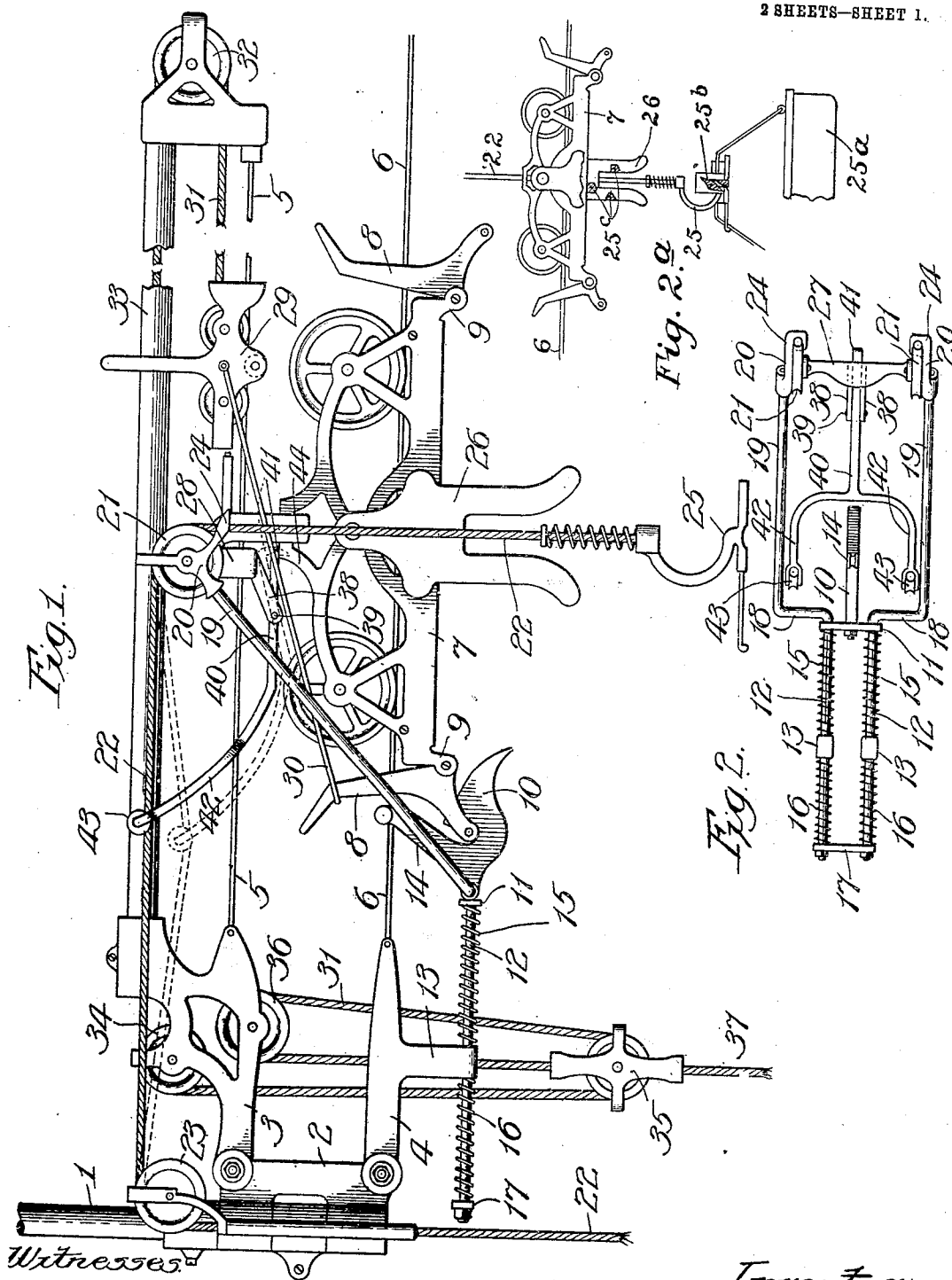


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L. B. BETHARDS.
STORE SERVICE APPARATUS.
APPLICATION FILED SEPT. 20, 1909.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.



Witnesses
Chas. H. Bull.
Clyde C. Palmer.

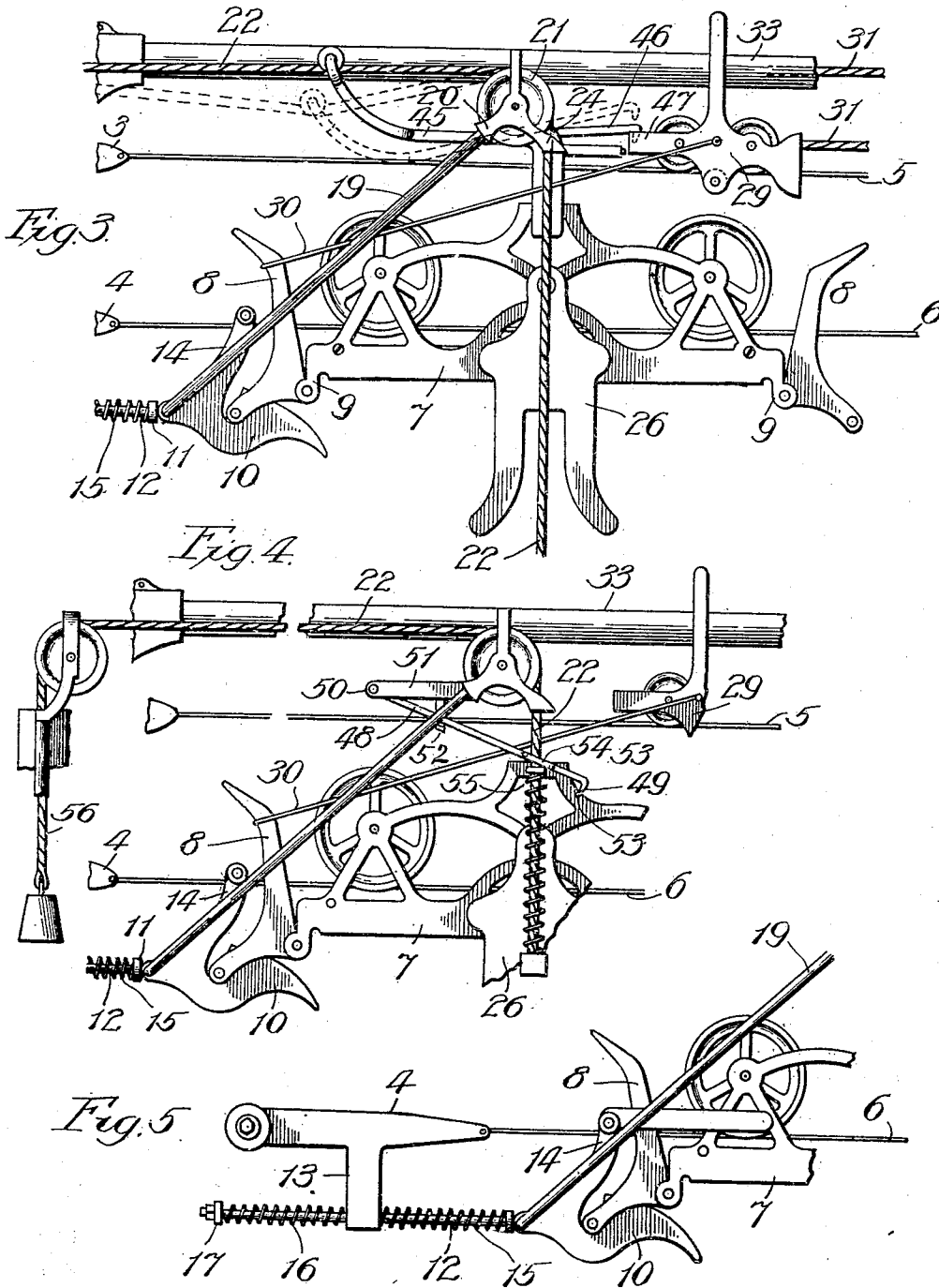
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Longo B. Bethards
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2 SHEETS—SHEET 2.



Witnesses:

Chas. H. Buell.
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Lonzo B. Bethards
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UNITED STATES PATENT OFFICE.

LONZO B. BETHARDS, OF CHICAGO, ILLINOIS.

STORE-SERVICE APPARATUS.

955,629.

Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed September 20, 1909. Serial No. 518,650.

To all whom it may concern:

Be it known that I, LONZO B. BETHARDS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding numerals of reference in the different figures indicate like parts.

In the use of store service apparatus, in which cars having detachable receptacles are operated upon wire-ways, it has heretofore been found difficult to maintain a proper relation between the catch mechanism by means of which the car is arrested and locked in a stationary position and the elevating mechanism. It has also been found difficult to maintain a satisfactory relation between the usual elevating stirrup and "fork" or locking mechanism so as to insure a perfect locking action between the basket and car when the former is elevated. Moreover, it frequently occurs that the car is forwarded by the propelling mechanism before the receptacle is locked thereto.

The object of my invention is to overcome these several objections and to provide simple and effective means for causing the elevating mechanism to maintain an unvarying relation to the car and catch device, as well as to provide means for preventing the car from being prematurely forwarded.

To these ends my invention consists in the combination of elements hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a side elevation of a car, an elevated way and an elevating device embodying the features of my invention; Fig. 2 is a plan view of the stop mechanism and pulleys, by means of which the car may be arrested and the receptacle raised and lowered; Fig. 2^a is a side elevation of a car, a detachable basket and an elevating device; Fig. 3 is a side elevation showing a modified construction, and Figs. 4 and 5 are similar views of modifications.

Referring to the drawings, 1, Fig. 1, represents the usual hanger for supporting one end of a wire-way, upon which is swiveled a fitting 2, to which in turn is jointedly connected fittings 3 and 4 having wires 5 and 6

respectively, attached to their forward ends. A car 7 is mounted upon the wire 6, said car being provided with a spring controlled yoke 8, at each end thereof, of well known construction, the same being pivoted to lugs 9. A catch 10 has its rear end rigidly attached to a cross-bar 11, the ends of which are rigidly secured to parallel rods 12, Figs. 1 and 2, having sliding bearings in depending arms 13, which are integral with the part 4. An arm 14 is formed upon the part 10, said arm having a bore in its upper end through which is loosely projected the wire 6, thereby holding the catch at all times at a fixed distance from the wire. The usual buffer-springs 15 and 16 are mounted upon the rods 12 upon opposite sides of the arms 13. A cross-bar 17 is also attached to the rear ends of the rods 12 to hold them parallel. The rods 12 are bent laterally as shown at 18, Fig. 2, and thence forwardly and upwardly as shown at 19 to form parallel supporting extensions, upon the ends of which are secured fittings 20 having pulley-wheels 21 journaled thereon. The usual elevating cords 22, are trained over pulleys 23 supported by brackets upon the hanger 1, Fig. 1, thence over the pulleys 21 and downwardly through guide holes in extensions 24 in the fittings 20 to the usual stirrup 25, by means of which the ordinary basket 25^a, Fig. 2^a, is raised and lowered to the locking head or "fork" 26 which contains the usual automatic locking mechanism for detachably connecting the basket to the car comprising a tilting locking-dog 25^b adapted to engage cross-bars 25^c all of well known construction.

A cross-bar 27, Fig. 2, has a depending portion 28, Fig. 1, through a bore in which the wire 5 is extended, so that through the action of the rods 19 a fixed distance between the wires 5 and 6 is maintained.

It is obvious that in the absence of the supporting bars 19, the release of the basket from the car would permit the latter to rise while at the same time the pulleys 21 would be lowered by reason of the transfer thereto of the weight through the action of the elevating cords, thereby disturbing the relation between the stirrup and locking mechanism as well as that between the catch 10 and yoke, so as to render the action of both coacting mechanisms uncertain. Upon lift-

ing the basket, the interlocking elements may thus be prevented from engaging or the yoke 8 may be disengaged from the catch. When the basket is raised an excessive force is often exerted upon the elevating cords in order to insure the engagement of the lock, which increases the distortion described. It will be seen, however, that when the connecting arms 19 are used any excessive stress upon the pulleys 21 will be sustained in part by the wire 6 so that whether the load be upon the basket or pulleys, the relation of the pulleys, the wire 6 and other coacting parts will remain unchanged.

In the example illustrated the propelling mechanism is that shown and described in Letters Patent to me, No. 927,212, and consists briefly of a trolley 29 upon the wire 5 having a loop 30 adapted to engage the part 8, and a propelling cord 31 attached to the forward end of the trolley and trained over a pulley 32 upon the end of a tubular arm 33 attached to the forward end of the part 3. Said cord is carried over pulley 34, beneath a wheel upon a block 35, over a pulley 36 and back to the block 35, to which a pull-cord 37 is attached.

If, in operating the device, the cord 37 is pulled before the basket is locked to the car through the action of the elevating cord, the car will be forwarded without the basket, thereby causing annoyance and delay. This contingency may be avoided by the following means: Extending rearwardly from the part 28 are parallel arms 38 to which is pivoted at 39 a lever 40 having a hook 41 at its forward end. The rear portion of the lever is bifurcated so as to form arms 42 having pulleys 43 upon their ends adapted to rest upon those portions of the elevating cords 22, which extend between the pulleys 21 and 23. The weight of the arms and pulleys serve normally to depress the cords to the position indicated in dotted lines in Fig. 1, thereby tilting the forward end of the lever 40 and raising the hook 41 above the frame 44 of the car, which is free to pass under the same and to be brought into locking engagement with the stop 10 without engaging the hook. As soon, however, as the elevating cord is placed under tension for releasing the basket, the pulleys 43 are lifted thereby, which results in tilting the forward end of the lever downwardly sufficient to bring the hook 41 into engagement with the body of the car, where it remains until the tension upon the elevating cords is released. Inasmuch as this cannot occur until the basket is locked to the car, it follows that the latter cannot be forwarded by the action of the propelling mechanism until the locking is effected and the elevating cords permitted to relax. When this occurs the car is free to be forwarded.

In Fig. 3 is shown a modified construction in which, all other features remaining the same, the lever 45 is pivoted higher up and its short arm 46 is extended farther forward so as to engage the rear end 47, of the trolley frame when the cord 22 is under tension, it being manifestly immaterial, so far as results are concerned, whether the lock be applied to the car or to the propulsion mechanism.

A further modification is shown in Fig. 4, in which a rod 48, having a hook 49 upon its forward end, is pivoted at 50 to an arm 51 extending rearwardly from the pulley support. A bail 52 serves to limit the downward movement of the rod. The hook acts by gravity, and is adapted to engage a pin 53 upon the car when the latter is at the station during the time when the basket is released from the car. A loop 54 is formed upon the bar through which the cord 22 is loosely passed. A collar 55 upon the cord is adjusted to engage the loop and hold the hook out of engagement with the pin during the time the basket is locked to the car. This result is accomplished by means of a counterweight 56 upon the cord 22, which causes the collar 55 to engage the hook and hold the hook normally out of engagement with the pin.

A still further modification is shown in Fig. 5, in which the auxiliary wire 5 is omitted, it being obvious that the pulley supports 19 will serve to maintain the proper relation between the elevating mechanism and the car, and further, that said device is independent of the character of the propelling means employed.

Having thus described my invention, I claim:

1. In a store-service apparatus of the class described, the combination with a car mounted upon an elevated way and provided with a detachable receptacle, of a buffer-stop, elevating cords for raising and lowering the receptacle, pulleys for supporting said cords, and means for causing said pulleys to move back and forth with said buffer stop when the latter is moved from its normal position by the impact of the car.

2. In a device of the class described, the combination of an elevated way, a car, a buffer-stop, a detachable receptacle, elevating cords for raising and lowering said receptacle to and from the car, pulleys for said elevating cords, and means rigidly attached to said buffer stop to form the sole support for said pulleys.

3. In a store-service apparatus, an elevated way, a car mounted thereon, a spring-controlled buffer-stop and catch, a detachable basket, means for locking the same to the car, a stirrup, elevating cords connected therewith, pulleys therefor in the vertical plane of the locking mechanism upon the

car, in combination with supporting means rigidly attached to and supported by said buffer-stop for supporting said pulleys.

4. In a device of the class described, the combination with an elevated way, a car mounted thereon, a buffer-stop, a catch for arresting and holding the car in a stationary position, a detachable basket, means for locking said basket to the car, basket elevating cords, pulleys therefor, pulley supporting means rigidly attached to said buffer-stop, an auxiliary locking mechanism for preventing the forwarding of the car while the basket is detached and means controlled by said elevating cords for normally holding said auxiliary locking mechanism out of engagement.

5. The combination with an elevated way, a car having a detachable basket and means for locking the same to the car, of propulsion mechanism, basket elevating cords, and a hook pivoted to a stationary point, said hook being in operative connection with the ele-

vating cords for preventing the forwarding of the car when the basket is unlocked therefrom.

6. The combination with an elevated way, a car having a detachable basket and locking mechanism for locking the basket to the car, of propulsion mechanism, basket elevating cords, and a pivoted lever element weighted at one end, said weighted end being connected with said cords to hold them normally in a predetermined position while the opposite ends of said lever is provided with a hook for preventing the forwarding of the car when the weighted end is lifted by the tension of said cords.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses, this 18th day of September 1909.

LONZO B. BETHARDS.

Witnesses:

D. H. FLETCHER,
CARRIE E. JORDAN.