

J. B. CASTAGNOS.

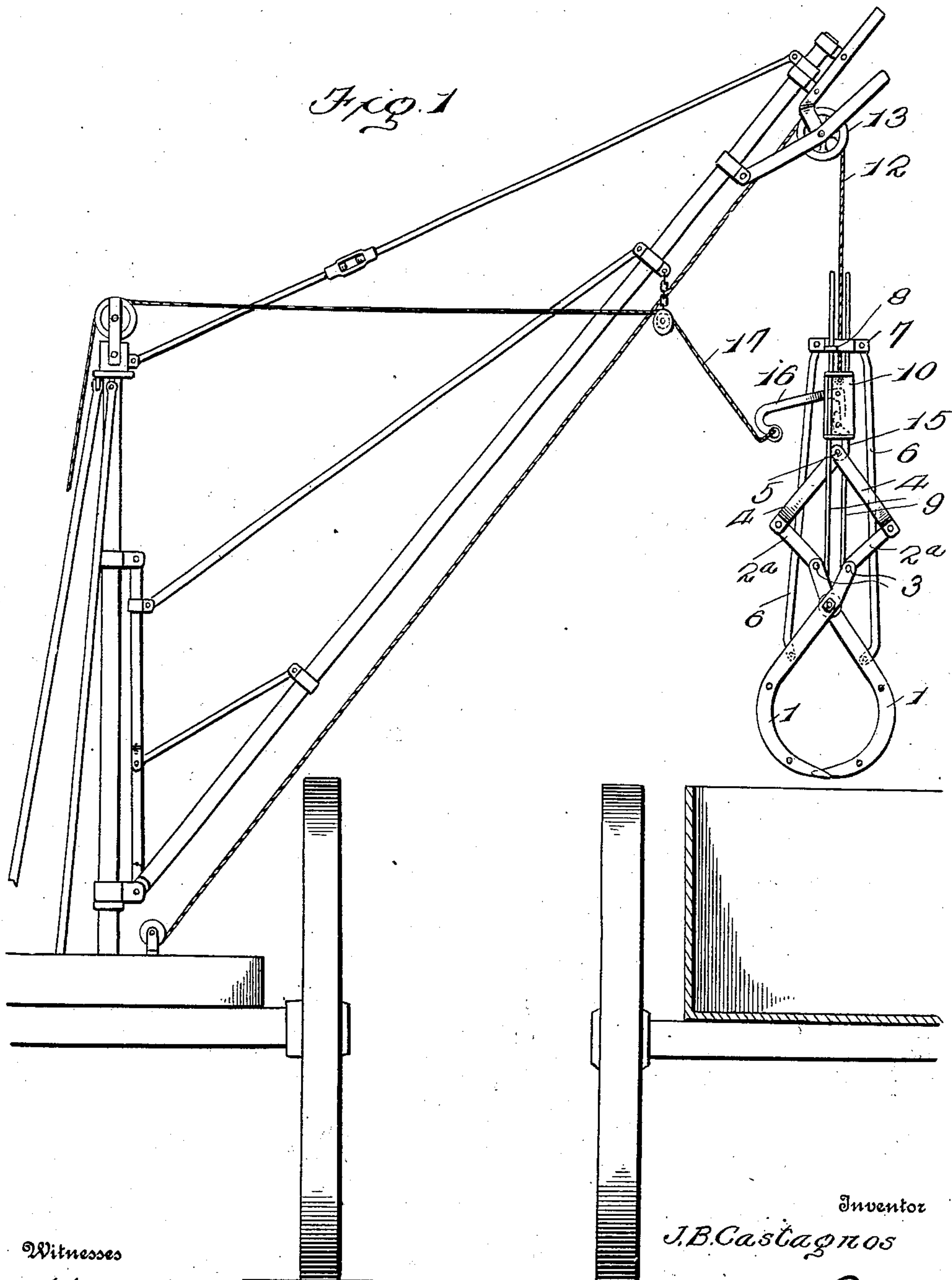
GRAPPLE.

APPLICATION FILED JULY 22, 1908

915,017.

Patented Mar. 9, 1909.

3 SHEETS—SHEET 1.



Witnesses

John A. Murphy
William H. Chadwick

Inventor

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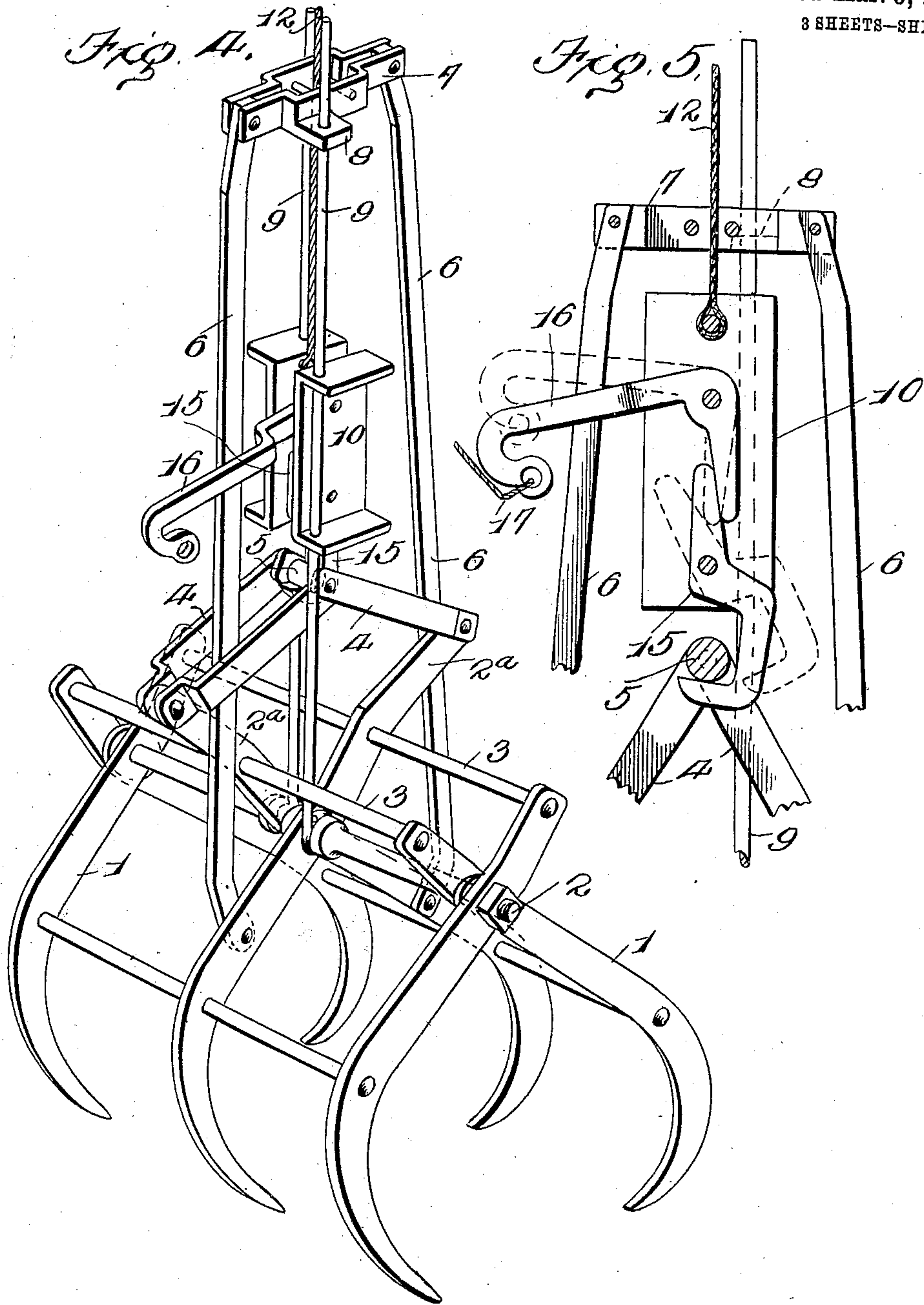
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UNITED STATES PATENT OFFICE.

JOSEPH BENJAMIN CASTAGNOS, OF DONALDSONVILLE, LOUISIANA.

GRAPPLE.

No. 915,017.

Specification of Letters Patent.

Patented March 9, 1909.

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To all whom it may concern:

Be it known that I, JOSEPH BENJAMIN CASTAGNOS, of Donaldsonville, Ascension parish, and State of Louisiana, have invented certain new and useful Improvements in Grapples; 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.

The primary object of this invention is to provide a simple and highly efficient grapple for sugar cane and the like which has to be taken up in quantities from one point and transferred to and discharged at another point.

Further objects are to provide an improved form of locking device for automatically engaging the grapple and effecting the drawing together of the forked members thereof; to provide improved means for releasing the locking device; to control the lifting of the grapple and the lowering of the locking device and its releasing means by a single rope or cable; and finally to provide improved means for enabling the forked members to open or spread apart in discharging their load.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view showing the position of the grapple previous to the release of the locking means Fig. 2 is a view showing the parts in position after the load has been discharged. Fig. 3 is an enlarged plan view of the grapple. Fig. 4 is a view in perspective. Fig. 5 is a fragmentary view of the locking hook releasing lever.

Referring to the drawings, 1, 1, designate two forks, each of which consists of a series of corresponding finger bars connected by suitable cross-rods and pivoted together by a common cross-rod 2. The outer finger bars of each fork are extended beyond the cross-rod 2, and the central finger bars are formed with arms 2^a through which are passed bracing-rods 3 which connect the extended portions of the end finger bars. To the arms 2^a of the central finger bars are connected spaced-apart parallel straps 4, which straps are pivotally united by a cross pin 5 centrally above the cross-rod 2. By raising these straps at their point of connection the two forks will be drawn together,

such straps and the arms 2^a acting conjunctively as lazy-tongs.

6, 6, designate two upright bars each of which is pivoted at its lower end to the central finger bar of one of the forks, and at their upper ends these bars are pivoted to a cross-head 7, which latter supports on its opposite sides keepers 8 for two guide rods 9. These guide rods occupy upright positions and at their lower ends are supported by cross-rod 2.

10 designates a vertically-movable block having apertured flanges to accommodate guide-rods 9 whereon it may be moved vertically by a single hoisting rope or cable 12, which in practice is passed over a roller 13 mounted on a boom carried by any suitable support.

15 designates a latch which is shown in the form of a hooked lever pivotally mounted on block 10 beneath the lower end of which the hooked portion of the lever normally projects so that when the block is lowered such hooked end will automatically engage with the cross pin 5. After being so lowered any upward pull on the block, as by the winding of rope 12, will cause the two forks to be drawn toward each other and inclose the cane or other articles between them. After the forks have been thus closed together, any further upward pull on rope 12 will effect the lifting of the device in its entirety, whereupon it may be moved to the point where the load is to be discharged. The separation of the forks, for the purpose of discharging the load, is effected by the release of the hooked lever from engagement with cross pin 5. For this purpose I provide a lever 16, which is pivotally mounted on block 10. The inner shorter arm of this lever is bent to conform to the upper shorter arm of the locking lever against which it lies when the parts are in their normal positions. By pulling on a rope 17, connected to the outer end of the longer arm of lever 16, the latter will be so turned on its fulcrum as to disengage the hooked lever from cross pin 5. Only a slight pull on the releasing lever is necessary to thrust the hooked lever to one side and permit the forks to lower. As this occurs the forks will spread apart under the action of the two upright bars 6, which latter will not in any way interfere with the free action of the forks. Immediately the pull on the releasing lever is released, the hooked lever will by gravity resume its normal position so that when the hoisting rope is slackened the grapple as a whole will be first low-

ered and then the lever carrying block 10 will be lowered so that the hooked lever may again automatically engage the cross pin 5.

The advantages of my invention will be apparent to those skilled in the art. It will be seen that it is not necessary for the operator to manually place the locking lever in engagement with the forks; and also that the raising and lowering of the grapple as well as the raising and lowering of the hook carrying block is controlled entirely by a single rope. The weight of the longer arm of the releasing lever will normally hold the latter in such position as to permit of the free action of the locking lever; and that only a slight pull on the releasing lever is necessary to effect the disengagement of the locking lever to permit of the opening and lowering of the forks. By means of the two upright bars 6 all danger of interfering with the free movements of the forks is avoided.

I claim as my invention:—

1. A grapple comprising two forks pivotally connected together and having at their centers oppositely-extended arms, straps pivotally connected together and also pivoted to said arms, a vertically-movable block, guides therefor supported by said forks, a single hoisting rope or cable connected to said block, a hooked lever carried by said block and designed to engage said straps at their point of connection, and means also carried by said block for engaging and releasing said hooked lever.

2. A grapple comprising two forks pivotally connected together and having at their centers oppositely-extended arms, straps pivotally connected together and also pivoted to said arms, a pin at the point of connection between said straps, a vertically-movable block, guides therefor supported by said forks, a single hoisting rope or cable connected to said block, a hooked lever carried by said block, and normally projecting beyond the lower end thereof, to automatically engage said pin; and means also carried by said block for engaging and releasing said hooked lever.

3. A grapple comprising two forks pivotally connected together and having at their centers oppositely-extended arms, two spaced-apart straps pivotally connected to each arm, a cross pin forming a pivot-connection between the two pairs of straps, a vertically-movable block, guides therefor supported by said forks, a hoisting rope or cable connected to said block, a hooked lever carried by said block and designed to engage said cross pin, and a releasing lever also carried by said block for disengaging said hooked lever from said cross pin.

4. The combination with two forks pivotally connected together, of straps pivotally connected to said forks, a cross pin forming a pivot-connection between said straps, a vertically-movable block, guides therefor supported by said forks, a hooked lever carried by said block and normally projecting beyond the lower end thereof for automatically engaging said cross pin, the short arm of said hooked lever being bent, a releasing lever also pivoted on said block and having its short arm bent to engage the short arm of said hooked lever, means connected to said block for raising it and said forks, and a rope connected to said releasing lever.

5. The combination with two forks pivotally connected together and having at their centers oppositely-extended arms, of straps pivoted to said arms, a cross pin pivotally uniting said straps, upright bars pivoted to said forks, a cross-head to which said bars are pivoted at their upper ends, vertically-disposed guide rods supported by said forks and by said cross-head, a vertically-movable block guided by said rods, a locking lever carried by said block for engaging said cross pin, and a releasing lever also carried by said block for engaging said locking lever.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

JOSEPH BENJAMIN CASTAGNOS.

Witnesses:

ROBERT LANDY,
PAUL BLANCHARD.