No. 818,644. PATENTED APR. 24, 1906.

L. J. B. TROUARD.

CANE LOADING APPARATUS.

APPLICATION FILED JUNE 23, 1905.

2 SHEETS—SHEET 1.

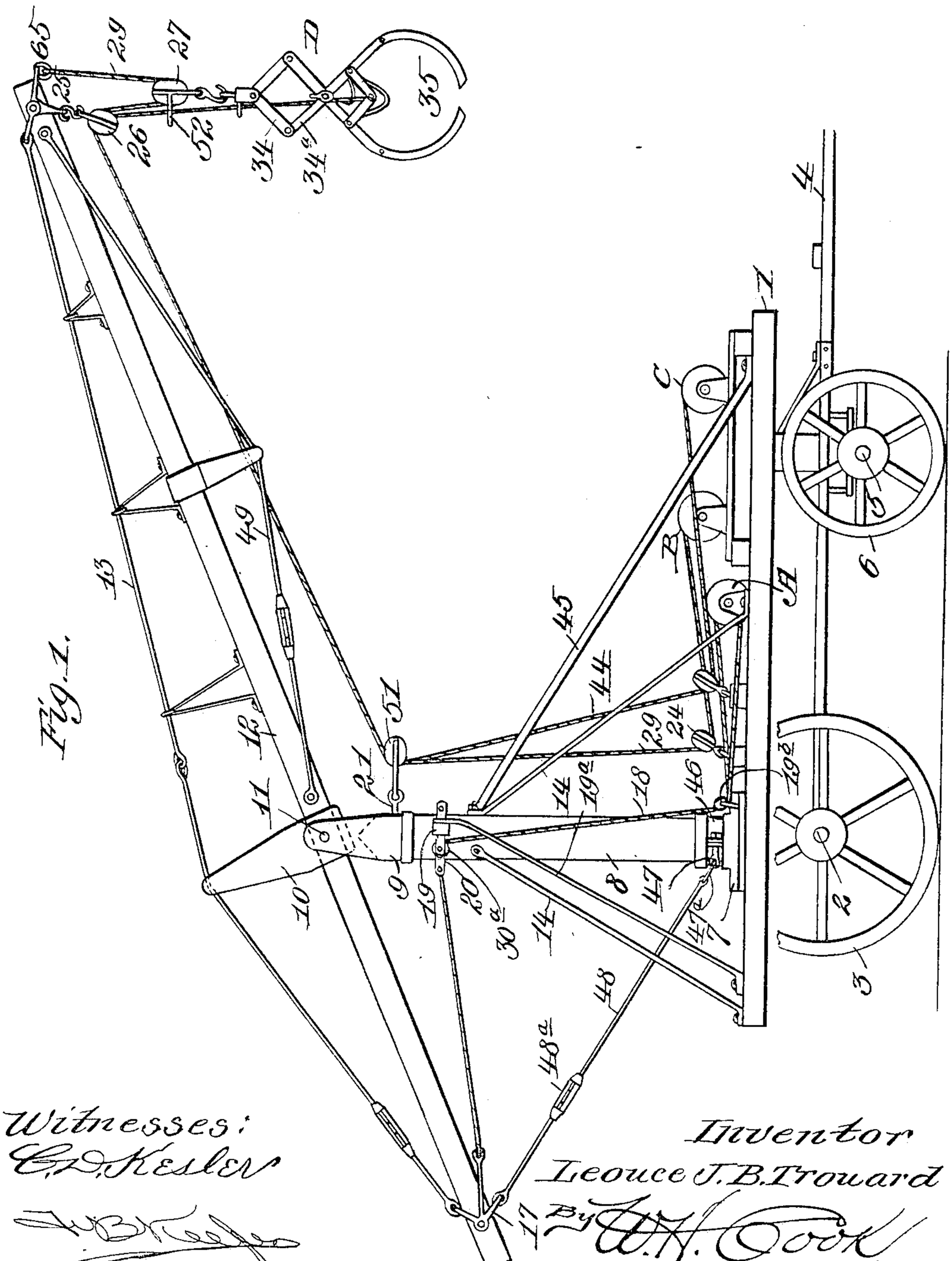

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

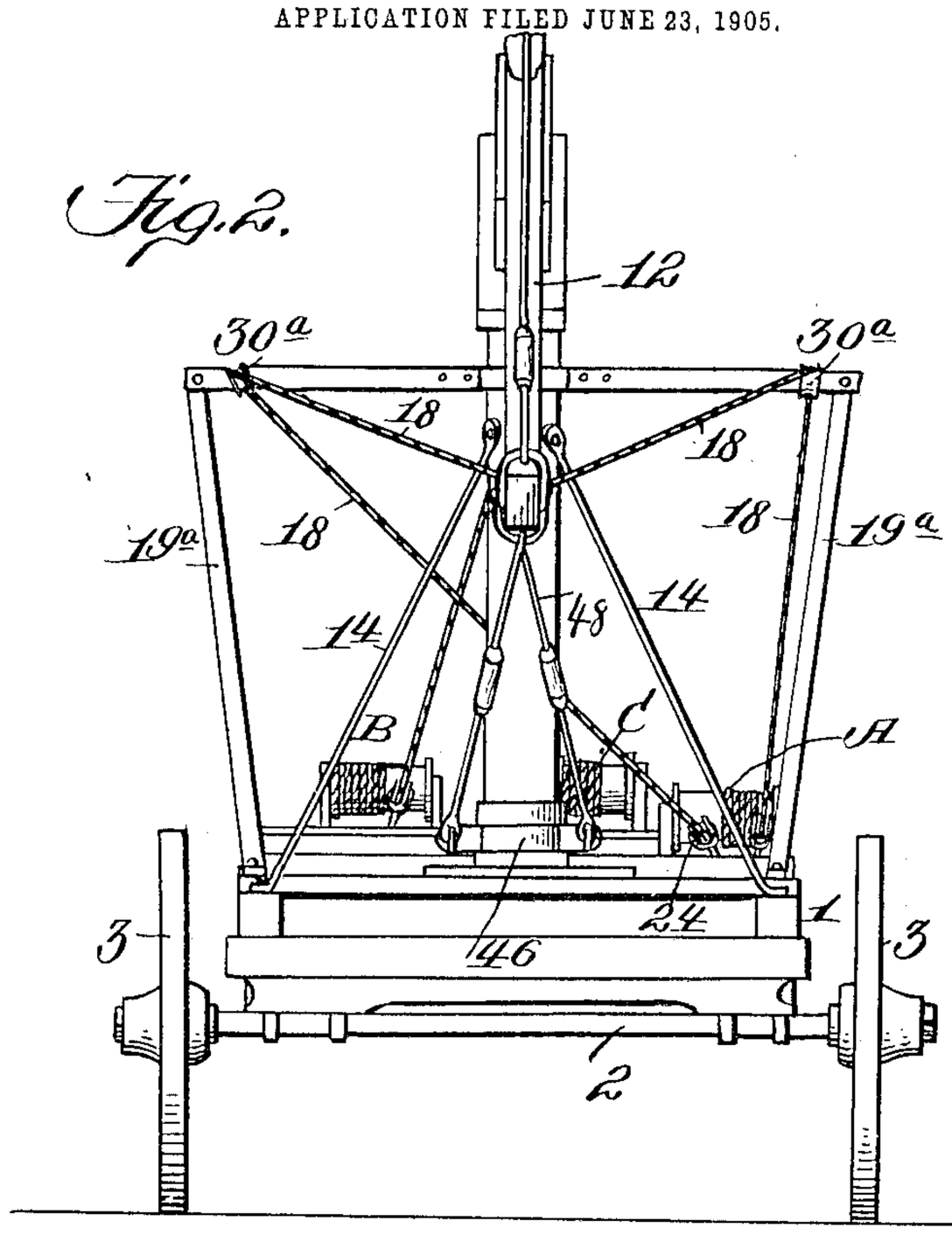
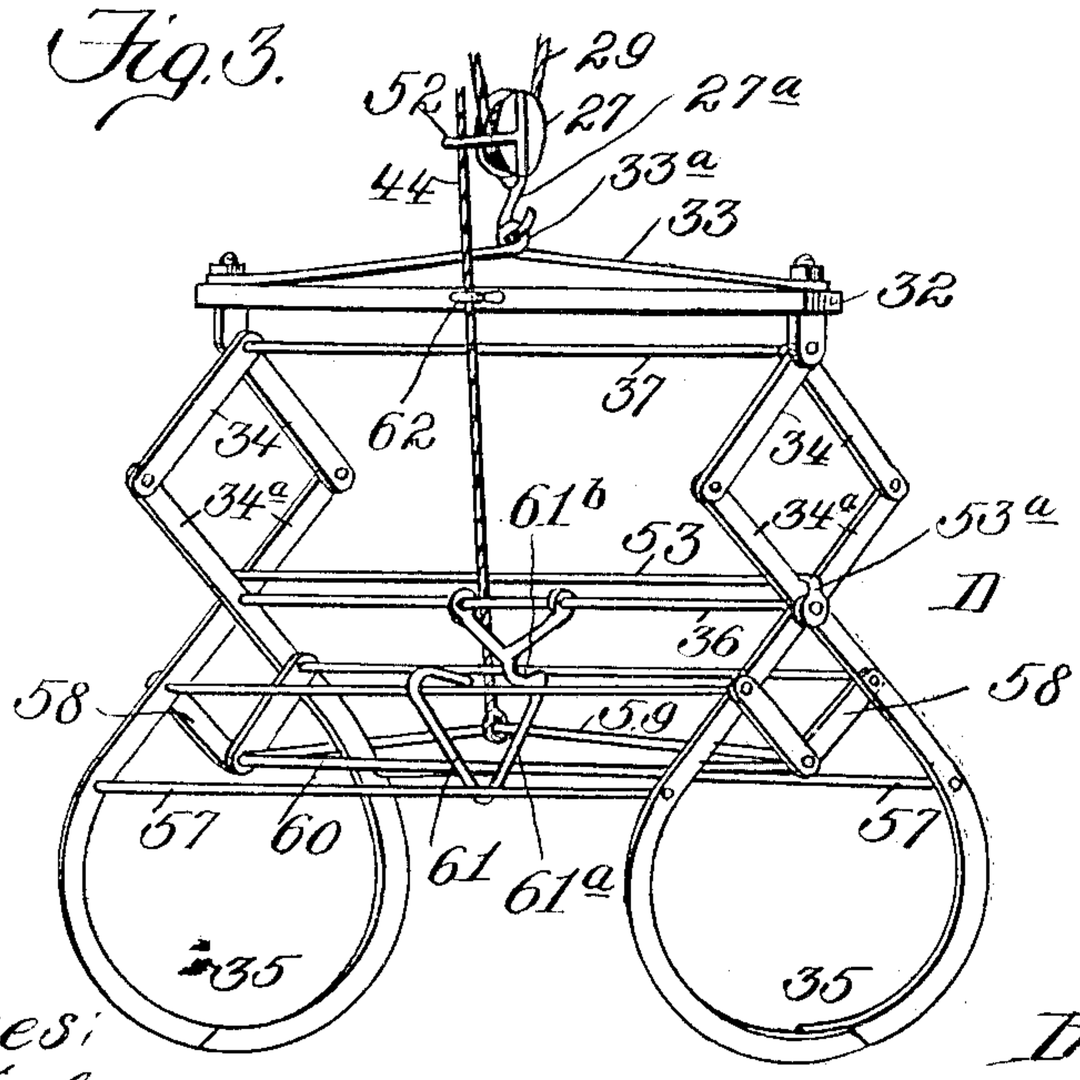


Fig. 3.



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UNITED STATES PATENT OFFICE.

LEONCE J. B. TROUARD, OF NEW ORLEANS, LOUISIANA.

CANE-LOADING APPARATUS.

No. 818,644. Specification of Letters Patent. Patented April 24, 1906.

Application filed June 23, 1905. Serial No. 266,621.

To all whom it may concern:

Be it known that I, LEONCE J. B. TROUARD, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Cane-Loading Apparatus, of which the following is a specification.

This invention relates to a cane-loading apparatus of that type which is readily transportable from one point to another; and it consists in certain novel constructions and combinations of parts which will be more fully hereinafter set forth.

The primary object of the invention is to provide a cane-loading apparatus which is easily controllable to pick up bundles of cane and deposit the same in a car, wagon, or other receptacle in an expeditious manner and requiring but a comparatively few number of attendants to maintain the apparatus in practical operation.

Other objects and advantages will hereinafter appear, and a preferred embodiment of the invention is disclosed in the drawings, wherein—

Figure 1 is a side elevation of a cane-loading apparatus embodying the invention. Fig. 2 is a rear end elevation of the same. Fig. 3 is a detail perspective view of the grapple or fork attachment.

Similar characters of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a bed of suitable dimensions supported on running-gear of any preferred form, including axles 2 and 5, having wheels 3 and 6, respectively, applied thereto, and a tongue 4, equipped with the usual attachments for connection thereto of parts of harness of draft-animals which are used in transporting the apparatus from one point to another. The bed 1 and running-gear, as set forth, are braced and strengthened to sustain the weight of the apparatus, and said bed is also provided with suitable transversely-extending supporting members at various points to receive the several devices included in the apparatus. Over the rear axle 2 a base or foot support 7 is secured on the bed and receives the lower extremity of an upright column 8, the latter having on the upper end thereof a rotatable cap 9, which is suitably bifurcated and has a boom-block 10 pivoted therein, as at 11. The boom-block 10 is secured to a boom 12, which is strengthened by stays 13 and 49. The column 8 is held in stable position by stay-rods 14 and a brace 45, connected to said column and the bed 1 at opposite points and at such distances apart as to be effective in obviating any tendency of the column to sag under the weight strain imposed thereon.

On the base-socket or foot 7 is mounted a rotatable collar 46, provided with eyes 47 for the attachment of hooks 47ª, loosely engaging the lower ends of connecting-rods 48, which are attached at their opposite ends to a shackle 17, secured to the rear end of the boom 12, the said connecting-rods being provided with adjusting-turnbuckles 48ª. The object of the rods 48 is to hold the boom 12 at a desired inclination without interfering in the least with the rotary movement thereof on the column 8 through the medium of the cap 9. A strap-collar 20 is secured on the upright column 8 and has arms 19 projecting outwardly therefrom and terminally held by braces 19ª, extending down and connected to the bed 1. The arms 19 carry sheaves or pulleys 30ª, which are engaged by ropes or cables 18, the latter also passing through or coöperating with sheaves or pulleys 19ᵇ, secured to the bed 1. The ropes or cables 18 are also attached to the rear end of the boom adjacent to the shackle 17, and by pulling on the opposite ropes 18 the boom is swung over the bed either to the right or left. The ropes or cables 18 run to a drum A and may be coiled on the latter in opposite directions, so that a revolution of the drum in one direction will pull on one of the said ropes or cables and proportionately pay off the other, and vice versa.

Secured to the cap 9 is an eyebolt 21, to which a sheave or pulley 51 is movably attached. On the lifting end of the boom 12 a shackle 25 is secured, and movably held thereby is a sheave or pulley 26, practically in alinement with the sheave or pulley 51, and trained over or engaging the said pulleys 26 and 51 are ropes, cables, or analogous devices 29 and 44, the rope or cable 29 being also passed around and coöperating with a suspending sheave or pulley 27 and terminally secured to an eye 65 on the lifting end of the boom and forming part of the shackle 25. From the sheave or pulley 51 the ropes or cables 29 and 44 extend downwardly to and engage a sheave or pulley 24, secured on

the bed 1, and from this latter sheave or pulley the said ropes or cables extend forwardly to drums B and C, having suitable brake attachments. All of the drums A, B, and C are located in close relation and may be operated by a motive power; but it is preferable that they be constructed or provided with devices for manual operation. The rope or cable 29 controls the elevation and depression of a grapple or fork D, and the rope or cable 44 operates to release the jaws or grappling-hooks of the grapple or fork in a manner which will be more fully hereinafter set forth.

The grapple or fork D comprises an upper or head bar 32, to which is secured a suspending-bar 33, having a central eye or analogous device 33^a to receive a hook 27^a, depending from the suspending sheave or pulley 27. Depending from opposite extremities of the head-bar 32 are pairs of movably-connected divergent links 34, which are pivotally associated with the said head-bar by a transversely-extending pintle-rod 37, having its terminals engaging the upper assembled ends of the said links. To the lower ends of the links 34 the upper terminals of arms 34^a are pivotally secured and continue downwardly and are shaped to form inturned hook members 35, the opposite pairs of said members constituting the lifting hooks or clamps for directly engaging the cane. The hook members are braced or connected for unitary action and to strengthen the same by cross-rods 57, and the arms 34^a intersect each other at an intermediate point and are pivotally secured by the opposite terminals of a common pintle-rod 36. The hook members 35 are prevented from closing beyond a predetermined extent by a controlling-rod 53, arranged above the pintle-rod 36 and having angular ends 53^a, which extend between and outwardly over the intersecting portions of the arms 34^a and secured to the ends of the said rod 36. Below the pivotal connection of the arms 34^a the latter have links 58 pivotally attached thereto and their lower ends movably secured by a cross pintle-rod 60, which also serves as a catch-rod and has arranged thereover and also connected to the links 58 an actuating-rod 59, to the center of which the rope or cable 44 is attached. Centrally suspended from the pintle-rod 36 is a catch 61, having a lower inverted triangular body 61^a, and an upper catch shoulder or projection 61^b to engage the catch-rod 60. The rope or cable 44 is maintained in operative position and prevented from slipping transversely by passing through guides 62 and 52, respectively, on the head-bar 32 and suspending sheave or pulley 27. These guides also prevent the rope or cable 44 from becoming entangled with the rope or cable 29 and parts of the cable or fork through which it extends.

The apparatus is conveyed to the point where it is desired to use the same and moved adjacent to piles of cut cane and operates to take up the latter and deposit it in a car, wagon, or other vehicle between which and the cane to be loaded the apparatus is disposed. After one pile or stack of cane has been loaded the apparatus may be quickly moved to another pile or stack and operate in a similar manner in relation thereto. During the loading operation of the apparatus the boom 12 is swung first to the right and then over to the left and is quickly controlled by operating the ropes or cables 18 in alternation. The grapple or fork D is raised and lowered, as found desirable, and is controlled in its elevation and depression by the rope or cable 29 and the auxiliary rope or cable 44, which mainly operates with the locking means for the hook members 35. When the grapple or fork D is lowered, the hook members 35 are held open, the catch-rod 60 being in engagement with the shoulder 61^b of the catch 61. After the hook members 35 have been placed over a quantity of the cane proportionate to their capacity the catch-bar 60 is manually released from the shoulder 61^b of the catch and the drums B and C are operated to coil both ropes or cables 29 and 44 to elevate the grapple or fork D. When the said grapple or fork has been elevated a sufficient distance, the boom is swung over to the other side of the apparatus, and when the grapple or fork arrives over the body of the car, wagon, or other vehicle the load is released. During the swinging movement of the boom when the grapple or fork is loaded and previous to the release of the load the brake devices of the drums B and C are both applied to prevent movement of the said drums and slackening of the ropes or cables 29 and 44. When it is desired to release the load from the grapple or fork, the brake device of the drum B is disengaged from the latter and the brake device of the drum C is held in engaging position, thereby permitting the rope or cable 29 to pay off against the resistance of the rope or cable 44, such resistance to movement of the latter rope or cable exerting a lifting tension on the catch-rod 60 and forcing the hook members 35 open, the lifting or pulling tension of the rope or cable 44 continuing until the catch-rod 60 has engaged the shoulder 61^b of the catch 61. When the catch-rod 60 is in engagement with the shoulder 61^b, the hook members 35 are fully opened and remain in open position until the grapple or fork D is lowered to engage and take up a succeeding load of cane.

The apparatus is comparatively simple in its construction and arrangement and also found exceptionally useful for the purpose for which it has been devised.

It will also be undertood that changes in the proportions, dimensions, and minor details may be resorted to without departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. In an apparatus of the class set forth, the combination of a bed mounted on running-gear, an upright column held on the bed, a boom movably supported on the column to have swinging movement from one side to the other of the bed, outwardly-projecting devices connected to the column and carrying pulleys, ropes or cables connected to the rear extremity of the boom and passing through the said pulleys downwardly to the bed for swinging the boom in opposite transverse directions, a grappling device held by the lifting extremity of the boom, and means for raising and lowering the grappling device.

2. In an apparatus of the class set forth, the combination of a movable supporting means, a boom disposed on the said supporting means and having a swinging movement in opposite transverse directions, outwardly-projecting arms carrying pulleys, ropes or cables connected to the rear end of the boom and engaging the said pulleys, a grappling device movably held by the lifting extremity of the boom, and means for controlling the elevation and depression of the grappling device.

3. In an apparatus of the class set forth, the combination of a movable supporting means, a boom mounted on the supporting means and shiftable from one side to the other of the latter, connecting-rods attached to the rear end of the boom and movably held by the supporting means to permit the boom to have unretarded swinging movement, devices for swinging the boom to opposite sides of the supporting means, and a grappling device movably held by the lifting end of the boom.

4. In an apparatus of the class set forth, a movable bed, an upright column supported on the bed, a boom held on the column and having a pivotal and laterally-swinging operation, a collar rotatably mounted on the column, connecting-rods between the said collar and rear end of the boom, devices connected to the rear end of the boom for swinging the latter in opposite lateral directions, and a grappling device held by the lifting extremity of the boom and provided with means for raising and lowering the same.

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

LEONCE J. B. TROUARD.

Witnesses:

W. H. Cook,

F. C. Cook.