Jan. 7, 1958 W. STACKHOUSE 2,818,955

COIN CONTROLLED SERVICE UNIT DISPENSERS

Filed Aug. 14, 1953 5 Sheets-Sheet 1

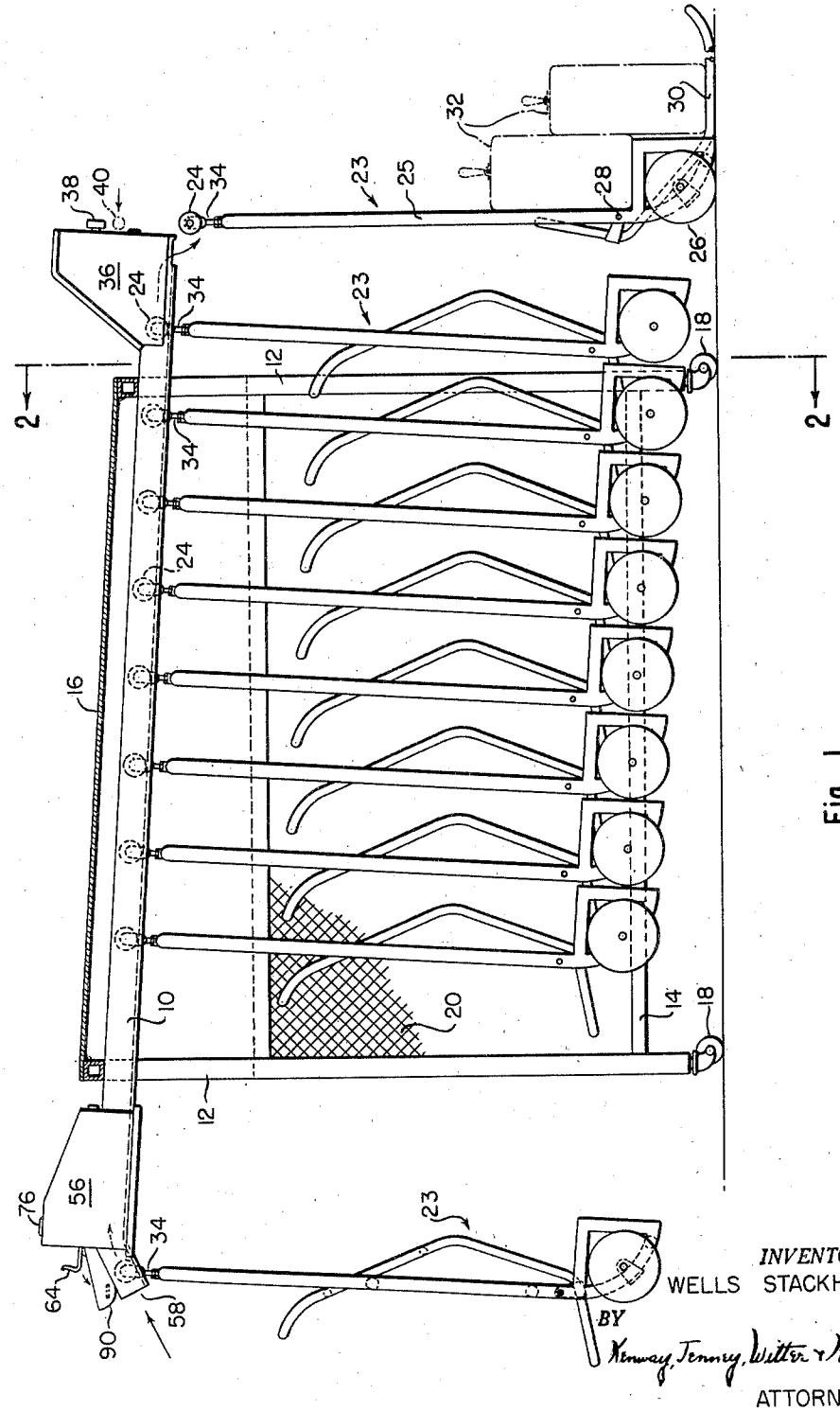

Fig. 1

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Filed Aug. 14, 1953 5 Sheets-Sheet 2

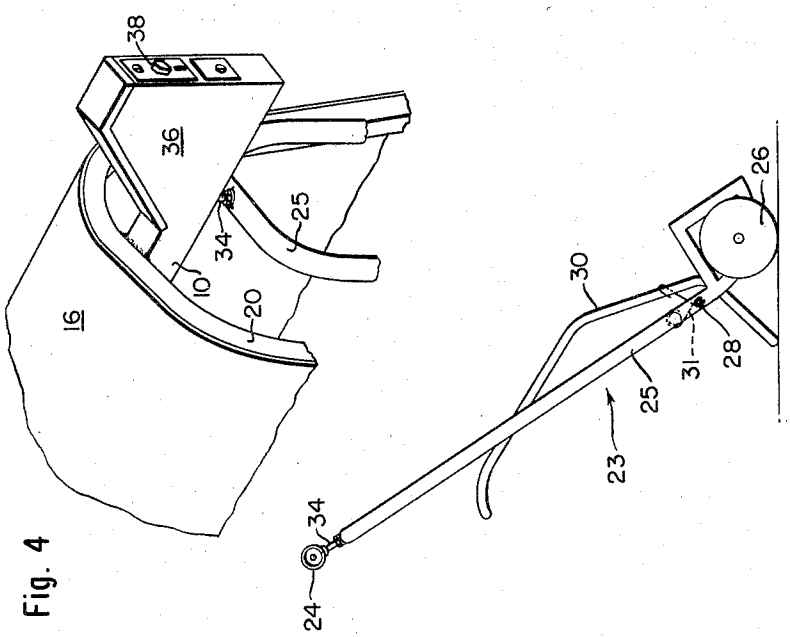

Fig. 4

Fig. 3

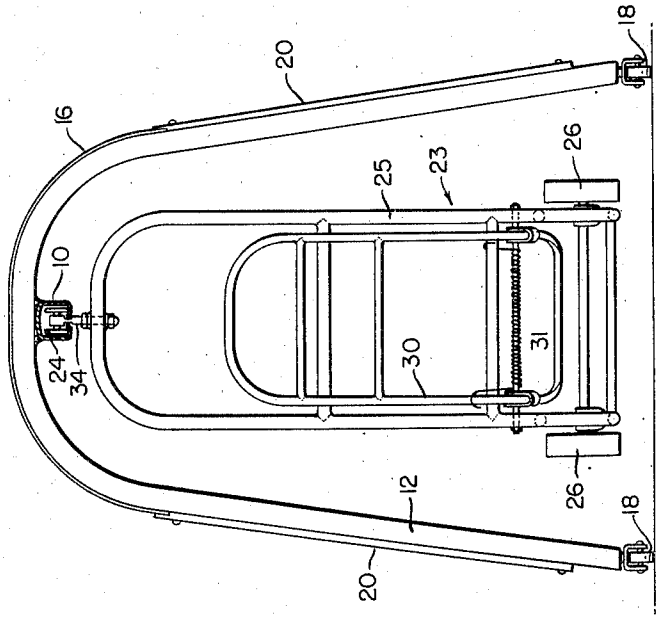

Fig. 2

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COIN CONTROLLED SERVICE UNIT DISPENSERS

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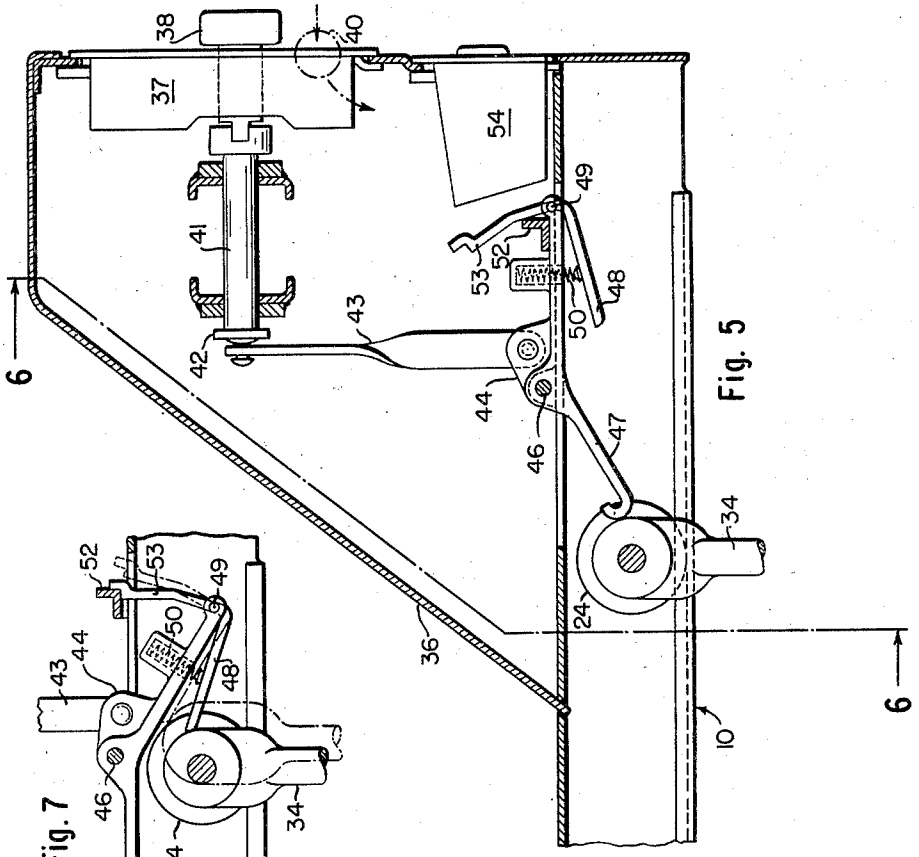

Fig. 5

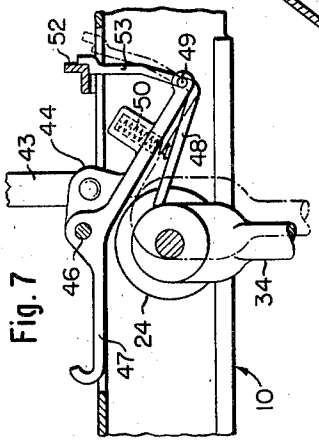

Fig. 7

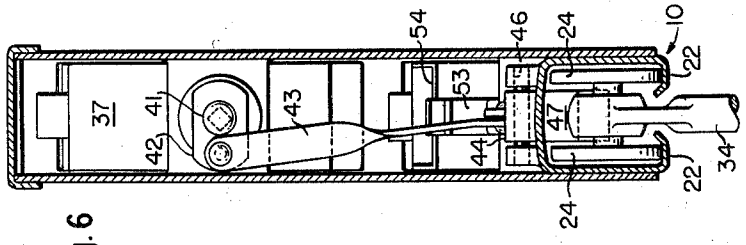

Fig. 6

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COIN CONTROLLED SERVICE UNIT DISPENSERS

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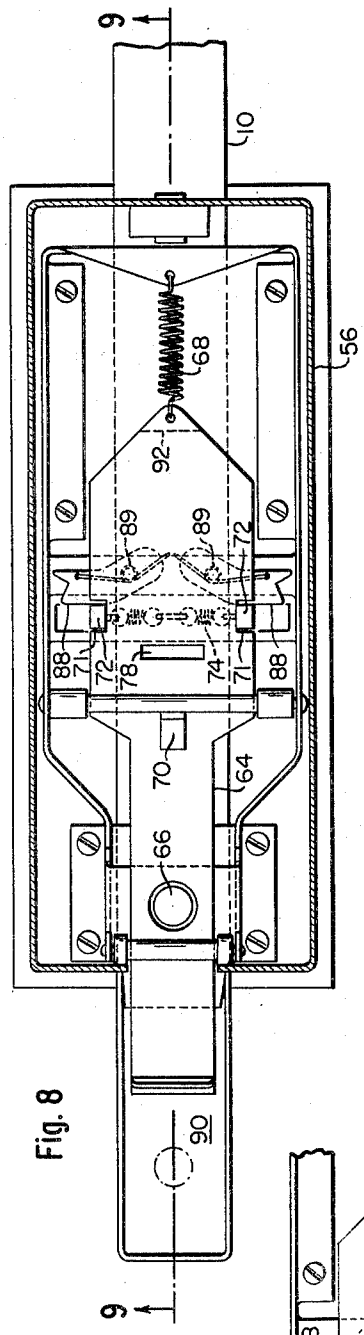

Fig. 8

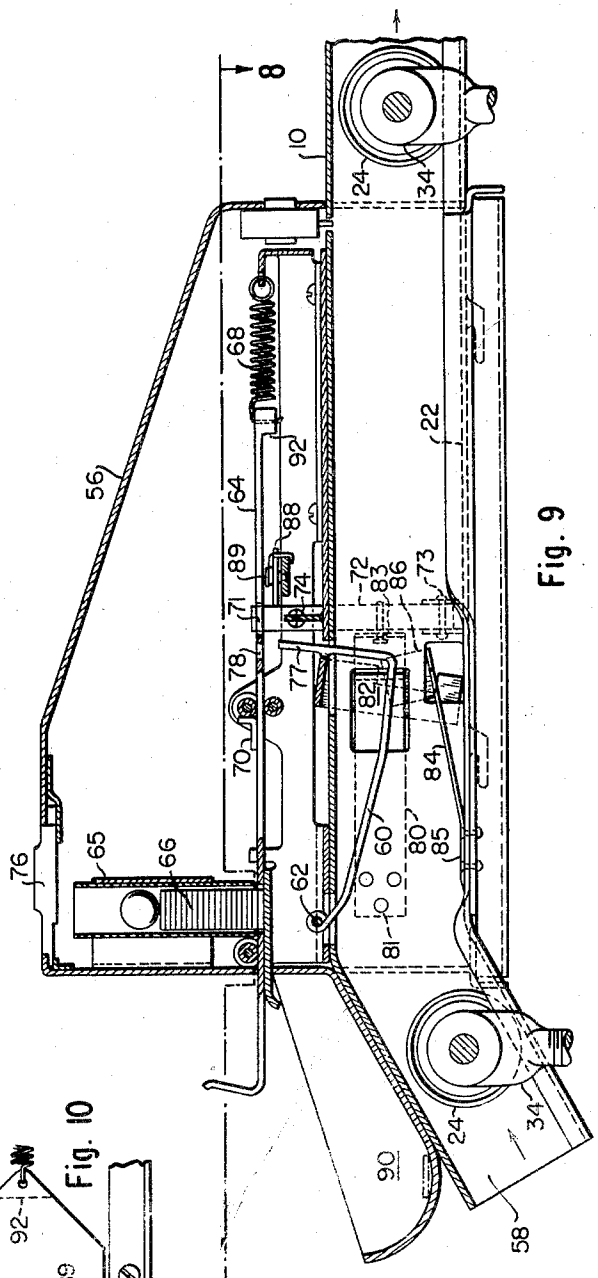

Fig. 9

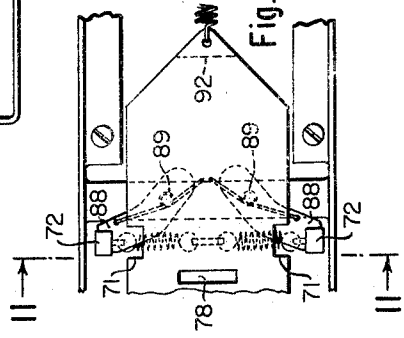

Fig. 10

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COIN CONTROLLED SERVICE UNIT DISPENSERS

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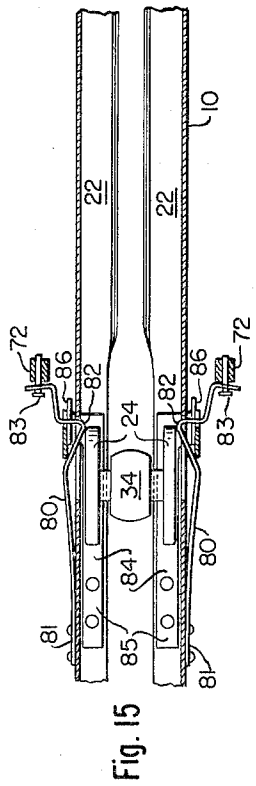

Fig. 15

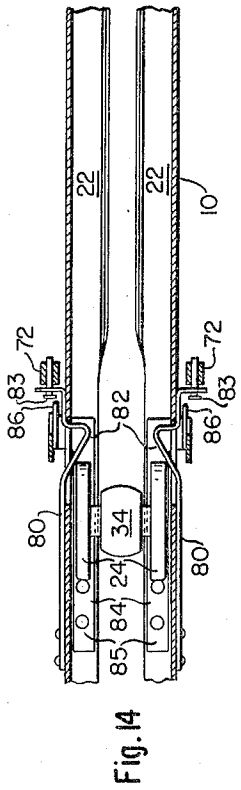

Fig. 14

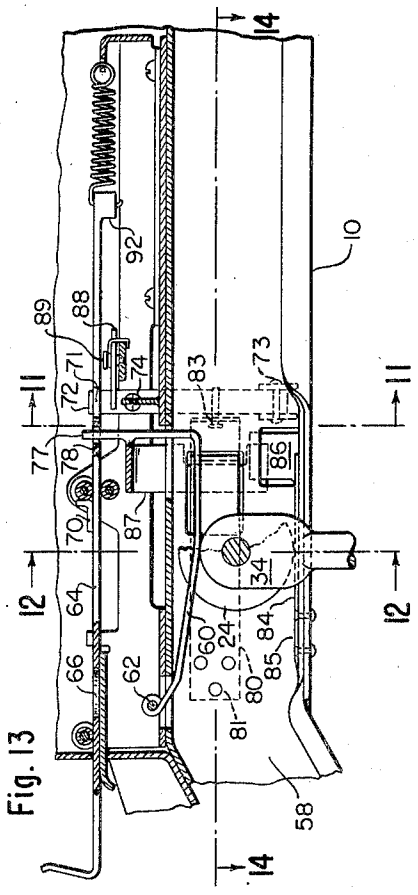

Fig. 13

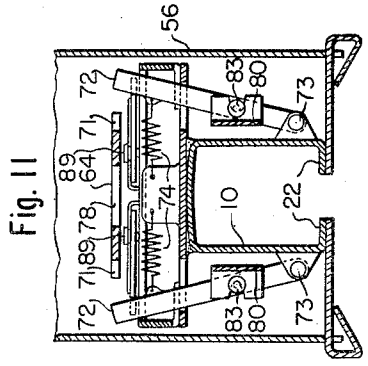

Fig. 11

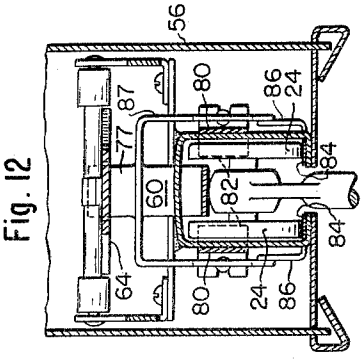

Fig. 12

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United States Patent Office 2,818,955 Patented Jan. 7, 1958

2,818,955

COIN CONTROLLED SERVICE UNIT DISPENSERS

Wells Stackhouse, Havertown, Pa., assignor to American Locker Company, Inc., Boston, Mass., a corporation of Delaware

Application August 14, 1953, Serial No. 374,324

7 Claims. (Cl. 194—4)

This invention relates to dispensers for service units and the like and more particularly to the dispensing of hand trucks to be used at passenger traffic terminals for handling personal baggage. It is well known that the labor market has decreased the available "red cap" supply to a degree where passengers are now required in large measure to attend to the handling of their own baggage. The primary object of my invention resides in the production of a novel dispenser for hand trucks adapted to be employed by passengers for facilitating this baggage handling service.

My invention contemplates a novel dispenser including a substantially horizontal track supported in elevated position within a housing and adapted to retain thereon in consecutive alignment a plurality of truck units carried on casters on the track. The track is preferably slightly inclined downwardly toward the dispensing end whereby the units will normally ride by gravity toward that end. Coin controlled means is provided at the dispensing end of the track for dispensing the units one at a time upon the insertion of a coin. The other end of the track is adapted to receive additional units from said other end. The invention furthermore contemplates means at said other end for dispensing a refund coin upon the addition of a unit to the track, the refund coin being of smaller denomination than the unit dispensing coin. The production of a novel service unit dispenser embodying these features comprises a further object of the invention.

These and other features of the invention will be best understood and appreciated from the following description of preferred embodiments of the invention selected for purposes of illustration and shown in the accompanying drawings in which—

Fig. 1 is a side elevation of a hand truck dispenser embodying my invention, the near half of the housing being illustrated as broken away,

Fig. 2 is a transverse view taken on line 2—2 of Fig. 1,

Fig. 3 is a side elevation of one of the trucks,

Fig. 4 is a fragmentary perspective view of the coin controlling mechanism,

Fig. 5 is an enlarged sectional view longitudinally therethrough,

Fig. 6 is a sectional view taken on line 6—6 of Fig. 5,

Fig. 7 is a fragmentary view of Fig. 5 and showing the parts in another position,

Fig. 8 is an enlarged plan view of the truck receiving end of the dispenser, taken on line 8—8 of Fig. 9,

Fig. 9 is a vertical sectional view taken on line 9—9 of Fig. 8,

Fig. 10 is a fragmentary plan view showing parts of Fig. 8 in another position,

Fig. 11 is a sectional view taken on lines 11—11 of Figs. 10 and 13,

Fig. 12 is a sectional view taken on line 12—12 of Fig. 13,

Fig. 13 is a vertical sectional view like Fig. 9 and

showing a truck supporting carriage passing through the receiving mouth to the truck supporting track,

Fig. 14 is a plan section taken on line 14—14 of Fig. 13, and

Fig. 15 is a like view showing the carriage in a further advanced position.

My service unit dispenser includes a substantially horizontal rail or track, preferably slightly inclined downwardly to the dispensing end, for supporting in consecutive alignment thereon a plurality of units to be dispensed. The invention is particularly applicable to the dispensing of hand baggage trucks and I have herein illustrated the invention as employed for this purpose.

The rail 10 shown in Figs. 1 and 2 is supported in elevated position on a stand embodying two spaced uprights 12 of inverted U-shape and connected together by bars 14 and an inverted U-shape housing 16. The stand is supported on floor casters 18 and preferably includes side panels 20 of wire mesh depending downwardly toward the floor.

The rail 10 is of inverted U-shape in cross section and is supported on the two uprights 12 longitudinally within the housing. The bottom margins of the rail are disposed inwardly (Fig. 6) to provide two spaced tracks 22 therealong. The trucks 23 to be dispensed are provided with casters 24 for riding on and along the tracks. Each truck embodies a body 25 mounted on wheels 26 and pivoted at 28 to the body is a baggage supporting frame 30. A spring 31 on the pivot shaft 28 is adapted to hold the frame folded against the body as illustrated in Fig. 3. When the truck is to be used the frame is pivoted outwardly to the position shown at the right hand end of Fig. 1 in which it is adapted to receive and support a plurality of bags 32. When in open position the frame 30 normally counterbalances the truck to the upright position illustrated in Fig. 1. A carriage 34 secured to the top end of each body 25 includes two casters 24 for riding on and along the tracks.

The coin controlled dispensing mechanism is carried on and within a housing 36 supported on the lower end of the rail. The coin controlling mechanism is housed within a box 37 and can be of conventional design embodying a knob 38 adapted to be rotated only upon the insertion of a coin 40 into the box.

The knob 38 is connected to a shaft 41 having a crank 42 on its inner end. A link 43 connects the crank to a dispensing member 44 pivoted to the track at 46. When the dispensing mechanism is in its normal position (Fig. 5) an arm 47 on the member 44 is disposed in position barring the outward passage of the foremost carriage 34. When a coin has been deposited and the shaft 41 rotated the member 44 is moved to the position of Fig. 7. This movement permits the foremost carriage to pass underneath the arm 47 and into contact with an arm 48 pivoted to the member 44 at 49, a spring 50 and stop 52 normally holding the arms 48 and 53 in the position of Fig. 7. The latch 53 serves to hold the arm 47 in the position of Fig. 7 during passage of the carriage 34 into contact with the arm 48 whereupon contact of the carriage against the arm 48 releases the latch to the broken line position (Fig. 7) and the shaft 41 can then be rotated back to its original position. When the shaft 41 is thus rotated back the parts are returned to the position of Fig. 5 and the foremost carriage is thereupon free to be removed from the rail, the other carriages rearwardly thereof being again barred by the arm 47. The inserted coin drops into a coin box 54.

The trucks to be dispensed are placed on the rail at its left hand higher end (Fig. 1) and the inclination of the rail causes them automatically to feed downwardly to the dispensing end. It is contemplated that several

dispensers will be placed in convenient locations and that each truck after use will be replaced in the most convenient dispenser. For the purpose of encouraging and compensating for such replacement the refunding of a coin smaller than the dispensing coin is contemplated. For example, the dispenser at 37 may require a twenty-five cent coin and a dime may be refunded when the truck is returned. The following described mechanism illustrated in Figs. 8–15 of the drawing is provided for this purpose.

The coin refunding mechanism is enclosed within a housing 56 on the higher end of the rail. The carriages 34 of the trucks to be replaced on the track are moved upwardly through a mouth 58 to the track (Fig. 9), and the following described mechanism is provided for refunding a coin and preventing release or return movement of each truck after its carriage has passed through the mouth to the rail.

A latch 60 pivoted at 62 normally falls by gravity to the position shown in Fig. 9. Disposed within the housing 56 on the rail above the latch 60 is a coin refunding slide 64 mounted to slide through the bottom end of a magazine 65 adapted to hold a stack of coins 66. A spring 68 attached to the slide normally holds it inwardly to the position of Figs. 8 and 9 permitted by a stop 70 in which position the lowermost coin of the stack drops into a hole in the slide. The two side margins of the slide are notched at 71 and two arms 72 pivoted at 73 are normally drawn inwardly by springs 74 to engage within the notches and thus lock the slide against movement. A key locked closure 76 is provided for filling the coin magazine. The latch 60 carries an upwardly directed lug 77 on its free end and when a carriage 34 is moved inwardly to the position of Fig. 13 the carriage raises the latch and projects the lug through a slot 78 in the slide 64, thereby further locking the slide against movement.

A pair of spring arms 80 secured at 81 to the sides of the rail extend inwardly of the rail at 82 and from thence outwardly into connecting contact with the pivoted arms 72 at 83, the arms 72 and 80 being normally in the innermost position of Fig. 14. A second pair of spring arms 84 are attached to the tracks 22 at 85 and their forward ends are disposed outwardly and upwardly at 86 into a position overlapping the free ends of the arms 80 in a manner normally preventing outward movement of the arms 80. The upwardly disposed ends 86 of the arms 84 are nested within a downwardly extending U-shaped portion 87 of the latch 60 as illustrated in Figs. 12 and 13. When the carriage 34 moves inwardly to the position of Fig. 13 the casters 24 depress the arms 84 to a position releasing the arms 80 for outward movement.

When the carriage 34 moves inwardly from Fig. 14 to Fig. 15 the casters 24 engage and move the arms 80 outwardly and simultaneously pivot the arms 72 outwardly to a position disengaging them from the notches 71 in the coin slide. A pair of spring operated latches 88 pivoted at 89 thereupon engage the arms 72 and hold them outwardly as illustrated in Fig. 10. When the carriage is moved further inwardly beyond the latch 60 this latch drops by gravity to a position behind the carriage and withdraws the lug 77 from the slot 78 in the coin slide 64. The slide can then be drawn outwardly to a position depositing the lowermost coin of the stack into the refund receptacle 90. Such outward movement of the slide contacts its lug 92 with and releases the latches 88 which in turn release the arms 72. The arms 72 are thereupon drawn inwardly into contact with the coin slide. When the coin slide returns to its innermost position the arms 72 reengage within the notches 71 and again lock the slide against movement.

It will be apparent that the latch 60, arms 80 and arms 84 cooperate together and with the carriages 34 to provide an interlock permitting replacement of the carriages on the track and preventing return movement after such replacement. The ends 86 of the arms 84 normally prevent outward movement of the arms 80 thus normally maintaining the coin slide 64 in locked position by engagement of the arms 72 in the notches 71. The lug 77 on the latch 60 also functions to prevent outward movement of the coin slide 64 until the carriage has passed inwardly beyond the latch 60. Also the coin refunding movement of the slide 64 functions automatically to release the latches 88 whereupon the arms 72 can engage within the notches 71 and lock the slide when it returns to its innermost position. Thus all these elements cooperate to the end of permitting the refunding of a single coin for each carriage returned to the track and furthermore prevents any tampering that would release further coins or permit return movement of a carriage that has passed through the return mechanism to the track.

While, as illustrated in the drawings, the invention is particularly adapted to the dispensing of hand trucks it will be understood that it is well adapted to the dispensing of other service units and the like as defined in the accompanying claims.

Having thus disclosed my invention what I claim and desire to secure by Letters Patent is:

1. A dispenser for hand trucks and the like, comprising a substantially horizontal rail, a stand adapted to support the rail in elevated position on and above a floor with free space therebeneath, a plurality of truck supporting carriages including casters disposed to ride on and along the rail, means preventing lateral release of the carriages from the rail, coin controlled means at one end of the rail for dispensing said carriages therefrom one at a time, the other end of the rail being adapted to receive additional carriages, and means for preventing release of the carriages from said other end of the rail.

2. The dispenser defined in claim 1 in which the rail is slightly inclined downwardly from said other end to the carriage dispensing end.

3. The dispenser defined in claim 1 plus means at said other end of the rail for refunding a coin upon the addition of a carriage to the rail.

4. The dispenser defined in claim 1 in which said stand includes an inverted U-shaped housing disposed over and along the rail and having side walls depending toward the floor.

5. The dispenser defined in claim 1 in which the rail is inverted U-shape in cross section and includes spaced tracks therealong at its bottom portion and each carriage includes supporting casters riding on the tracks and carrying a truck supporting element depending downwardly through the space between the tracks.

6. A dispenser comprising a track for supporting thereon a plurality of units in consecutive alignment, coin controlled means at one end of the track for dispensing the units, means at the other end of the track for permitting the placement of units thereon, means for supporting a stack of coins, a slide for dispensing the bottom coin from the stack, a latch normally engaging the slide and preventing its coin refunding movement, means for releasing the latch when a replacement unit is added to the track, further means preventing coin dispensing movement of the slide until the replacement unit has passed to a predetermined position along the track, means for holding the latch in released position, and means carried by the slide for releasing the holding means when the slide is moved to coin dispensing position.

7. A dispenser comprising a track for supporting thereon a plurality of units in consecutive alignment, coin controlled means at one end of the track for dispensing the units, means for supporting a stack of coins at the other end of the track, a slide for dispensing the bottom coin from the stack, a pair of arms respectively at opposite sides of the slide, means normally moving and holding the arms inwardly to a position in interlocking engagement with the slide, means disposed in the path of

movement of a unit on and along the track between the arms for spreading the arms and releasing the slide, means for holding the arms in spread relation, and further means for preventing coin dispensing movement of the slide until the unit has passed to a predetermined position along the track.

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