

C. A. McDougall & J. M. GIVENS:
MAIL CARRYING APPARATUS.
APPLICATION FILED NOV. 20, 1916.

1,236,459.

Patented Aug. 14, 1917.

3 SHEETS—SHEET 1.

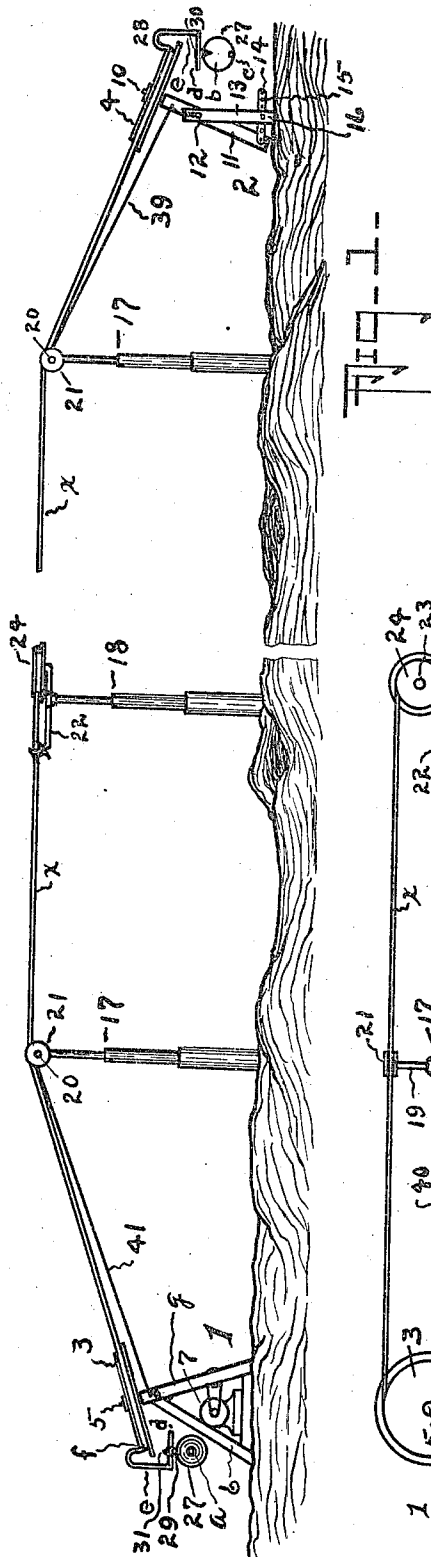


Fig. 1--

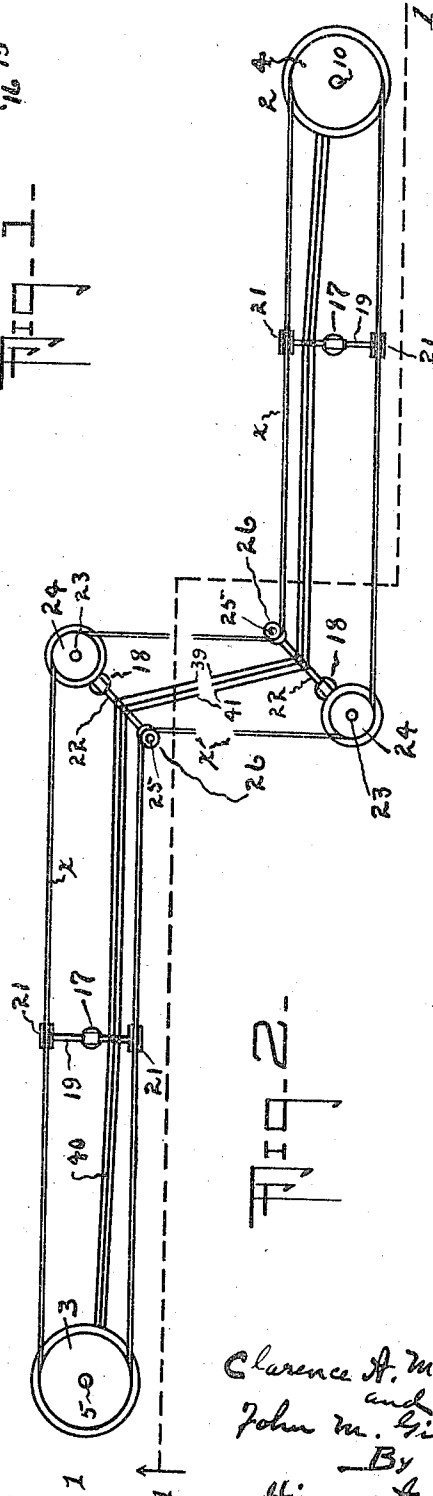
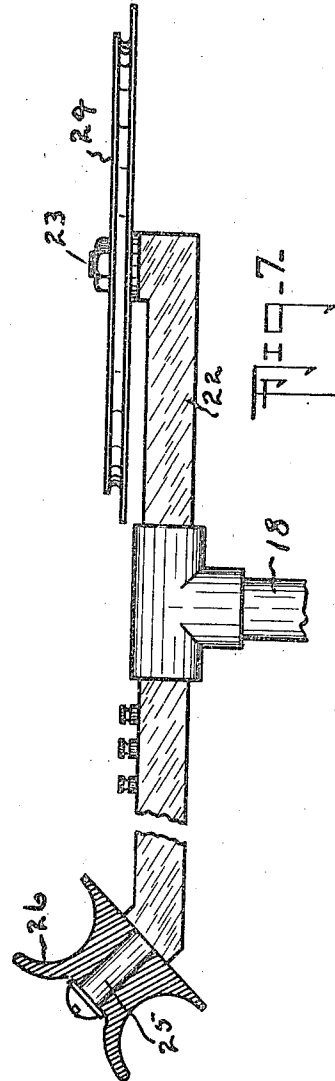
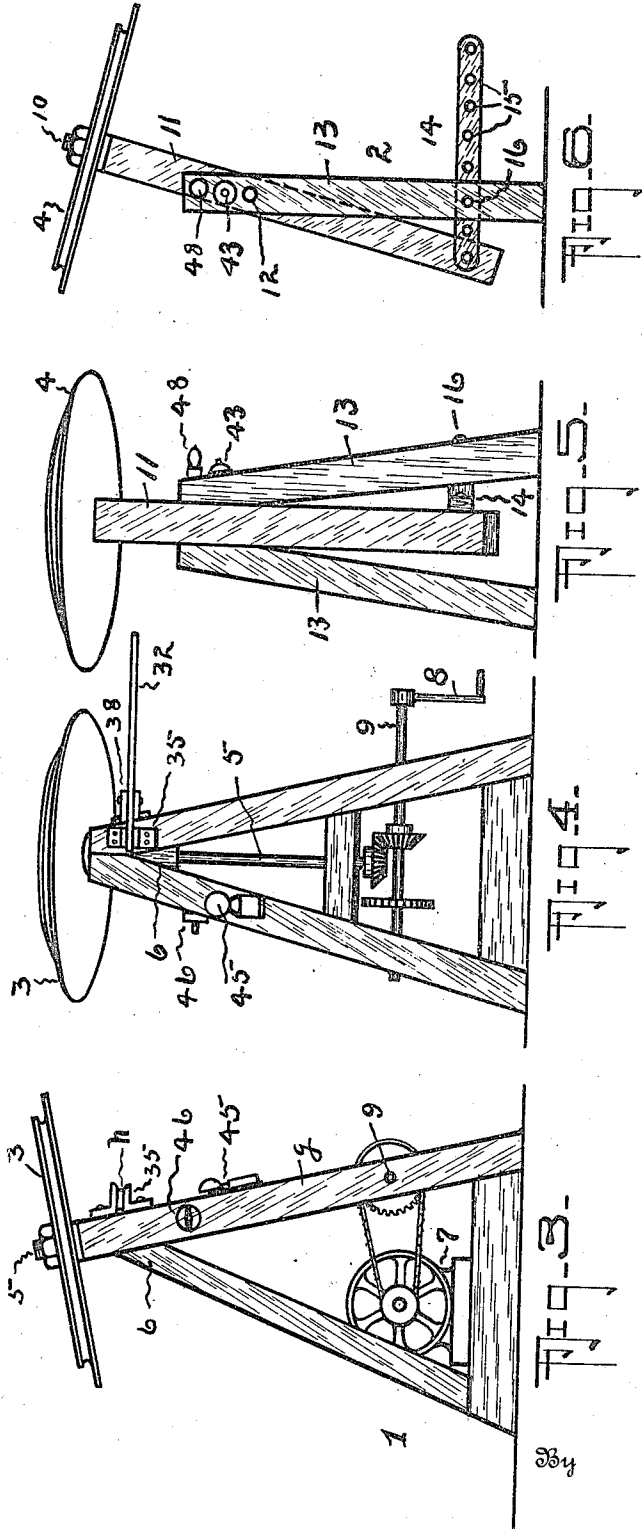


Fig. 2--

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 3 SHEETS—SHEET 2.



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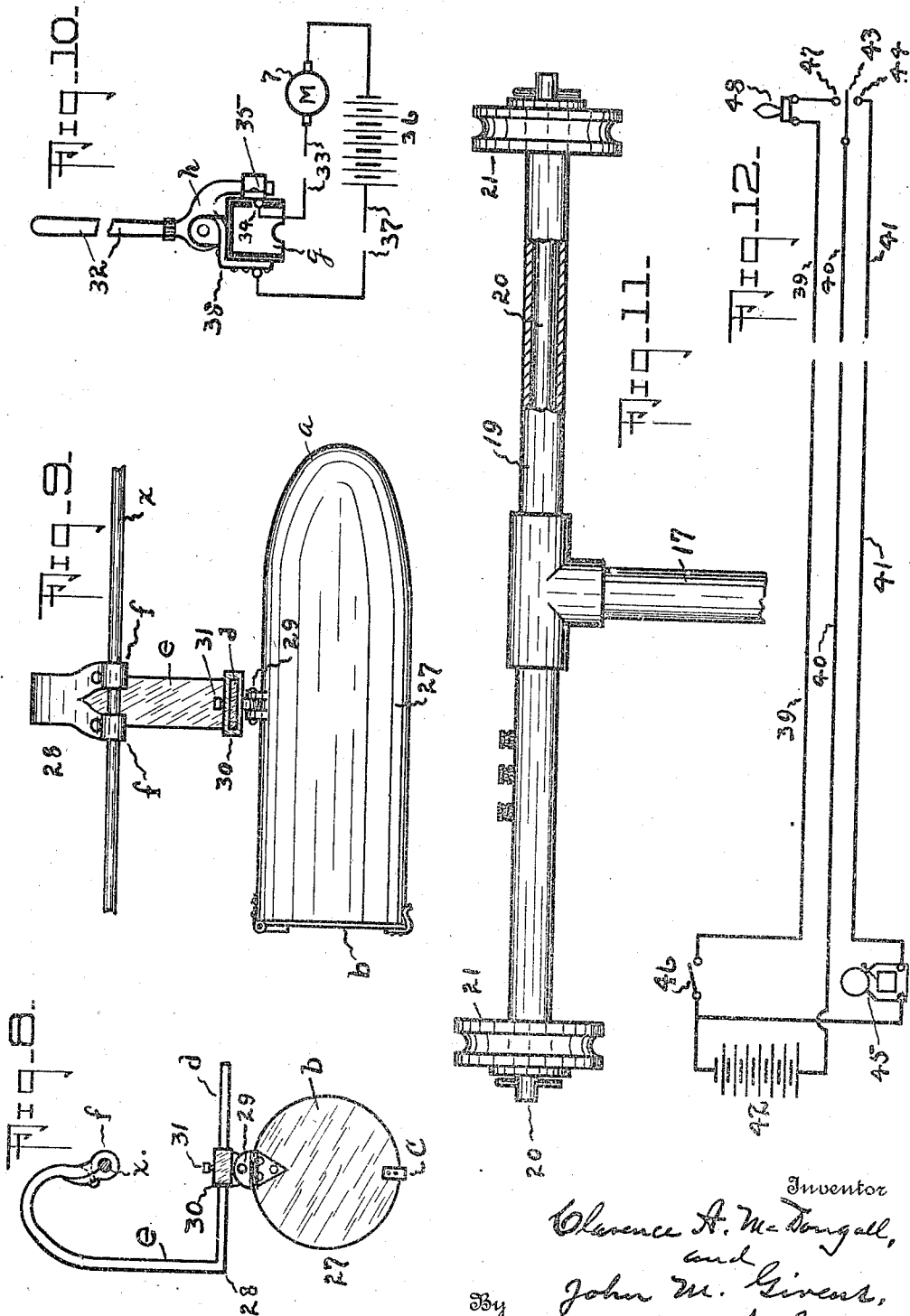
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

CLARENCE A. McDOUGALL AND JOHN M. GIVENS, OF OMAHA, NEBRASKA.

MAIL-CARRYING APPARATUS.

1,236,459.

Specification of Letters Patent.

Patented Aug. 14, 1917.

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To all whom it may concern:

Be it known that we, CLARENCE A. McDOUGALL and JOHN M. GIVENS, citizens of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in a Mail-Carrying Apparatus, of which the following is a specification.

10 This invention relates to a mail carrying apparatus or system useful in the country or suburban districts, in connection with the R. F. D. mail carrying systems now in general use. While the apparatus is described
15 as a means for carrying letters or packages, it may, of course, be used for other purposes.

The invention includes a carrier to be operated at one station for conveying letters or packages any desired distance in either direction between two posts or stations, and means for signaling from one station to the other; and also includes certain details of construction found to be of advantage in operation.

25 With the foregoing objects in view, the invention presents a novel construction, combination and arrangement of parts as described herein and claimed, and as illustrated in the drawing, wherein,—

30 Figure 1 is a broken away view showing the parts in side elevation, viewed from line 1—1, Fig. 2. Fig. 2 is a plan view illustrating the parts shown in Fig. 1. Fig. 3 is a side view of a frame support for the carrier, at
35 one of the stations, an electric motor being shown. Fig. 4 is a view of the supporting frame shown in Fig. 3, taken at right angles thereto, the motor being omitted. Fig. 5 is an end view of a frame support for another
40 terminal station. Fig. 6 is a view of the same taken at right angles to the view shown in Fig. 5. Fig. 7 is a view on an enlarged scale showing a cross-bar and carrier supports for an intermediate post. Fig. 8 is an
45 end view of a letter or package receptacle and its mounting. Fig. 9 is a side view of the same. Fig. 10 is a plan view of an actuating lever employed for automatically opening an electrical circuit. Fig. 11 is a side
50 view, partly broken, showing a cross-bar and carrier supports for one of the intermediate posts. Fig. 12 is a diagrammatic view showing electrical conductors for signaling.

Referring to the drawing for a more particular description, numeral 1 indicates a 55 post or station which may be located at or near a residence or farm house, and numeral 2 indicates a post or station which may be located at a cross-roads visited at intervals by a mail carrier. It will be understood that 60 the principal object to be attained is the convenience and saving of time in receiving or delivering mail, since the stations 1 and 2 may be a considerable distance from each other; and it will be noted that both are to 65 be described as receiving as well as sending stations.

At *x* is indicated an endless carrier, which may consist of any suitable cable, band or strand of any required length, and is mounted 70 upon the peripherally grooved wheels 3 and 4, the wheel 3 being driven by the upright shaft 5 having suitable bearings in the frame 6 and actuated by a motor 7 or by a manually operated crank 8, a horizontal driving shaft 9 being employed for driving the shaft 5.

The wheel 4 for the station 2 is preferably mounted as an idler upon the shaft or pivot pin 10 which is mounted in the upper end 80 of the plate 11, said plate being mounted pivotally between its ends as indicated at 12 upon and near the upper ends of the upright posts 13, the lower end of the plate 11 being provided with an arm 14 having apertures 15 formed therein at longitudinal intervals so that the plate may be adjusted to a desired degree of inclination and maintained at such inclination by means of a pin 16 traversing one of said upright posts, 90 and on account of this arrangement, the wheel 4 may be disposed nearer to or farther from the ground, and a desired degree of tension for the cable or carrier *x* may be provided. 95

The arrangement is such that mail packages may be conveyed any desired distance regardless of the hills or valleys of the intervening space between the two stations, any required number of upright posts 17 100 and 18 of suitable heights being employed, and the movement of the carrier may be in straight lines or angular, as best shown in Fig. 2.

At 19 are indicated tubular cross-bars 105 each being mounted midway between its

ends upon a post 17 and each being traversed by a shaft 20 (Fig. 11.) upon which pulleys 21 are mounted as idlers for supporting the endless carrier α . In instances where it is required that the carrier shall move angularly, cross-bars 22 are employed, each being mounted between its ends upon a post 18, one of its ends being provided with a pivot-pin 23 disposed at right angles to the bar to provide bearings for a peripherally grooved, horizontal wheel 24, the opposite end of the bar being provided with a pivot-pin 25 disposed inclinedly to the axis of the bar 22 to provide bearings for a pulley 26, the wheels 24 and pulleys 26 being mounted as idlers, and in the peripheral grooves of which the carrier α engages.

Numerals 27 indicate a pair of elongated, cone-shaped receptacles for containing letters or packages, arranged to be disposed horizontally when moving, the convergent front end of each being indicated at a and a lid b being provided and hingeably mounted upon its rear end, the lid being provided with a suitable catch c as plainly shown in the drawing. At 28 are indicated hangers, each preferably consisting of a band or metallic plate bent to provide an arm d adapted, normally, to be disposed horizontally, and an arm e disposed vertically, said arm d having a curved terminal best shown in Fig. 8, the curvature being upwardly and outwardly to terminate in a pair of loops f , said loops being disposed a suitable distance apart so that they will resist stresses to advantage when secured upon the carrier.

The hangers are so disposed upon the endless carrier that, in operation, when one receptacle is at the station 1, the other will be at the station 2. The mounting of each receptacle is such that it may swing dependently transversely of the arm d by reason of its pivotal mounting 29 upon the clasp or sleeve 30, and by means of a keeper 31, the sleeve may be adjusted longitudinally of the arm d so that the center of gravity for the receptacle will be in line with the carrier, the arm e being maintained substantially in a vertical position during the movements of the carrier.

In operation, when it is desired to cause mail matter to be conveyed from station 1 to station 2, the carrier α may be actuated by means of the motor 7 or the crank 8, and the receptacle containing the mail will be conducted to the wheel at station 2, the other receptacle being coincidentally conducted to station 1, the loops f of the hangers moving in the grooves of the wheels and pulleys without obstruction since they are of convex form in cross-section and of such proportion that they will readily engage in said grooves.

As best shown in Figs. 4 and 10, one of

the posts g of the frame 6 at the station 1 is provided with a trip-lever 32 which may be manually swung to be disposed in the line of movement of the arms e of the hangers 28, and when either of the receptacles reaches the wheel 3 an arm d will cause a swinging movement of the arm or lever 32 for opening an electrical circuit to automatically terminate operation of the electric motor 7 to thereby terminate the movement of the carrier and receptacles at the stations.

Any desired electrical control may be employed for the operation last mentioned, as the electrical conductor 33 having a metallic contact indicated at 34 with the knife switch 35 of the lever 32, said conductor 33 being electrically connected with the motor 7 and energized by a battery 36, an electrical conductor 37 from the battery being in electrical communication with the plate 38 secured upon the post g , and suitable insulation being provided, and the metallic plate 38 being in engagement with the metallic head h of the trip lever.

The apparatus thus described provides a convenient means for the carriage of letters or packages, and when used as a system, facilitates the collection of mail as well as its delivery. It is more useful and convenient, however, by reason of certain electric signals which, at very slight expense, may be operated by use of the electrical conductors 39, 40 and 41 shown in Fig. 12, which may be energized by the battery 42 when the switch 43 at the station 2 is closed by the postman by moving it into engagement with the electrical contact 44 to cause actuation of any desired electrical signal, as the ringing of a bell 45 located at the station 1 to indicate that mail has been deposited in a receptacle 27. An operator at the station 1 thereupon may cause a movement of the carrier for conducting the receptacle to said station 1.

In the use of the apparatus, the receptacles are normally disposed at the stations 1 and 2, and to visibly indicate to the postman that the receptacle at station 2 contains mail for the purpose of mailing, a person at station 1, by means of the electrical conductors 39 and 40, when the switch 46 has been closed, the switch 43 being in engagement with the electrical contact 47, may cause actuation of any desired electric signal, as the flashing of a light 48, located at the station 2. It will be understood, to facilitate operation, the postman, when leaving the station 2 should move the switch 43 into engagement with the electrical contact 47, so that an operator at the station 1 may, at any time, by closing the switch 46, cause a flashing of the light 48.

The operations mentioned are of particular advantage since all travel from residences

to delivery stations may be eliminated which may be at considerable distances, for rural delivery. The parts may be constructed of any desired size, proportion or material, and while the construction has been shown and described in detail to fully explain one embodiment of the invention, it will be understood that changes may be made within the scope of the invention, as determined by the appended claims.

What we claim and desire to secure by Letters Patent is,—

1. In devices for the purpose described, the combination with a pair of upright, terminal supports, peripherally grooved wheels journaled thereon, secondary upright supports intermediate the terminal supports, horizontal cross-bars on the secondary supports, each being provided at one of its ends with an upright pivot-pin, its opposite end being provided with a pivot-pin disclosed inclinedly to the longitudinal axis of the cross-bar, peripherally grooved wheels on the upright pivot-pins of the cross-bars, peripherally grooved pulleys on the inclinedly disposed pivot-pins, an endless flexible carrier engaging in the grooves of said wheels and pulleys, a pair of hangers mounted upon the endless carrier, a pair of receptacles mounted upon the hangers, one of said wheels being revoluble to move the endless carrier for conveying each receptacle from one terminal support to the other terminal support.

2. In devices for the purpose described, the combination with an upright support, a second upright support remote from the first named support, a standard pivotally mounted between its ends on the second support, a peripherally grooved wheel journaled on the first named support, a peripherally grooved wheel journaled on the standard, an endless flexible carrier engaging in the grooves of said wheels, said standard being adapted to have swinging movements for increasing or decreasing the tension of the flexible endless carrier, a pair of hangers mounted upon the endless carrier, a pair of receptacles mounted upon the hangers, one of said wheels being revoluble to move the endless carrier for conveying each receptacle from one support to the other support.

3. In devices for the purpose described, the combination with a pair of wheels each being suitably journaled and provided with a peripheral groove, an endless flexible cable engaging in said grooves, a plurality of hangers secured to the cable, each of said hangers having a rectilinear part, receptacles mounted on the rectilinear parts of the hangers, means for actuating one of the wheels for moving the cable, means for adjusting the mounting of the receptacles longitudinally of the rectilinear parts of the

hangers, and means for adjusting the tension of the cable.

4. In devices for the purpose described, the combination with an upright support, a second upright support remote therefrom, a standard pivotally mounted on the second upright support, peripherally grooved wheels journaled on the standard and first named upright support, secondary upright supports, cross-bars on the secondary upright supports, each being provided at one of its ends with an upright pivot-pin, its opposite end being provided with a pivot-pin disposed inclinedly to the longitudinal axis of the cross-bar, peripherally grooved wheels on the upright pivot-pins of the cross-bars, peripherally grooved pulleys on the inclinedly disposed pivot-pins, an endless flexible carrier engaging in the grooves of said wheels and pulleys, a pair of hangers mounted upon the endless flexible carrier, a pair of receptacles mounted upon the hangers, one of said wheels being revoluble to move the endless flexible carrier for conveying each receptacle, and means for adjusting the standard in the arc of a circle for increasing or decreasing the tension of the endless flexible carrier.

5. In devices for the purpose described, an upright support, a second upright support, peripherally grooved wheels journaled on said supports, an endless flexible carrier engaging in the peripheral grooves of the wheels, a pair of hangers each consisting of a band secured at one of its ends upon the carrier and having a curved part projecting above and outwardly of the carrier and a rectilinear part disposed below the carrier, sleeves adapted to be adjusted longitudinally of the rectilinear parts of the hangers, a pair of receptacles mounted on the sleeves, one of said wheels being revoluble to move the endless flexible carrier for conveying said receptacles from one upright support to the other upright support.

6. In devices for the purpose described, the combination with the peripherally grooved wheels and the longitudinally movable cable mounted thereon, of a pair of hangers each consisting of a band provided at one of its terminals with a pair of adjacently disposed loops circumscribing and secured to the cable, said band having a curved part adjacent to said loops projecting above and outwardly of the cable, and a rectilinear part disposed below said cable, sleeves mounted upon and arranged for adjustment longitudinally of the rectilinear parts of the bands, and a pair of elongated receptacles hingeably mounted midway between their ends upon the sleeves.

7. In devices for the purpose described, the combination with a pair of upright, terminal supports, peripherally grooved wheels

journaled thereon, an endless flexible carrier engaging in the grooves of said wheels, a pair of hangers mounted upon the endless carrier, a pair of receptacles mounted on the
5 hangers, one of said wheels being revoluble to move the endless carrier for conveying each receptacle from one terminal support to the other terminal support, and means for automatically terminating the movement
10 of the endless flexible carrier when a recep-

tacle is conveyed to one of said terminal supports.

In testimony whereof, we have affixed our signatures in the presence of two witnesses.

CLARENCE A. McDOUGALL.
JOHN M. GIVENS.

Witnesses:

HIRAM A. STURGES,
ARTHUR H. STURGES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."