(No Model.) 5 Sheets—Sheet 1.

D. H. RICE.

APPARATUS FOR CASH CARRIERS.

No. 313,370. Patented Mar. 3, 1885.

Fig. 2

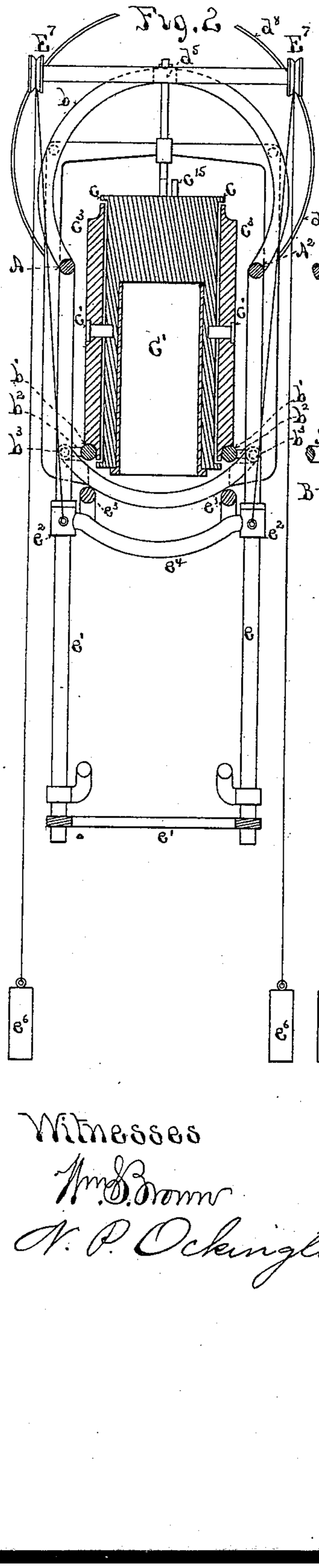

Fig. 1

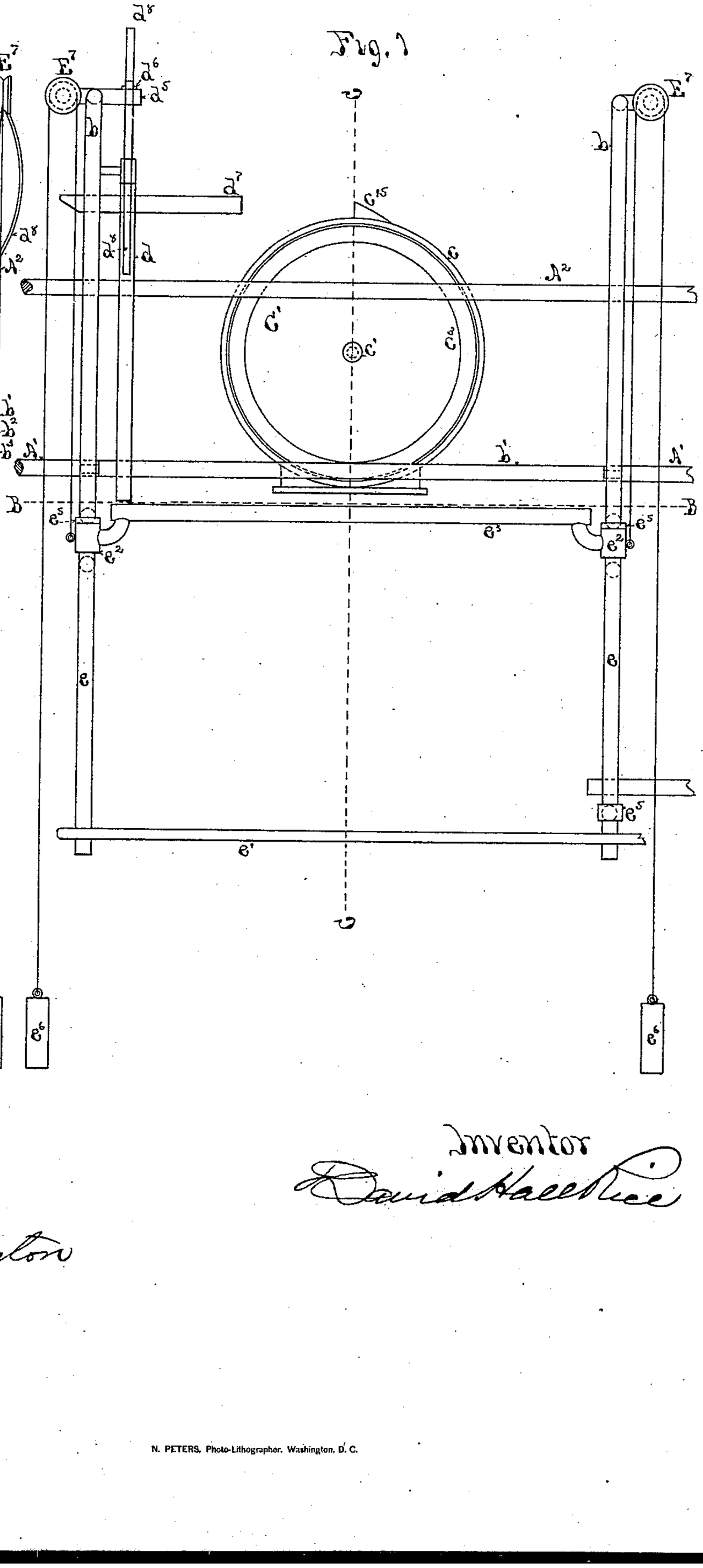

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Fig. 3

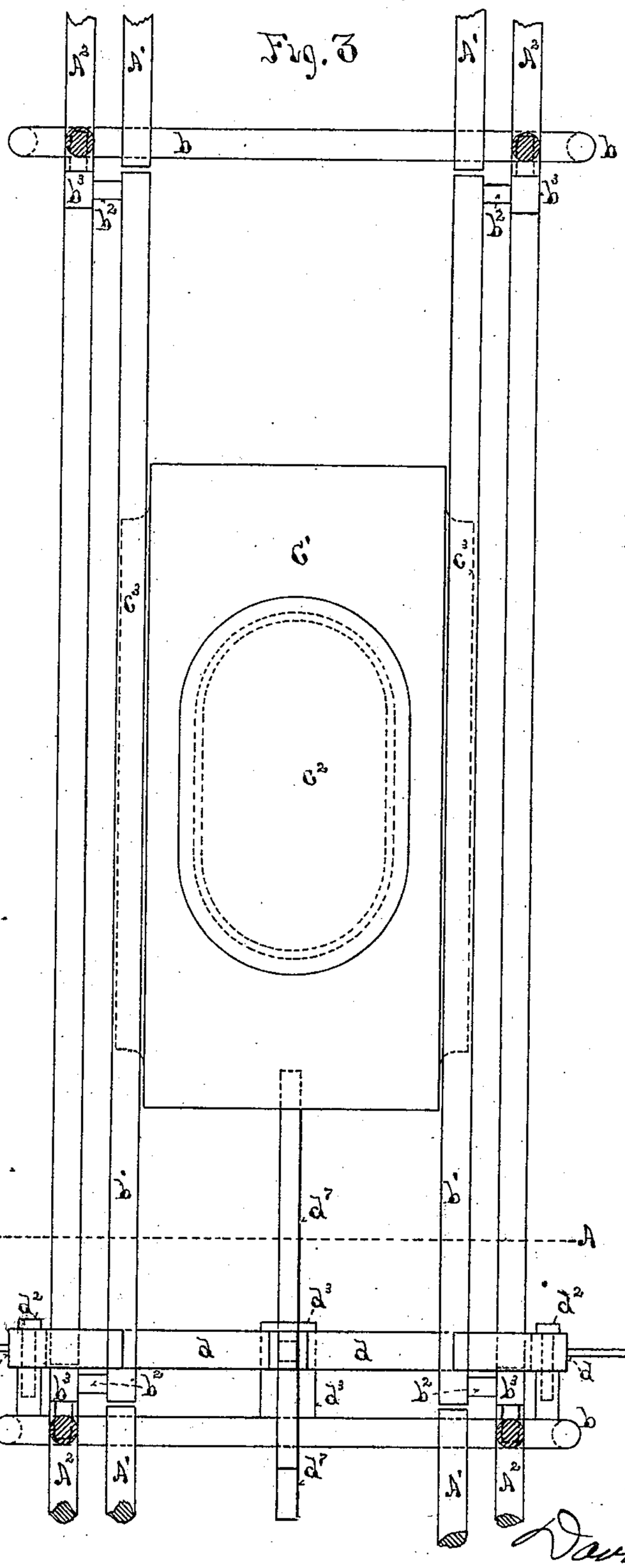

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Fig. 5

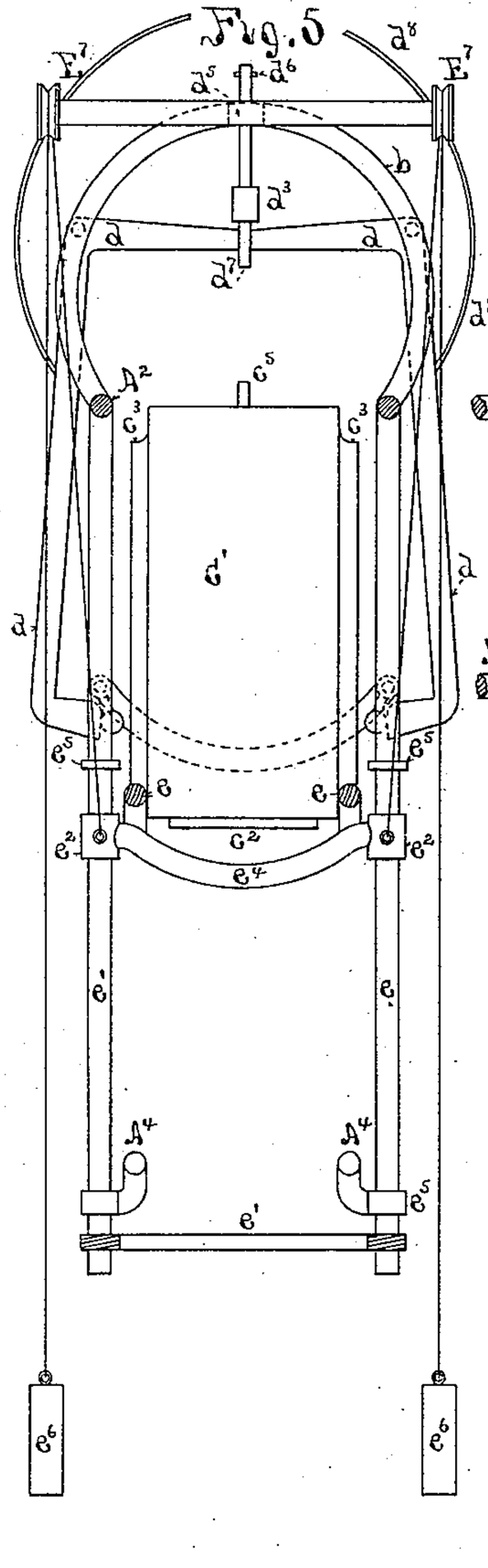
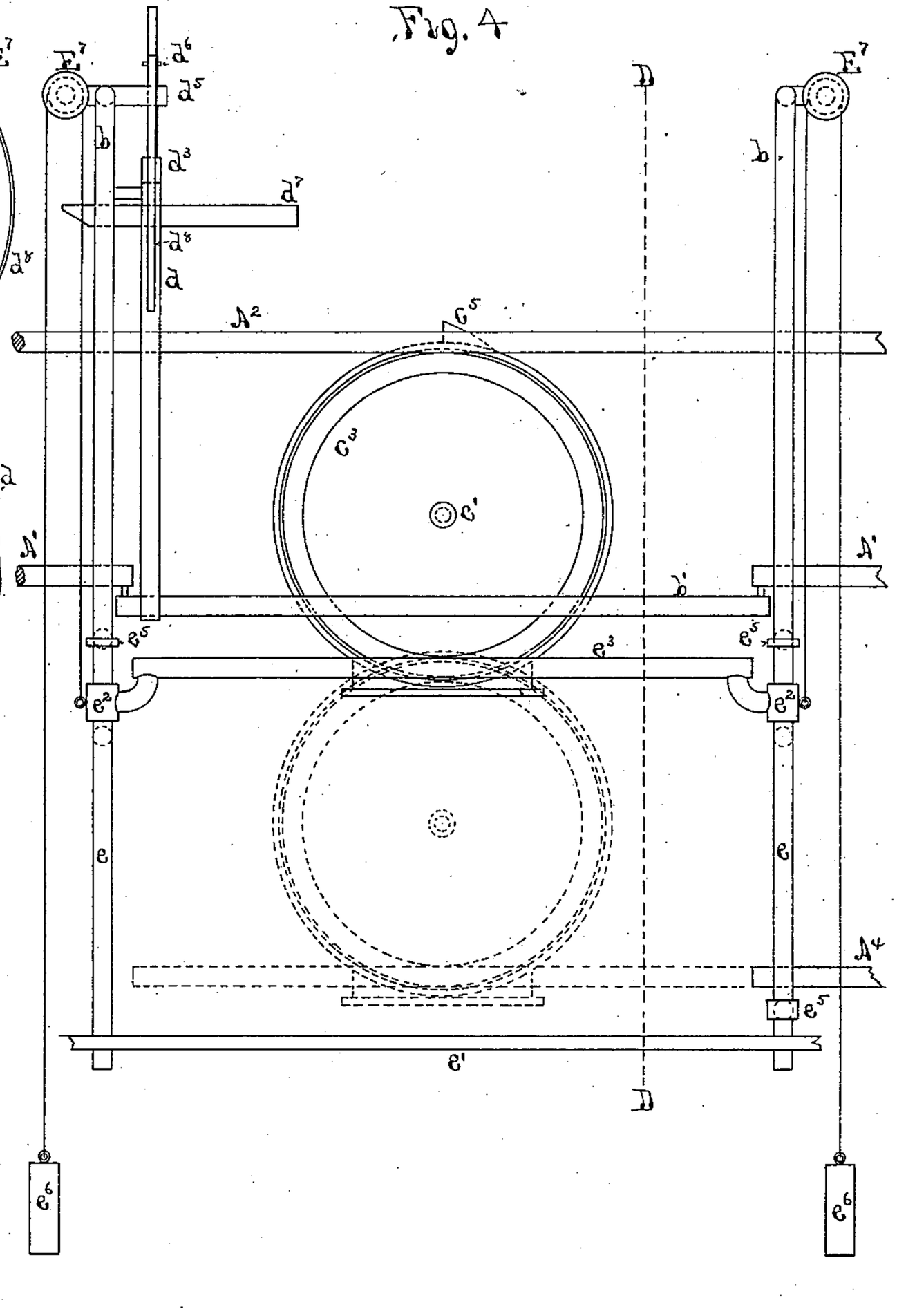


Fig. 4



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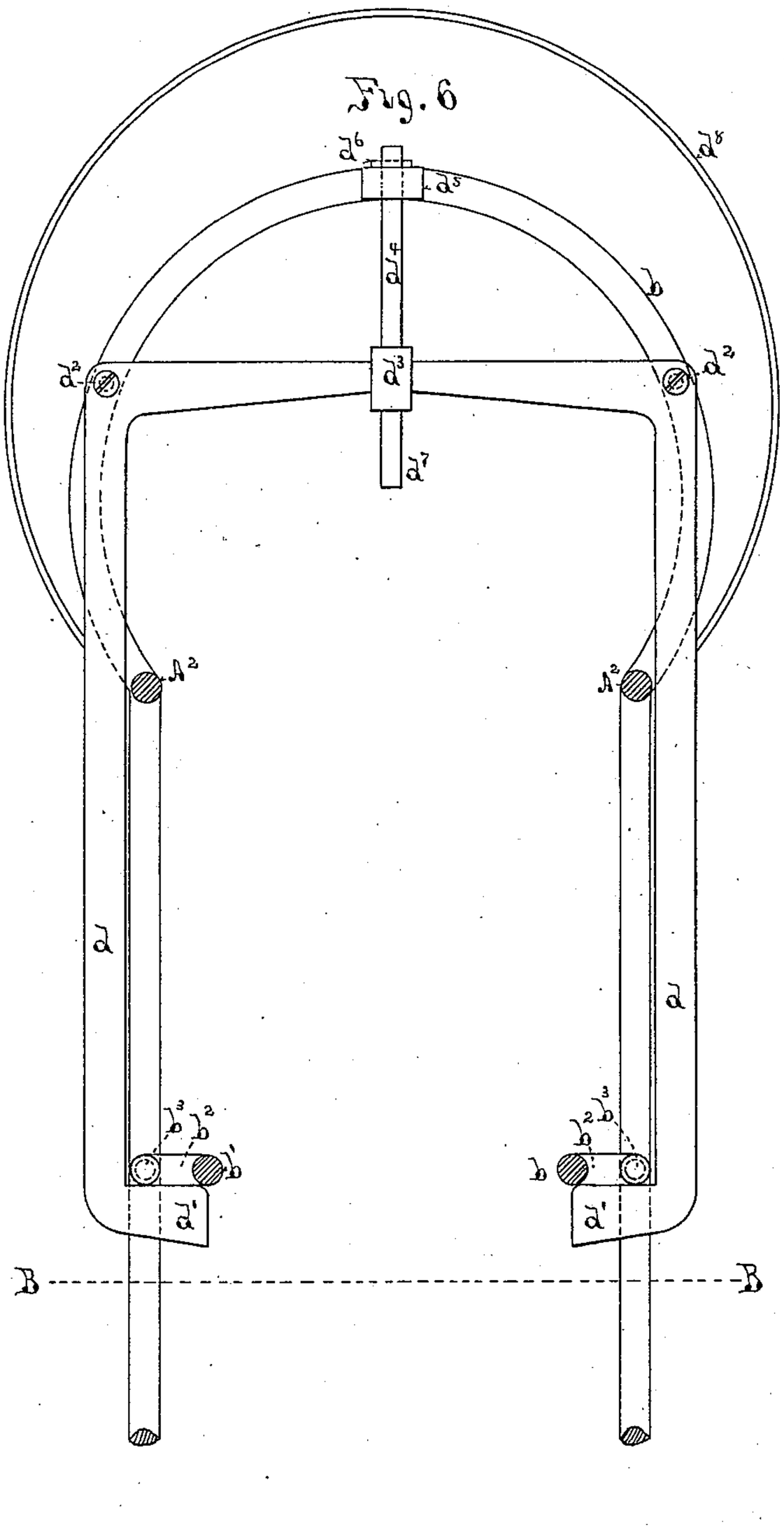
No. 313,370. Patented Mar. 3, 1885.

Fig. 6



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(No Model.) 5 Sheets—Sheet 5.

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APPARATUS FOR CASH CARRIERS.

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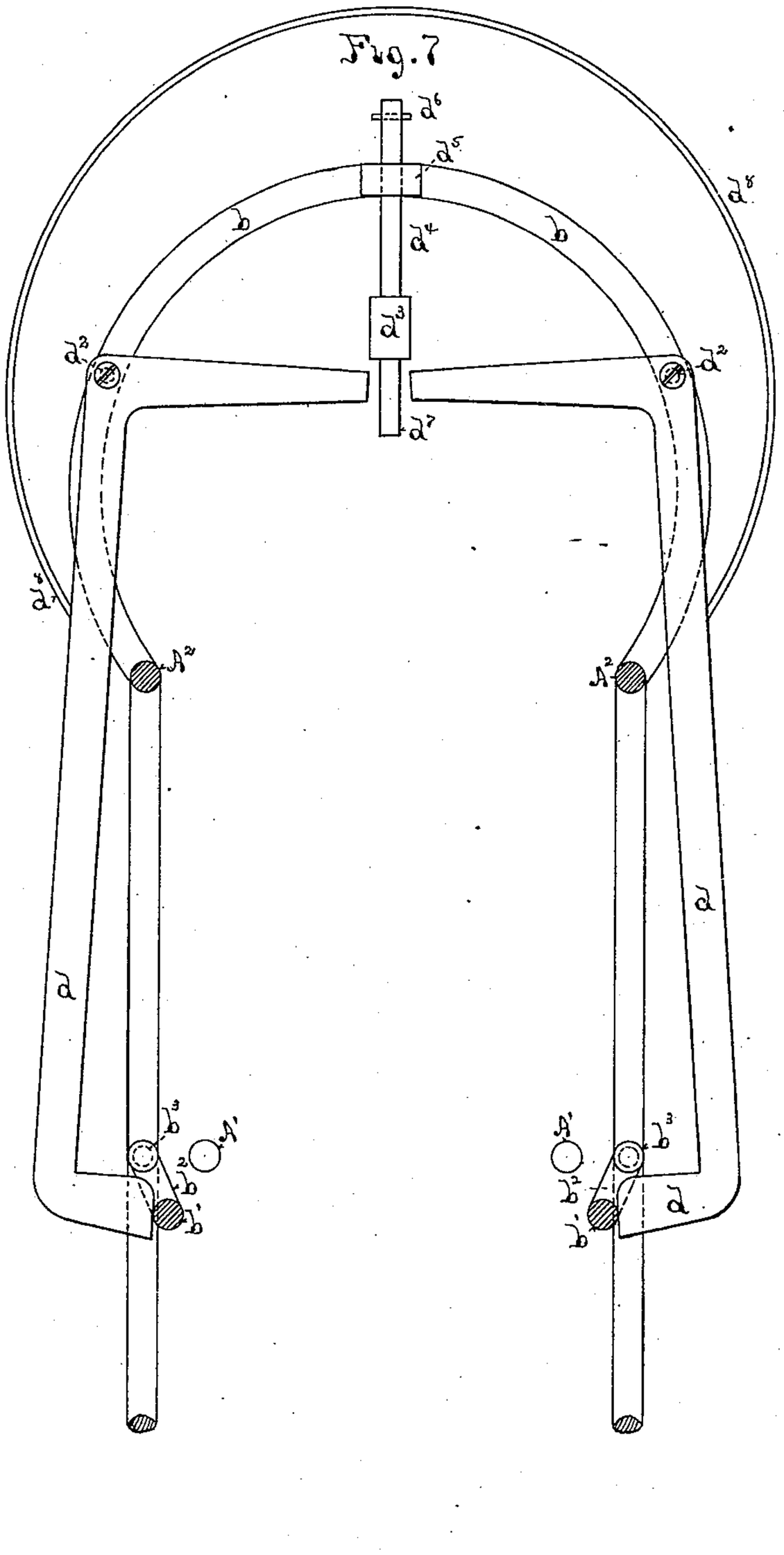
Fig. 7



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR CASH-CARRIERS.

SPECIFICATION forming part of Letters Patent No. 313,370, dated March 3, 1885.

Application filed January 20, 1885. (No model.)

To all whom it may concern:

Be it known that I, DAVID HALL RICE, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Improvement in Systems of and for Cash-Carriers, of which the following is a specification.

My improvement relates to cash-carrier systems; and it consists of certain combinations of the parts of carriers and tracks therefor, and of elevating and receiving devices therewith, constituting a more simple and complete system for the sending and delivery of small parcels, substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a track and its carrier delivery mechanism with a carrier passing thereover. Fig. 2 is a section transversely through the line C C of Fig. 1. Fig. 3 is a bottom plan view of Fig. 1, with the parts below the dotted line B B removed. Fig. 4 is a side view similar to Fig. 1, showing the carrier in the act of passing down through the track and being transported to the track below by the transferring mechanism. Fig. 5 is an end view from the left-hand side of Fig. 4. Fig. 6 is an enlarged view of the track alone from the same point, showing the mechanism which operates the delivery-section of the former in one position, and when adjusted to pass a carrier over it without delivering it through the track. Fig. 7 is a similar view to Fig. 6, with the parts in position to deliver the carrier through the track into a basket or other similar receptacle, substituted in lieu of the parts below the line B B in Fig. 1.

A′ A′ is the track, composed of two rods or tubes of metal secured in frames *b b*, which may be either supported on posts and brackets or suspended from the ceiling of the room, as desired. Two stay-rods, A^2 A^2, also run the whole length of the track, to give additional stability to the frames *b b*.

Between the brackets or frames *b b*, (shown in Fig. 1,) or any two similar frames, a section, *b′ b′*, of each rail A′ is cut out, as clearly shown in Fig. 3, and to this section, near each end, is attached a short arm, b^2 b^2, pivoted in the sides of the brackets or frames *b b* by pivots parallel with the track-rails, (marked b^3 b^3.)

When the sections *b′ b′* of rails A′ A′ are held in the position shown in Figs. 1, 2, 3, and 6, therefore—that is, so as to register with the rails—a carrier provided with proper wheels to fit the track, and of suitable breadth, will pass over the sections and onto the track beyond; but when the sections *b′ b′* are allowed to drop and turn upon the pivots b^3 b^3, or so supported that the weight of the carrier will cause them to so turn, then they will be drawn from under the wheels of the carrier, and the latter will drop through the track and be caught in a suitable receptacle or transporting mechanism, to be delivered to a person beneath or upon another track, as desired. In like manner, when the sections *b′ b′* are in the position shown in Fig. 6, a carrier may be introduced by hand or on a suitable elevator, in position to have the wheels parallel with the sections and come in contact with them beneath, when by pressing upward on the carrier the sections will swing upward on their pivots and allow it to pass through to a position above the track, when the sections will drop back under its wheels, and the carrier be dropped upon them and roll off upon the track A′ beyond.

C′ is the carrier, fitted to run upon the track A′. The body part has upon its opposite sides two countersunk cylindrical depressions of sufficient diameter and depth to receive the flange of the wheel within each, leaving an overlapping portion of the body all around *c*, to protect the flange of the wheel from injury if the carrier should be dropped in handling it. The wheels run freely on the pivots *c′*, which have their ends countersunk in the outer face of the wheel, to allow the carrier to descend through between the track-sections *b′ b′* without being caught or causing undue friction. The bottom part of the body of the carrier depends between the rails A′ A′, and has formed in it from below upward a chamber, into which is inserted a cup, c^2, the latter being held in place by any suitable spring catch or lock of well-known form. This cup is to contain the cash or parcel to be carried.

As shown in Fig. 3, the tread part of the carrier-wheels c^3 c^3 is so made that the pivoted rail-sections *b′ b′* can swing away from under the wheels and leave a clear passage for the carrier between them. These wheels are made of the substance known as "leatheroid," or

fiber which has no resonant quality, and avoids the ringing sound produced by metal or wooden wheels in traversing a track.

In order to hold the wheel track-sections b' b' in position registering with the track-rails A′ A′, I employ the following mechanism, although it is obvious that a great variety of latch mechanisms may be used for the purpose: Upon the track-supporting frame b on the end of the track-sections b' b' upon which the carrier first enters, the track being properly inclined for the purpose, I pivot two right-angled levers, d d, provided upon their lower ends with cam-shaped ends d' d', which project inwardly under the rail-sections b' b', as shown, the pivots d^2 d^2 of the levers being nearly in a vertical line above these ends. The arms of the levers d d on the opposite sides of the track project inward over the path of the carrier directly toward each other until they meet within, say, one-eighth of an inch of each other, with a block of metal, d^3, placed between them, the ends of the arms, or some considerable part of them where they abut against this metal block, being above a right line passing through the centers of pivots d^2 d^2. So long, therefore, as the block or key d^3 is between the adjacent ends of the levers d d, they cannot approach each other nearer, and the cam-shaped opposite ends d' d' will be firmly held under the rail-sections b' b', and retain the latter from swinging downward out of line with the rails A′ A′. While in this position a carrier may be passed through between the track-sections b' b' by placing the treads of the wheels c^3 c^3 against the lower sides of the track-sections and pressing the carrier upward, thus turning the track-sections to each side upon their pivots until the carrier passes through between them. When the carrier is raised above the track-sections, they will drop back upon the lever ends d' d' under the wheels, and the carrier may be lowered upon them and released, when it will run off upon the track. The block d^3 has a rod attached to its upper side, d^4, rectangular in cross-section, which projects vertically upward and passes through the sleeve d^5, attached to the frame b, fitting the sleeve so as to move up and down freely, and having a cross-pin, d^6, so placed as to limit its downward movement. To the lower side of the block d^3 is attached an arm, d^7, extending above and parallel to the rails A′ A′, and just over the path of the body part of the carrier in the direction from which it approaches the drop mechanism. The lower side of this arm, at the end where it is first met by the carrier, is beveled upward, and it projects in the opposite direction from the block d^3 from that above described. On top of the carrier, intended to pass through this particular drop, is placed a projection, c^5, in such a position as to come in contact with the arm d^7 just before the carrier reaches the rail-sections b' b', and lift it and the block d^3 upward from between the ends of levers d d. Passing along under the arm d^7, the carrier projection c^5 keeps the block d^3 in this position until the carrier has entered upon the rail-sections b' b', when the weight of the carrier will turn them downward, and the carrier will pass through between them, as before described. A bow-shaped spring, d^8, has its ends attached to the outside of the levers d d, as shown, and compresses them together with sufficient force to cause their cam ends d' d' to return the rail-sections b' b' into line with the rails A′ A′, when the block d^3 drops in between the other ends of the levers and locks them in place until again raised by the carrier. In case a carrier is to pass over the rail-sections b' b', as shown in Figs. 1 and 2, its projection c^{15} is placed so as to pass to one side of the lever d^7, and the corresponding lever of the drop mechanism at its station is placed in the path of its projection. Thus each carrier will pass over the drop mechanism of every station except its own and automatically deliver itself there.

In Figs. 1, 2, 4, and 5 is shown a transfer mechanism for conveying the carrier to another track after it passes through between rail-sections b' b'. Tubular extensions e e are secured to the frames b b, extending vertically downward, and framed together at their lower ends by bars e' e'. Upon these extensions four sleeves, e^2 e^2, slide freely up and down.

Directly underneath the rail-sections b' b and rails A′ A′ two rails of similar size and shape in cross-section, e^3 e^3, are rigidly attached by short bent arms to the sleeves e^2 e^2, and cross-bars e^4 e^4, also attached to the sleeves, unite the whole into a firm rectangular frame sliding up and down with the sleeves. Collars e^5 e^5 on the rods e e limit the movements of the sleeves e^2 e^2 at top and bottom. The upper collars, e^5 e^5, are fixed at such a height on the rods that when the sleeves e^2 e^2 abut against them the receiving and transfer rails e^3 e^3 will lie just below the path of the rail-sections b' b', turning on their pivots b^3 b^3, and, therefore, when the weight of the carrier forces the latter to turn from beneath the wheels the latter will have but a very slight distance to descend upon the same path before it will reach the rails e^3 e^3, and the carrier is moreover obliged to descend in this path upon the rails e^3 e^3 by the compression of the spring d^8 acting upon levers d d, and rail-sections b' b' pressing against the opposite flat wheels and faces of the carrier-sides and, keeping it true and from rolling on the rails e^5 e^5 when it reaches them. The sleeves e^2 e^2 are held up against the collars e^5 e^5 by counter-weights e^6 e^6, attached to cords passing over pulleys E′ E′ and attached to the other ends to said sleeves. These counter-weights will hold the sleeves and rails e^3 e^3 in this position when no carrier is thereon; but when the carrier descends upon the rails e^3 e^3, as described, its superior weight causes the rails and sleeves to descend until the latter come in contact with the lower collars, e^5 e^5. At this instant the rails e^3 e^3 have registered with the rails of another track, A⁴

A^4, and the carrier, having descended below the rail-sections b' b', is released from their compression upon its sides, and they return to position in line with rails A′ A′. The carrier being thus released rolls off upon the rails A^4 A^4, and the rails e^3 e^3 and sleeves e^2 e^2 return to their upper position. This transfer device differs from an ordinary switch in employing a supplemental set of rails, having no connection with and forming no part of the main track, to receive and transfer the carrier to the other track, and also in conducting the carrier to and placing it upon said supplemental rails by spring-guides, which hold it until it has reached the position to be delivered upon the other track.

Instead of the rails e^3 e^3, a basket or other similar receptacle may be attached to the sleeves e^2 e^2, and the rails A^4 A^4 dispensed with, if it be desired to merely deliver the carrier to an attendant beneath, and deliver the carrier into a receptacle instead of upon the rails, as it is evident that the carrier would roll off the latter after falling below the rails A′ A′.

I make no claim herein to such combinations of elevating devices or receptacles with the pivoted rail-sections, as I am about to make other applications for Letters Patent claiming such features relating to them as may be patentable.

What I claim as new and of my invention is—

1. In combination with a double-wheel carrier-track, A′ A′, two track-sections, b' b', suspended upon pivots b^3 b^3, placed parallel to the track, and adapted to be revolved thereon to remove or replace the carrier upon the track, substantially as described.

2. In combination with the double-wheel carrier-track A′ A′, the two track-sections b' b', suspended upon pivots b^3 b^3, placed parallel to the track and with relation to the carrier-wheels, to permit the weight of the carrier to withdraw said rail-sections from beneath it, substantially as described.

3. The combination of the track A′ A′, the rail-sections b' b', pivoted therein, the supplemental rising and falling transferring-rails e^3 e^3, and the track A^4 A^4, substantially as described.

4. In a cash-carrier, the combination, with the wheel c^3, of the body provided with an annular projecting flange, c, overlapping and protecting the flange of the wheel all around the same, substantially as described.

5. The combination, with the track A′ A′, of the track-sections b' b', pivoted longitudinally therein, the bent pivoted levers d d, supporting said track-sections at one end and projecting toward each other at the other, and the key-block d^3, fitting between said adjacent ends, substantially as described.

6. In combination with the track A′ A′, the rail-sections b' b', pivoted therein parallel to said track, movable bars or shelves d' d', placed thereunder, the bar d^7, placed within the carrier-path and in position to be struck and moved by the carrier, and intervening mechanism connecting said bar to said shelves, whereby its movement will release the latter from beneath said rail-sections and permit them to revolve out of or into line with the track, substantially as described.

7. The combination of the track A′ A′, the track A^4 A^4, the transferring-rails e e, registering with the latter, and the yielding sections b' b', acting as spring-pressure guides to transfer the carrier from track A′ A′ to track and rails e^3 e^3, substantially as described.

8. The combination of the track A′ A′, the rail-sections b' b', pivoted parallel thereto, their supporting pivoted levers d d, and the spring d^8, said levers having cam-shaped faces bearing against said sections, whereby the same are returned to a position in line with said track, substantially as described.

9. The combination of the track A′ A′, and the yielding sections or rails b' b', acting upon the sides of the carrier as spring-pressure guides or checks as it drops from the tracks A′ A′ and passes downward between them, substantially as described.

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