J. F. OHMER, JR.

ZONE FARE COMPUTING DEVICE.

APPLICATION FILED MAR. 8, 1920.

1,402,789.

Patented Jan. 10, 1922.

3 SHEETS—SHEET 1.

Fig. 1

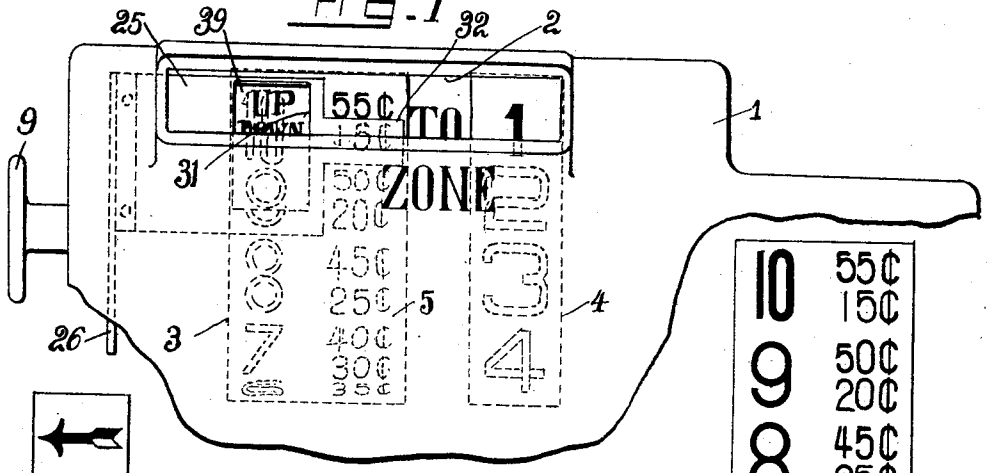




Fig. 2.

Fig. 3.

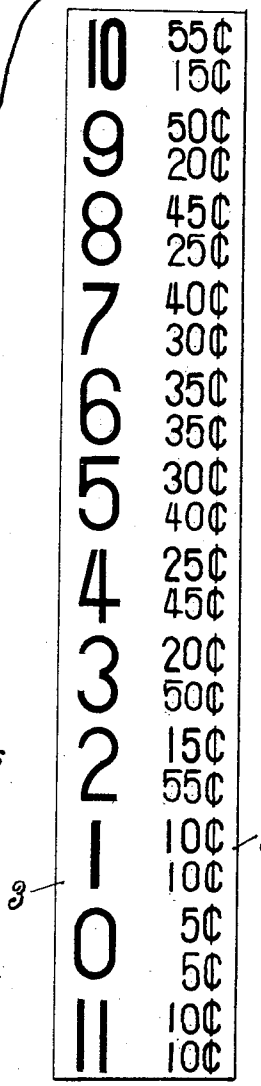


Fig. 4.

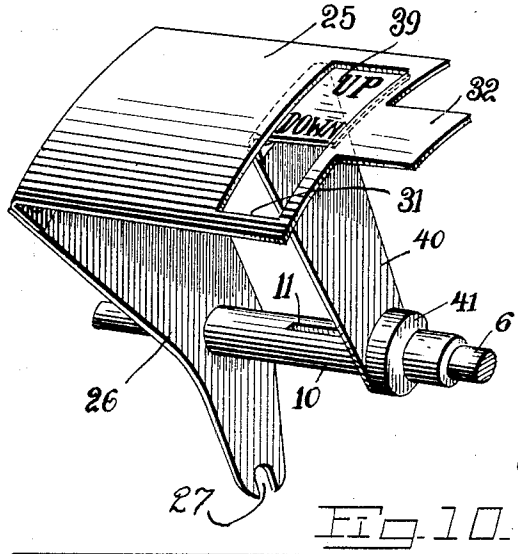


Fig. 10.

UP 55¢ 11 1 AUG. 919

FARE FROM ZONE TO ZONE

Good only on this date and between zones that are printed above. Give this receipt to motorman when leaving car. OMAR Ry. Co.

INVENTOR

John F. Ohmer Jr.

BY Edward Reed

ATTORNEY

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3 SHEETS—SHEET 2.

Fig. 5.

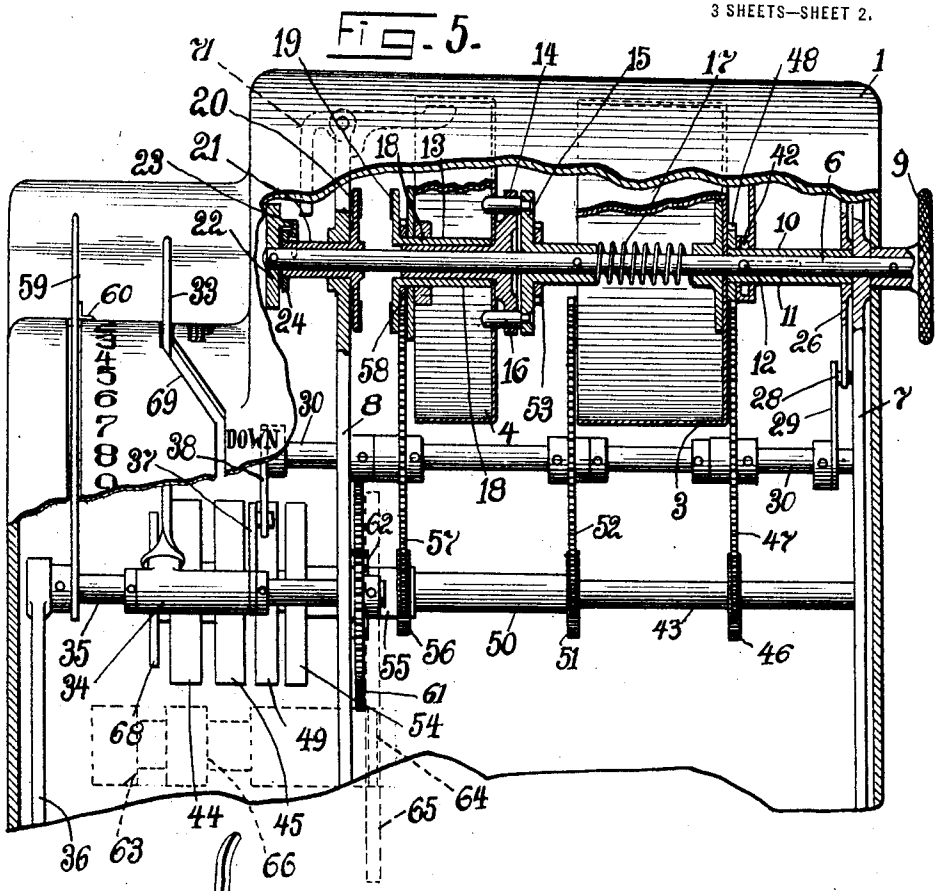


Fig. 8.

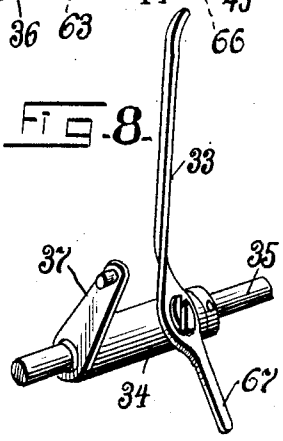
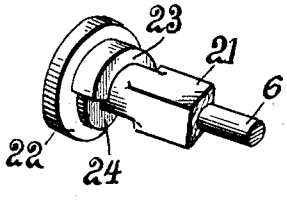


Fig. 9.



INVENTOR

John F. Ohmer Jr.

BY Edmund Reed.

ATTORNEY.

J. F. OHMER, JR.

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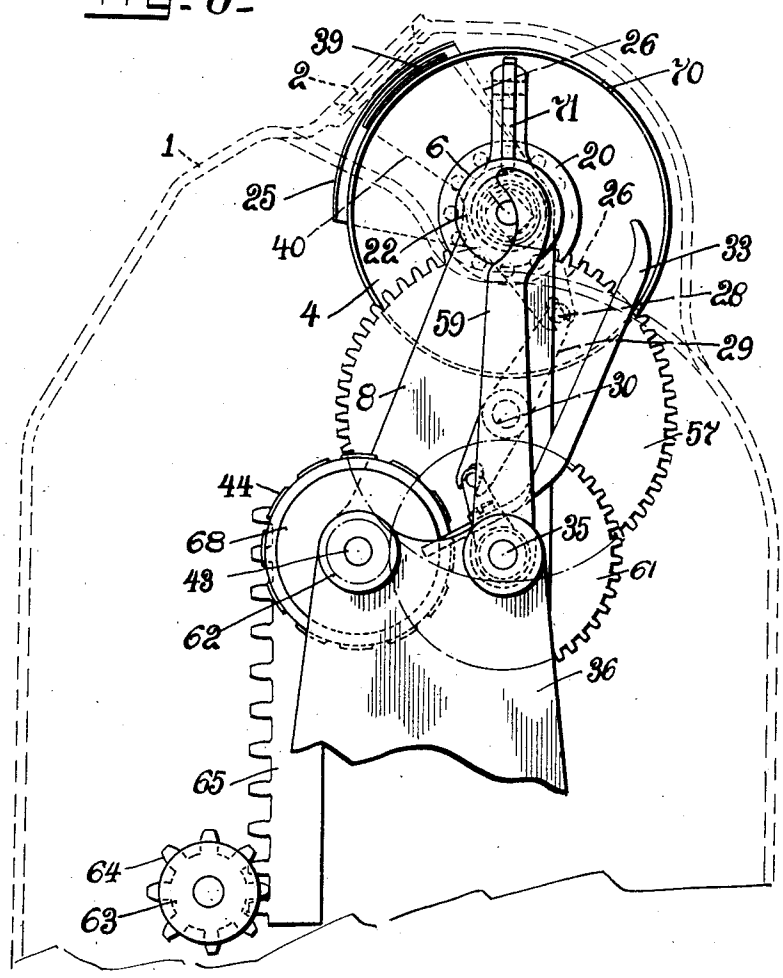
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3 SHEETS—SHEET 3.

Fig. 6.



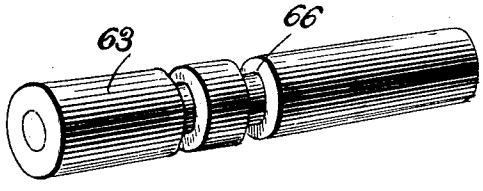


Fig. 7.

INVENTOR.

John F. Ohmer Jr.

BY Edward Reed.

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN F. OHMER, JR., OF DAYTON, OHIO, ASSIGNOR TO OHMER FARE REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF NEW YORK.

ZONE-FARE-COMPUTING DEVICE.

1,402,789. Specification of Letters Patent. Patented Jan. 10, 1922.

Application filed March 8, 1920. Serial No. 364,149.

To all whom it may concern:

Be it known that I, JOHN F. OHMER, Jr., a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Zone-Fare-Computing Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a zone fare computing device for use on street cars and the like. On street cars operating on the zone system it has been customary to furnish each passenger as he boards the car with a ticket showing the zone in which he boarded the car, that is the starting zone. As the passenger leaves the car he surrenders the ticket and pays the fare from the zone in which he boarded the car to the zone in which he left the car, or the destination zone. To determine the fare due requires first that the number of zones travelled be determined, and then that the fare due be computed, based upon the number of zones travelled and the rate per zone. While these computations are simple they frequently cause trouble to the conductor, or platform man, and numerous mistakes are made.

The object of the present invention is to provide a simple, easily operated device which will compute and indicate the fare from the starting zone to any selected destination zone.

A further object of the invention is to provide such a device with means from which a ticket may be printed, showing the starting and destination zones and the amount of the fare.

Other objects of the invention will appear as the mechanism is described in detail.

In the accompanying drawings Fig. 1 is a front elevation of a portion of a mechanism embodying my invention; Fig. 2 is a layout of the destination zone indicator; Fig. 3 is a layout of the combined starting zone indicator and fare indicator; Fig. 4 is a detail view of the flash; Fig. 5 is a rear elevation, partly in section, of the upper portion of a mechanism embodying the invention; Fig. 6 is a side elevation of said mechanism; Fig. 7 is a detail view of the platen; Fig. 8 is a detail view of the controlling lever for the flash and printing wheels; Fig. 9 is a detail view of the connection between the main shaft and the sleeve of the locking device; and Fig. 10 is a view of the ticket printed by the machine.

In carrying out my invention I provide a starting zone indicator and a destination zone indicator, each indicator being provided with a series of zone designations corresponding to the number of zones on the route traveled by the car, or other vehicle. These designations may be of any suitable character, such as the name of a station or street within the zone, but it is customary to number the zones and I have therefore shown the indicator as provided with consecutive numbers to designate the several zones. The zone designations on the two indicators are the same but the sequence of the numbers is reversed, that is, if the two indicators are moved in the same direction the numbers on the one will increase while the numbers on the other will decrease in value. A fare indicator is also provided and is arranged in a predetermined relation to the starting zone indicator. The indications on the several indicators are of such a character and are so arranged that when the two zone indicators have been relatively adjusted to position, the indication on the starting zone indicator which represents the zone in which the car is then located adjacent to the zero indication on the destination zone indicator, and the simultaneous adjustment of the several indicators to exhibit a selected destination zone on the destination zone indicator will also cause the fare indicator to exhibit the correct fare from the starting zone to the selected destination zone. Inasmuch as the indications on the starting zone indicator will not represent the starting zone when the indicators have been adjusted to indicate the fare to the destination zone, I have provided means for concealing the starting zone indicator at all times except during the initial adjustment thereof. Printing wheels are connected with the respective indicators in such a manner that they will be set to print on a ticket the number of the starting zone, the number of the destination zone and the amount of the fare. Obviously such other data may be printed on the ticket as may be desired but this other data is not essential to the present invention. The mechanism for accomplishing these results may take various forms and it will be

understood that the mechanism here shown and described has been shown for the purposes of illustration only.

In the particular embodiment of the invention here illustrated the mechanism is mounted in a casing 1 having a sight opening 2, which may comprise either a single elongated opening or may be divided into several separated parts arranged in proper relation one to the other. Mounted within this casing are the starting zone indicator 3, the destination zone indicator 4 and the fare indicator 5. The several indicators may take any suitable form but I prefer that they be in the form of drums with the indications arranged about the peripheries thereof, and that the drums be so mounted that the indications on each indicator may be moved successively into alinement with the sight opening. The fare indicator 5 is mounted in fixed relation to the starting zone indicator and as a matter of convenience in manufacture I have here shown the same as combined in a single drum with the starting zone indicator, but obviously the two indicators may be supported in proper relative positions in any suitable manner. The several indicators are supported by a shaft 6 which is journaled in frame members 7 and 8 and is provided with a knob, or hand wheel, 9 arranged exteriorly of the casing and by means of which the shaft may be rotated or moved longitudinally. The starting zone indicator 3 is so mounted on the shaft that it will always rotate therewith but will permit the shaft to have longitudinal movement relatively thereto. In the present construction the starting zone indicator is loosely mounted on the shaft and is rigidly secured to a sleeve 10 mounted on the shaft and confined between the indicator and the frame member 7, so that it will hold the indicator against axial movement when longitudinal movement is imparted to the shaft. As here shown, the sleeve is provided with elongated slots 11 and a pin 12 extends through the shaft and through the slots, thus holding the shaft and the sleeve, and consequently the indicator, against relative rotation but permitting the shaft to be moved longitudinally relative to the indicator. The destination zone indicator 4 is loosely mounted on the shaft 6 but is held against axial movement thereon, this being accomplished in the present instance by a gear 57 which is held between a clutch member 19 and a washer, or plate, both of which are rigidly connected with the indicator 4. Said indicator is adapted to be connected with, or disconnected from, the shaft to permit the two zone indicators to be adjusted either in unison or individually. This connection is preferably in the form of a clutch and in the present device the indicator is mounted upon a sleeve 13 which is loosely mounted on the shaft and is provided at one end with a clutch member 14 to cooperate with a corresponding clutch member 15 rigidly secured to the shaft. As here shown, the clutch members are in the form of plates, or disks, the plate 14 having openings to receive pins 16 carried by the plate 15. The two clutch members are held normally in engagement by means of a spring 17 confined between the hub of the clutch member 15 and the hub of the starting zone indicator 3, which spring serves to move both the shaft and the clutch member 15 to the left in Fig. 5 and to hold the two clutch members in cooperative relation. Means are also provided for locking the destination zone indicator against displacement during the adjustment of the starting zone indicator relatively thereto. To this end the hub 18 of the destination zone indicator is provided with a locking member, or plate, 19, which is rigidly secured thereto and which cooperates with a second locking member, or plate, 20, which is held against rotation but is movable into and out of locking relation with the first mentioned locking member. Preferably the two locking members are provided on their adjacent faces with interlocking projections which, when in engagement, will positively prevent the rotation of the destination zone indicator. The locking member 20 is so mounted that it will be moved into operative relation to the locking member 19 when the shaft 6 is moved longitudinally to disconnect the clutch members 14 and 15 and thus release the destination zone indicator from the shaft. In the construction here shown the locking plate 20 is carried by a sleeve 21 which is slidably mounted in a bearing in the frame member 8 and is held against rotation therein, preferably by making the sleeve and the bearing both noncircular in shape. The shaft 6 is journaled in the sleeve 21 and is so connected therewith that the sleeve will move lengthwise with the shaft. To this end the shaft has rigidly secured thereto a disk 22 having a flanged portion 23 forming a guideway to receive a disk 24 rigidly secured to the sleeve 21. The locking members 19 and 20 are spaced apart such a distance that the projections thereon will be brought into interlocking engagement just before the pins 16 of the clutch member 15 clear the opening in the clutch member 14, thus causing the destination zone indicator to be locked against rotation before it is released from the shaft. It is also desirable that the destination zone indicator should be in a predetermined position, such as its zero position, before the two zone indicators are disconnected for relative adjustment, thus preventing mistakes due to setting the two indicators in improper relative positions.

This may be accomplished by providing a suitable locking device which will prevent disconnection of the indicators until the destination zone indicator has been moved into its proper position. As here shown, the destination zone indicator 4 is provided in its periphery with an opening, or slot, 70 which when the said indicator is in its zero position will be arranged in alinement with one end of a locking finger 71 which is pivotally mounted on a fixed part of the mechanism, such as the frame 8, and the end of which projects into the drum of the indicator 4. The locking finger 71 has its opposite end turned downwardly so that it will lie in the path of a part connected with the shaft 6, such as the disk 22. The arrangement of the outer end of the finger relatively to the disk 22 is such that the disk will engage the finger before the clutch members 14 and 15 are disengaged. If the indicator 4 is not in its zero position the inner end of the finger will engage the periphery of the drum and thus prevent the disengagement of the clutch members, but if the indicator is in its zero position the end of the finger will pass through the slot 70 and thus permit the separation of the two clutch members. This finger will also serve to lock the indicator 4 against rotary movement so long as the clutch members are disengaged.

The fares must, of course, be computed and arranged upon the fare indicator in proper relation one to the other and to the zone indicators. The manner of computing the fares may vary but in the present instance I have assumed that the zones are uniform and that the same fare will be charged for each zone, and I have arbitrarily fixed the zone fare rate at 5 cents, which will be the minimum fare received. It will be noted that the zone indications on the destination zone indicator and the starting zone indicator are arranged in opposite directions, that is, on the one indicator the zone designations, or numbers, are arranged in clockwise fashion and on the other indicator they are arranged in counter clockwise fashion. In this computation I have also assumed that the down trip will begin at 1 and end at 11 and that the up trip will begin at 11 and end at 1. As a matter of convenience I have placed upon the starting zone indicator a zero indication corresponding in location to the arrow on the destination zone indicator. The fare indications for the down trip occupy the lower positions opposite each zone indication and I have placed opposite the zero on the starting zone indicator the zone rate of fare and have increased the fare opposite each zone indication by arithmetical progression, by the zone rate of fare, as the zone indications decrease in value, that is, from 11 to 1, it being noted that the fare opposite the zero is 5 cents, that opposite the 11 is 10 cents, that opposite the 10 is 15 cents, etc. In computing the fares for the up trip I have also placed the minimum fare, or zone rate opposite the zero, in the upper position, and have increased the fare opposite each zone indication by arithmetical progression, by the zone rate of fare, as the zone numbers increase, that is, from 1 to 11. It will be noted, however, that in each instance the highest fare is opposite the next to the last zone indication, as when the car is in the last zone on either trip the fare will be the minimum fare.

To compute a fare the starting zone indicator is first adjusted relatively to the destination zone indicator to cause the number representing the zone in which the car is then located to be brought opposite the zero point on the destination zone indicator. To accomplish this the indicators are first adjusted to bring the zero point on the destination zone indicator, which is here indicated by the arrow, into alinement with the sight opening. The shaft 6 is then moved longitudinally to disconnect the starting zone indicator from the destination zone indicator and the former is then adjusted to bring the number of the starting zone, that is the zone in which the car is located, into alinement with the sight opening. With the starting zone indicator in this position the shaft is released and the connection between the two zone indicators is reestablished. The destination zone indicator is then adjusted to bring into alinement with the sight opening the number of the zone at which the passenger intends to leave the car, that is the destination zone. Inasmuch as the indicators are connected one with the other, this adjustment of the destination zone indicator will also adjust the starting zone indicator and the fare indicator and will cause the fare indicator to exhibit at the sight opening the fare from the starting zone to the destination zone. It will be noted that the fare indicator is provided with two series of indicators, one of which represents a fare when the car is travelling in one direction and the other of which represents a fare when the car is travelling in the opposite direction, the two trips being characterized in the present instance as the "up" and "down" trips of the car. The fares of the two series of fare indications are alternately arranged on the fare indicator so that two fares will be arranged adjacent to each starting zone indication and consequently two fares will be brought opposite the sight opening, one of which represents the fare when the car is on the up trip and the other of which represents the fare if the car is on the down trip.

In Fig. 1 I have shown the computation of

the fare of a passenger who boarded the car on the up trip in the 11th zone and gave his destination as the first zone, consequently, he will ride through all 11 zones and the fare will be 55 cents, as indicated by the upper figures on the fare indicator. If a second passenger boards the car in the same zone, that is zone 11, and wishes to ride to zone 4, he will ride through 8 zones and the fare will be 40 cents, as shown by the upper indication which will appear on the fare indicator opposite the figure 4 on the destination zone indicator.

To avoid confusion means are provided for concealing one of these fare indications so that only the fare which is payable will be visible. Inasmuch as the indication on the starting zone indicator which appears at the sight opening after this indicator has been moved from its initially adjusted position has no relation to the other indications, it is desirable that it also should be concealed. I have therefore provided the combined starting zone indicator and fare indicator with a suitable flash which will conceal those indications which are not pertinent to the particular computation which is being made. In the present construction this flash is shown at 25 and comprises a curved plate carried by an arm 26 which is pivotally mounted on the sleeve 10 and has that portion thereof which projects below the sleeve notched, as shown at 27, to receive a pin 28, carried by a rock arm 29, which is mounted on a shaft 30 journaled in the frame members 7 and 8. This flash extends across the starting zone indicator and is provided with an elongated opening 31 arranged above the indications on said indicator. The flash 25 has a reduced end portion 32 which extends across the fare indicator and is of such a width that when the flash is in one position it will conceal the lower fare indication and when the flash is in the other position it will conceal the upper fare indication, thus permitting but one fare indication to be shown through the sight opening. The movement of the flash is controlled by a lever 33 which is connected with a sleeve 34 mounted on a shaft 35, mounted in the frame member 8 and a frame member 36 and adapted to be rotated by the movement of the lever 33. This sleeve has secured thereto a rock arm 37 which is connected with a rock arm 38 on the shaft 30 so that the movement of the lever will be transmitted to the flash, and when the lever is in the position marked "Up" the upper fare indication, which is located opposite the sight opening, will be visible and when the lever is in a position marked "Down" the lower fare indication will be visible and the upper fare indication will be concealed. The opening 31 in the main plate of the flash is at all times in alinement with the starting zone indicator and in order to conceal these indications during the computations of a fare I have provided an auxiliary flash comprising a plate 39 arranged beneath the plate 25 and normally in line with the opening 31. This plate however is movable out of alinement with the opening 31 to permit the starting zone indicator to be observed during the initial adjustment thereof. To this end the flash 39 is carried by an arm 40 which is also mounted on the sleeve 10 but is held against rotation with the sleeve. As shown, the arm 40 is provided with a hub portion 41 having an internal guideway 42 into which the ends of the pin 12 extend, thereby connecting the flash 39 with the shaft 6 for longitudinal movement therewith but permitting the shaft and the sleeve to rotate relatively to the arm 40. Consequently when lengthwise movement is imparted to the shaft to disconnect the two zone indicators the flash 39 will be moved into an inoperative position and it will remain in that position until the starting zone indicator has been set and the shaft released to cause the two indicators to be again connected one to the other. To avoid any mistake in the reading of the indication I have provided on the face of the flash 39 the two words "Up" and "Down" and these always occupy the same positions in the sight opening during the adjustment of the destination zone indicator, and consequently when the fare indicator has been set the word "Up" will appear opposite the upper indication and the word "Down" will appear opposite the lower indication. When the car is on the up trip and the lever 33 is properly set the lower fare indication will be concealed and the word "Up" will appear opposite the only fare indication which is visible, thus indicating that the fare exhibited is the fare on the up trip from the starting zone to the destination zone, the number of which appears at the sight opening.

If desired, this computing mechanism may be used in connection with a ticket issuing device and I have in the present instance shown a series of type wheels which are so connected with the several indicators that when the latter are set to compute and indicate a fare between two zones the type wheels will be set to print the starting zone, the destination zone and the amount of the fare. In the present arrangement the several type wheels are mounted on a shaft 43 which is mounted in the frame members 7 and 36. In order to print the fares for both the up and down trips I have provided two type wheels 44 and 45 which are connected one to the other for rotation in unison and in effect constitute a double type wheel. One of these type wheels carries the fare indications for the up trip and the other carries the fare indications for the down trip. These two type wheels are mounted directly upon the shaft 43 and this shaft

is geared to the combined starting zone indicator and fare indicator so that the type wheels will be adjusted simultaneously with the adjustment of this indicator. As here shown, the shaft 43 is provided with a pinion 46 which meshes with a gear 47 on the shaft 30 and which in turn meshes with a pinion 48 mounted on the sleeve 10 and rigidly secured to the indicator drum 3. The starting zone type wheel, 49, is mounted on a sleeve 50, which is journaled on the shaft 43 and is adapted to be connected with the starting zone indicator only during the initial adjustment of that indicator, consequently the sleeve is provided with a pinion 51 which meshes with a gear 52 on the shaft 30, and the clutch member 15 has rigidly secured thereto a pinion 53 which is so arranged that when the clutch members 15 and 14 have been disengaged to permit the rotation of the starting zone indicator independently of the destination zone indicator, the pinion 53 will mesh with the gear 52 and the adjustment of this indicator will also adjust the type wheel 49. When the adjustment of the starting zone indicator has been completed and the shaft is released to cause the two zone indicators to be again connected one to the other the pinion 53 will move out of mesh with the gear 52 and the connection between the indicator and the type wheel will be broken thus permitting the type wheel to remain in its adjusted position during the subsequent movements of the starting zone indicator. The destination zone type wheel 54 is mounted on a sleeve 55 which is journaled on the sleeve 50 and this sleeve is connected with the destination zone indicator for rotation therewith. The sleeve 55 has secured thereto a pinion 56 meshing with a gear 57 on the shaft 30 which in turn meshes with a pinion 58 secured to the destination zone indicator 4. Consequently the type wheel will be set to correspond to the adjustments of the indicator. In practice the starting zone indicator is adjusted to its proper position with relation to the destination zone indicator when the car enters a new zone and this adjustment, when once made, is good for all computations so long as the car remains in that zone and it will be noted that the starting zone type wheel 49 remains in its adjusted position until the starting zone indicator is again adjusted with relation to the destination zone indicator. After this initial adjustment has been made the computation of the fare to any selected zone requires only that the destination zone indicator shall be adjusted to exhibit the number of the selected destination zone. This adjustment automatically brings into alignment with the sight opening the correct fare indication. The sight opening will usually be arranged on the front of the casing 1, which is adjacent to the passenger, particularly when the device is provided with ticket printing mechanism, and as the conductor will stand on the opposite side, or in the rear, of the mechanism, the indications could not readily be observed by him. I have therefore provided in the rear of the machine a setting device for the destination fare indicator, which, as here shown, comprises a lever 59 mounted on the shaft 35, extending through a slot in the wall of the casing and provided with a pointer 60 which travels along a zone indicator, that is a series of numbers placed upon the casing to represent the several zones. The shaft 35 is provided with a gear 61 which meshes with a pinion 62 on the sleeve 55 which carries the type wheel 54 and which is connected with the destination zone indicator through the gearing 56, 57 and 58. The zone indications on the casing are so arranged that the movement of the lever to bring the pointer 60 into alignment with a selected zone indication will adjust the destination zone indicator to cause the latter to exhibit the corresponding zone number. Thus after the initial setting of the machine it is only necessary, in order to compute a fare to a given zone to adjust the lever 59, which can be very quickly and easily done.

As has been explained the printing device comprises two type wheels one of which prints the fare for the up trip and the other of which prints the fare for the down trip. It is, of course, desirable that only one fare be printed on the ticket and in order to accomplish this I have so constructed the printing mechanism that it will print from but a single fare type wheel and the two fare type wheels are adjustably mounted so that either of them may be moved into printing position. The printing mechanism as a whole, that is the mechanism for printing the ticket, is not here shown as it is not necessary to an understanding of the present invention and may be of any suitable character. However, the present mechanism is designed to utilize the printing mechanism shown in Patent No. 1,182,410 granted May 9, 1916, to John F. Ohmer. This mechanism comprises a platen which is shown at 63 and is provided with a pinion 64 which travels over a rack 65 extending past the type wheels, thus causing the platen to be brought into operative relation to the type wheels. In order that an impression may be taken from but one fare printing wheel on each operation of the printing mechanism the platen is provided adjacent to the fare printing type wheels with circumferential grooves 66 having between them an operative portion of the platen with which one or the other of the two fare printing wheels is always in alignment, the other fare printing wheel being in align-

ment with one of the grooves. The two type wheels are slidably mounted on the shaft 43 so that either may be brought into alignment with the operative portion of the platen while the other fare printing wheel is in alignment with one of the grooves and therefore inoperative, thereby causing but a single fare to be printed on the ticket. This adjustment of the type wheels is accomplished by the lever 33 which operates the flash. This lever is pivotally mounted on the sleeve 34 and has a portion 67 extending beyond its axis and between the type wheel 44 and a plate 68 rigidly secured thereto. The slot in the casing through which the lever 33 travels, which is shown at 69, is inclined so that the movement of the lever from the "up" to the "down" position will rock the same about its axis and will thus impart axial movement to the two type wheels and move the desired one of said type wheels into printing position with relation to the platen.

While I have described one embodiment of my invention I wish it to be understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art. I also wish it to be understood that the computing device may be used for computing values other than fares, the necessary changes being made in the indications on the indicators, and therefore that the names by which the indicators are herein characterized are used as terms of definition and not as terms of limitation.

Having now fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a zone fare computing device, a starting zone indicator, a destination zone indicator, and a fare indicator, means for adjusting the several indicators in unison, said zone indicators being adjustable relatively one to the other, and the indications on the several indicators being so arranged that when said indicators have been set in predetermined relative positions the simultaneous adjustment of the several indicators will cause the fare indicator to indicate the fare to the zone indicated by the destination zone indicator.

2. In a zone fare computing device, a starting zone indicator, a fare indicator mounted in fixed relation to said starting zone indicator, and a destination zone indicator, said zone indicators being adjustable relatively one to the other and the indications on the several indicators being so arranged that when a selected starting zone has been set opposite a predetermined point on said destination zone indicator the simultaneous adjustment of said indicators to cause said destination zone indicator to indicate a selected zone will cause said fare indicator to indicate the fare from the selected starting zone to the selected destination zone.

3. In a zone fare computing device, a starting zone indicator, a fare indicator mounted in fixed relation to said starting zone indicator, a destination zone indicator, said zone indicators being adjustable relatively one to the other and the indications on the several indicators being so arranged that when a selected starting zone has been set opposite a predetermined point on said destination zone indicator the simultaneous adjustment of said indicators to cause said destination zone indicator to indicate a selected zone will cause said fare indicator to indicate the fare from the selected starting zone to the selected destination zone, type wheels connected with the respective indicators, and a platen cooperating with said type wheels.

4. In a zone fare computing device, two zone indicators, means for adjusting said zone indicators relatively one to the other or in unison, and a fare indicator mounted in fixed relation to one of said zone indicators.

5. In a zone fare computing device, a starting zone indicator, a fare indicator mounted in fixed relation to said starting zone indicator, a destination zone indicator normally connected with said starting zone indicator for movement therewith, and means for disconnecting said indicators and relatively adjusting the same.

6. In a zone fare computing device, a starting zone indicator, a fare indicator mounted in fixed relation to said starting zone indicator, a destination zone indicator, and means for connecting said zone indicators one to the other and for disconnecting the same, whereby they may be adjusted in unison or separately.

7. In a zone fare computing device, a starting zone indicator, a fare indicator mounted in fixed relation to said starting zone indicator, a destination zone indicator, means for connecting said zone indicators one to the other and for disconnecting the same whereby they may be adjusted in unison or separately, and means for locking one of said zone indicators against movement while the other zone indicator is adjusted relatively thereto.

8. In a zone fare computing device, a starting zone indicator, a fare indicator, a destination zone indicator, and means for adjusting one of said indicators relatively to the others and for adjusting the several indicators in unison.

9. In a zone fare computing device, a starting zone indicator, a fare indicator, a destination zone indicator, means for adjusting one of said indicators relatively to the others and for adjusting the several in-

dicators in unison, type wheels, means for adjusting said type wheels in unison with the respective indicators, and a platen cooperating with the several type wheels to take a record therefrom.

10. In a zone fare computing device, a starting zone indicator, a fare indicator mounted in fixed relation to said starting zone indicator, a destination zone indicator normally connected with said starting zone indicator for movement therewith, means for disconnecting said indicators and adjusting said starting zone indicator relatively to said destination zone indicator, type wheels operatively connected with said destination zone indicator and said fare indicator, another type wheel, and means for operatively connecting said other type wheel with said starting zone indicator when the latter is disconnected from said destination zone indicator, and a platen to take a record from said type wheels.

11. In a zone fare computing device, a starting zone indicator, a fare indicator mounted in fixed relation to said starting zone indicator, a destination zone indicator normally connected with said starting zone indicator for movement therewith, means for disconnecting said indicators and for adjusting said starting zone indicator relatively to said destination zone indicator, and means for concealing the indications on said starting zone indicator when the latter is connected with said destination zone indicator.

12. In a zone fare computing device, a starting zone indicator, a fare indicator mounted in fixed relation to said starting zone indicator, a destination zone indicator normally connected with said starting zone indicator for movement therewith, means for disconnecting said indicators and for adjusting said starting zone indicator relatively to said destination zone indicator, and other means for adjusting said indicators in unison.

13. In a zone fare computing device, a casing having a sight opening, a starting zone indicator, a fare indicator, a destination zone indicator normally connected with said starting zone indicator for movement therewith, the several indicators being mounted in said casing and adjustable relative to said sight opening, means for disconnecting said zone indicators and for adjusting said starting zone indicator relative to said destination zone indicator, and an operating device for adjusting said indicators in unison.

14. In a mechanism of the character described, a shaft, a zone indicator mounted on said shaft for rotation therewith, a second zone indicator mounted on said shaft, means for connecting said second zone indicator with and disconnecting the same from said shaft, and means for rotating said shaft.

15. In a mechanism of the character described, a shaft, a zone indicator mounted on said shaft for rotation therewith, a second zone indicator mounted on said shaft, means for connecting said second zone indicator with and disconnecting the same from said shaft, means for rotating said shaft, and means for locking said second zone indicator against rotation when it is disconnected from said shaft.

16. In a mechanism of the character described, a shaft capable of both rotatory and longitudinal movement, a zone indicator mounted on said shaft for rotation therewith, a second zone indicator loosely mounted on said shaft, and means actuated by the longitudinal movement of said shaft for connecting said second zone indicator with and disconnecting the same from said shaft.

17. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a zone indicator mounted on said shaft for rotation therewith and held against axial movement with said shaft, a second zone indicator loosely mounted on said shaft, and cooperating devices connected with said second indicator and with said shaft respectively and controlled by the longitudinal movement of said shaft for connecting said second zone indicator with and disconnecting the same from said shaft.

18. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a zone indicator mounted on said shaft for rotation therewith and held against axial movement with said shaft, a second zone indicator loosely mounted on said shaft, and cooperating devices connected with said second indicator and with said shaft respectively and controlled by the longitudinal movement of said shaft for connecting said second zone indicator with and disconnecting the same from said shaft, a locking member connected with said second zone indicator, and a second locking member connected with said shaft for longitudinal movement therewith but held against rotation and adapted to cooperate with the first mentioned locking member to hold said second zone indicator against rotation when it is disconnected from said shaft.

19. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a zone indicator mounted on said shaft for rotation therewith and held against longitudinal movement therewith, a second zone indicator loosely mounted on said shaft, a clutch member secured to said second zone member, a

cooperating clutch member secured to said shaft, and a spring tending to hold said clutch members normally in cooperating engagement.

20. In a mechanism of the character described, a supporting frame, a shaft mounted in said frame for both rotatory and longitudinal movement, a zone indicator mounted on said shaft, a sleeve mounted on said shaft, connected with said zone indicator and confined between the same and said frame to hold said zone indicator against axial movement with said shaft, said sleeve having a slot therein, a pin mounted in said shaft and extending through said slot to cause said sleeve and said indicator to rotate with said shaft, a second zone indicator loosely mounted on said shaft, cooperating clutch members connected respectively with said second zone indicator and with said shaft, and a spring confined between the clutch member on said shaft and the first mentioned zone indicator to hold said clutch members normally in cooperative engagement.

21. In a mechanism of the character described, frame members, a shaft mounted in said frame members for both rotatory and longitudinal movement, a zone indicator mounted on said shaft for rotation therewith and held against longitudinal movement therewith, a second zone indicator loosely mounted on said shaft, means controlled by the longitudinal movement of said shaft for connecting said second zone member with and disconnecting the same from said shaft, a locking member connected with said second zone indicator, a sleeve mounted in one of said frame members and held against rotation therein, said shaft being journaled in said sleeve and held against longitudinal movement relatively thereto, and a locking member carried by said sleeve and arranged to be moved into locking engagement with the first mentioned locking member by the longitudinal movement of said shaft.

22. In a mechanism of the character described, a starting zone indicator, a destination zone indicator, a fare indicator, means for connecting said zone indicators one to the other for rotation in unison and for disconnecting the same to permit said starting zone indicator to be adjusted relatively to said destination zone indicator, and means for preventing said starting zone indicator from being disconnected from said destination zone indicator until said destination zone indicator has been adjusted to a predetermined position.

23. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a zone indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a second zone indicator mounted on said shaft and normally connected therewith, means for disconnecting said second zone indicator from said shaft, and means for preventing said second zone indicator from being disconnected from said shaft until said second zone indicator has been adjusted to a predetermined position.

24. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a zone indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a second zone indicator mounted on said shaft and normally connected therewith, means for disconnecting said second zone indicator from said shaft, means for preventing said second zone indicator from being disconnected from said shaft until said second zone indicator has been adjusted to a predetermined position, and means to hold said second zone indicator against rotation while it is disconnected from said shaft.

25. In a mechanism of the character described, a casing having a sight opening, a starting zone indicator mounted within said casing, a destination zone indicator mounted within said casing, said zone indicators being normally connected one to the other for adjustment in unison relatively to said sight opening, means for disconnecting said zone indicators to permit said starting zone indicator to be adjusted independently of said destination zone indicator, a device mounted between said starting zone indicator and said sight opening to normally conceal from view the indications on said starting zone indicator, and means for moving said device into an inoperative position when said starting zone indicator is disconnected from said destination zone indicator.

26. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a starting zone indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a destination zone indicator, means controlled by the longitudinal movement of said shaft to connect said shaft with and disconnect the same from said destination zone indicator, a device movable into and out of a position between said starting zone indicator and said sight opening to conceal from view the indications on said starting zone indicator, and means controlled by the longitudinal movement of said shaft to move said device into a position which will expose to view the indications on said starting zone indicator.

27. In a mechanism of the character described, a starting zone indicator, a fare indicator comprising two series of fare indications, one indication of each series of fare

indications being arranged adjacent to each zone indication on said starting zone indicator, a destination zone indicator, means for adjusting said zone indicators in unison and for adjusting said starting zone indicator independently of said destination zone indicator, a flash mounted in operative relation to said starting zone indicator and having a part extending across said fare indicator and movable into a position to conceal from view one or the other of the two fare indications.

28. In a mechanism of the character described, a casing having a sight opening, an indicator drum rotatably mounted in said casing adjacent to said sight opening and having thereon a series of zone indications and two series of fare indications, one fare indication of each series being arranged adjacent to each zone indication, a flash extending between said drum and said sight opening and having an elongated opening therein extending transversely to said sight opening adjacent to said zone indication and also having a part extending across said fare indication and adapted to be moved into a position to conceal either one of the two fare indications adjacent to said sight opening, and a part movable into and out of alinement with the opening in said flash to conceal or expose said zone indications.

29. In a mechanism of the character described, a casing having a sight opening, an indicator drum rotatably mounted in said casing adjacent to said sight opening and having thereon a series of zone indications and two series of fare indications, one fare indication of each series being arranged adjacent to each zone indication, a flash arranged between said drum and said sight opening and mounted for oscillatory movement about the axis of said drum, said flash having an elongated opening extending transversely to said sight opening and also having a part projecting across said fare indicator and movable into a position to conceal either one of the two fare indications adjacent to said sight opening, means to adjust said flash with relation to said fare indications, and a part mounted for movement into and out of alinement with the opening of said flash and held against movement about the axis of said drum.

30. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a starting zone indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a destination zone indicator loosely mounted on said shaft, means controlled by the longitudinal movement of said shaft for connecting said destination zone indicator with and disconnecting the same from said shaft, means for rotating said shaft, a printing wheel operatively connected with said destination zone indicator, a second printing wheel, and means for operatively connecting said second printing wheel with said starting zone indicator when said destination zone indicator is disconnected from said shaft.

31. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a starting zone indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a fare indicator mounted in fixed relation to said starting zone indicator and having therein two series of fares, a destination zone indicator mounted on said shaft, means controlled by the longitudinal movement of said shaft for connecting said destination zone indicator with or disconnecting the same from said shaft, a type wheel connected with said destination zone indicator, a second type wheel, means for connecting said second type wheel with said starting zone indicator when the destination zone indicator is disconnected from said shaft, a pair of type wheels connected with said fare indicator and having thereon type corresponding to the respective series of indications on said fare indicator, and means to cause a record to be taken from a selected one of said pair of type wheels.

32. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a starting zone indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a fare indicator mounted in fixed relation to said starting zone indicator and having thereon two series of fare indications, a destination zone indicator mounted on said shaft, means controlled by the longitudinal movement of said shaft for connecting said destination zone indicator with or disconnecting the same from said shaft, a type wheel connected with said destination zone indicator, a second type wheel, means for connecting said second type wheel with said starting zone indicator when the destination zone indicator is disconnected from said shaft, a pair of type wheels connected with said fare indicator and having thereon type corresponding to the respective series of indications on said fare indicator, a platen having a groove therein adapted to aline with one of said pair of type wheels, and means for adjusting said type wheels axially to move one of them into and out of alinement with said groove.

33. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a starting zone indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a fare indicator mounted in fixed relation to said starting zone indicator and having thereon two series of fare indica-

tions, a destination zone indicator mounted on said shaft, means controlled by the longitudinal movement of said shaft for connecting said destination zone indicator with or disconnecting the same from said shaft, a type wheel connected with said destination zone indicator, a second type wheel, means for connecting said second type wheel with said starting zone indicator when the destination zone indicator is disconnected from said shaft, a pair of type wheels connected with said fare indicator and having thereon type corresponding to the respective series of indications on said fare indicator, a platen having grooves forming between them a part adapted to aline with one of said pair of type wheels, said pair of type wheels being axially adjustable to bring a selected one into alinement with said part of said platen, a flash to conceal the indication of one series of indications on said fare indicator, and means for simultaneously actuating said flash and adjusting said pair of type wheels.

34. In a mechanism of the character described, a shaft mounted for both rotatory and longitudinal movement, a starting zone indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a fare indicator mounted in fixed relation to said starting zone indicator and having thereon two series of fare indications, a destination zone indicator mounted on said shaft, means controlled by the longitudinal movement of said shaft for connecting said destination zone indicator with or disconnecting the same from said shaft, a type wheel connected with said destination zone indicator, a second type wheel, means for connecting said second type wheel with said starting zone indicator when the destination zone indicator is disconnected from said shaft, a pair of type wheels connected with said fare indicator and having thereon type corresponding to the respective series of indications on said fare indicator, a platen having grooves forming between them a part adapted to aline with one of said pair of type wheels, said pair of type wheels being axially adjustable to bring a selected one into alinement with said part of said platen, a flash to conceal the indication of one series of indications on said fare indicator, a lever operatively connected with said flash and with said pair of type wheels, whereby a single movement of said lever will adjust said type wheels and operate said flash.

35. In a mechanism of the character described, an indicator, means for rotating said indicator, a second indicator, means for connecting said second indicator with and disconnecting the same from the first mentioned indicator, a flash arranged normally to conceal the indications on one of said indicators, and means for moving said flash into an inoperative position when said indicators are disconnected.

36. In a mechanism of the character described, a shaft, an indicator connected with said shaft for rotation therewith, a second indicator mounted on said shaft, means for connecting said second indicator with and disconnecting the same from said shaft, a flash arranged normally to conceal the indications on the first mentioned indicator, and means for moving said flash into an inoperative position when said second indicator has been disconnected from said shaft.

37. In a mechanism of the character described, a shaft mounted for both rotary and longitudinal movement, an indicator mounted on said shaft for rotation therewith and held against axial movement therewith, a second indicator mounted on said shaft, means controlled by the longitudinal movement of said shaft to connect the same with and disconnect the same from said second indicator, a flash arranged normally to conceal the indication on the first mentioned indicator, and means controlled by the longitudinal movement of said shaft to move said flash into an inoperative position.

38. In a mechanism of the character described, a starting zone indicator, a destination zone indicator, a fare indicator, means for connecting said zone indicators one to the other for rotation in unison and for disconnecting the same to permit said starting zone indicator to be adjusted relatively to said destination zone indicator, a locking member movably mounted on a fixed part of said mechanism adjacent to said destination zone indicator and having a part arranged to be actuated by the connecting means for said zone indicators when said means is actuated to disconnect said indicators, and having another part adapted to engage said destination zone indicator and prevent the disconnection of said zone indicators except when said destination zone indicator is in a predetermined position.

39. In a mechanism of the character described, a starting zone indicator, a destination zone indicator comprising a drum, a shaft on which said indicators are mounted, clutch members connected with said destination zone indicator and with said shaft respectively to connect said destination zone indicator with the shaft, said clutch members being adapted to be disengaged by the longitudinal movement of said shaft, a locking finger pivotally mounted on a fixed part of said mechanism adjacent to said destination zone indicator and having a part extending into said destination zone indicator, said locking finger also having a part extending into the path of a projection on said shaft whereby the longitudinal movement of said shaft will rock said finger about its axis and cause the same to engage

the periphery of the destination zone indicator and thereby prevent the disengagement of said clutch members, said destination zone indicator being provided in its periphery with an opening which will be arranged in alinement with said finger when said indicator is in its zero position.

40. In a computing device, two indicators adjustable relatively one to the other and each having thereon a series of indications, a third indicator arranged in a normally fixed relation to one of the first mentioned indicators and having thereon a value indication adjacent to each indication on said one of said first mentioned indicators.

41. In a computing device, two indicators adjustable relatively one to the other and each having thereon a series of indications, a third indicator arranged in a normally fixed relation to one of the first mentioned indicators and having thereon two series of value indications, one indication of each series being arranged adjacent to each indication on said one of said first mentioned indicators.

42. In a computing device, two indicators adjustable relatively one to the other and each having thereon a series of indications, a third indicator arranged in a predetermined relation to one of the first mentioned indicators and having thereon two series of value indications, one indication of each series being arranged adjacent to each indication on said one of said first mentioned indicators, the indications of one series increasing in value as the indications on said first mentioned indicator increase and the indications on the other series decreasing in value as the indications on said first mentioned indicator increase.

43. In a computing device, a starting zone indicator, a destination zone indicator, said indicators being adjustable relatively one to the other, and a fare indicator arranged in predetermined relation to said starting zone indicator, and two series of fare indications, one indication of each series being arranged adjacent to each indication on said starting zone indicator, the indications of one series increasing by arithmetical progression from the first toward the last of said zone indications and the indications of the other series increasing by arithmetical progression from the last to the first of said zone indications.

In testimony whereof, I affix my signature hereto.

JOHN F. OHMER, JR.