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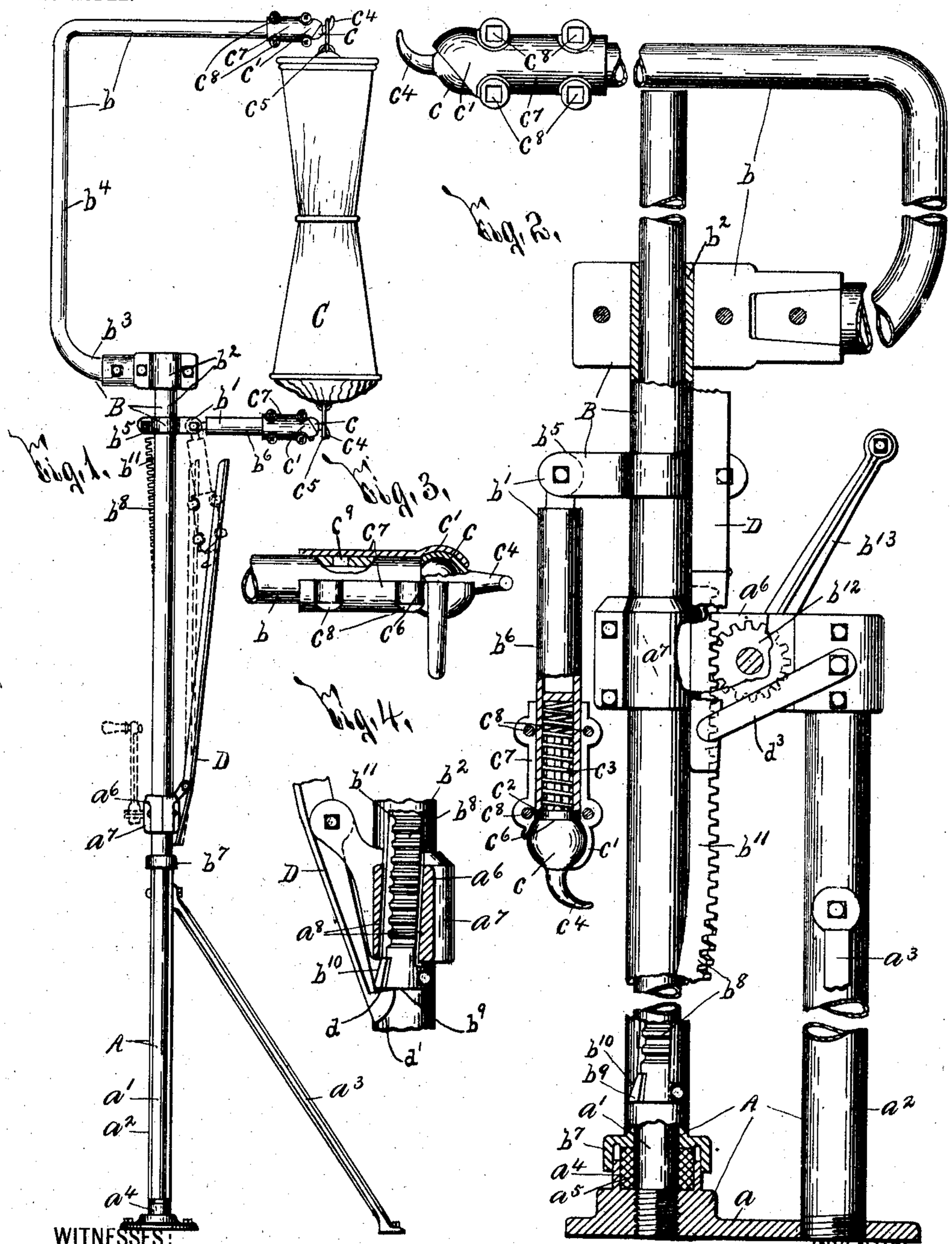
G. W. SMITH.

DELIVERY CRANE.

APPLICATION FILED APR. 5, 1900.

NO MODEL.



WITNESSES:

M. D. Lewis.

S. Davis

INVENTOR

George W. Smith.

BY

Hey & Parsons.

ATTORNEYS.

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UNITED STATES PATENT OFFICE.

GEORGE W. SMITH, OF ROCHESTER, NEW YORK, ASSIGNOR TO JOHN H. HOPKINS, OF ROCHESTER, NEW YORK.

DELIVERY-CRANE.

SPECIFICATION forming part of Letters Patent No. 768,632, dated August 30, 1904.

Application filed April 5, 1900. Serial No. 11,642. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMITH, of Rochester, in the county of Monroe, in the State of New York, have invented certain new and useful Improvements in Delivery-Cranes, of which the following is a specification.

My invention relates to improvements in delivery-cranes particularly applicable for use in railway mail service, and has for its object the production of a simple and practical device for holding a bag or other article in position for delivery to a suitable catcher; and to this end the invention consists in the combination, construction, and arrangement of the parts of a delivery-crane, as hereinafter fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is a side elevation of my improved delivery-crane and a mail-bag operatively supported thereby. Fig. 2 is a front elevation, partly broken away and in section, of my delivery-crane shown as in its inoperative position. Fig. 3 is an inverted view, partly broken away and in section, of a portion of the bag-support of said delivery-crane. Fig. 4 is an elevation, partly broken away and in section, of the upper end of the guide member and the lower end of the bag-support and trip of said crane.

My improved delivery-crane consists of a guide member A, a bag-support B, means for holding the bag in position, and a trip D.

The guide member A is preferably composed of a base a, a pair of upright standards a' a^2, rising from the base, and an inclined brace a^3, connected to the base a and to the standard a^2. Said base is arranged in suitable proximity to a railway-track (not illustrated) and is formed with an annular socket a^4, which surrounds the bottom of the standard a' and receives a buffer a^5, and said standard a^2 is provided with a lateral extension a^6, having its outer extremity formed with an eye a^7 and separated inclined shoulders a^8, Fig. 4.

The bag-support B consists of upper and lower arms b b' and a tubular sleeve b^2. The upper arm, b, is substantially U-shaped, and, as seen in Figs. 1 and 3, one of its ends or branches b^3 extends laterally beyond one side of the sleeve b^2, its central portion b^4 is arranged in a substantially vertical plane at one side of the plane of said sleeve, and its other end or branch is arranged substantially parallel with the end or branch b^3 above the sleeve b^2 and is extended laterally beyond the plane of the opposite side of said sleeve. Said arm b when constructed as described partly incloses a passage-way which extends laterally beyond opposite sides of the sleeve b^2, communicates with the lengthwise opening of the sleeve, and receives the catcher-arm of a mail-bag catcher. The lower arm b' usually consists of a section b^5, fixed to the sleeve b^2 beneath the arm b and arranged substantially parallel with the upper and lower branches of said arm b, and of a movable section b^6, pivoted to one end of the section b^5 and movable into planes substantially parallel with the sleeve b^2 and the upper and lower ends or branches of the arm b. Said sleeve b^2 encircles the standard a', is moved lengthwise of said standard in the eye a^7 until its upper end is either above or beneath the upper end of the standard, is rocked in said eye a^7 when moved lengthwise, and is provided with an annular flange b^7, spirally-arranged gear-teeth b^8, a stop-shoulder b^9, and an engaging face b^{10}. The annular flange b^3 is of greater diameter than the inclosing wall of the socket a^4 and normally incloses the upper portion of said wall, as seen in Fig. 2, for protecting the buffer a^5. The gear-teeth b^8 are formed upon a projecting rib b^{11} and are engaged by a suitable gear-wheel b^{12}, supported by the extension a^6 of the standard a^2 and actuated by a crank b^{13}. Said rib b^{11} is movable between the shoulders a^8 of the standard a^2, and as the support B is raised or lowered by the rotation of the gear-wheel b^{12} the rib b^{11} and shoulders a^8 coöperate to rock the support B within the eye a^7. Said stop-shoulder b^9 is arranged in proximity to the bottom of the support B at substantially right angles with the lengthwise axis of the support, and said engaging face b^{10} inclines upwardly and inwardly from the stop-shoulder b^9.

The means for holding the bag in position

consists of upper and lower ball-and-socket joints provided upon the outer or free extremities of the arms *b b'* of the support B. Each of said joints consists of ball-and-socket members *c c'*, a friction-piece c^2, and a spring c^3. Said ball members are provided with substantially hook-shaped shoulders c^4, extending in opposite directions from corresponding extremities thereof for engaging loops c^5, provided upon the upper and lower parts of the bag or other article C to be supported by my delivery-crane. The opposite extremities of the ball members are provided with substantially flat bearing-faces c^6, Figs. 2 and 3. The socket members *c'* consist of lengthwise separable sections c^7 and receive the ball members *c* in corresponding ends and the outer extremities of the arms *b b'* in their opposite ends. Said sections c^7 are secured together by suitable fastening means c^8, are provided with internal projections c^9 for engaging the supports *b b'*, and are cut away at their outer ends at c^{10} for permitting a maximum amount of movement of the ball members *c*. Said friction-pieces c^2 are arranged within the socket members *c'* and are engaged with the bearing-faces c^6, and said springs c^3 are arranged within the outer extremities of the arms *b b'* and are engaged with the friction-pieces c^2 for holding the ball members *c* in their adjusted positions.

The described means for supporting the bag or other article C permits automatic movement of the upper and lower parts of said bag, and owing to the capability of movement of the ball members *c* the loops c^5 of said bags C are readily detached from the substantially hook-shaped shoulders c^4 without liability of injury to the support B, the bags C, or the loops c^5.

The trip D consists of a lever having its intermediate portion pivoted to the guide member and its lower end provided with a stop-shoulder *d* and an engaging face *d'*, which respectively engage the stop-shoulder b^9 and engaging face b^{10} of the support B. Said stop-shoulders *d* b^9 coöperate to hold the support B in its elevated position, and said engaging faces *d'* b^{10} coöperate to rock the trip D from its normal position against the action of a suitable spring for permitting the automatic engagement of the shoulders *d* b^9 by said spring. The upper end of the trip is arranged in the path of the free extremity of the arm *b'* when the same assumes its inoperative position, and when said upper end is engaged by the free extremity of the arm *b'* the trip D is rocked on its pivot, thus disengaging the shoulders *d* b^9 and permitting the support B to descend and assume its inoperative position, as seen in Fig. 2.

The construction and operation of my invention will now be readily understood upon reference to the foregoing description and the accompanying drawings.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A delivery-crane comprising a guide member, and a rocking support movable lengthwise of the guide member and having a substantially U-shaped portion forming a passage-way extending laterally beyond opposite sides of the axis of the support, substantially as and for the purpose described.

2. A delivery-crane comprising a guide member, and a rocking support movable lengthwise of the guide member and provided with an arm having one end extended laterally from one side of a portion of the support and its other end extended laterally beyond the opposite side of said portion of the support and arranged above said first end, substantially as and for the purpose set forth.

3. A delivery-crane comprising a guide member, and a rocking support movable lengthwise of the guide member and provided with a lengthwise opening for receiving a portion of the guide member and with a substantially U-shaped upper portion for forming a passage-way communicating with the upper end of the opening and extending laterally beyond opposite sides of said opening, substantially as and for the purpose specified.

4. A delivery-crane comprising a guide member, and a rocking support movable lengthwise of the guide member and provided with a lengthwise opening for receiving a portion of the guide member and with an arm having one end extended laterally from one side of a portion of the support beneath the upper end of the opening and its other end extended laterally beyond the opposite side of said portion of the support and arranged above the upper end of said opening, substantially as and for the purpose described.

5. A delivery-crane comprising a guide member having a substantially upright standard, a rocking sleeve encircling the standard and having its upper end movable above and beneath the upper end of the standard and provided with an arm having one end extended laterally from one side of the sleeve and its other end extended laterally beyond the opposite side of the sleeve and arranged above said first end, substantially as and for the purpose specified.

6. A delivery-crane comprising a guide member, and a rocking support movable lengthwise of the guide member and having a substantially U-shaped portion for forming a passage-way extending laterally beyond opposite sides of the axis of the support, and an arm arranged beneath said passage-way and having its free end movable independently of the contiguous portion of the support, substantially as and for the purpose set forth.

7. A delivery-crane comprising a guide member, and a rocking support movable lengthwise of the guide member and provided

with an arm having one end extended laterally from one side of a portion of the support and its other end extended laterally beyond the opposite side of said portion of the support and arranged above said first end, said support being provided with a second arm projecting from the opposite side of said portion thereof and having its free end movable independently of the other arm, substantially as and for the purpose described.

8. A delivery-crane comprising a guide member, and a rocking support movable lengthwise of the guide member and provided with a lengthwise opening for receiving a portion of the guide member, said support being also provided with a substantially U-shaped portion for forming a passage-way communicating with the upper end of the opening and extending laterally beyond opposite sides of the opening, and with an arm arranged beneath said passage-way and having its free end movable independently of the contiguous portion of the support, substantially as and for the purpose set forth.

9. A delivery-crane comprising a guide member having a substantially upright standard, a rocking sleeve encircling the standard and having its upper end movable above and beneath the upper end of the standard and provided with an arm having one end extended laterally from one side of the sleeve and its other end extended laterally beyond the opposite side of the sleeve and arranged above said first end, said sleeve being also provided with a second arm arranged beneath the first arm and having its free end movable independently of the first arm, substantially as and for the purpose specified.

10. A delivery-crane comprising a support, and a ball-and-socket joint having one of its parts connected to the support and its other part provided with means for supporting a bag, substantially as and for the purpose set forth.

11. A delivery-crane comprising a support, a ball-and-socket joint having one of its parts connected to the support and its other part provided with means for supporting a bag, and a spring for holding said other part in its operative position, substantially as and for the purpose specified.

12. A delivery-crane comprising a support, a ball-and-socket joint having one of its parts connected to the support and its other part provided with means for supporting a bag, said other part being formed with a bearing-face, a spring supported by the first part, and a friction-piece interposed between the bearing-face and the spring, substantially as and for the purpose described.

13. A delivery-crane comprising a support, a socket member secured to the support, a ball member movable in the socket member and provided with a substantially hook-shaped projecting shoulder for supporting a bag, and means for holding the ball member in its operative position, substantially as and for the purpose set forth.

14. A delivery-crane comprising a support, a socket member secured to the support, a ball member movable in the socket member and provided with means for supporting a bag, and a spring arranged in the socket member for holding the ball member in its operative position, substantially as and for the purpose specified.

15. A delivery-crane comprising a support, a socket member secured to the support, a ball member movable in the socket member and having one extremity provided with a substantially hook-shaped projecting shoulder for supporting a bag, and its opposite extremity provided with a bearing-face, a spring arranged in the socket member for holding the ball member in its operative position, and a friction-piece interposed between the bearing-face and the spring, substantially as and for the purpose described.

16. A delivery-crane comprising a socket member, a support inserted within one end of the socket member, a ball member movable in the opposite end of the socket member and provided with means for supporting a bag, and a spring arranged in the support for holding the ball member in its operative position, substantially as and for the purpose set forth.

17. A delivery-crane comprising a support, a socket member secured to the support and consisting of lengthwise separable sections, a ball member movable in the socket member and provided with means for supporting a bag, and means for holding the ball member in its operative position, substantially as and for the purpose described.

18. A delivery-crane comprising a guide member, a rocking member movable lengthwise of the guide member and provided with arms, the ball-and-socket joints having corresponding parts connected to the arms and their other parts provided with means for supporting a bag, substantially as and for the purpose specified.

19. A delivery-crane comprising a guide member, a rocking support movable lengthwise of the guide member and having a substantially U-shaped portion for forming a passage-way extending laterally beyond opposite sides of its axis, and an arm arranged beneath said passage-way and having its free end movable independently of the contiguous portion of the support, and ball-and-socket joints having corresponding parts connected to the arms and their other parts provided with means for supporting a bag, substantially as and for the purpose set forth.

20. A delivery-crane comprising a guide member, a rocking support movable lengthwise of the guide member and provided with an arm having one end extended laterally from one side of a portion of the support and its

other end extended laterally beyond the opposite side of said portion of the support and arranged above said first end, said support being provided with a second arm projecting from the opposite side of said portion thereof and having its free end movable independently of the other arm, socket members secured to the arms, ball members movable in the socket members and provided with substantially hook-shaped projecting shoulders for supporting a bag, and means for holding the ball members in their operative position, substantially as and for the purpose described.

21. A delivery-crane comprising a guide member formed with a standard, an annular socket surrounding the standard, a buffer within the socket and a support movable lengthwise of the standard above the socket, said support being provided with means for supporting a bag, and an annular flange for inclosing the outer wall of said socket, substantially as and for the purpose specified.

22. In a delivery-crane, and in combination, a guide member, a support vertically movable thereon, a pair of supporting-arms carried by said guide member, one of said arms having movement independently of the other, and a pivoted device, controlled by the latter arm, coacting directly with said support to hold the same in an elevated position, substantially as and for the purpose described.

23. In a delivery-crane and in combination, a guide member, a support vertically movable thereon, a pair of supporting-arms carried by said guide member, one of said arms having movement independently of the other, and a pivoted device having one end engaging directly with said support and its opposite end arranged in the path of movement of the latter arm to be tripped thereby, substantially as and for the purpose described.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Rochester, in the county of Monroe, in the State of New York, this 26th day of September, 1899.

GEORGE W. SMITH.

Witnesses:

HAMPDEN HYDE,

D. LAVINE.