the central pin 21, forming the axis of the jaws of said grapple or grab. As clearly illustrated in the drawings, this grapple comprises the bars 22, to which are rigidly secured the teeth 23, forming a substantial continuation thereof. These bars cross each other and are swiveled on the center pin 21. At the upper end of the bars 22 are pivotally secured the spaced bars 24, which are in turn pivotally connected together at their upper ends, as at 25, the upper section of said grapple when closed being of diamond shape, as clearly illustrated in Figs. 2 and 4. The hook members of the grapple are also provided with the curved tripping-bars 26, which normally extend in a horizontal plane when the grapple is closed.

To the pivot-pin 25 of the grapple is affixed a single block 27 of a block-and-tackle arrangement and which is operatively connected with a double block 28, carried at the outer end of the boom 12. The operative connection between these two blocks is the ordinary tackle arrangement, (designated at *a*,) which after passing through the double block passes downwardly to a suitable block 29 and thence running forwardly, where it is secured to the mule or other hauling power.

b is a rope or cable diverging at its lower end and connected with the opposed tripping-arms 26 of the grab. This rope or cable *b* reeves through a pulley 30 at the upper end of the boom 12, thence passes downwardly, reeving through another pulley 31 on a cross-piece 32, secured to the main upright 3, thence downwardly into proximity to the attendant.

c is another rope or cable, which is secured at its lower end to the pivot-pin 17, connecting the short and long arms of the extensible support 16, the said rope or cable *c* reeving through a pulley 33, carried at the outer end of the boom, thence reeving through a pulley 34, carried by the cross-piece 32, thence passing downwardly into proximity to the attendant.

The operation of the device will be apparent from the foregoing description, but may be summarized in the following: The grapple or grab being in the open position, as shown in Fig. 1, ready to close around a bundle of cane, the mule hitched to the cable *a* pulling on same first distends the contracted arms 22 24, which are then in the position indicated in Figs. 1 and 3, until they reach the position indicated in Figs. 2 and 4, whereby the grapple or grab is not elevated from the ground until the hooks have been completely closed around the heap, when the load is elevated to the position shown in Fig. 2. In this position the spider or sleeve 8 is rotated around the central upright or mast 3 by means of the operating-lever 10, and the boom, extensible support, and grapple are swung transversely of the central upright either to the right or left, as the case may be, to a position above the cane-cart, it being observed that while being elevated all swaying motion of the grab is prevented by the arms 16^b, which normally turn on the axis 17. The grab being now located over the cane-cart may be moved transversely thereof for depositing the load of cane in any particular position in the cart by means of the cable *c*, which when operated will swing the short arms 16^a of the extensible support around the pivot-pin 15 for increasing the length of the extensible support, or if the grab is to be moved nearer toward the center post the cable *c* is allowed to relax, and the arms 16^a will be swung inwardly by the weight of the parts, thereby decreasing the length of the extensible support. It will be obvious that the same operations will move the cane-grab when in its lowermost position, Fig. 1, toward and away from the central support for picking up all the cane on the ground within a limited area without shifting the position of the cart. The grapple being in its elevated position, to dump a load it is simply necessary to hold the cable *b* taut and slacken the cable *a*, when the weight of the load itself will automatically trip the grab, as will be apparent.

Although I have described the foregoing as being the preferred construction of the apparatus, it will be understood that I do not wish to limit myself to the exact details as shown and described, as it is obvious that many modifications might be made without departing from the spirit of the invention; but

What I claim is—

1. In loading apparatus, the combination with a vehicle, an upright carried by said vehicle, a swinging boom pivotally supported on said upright, a grapple carried by said boom; means for operating said grapple toward or away from said upright independently of said boom; means for elevating said grapple, and means for swinging said boom laterally of said upright.

2. In loading apparatus, the combination with a vehicle, an upright carried by said vehicle, a swinging boom pivotally supported on said upright, a support pivotally secured to said boom and constructed to operate toward or away from said upright, a grapple suspended from said boom and connected to said support, means for operating said grapple toward or away from said upright through the medium of said support, means for elevating said support and grapple, and means for swinging said boom laterally of said upright.

3. In loading apparatus, the combination with a vehicle, an upright carried by said vehicle, a swinging boom pivotally supported on said upright, an extensible support carried by said boom, a grapple suspended from said boom and connected to said extensible support, means for extending said support, means for elevating said extensible support and grapple, and means for swinging said boom, extensible support and grapple laterally of said upright.

4. In loading apparatus, the combination with a vehicle, an upright carried by said vehicle, a swinging boom pivotally supported on said upright, an extensible support pivotally mounted on said boom, a grapple suspended from said boom and connected to said extensible support, means for extending said support, means for elevating said extensible support and grapple, and means for swinging said boom, extensible support and grapple laterally of said upright.

5. In loading apparatus, the combination with a vehicle, an upright carried by said vehicle, a swinging boom pivotally supported on said upright, a collapsible support carried by said boom, a grapple suspended from said boom and connected to said collapsible support, means for extending and contracting said collapsible support, means for elevating said support and grapple, and means for swinging said boom, collapsible support and grapple laterally of said upright.

6. In loading apparatus, the combination with a vehicle, an upright carried by said vehicle, a swinging boom pivotally supported on said upright, a collapsible support pivotally secured to said boom, a grapple suspended from said boom and connected to said collapsible support, means for extending and contracting said collapsible support, means for elevating said support and grapple, and means for swinging said boom, collapsible support and grapple laterally of said upright.

7. In loading apparatus, the combination with a vehicle, an upright carried by said vehicle, a swinging boom pivotally supported on said upright, a sectional support carried by said boom, comprising a short arm pivotally mounted on said boom, a long arm pivoted to said short arm, a grab suspended from said boom and connected to the outer end of said long arm, means for swinging said short arm around its pivotal axis for extending said sup-

port, means for swinging said long arm around its pivotal axis for elevating said grab, and means for swinging said boom, sectional support and grab laterally of said upright.

8. In loading apparatus, the combination with a vehicle, of a mast carried thereby, a spider rotatably mounted on said mast, a boom pivotally carried by said spider, an operating-handle carried by said spider, side plates, bracing said boom laterally, and pivotally connecting said boom and operating-handle, a grapple suspended from said boom, and means for elevating said grapple.

9. In loading apparatus, the combination with a vehicle, of a mast carried thereby, a spider rotatably mounted on said mast, a boom pivotally secured to said spider, a grapple suspended from said boom, means for operating said grapple toward or away from said mast, means for elevating said grapple, an operating-handle secured to said spider for swinging said boom laterally of said mast, and side plates pivotally connected to said boom and handle for bracing said boom laterally.

10. In loading apparatus, the combination with a vehicle, of a mast carried thereby, a spider rotatably mounted on said mast, a boom pivotally secured to said spider, an extensible support pivotally connected to the lower end of said boom, a grapple carried by said extensible support, means for extending said support, means for elevating said support and grapple, an operating-handle secured to said spider for swinging said boom, support and grapple laterally of said mast, and side plates pivotally connecting said boom and operating-handle for bracing said boom laterally.

11. In loading apparatus, the combination with a vehicle, of a mast carried thereby, a spider rotatably mounted on said mast, a boom pivotally mounted on said spider, a collapsible support pivotally secured to said boom, a grapple carried by said collapsible support, means for extending and contracting said collapsible support, block-and-tackle connections between said grapple and the outer end of said boom for elevating said support and grapple, an operating-handle secured to said spider for swinging said boom and support laterally around said mast, and side plates pivotally connected to said boom and operating-handle for bracing said boom against independent lateral movement.

12. In loading apparatus, the combination with a vehicle, of a mast carried thereby, a spider rotatably mounted on said mast, a boom pivotally secured to said spider, a sectional support carried by said boom, comprising a short section pivotally mounted on said boom and a long section pivoted to said short section, a grapple carried at the outer end of said long section, means for swinging said short section around its pivotal axis for extending said support, means for swinging said

long section around its pivotal axis for elevating said grapple, an operating-handle carried by said spider for swinging said boom, sectional support and grapple laterally around
5 said mast, and side plates pivotally connecting said boom and operating-handle, for bracing said boom against independent lateral movement.

10 13. In loading apparatus, the combination with a vehicle, of a mast carried thereby, a traveler-bar secured to said vehicle, stay-rods secured at one end of said mast and movably secured at their other ends to said traveler-

bars, a boom rotatably mounted on said mast, a support pivotally secured to said boom at
15 its lower end, a grapple secured at the outer end of said support, means for elevating said support and grapple, and means for swinging said boom, support, and grapple, when
20 elevated, laterally of said mast.

In testimony whereof I affix my signature in presence of two witnesses.

VALENTINE GOETZ, JR.

Witnesses:

PHILIP H. GILBERT,
R. L. MARKS.