April 5, 1960 W. C. WATSON 2,931,611

SUPPORT FOR RURAL MAIL BOXES

Filed Jan. 7, 1957 2 Sheets-Sheet 1

FIG. 1

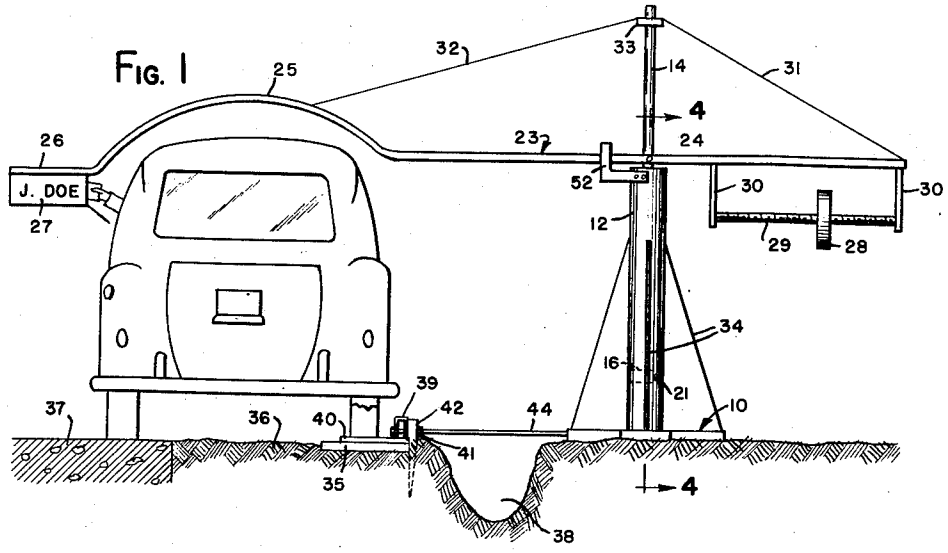
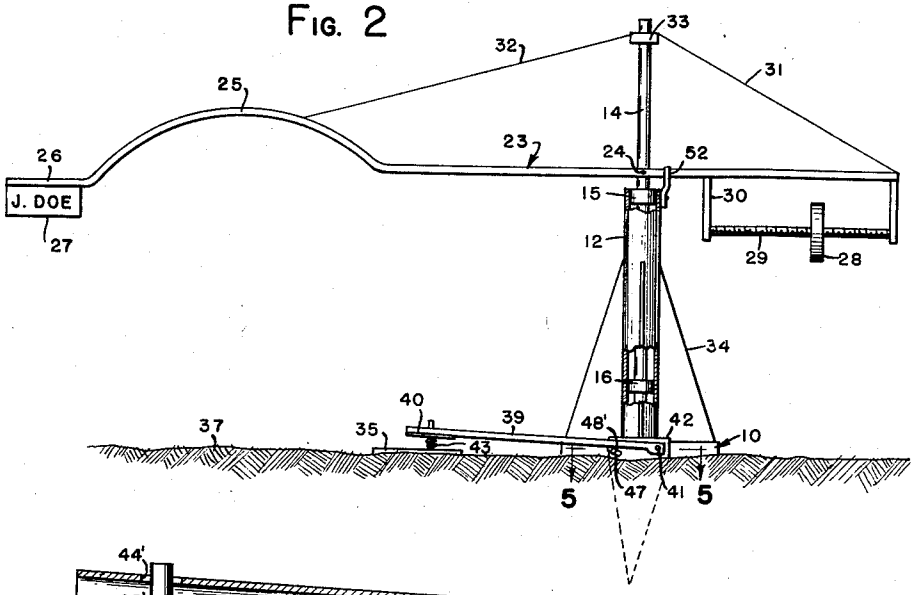


FIG. 2



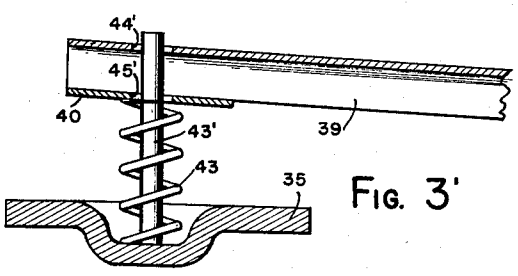


FIG. 3'

INVENTOR
WILLIAM C. WATSON

BY

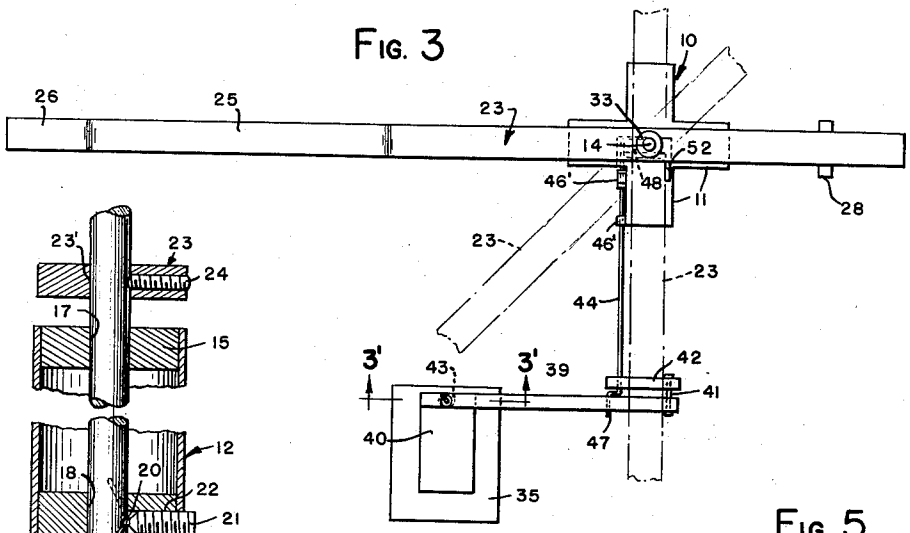
ATTORNEY

April 5, 1960 W. C. WATSON 2,931,611

SUPPORT FOR RURAL MAIL BOXES

Filed Jan. 7, 1957 2 Sheets-Sheet 2

FIG. 3



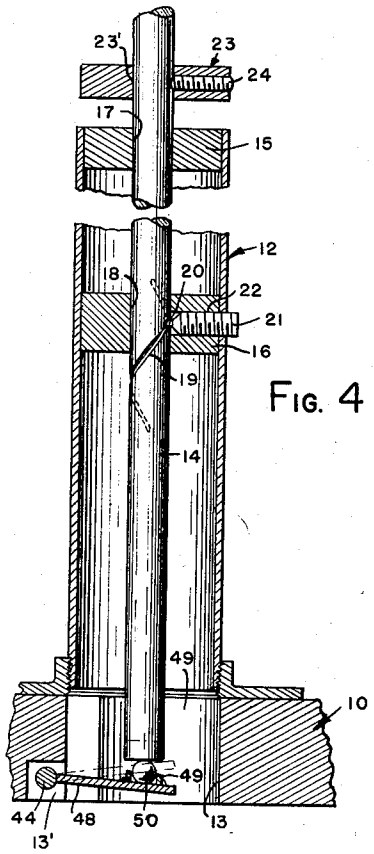
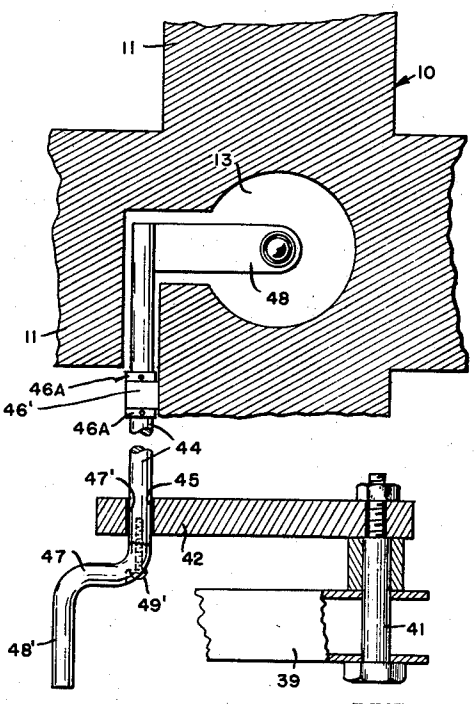


FIG. 4

FIG. 5



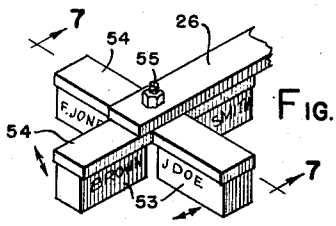


FIG. 6

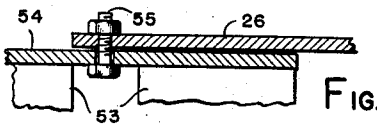


FIG. 7

INVENTOR

WILLIAM C. WATSON

BY

ATTORNEY

United States Patent Office 2,931,611 Patented Apr. 5, 1960

2,931,611

SUPPORT FOR RURAL MAIL BOXES

William C. Watson, Marion, S.C.

Application January 7, 1957, Serial No. 632,876

9 Claims. (Cl. 248—145)

The present invention relates to a support for rural mail boxes or the like.

A primary object of the invention is to provide a support for a rural mail box which is operable to position the mail box adjacent the left hand or driver's seat side of the mail delivery vehicle, thus making it unnecessary for the postman to leave the vehicle or even to move over to the right hand side of the vehicle when delivering the mail.

A further object is to provide a mail box support of the above-mentioned character, including means for causing the support to shift to a position wherein the mail box is adjacent to the driver's side of the vehicle, said means adapted to be actuated by driving a wheel of the vehicle upon the same.

Another object is to provide a mail box support of the above-mentioned character which will return automatically to a position parallel to the roadway after the wheel of the delivery vehicle releases the operating means.

A still further object of the invention is to provide a mail box support of the above-mentioned character which is simplified in construction, sturdy and durable and inexpensive to manufacture.

A further object is to provide a support which is capable of carrying one or a plurality of mail boxes, as found desirable.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is an elevation of the mail box support, the road being shown in transverse section, with the swinging arm of the support shifted to a position transversely of the road and extending over the automobile, the rear end of the automobile being shown and the right rear wheel broken away, to show the front wheel depressing the presser foot,

Figure 2 is an elevation of the support at right angles to Figure 1, the road being shown in longitudinal section, the supporting arm swung to a position parallel with the longitudinal direction of the road, and the automobile removed,

Figure 3 is a plan view of the mail box support, shown in the position indicated in Figure 2, the swinging arm extending longitudinally of the road, and transverse adjusted positions of the arms being indicated in dotted lines,

Figure 3' is a longitudinal section taken on line 3'—3' of Figure 3,

Figure 4 is an enlarged fragmentary vertical section taken on line 4—4 of Figure 1,

Figure 5 is an enlarged fragmentary horizontal section taken on line 5—5 of Figure 2,

Figure 6 is a fragmentary perspective view, upon a reduced scale, of a modified form of support for a plurality of mail boxes,

Figure 7 is a fragmentary vertical section taken on line 7—7 of Figure 6.

In the drawings, where for the purpose of illustration are shown preferred embodiments of the invention, the numeral 10 designates a horizontal base which may be conveniently formed of a pair of crossed members 11, as indicated. The base 10 has an upstanding vertical post 12 suitably rigidly secured thereto, and this post 12 is tubular, as shown. The base 10 is provided with recesses or openings 13 and 13', adjacent to the lower end of the tubular post.

A vertical shaft 14 extends entirely through the tubular post 12 and above the same for a substantial distance. The shaft 14 is considerably smaller in diameter than the tubular post and is positioned concentrically within the tubular post by a pair of fixed bearings or collars 15 and 16, located respectively at the top of the post and at a point near the lower end of the post. The bearings 15 and 16 have aligned central openings or bores 17 and 18, slidably receiving the shaft 14 so that the shaft may move longitudinally or rotate therein. The shaft 14 is provided over a portion of its length with a steep spiral groove 19, receiving the inner reduced portion 20 of a set screw 21, having screw-threaded engagement within a screw-threaded opening 22 of the bearing 16, adjacent to the groove 19, Figure 4. The arrangement is such that the engagement of the reduced extension 20 within the spiral groove will cause the shaft to rotate upon its longitudinal axis when the shaft is moved longitudinally.

A long horizontal arm 23 has an opening 23' to adjustably receive the shaft 14 and is rigidly secured to the shaft 14 at a selected elevation by a set screw 24, or the like. The set screw 24 assures the turning of the arm 23 with the shaft 14. The arm 23 extends for substantial distances upon opposite sides of the post 12, as shown in Figures 1 and 2, and the shaft 14 projects through the openings 23' in the arm 23 and extends a substantial distance above it, as shown. The arm 23 is provided near one end with an upwardly offset or bowed portion 25, adapted to extend over the roof of an automobile or mail delivery truck. Figure 1 shows the rear end of the automobile with the rear wheel broken away, to show the forward right wheel. The forward end of the bowed portion 25 carries a relatively short horizontal extension 26, integral therewith, and the extension 26 has the rural mail box 27 suitably rigidly secured to its lower side and depending therefrom, as shown. As shown in Figure 1, the mail receiving end of the mail box is disposed innermost, so as to be adjacent to the window at the driver's side of the vehicle, when the arm 23 is positioned transversely of the road, Figure 1.

Near its opposite end and on the opposite side of the post 12, the arm 23 carries an adjustable counterweight 28, having screw-threaded engagement with a horizontal screw-threaded shaft 29, rigidly secured to a pair of depending vertical elements 30, rigidly secured to the arm 23. Suitable guy cables 31 and 32 may be provided, with their upper ends secured to a fixed collar 33 upon the top of the shaft 14, and their lower ends fixedly secured to the arm 23 in the manner shown in the drawings. The guy cables 31 and 32 render the arms 23 rigid, so that it will not deflect appreciably. Additional guy cables 34 may extend between the crossed members of the base 10 and the post 12, near the top of the latter, as shown, to render the support further rigid.

Means are provided to elevate the shaft 14 and thereby cause the turning of this shaft with the support arm 23. Such means comprises a horizontal base plate 35 fixedly mounted upon the dirt shoulder 36 near one edge of the road or pavement 37 and adjacent the side of the drainage ditch 38 nearest the road, when there is a drainage ditch

along the road. The support base 10 is fixedly mounted upon the ground near the opposite side of the drainage ditch 38. The base plate 35 is spaced from the base 10, longitudinally of the roadway, Figures 2 and 3.

A lever member 39, which is inverted U-shaped in cross section, extends parallel to the road 37 and adjacent the inner edge of the base plate 35 and has one end terminating opposite the base 10 and its other end terminating at the base plate 35. The forward end of this lever 39 has a plate or presser foot 40 rigidly secured thereto, in superposed relation to the base plate 35. The other end of the lever 39 is pivoted at 41 to a stationary element 42, which may be in the nature of a stake driven into the ground, as indicated. The lever 39 is vertically swingable about its pivot 41, and a compressible coil spring 43 is arranged between the presser foot 40 and the stationary base plate 35, and serves to maintain the lever 39 normally elevated with respect to the base plate, Figures 2 and 3'. The spring 43 is carried by a vertical rod 43' rigidly secured to the stationary base plate 35 and this rod operates within an opening 44' in the lever 39 and within an opening 45' in the presser foot 40, Figure 3'.

A horizontal rock shaft 44 is arranged transversely of the road and extends between the base plate 10 and the fixed element 42, Figure 3. This rock shaft has its end portion adjacent to the base 10 mounted within fixed bearings 46', while its end adjacent to the fixed element 42 is journaled in an opening 47' formed in the element 42. Stop rings 46*a* are rigidly mounted upon the rock shaft upon opposite sides of the bearing 46. The end of the rock shaft 44 adjacent to the fixed support 42 carries a crank 47 having an extension 48' at its outer end. The crank 47 is circumferentially adjustably mounted upon the rock shaft, and to effect this, the adjacent ends of the shaft 44 and crank 47 are provided with interfitting teeth, which are clamped together by a set screw 49', and which may be adjusted to permit of the radial adjustment of the crank 47. The crank 47 extends radially of the rock shaft 44 and is vertically inclined and extends upwardly and its extension 48' is arranged beneath and engages the lever 39. When the lever 39 is depressed, the crank 47 swings downwardly and turns rock shaft 44 counter-clockwise, Figure 2. The rock shaft 44 is spaced from the pivot 41 as shown. At its end adjacent to the upstanding tubular post 12, the rock shaft 44 has a radial lifting arm or crank 48 rigidly secured thereto, Figure 4, and this radial arm is provided upon its upper face with an annular flange 49, forming a cup, to receive a bearing ball 50, arranged beneath the vertical shaft 14 to contact with its lower end. The rock shaft 44 is turned counter-clockwise, Figure 4, to lift arm 48, moving ball 50 upwardly, which raises shaft 14, and permits the shaft to turn upon its axis during its upward movement.

A stop element 52 is rigidly mounted upon the upper end of the post and is disposed in the path of travel of the arm 23 to limit the extent of travel of this arm when the same is swung to the mail receiving position, Figure 1. The stop 52 extends above the arm 23, as shown.

In operation, the arm 23 will normally assume the position shown in Figures 2 and 3, wherein the arm 23 is parallel with the road 37 upon the remote side of the ditch 38, clear of the traffic. It is in this position of the arm that the mail is taken from the mail box by the owner of the mail box. The arm 23 will automatically gravitate to the lower position extending longitudinally of the road, when released. The spiral groove 19 is sufficiently steep to enable the arm 23 and shaft 14 to gravitate to the lowered position, when the lever 39 is elevated.

When the mail delivery vehicle approaches, it is driven partly off of the road 37 onto the dirt shoulders 36 and its right front wheel passes upon the presser foot 40 and shifts the same to the lowered position, Figure 1, and the vehicle is stopped while the front wheel remains upon the presser foot 40. The downward movement of the presser foot 40 swings the lever 39 downwardly, and this lever turns the crank 47 downwardly, Figure 2, turning the rock shaft 44 counter-clockwise, Figure 4. This counter-clockwise movement of the rock shaft will elevate the lifting arm or crank 48, which will in turn elevate the shaft 14 for a slight distance. When the shaft 14 is elevated, the extension 20 of the stationary set screw 21 will act within the spiril groove 19, causing the shaft to be turned upon its longitudinal axis, and the arm 23 will be swung counter-clockwise, from the position parallel to the road, to a position transversely of the road, as viewed from Figure 3. This turning movement is approximately ninety degrees. This will cause the arm to extend over and transversely of the automobile, Figure 1. All of this operation occurs while the front wheel of the vehicle is holding the presser foot 40 and lever 39 in the lowered position, and the arm 23 and associated elements will swing to the position indicated in Figure 1 promptly upon the passage of the wheel of the vehicle upon the presser foot 40. The stop element 52 will engage the arm 23 when it is in a position shown in Figure 1 to limit its swinging movement to substantially ninety degrees from its starting position. The curved portion 25 will now be positioned over the roof of the vehicle, Figure 1, and the mail box 27 will be adjacent to the vehicle window at the driver's side so that the mail may be readily deposited in the box 27, as shown in Figure 1.

When the mail is thus delivered, and the box 27 is closed, the postman drives the front wheel of the automobile off of the presser foot 40 just far enough to release the presser foot and then brings the vehicle to a stop. At the same time, the front wheels are turned sharply to the left or toward the road 37, Figure 1, so that the subsequent movement of the vehicle will not cause the rear wheel to pass over the presser foot but will clear the same. As soon as the presser foot is released, and while the vehicle is stopped, the arm 23 and associated elements will return by gravity to the position shown in Figures 2 and 3, wherein the arm 23 is parallel to the road 37, and is positioned upon the remote side of the ditch 38 with respect to the road. The swinging movement of the arm 23 to the position parallel to the road is limited when the shaft 14 moves downwardly to contact with the ball 50, the arm or crank 48 being then in the lowered position. The arm 23 is vertically adjustably mounted upon the shaft or rod 14, and is clamped thereto in the selected adjusted position. The arm 23 may thus be arranged at different elevations corresponding to the height of the automobile. The downward movement of the shaft 14 is limited by the engagement of the shaft 14 with the ball 50, as stated, and if the arm 23 should be clamped to the shaft 14 in a sufficiently lowered position, it would contact with the upper end of the post 12, and limit the downward movement of the shaft, but this contact would depend upon the vertical adjustment of the arm 23 upon the shaft 14. The rock shaft 44 is turned in the bearings 46', as explained, and is held against longitudinal movement by sleeves 46*a*, rigidly mounted upon the rock shaft and engaging opposite ends of the bearing 46'.

In Figures 6 and 7, there is shown a slight modification of the invention, wherein the arm extension 26 carries a plurality of mail boxes 53, supported by crossed members 54, in turn bodily carried by a vertical bolt 55 or the like, rotatable within an opening in the arm 26. The arrangement is such that all of the boxes 53 are positioned by the arm 23 adjacent to the driver's side of the vehicle, in the manner described in connection with the mail box 27. The postman need only turn the boxes 53 upon the pivot 55 to arrange the particular customer's box adjacent to the vehicle window for depositing the mail within the same. In this manner, a single supporting structure is used for manipulating several mail boxes. All other parts of the apparatus remain identical with those described in connection with the first form of the invention.

It is thus seen that there is provided a support for the

mail box, which will be actuated by the delivery vehicle, and will then swing the mail box into a position adjacent to the driver's seat window, and when the support is released by the vehicle, the support will automatically return by gravity to an out-of-the-way position, parallel with the road, in which position the mail may be conveniently removed by the box owner.

While I have shown the stationary element 42 in the form of a stake or the like upon one side of the ditch 38, and separate from the base 10, it should be understood that this element 42 may be attached directly to the base, or arranged close to it, where there is no drainage ditch. In such cases, the arm 23 and the rock shaft 44 will be correspondingly shorter.

It is to be understood that the forms of my invention herewith shown and described are to be taken as preferred examples of the same and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A movable rural mail box support for positioning the mail box adjacent to the driver's seat side of a mail delivery vehicle and subsequently returning the mail box to a position clear of the road upon which the vehicle travels, said mail box support comprising an upright stationary support adapted to be mounted upon the ground a substantial distance from one side of the road, a rotary member journaled upon the support, a long generally horizontal arm secured to the rotary member at an elevation adapted to be near the top of said vehicle and extending above said vehicle and beyond one side of the support for a distance exceeding the distance from the road to the support, the length of said arm beyond said one side of the support being sufficient to enable the arm to extend entirely across the width of said vehicle and somewhat beyond the side of the vehicle remote from said support when the arm is arranged transversely of the vehicle and road, the arm being adapted to swing above and clear the top of the vehicle, a rural mail box carried by the end of the arm remote from the support, and means adapted to be engaged by a vehicle and connected with the rotary member for causing the rotary member to swing the arm from an initial position substantially parallel with the road to a position transversely thereof and allowing the arm and rotary member to return automatically to its initial position parallel to the road after the deposit of mail into the rural mail box from the driver's seat side of the vehicle.

2. A movable rural mail box support for use in positioning the mail box near the outer left hand side of a mail delivery vehicle traveling on a road near the mail box support and for subsequently returning the mail box to a position clear of the road and vehicle, said mail box support comprising a fixed upright support spaced from one side of the road, an upright shaft journaled upon the support for rotation and limited vertical movement, spiral engaging means interconnecting the shaft and support whereby elevation of the shaft will cause the same to turn upon its vertical axis, a long generally horizontal arm secured to said shaft to turn therewith at an elevation adapted to be near the top of said vehicle, said arm extending beyond one side of the support and shaft a distance exceeding the total width of said vehicle and somewhat greater than the distance of the support from the road, said arm adapted to swing over the top of said vehicle, a rural mail box secured to the end of the arm remote from said support, and means adapted to be operated by contact with a vehicle for elevating said shaft to cause the arm to swing from an initial position substantially parallel with the road to a position transversely thereof to thereby position the rural mail box adjacent to the outer left hand side of the vehicle which is remote from said support, disengagement of the vehicle and last-named means allowing said arm and shaft to return by gravity to said initial position wherein the arm extends substantially parallel to the road and clear of the road and vehicle.

3. A movable rural mail box support adapted to position the rural mail box near the outer left hand side of a mail delivery vehicle traveling upon a road near the mail box support and subsequently returning the rural mail box to a position clear of the road and vehicle and spaced from one side of the road, said mail box support comprising an upright fixed support spaced a substantial distance from said one side of the road, an upright shaft connected with the support for rotation and limited vertical movement, spiral engaging means interconnecting the shaft and support so that elevation of the shaft will cause the same to turn upon its longitudinal axis, a long generally horizontal arm secured to said shaft for rotation therewith at an elevation adapted to be near the top of said vehicle, said arm extending beyond one side of the support for a distance materially greater than the total width of the vehicle and exceeding the distance from the support to said one side of the road, said arm also extending beyond the opposite side of said support, counterbalance means for the portion of the arm extending beyond said other side of the support, a rural mail box carried by the end of the arm remote from the counterbalance means, said mail box extending longitudinally of the arm and having a mail receiving end facing inwardly toward said support, a portion of the arm remote from the counterbalance means being upwardly bowed to facilitate the passage of the arm over the top of said vehicle, and means connected with said shaft to elevate the same and adapted to be actuated by contact with a vehicle, whereby the arm is automatically swung horizontally from an initial position substantially parallel to the road and clear of the road to a position transversely of the road and vehicle wherein the rural mail box is positioned near the outer left hand side of the vehicle for the deposit of mail by the driver of the vehcile, disengagement of the vehicle from the last-named means allowing the arm and shaft to return by gravity to said initial position.

4. A movable rural mail box support according to claim 2, wherein said means adapted to be operated by contact with a vehicle includes a substantially horizontal rock shaft near the bottom of said upright support, and a lift extension carried by the rock shaft and engaging beneath the lower end of said upright shaft for elevating the same when the rock shaft is turned in one direction.

5. A movable rural mail box support for positioning the rural mail box near the outer left hand side of a mail delivery vehicle traveling upon a road near the mail box support and subsequently returning the rural mail box to a position clear of the road and vehicle and spaced from one side of the road, said mail box support comprising an upright support mounted a substantial distance from said one side of the road, an upright shaft journaled upon the support for rotation and limited vertical movement, spiral engaging means interconnecting the shaft and support so that elevation of the shaft will cause the same to turn upon its vertical axis, a long generally horizontal arm secured to said shaft near the top of the support for rotation with the shaft, said arm disposed at an elevation adapted to be near the top of said vehicle, said arm extending beyond one side of the support for a distance substantially greater than the total width of the vehicle, said arm also extending beyond the opposite side of said support, adjustable counterbalance means for the portion of the arm extending beyond said opposite side of the support, a rural mail box carried by the end of the arm remote from the counterbalance means and extending longiutdinally of the arm, said mail box having its inner end facing said support open for the reception of mail, said arm being upwardly bowed between the support and mail box to facilitate the pas-

sage of the arm over the top of said vehicle, a stop element fixedly secured to said support and engageable with said arm to limit swinging movement of the same in one direction, and means adapted to be operated through contact with said vehicle and connected with said shaft to elevate the same for swinging said arm horizontally in one direction.

6. A rural mail box supporting and shifting device, comprising a vertically movable presser foot adapted to be arranged near one side of a road bed and spaced from the path of travel of the wheels of the vehicle while such wheels are traveling upon the road bed, an upstanding supporting element arranged near and spaced from the side of the presser foot which is remote from said road bed, an upstanding shaft mounted upon the upstanding supporting element and having its upper end adapted to terminate near the elevation of the top of the vehicle which is traveling upon the road bed, means operated by the downward movement of the presser foot when the presser foot is depressed by a wheel of a vehicle to raise the upstanding shaft, means to turn the upstanding shaft upon its longitudinal axis when it is raised, a long generally horizontal arm secured to the upper end of the upstanding shaft and adapted to extend above and across the vehicle and extending between the upstanding supporting element and the presser foot and extending beyond the presser foot in a direction remote from the upstanding supporting element for a substantial distance so that its free end is adapted to terminate upon the driver's seat side of the vehicle which is remote from the upstanding supporting element when the arm is shifted to a position transversely of the road bed, and a mail box mounted upon the free end of the arm and arranged adjacent to the driver's seat side of the vehicle when the arm extends transversely of the vehicle, said generally horizontal arm being adapted to be returned to a position generally parallel with and spaced from the road bed when the upstanding shaft descends and is turned upon its longitudinal axis in an opposite direction.

7. A rural mail box supporting and shifting device, comprising a vertically movable presser foot adapted to be arranged near and adapted to be spaced from one side of a road bed and thereby spaced from the path of travel of the wheels of the vehicle while such wheels are traveling upon the road bed, an upstanding supporting element arranged near and spaced from the side of the presser foot which is remote from said road bed, an upstanding shaft mounted upon the upstanding supporting element and having its upper end adapted to terminate near the elevation of the top of the vehicle which is to travel upon the road bed, a generally horizontal rock shaft extending between the presser foot and upstanding shaft, means operated by the downward movement of the presser foot when the presser foot is depressed by a wheel of a vehicle to turn the rock shaft upon its longitudinal axis, means operated by the turning movement of the rock shaft in one direction to raise the upstanding shaft, means to turn the upstanding shaft upon its longitudinal axis when it is raised, a long generally horizontal arm secured to the upper end of the upstanding shaft and adapted to extend above and across the vehicle traveling upon the road bed and extending between the upstanding supporting element and presser foot and extending beyond the presser foot in a direction remote from the upstanding supporting element for a substantial distance so that its free end is adapted to terminate upon the driver's seat side of the vehicle which is remote from the upstanding supporting element when the arm is shifted to a position transversely of the road bed, and a mail box mounted upon the free end of the arm and arranged adjacent to the driver's seat side of the vehicle when the arm extends transversely of the vehicle, said generally horizontal arm being returned to a position generally parallel with and spaced from the road bed when the upstanding shaft descends and is turned upon its longitudinal axis in an opposite direction.

8. The combination with a road bed, of a wheeled vehicle to travel upon the road bed, a vertically movable presser foot arranged near and spaced outwardly from the road bed, an upstanding supporting element spaced from the presser foot and arranged upon that side of the presser foot remote from the road bed, a horizontal rock shaft extending between the presser foot and upstanding supporting element, an upstanding shaft mounted upon the upstanding supporting element, means operated by the downward movement of the presser foot to turn the rock shaft in one direction, means operated by the turning movement of the rock shaft to raise the upstanding shaft, means to turn the upstanding shaft upon its longitudinal axis when it is raised, a generally horizontal arm mounted upon the upstanding shaft to travel therewith, said arm extending from the upstanding shaft to a point upon the opposite side of the vehicle remote from the upstanding shaft when the arm is arranged transversely of the vehicle, a mail box mounted upon the free end of the arm, said generally horizontal arm being returned to a position generally parallel with and spaced from the road bed when the upstanding shaft descends and is turned upon its longitudinal axis in an opposite direction.

9. A vertically movable vehicle wheel operated presser foot adapted to be arranged near and spaced from one side of a road bed, an upstanding supporting element disposed outwardly of and spaced from the presser foot, an upstanding shaft mounted upon said supporting element and having its upper end adapted to be arranged near the elevation of the top of said vehicle, a horizontal rock shaft extending between the presser foot and the upstanding shaft, means operated by the presser foot to turn the rock shaft, means operated by the rock shaft to raise the upstanding shaft, means to turn the upstanding shaft upon its longitudinal axis when it is moved longitudinally, a generally horizontal arm mounted upon the upper end of the upstanding shaft and having a portion adapted to be arranged at an elevation above the top of said vehicle, said arm when arranged transversely of the vehicle extending from the upstanding shaft to the presser foot and extending from the presser foot to the driver's seat side of said vehicle which side is remote from the upstanding shaft, and a mail box mounted upon the free end of said arm.

References Cited in the file of this patent

UNITED STATES PATENTS

942,859	Kersey	Dec. 7, 1909
1,004,476	Schultz	Sept. 26, 1911
1,100,012	Dudgeon	June 16, 1914
1,230,623	Teven	June 19, 1917
1,753,506	Florine	Apr. 8, 1930
1,834,775	Hall	Dec. 1, 1931
1,893,392	Black	Jan. 3, 1933

FOREIGN PATENTS

4,303	Australia	Apr. 4, 1932