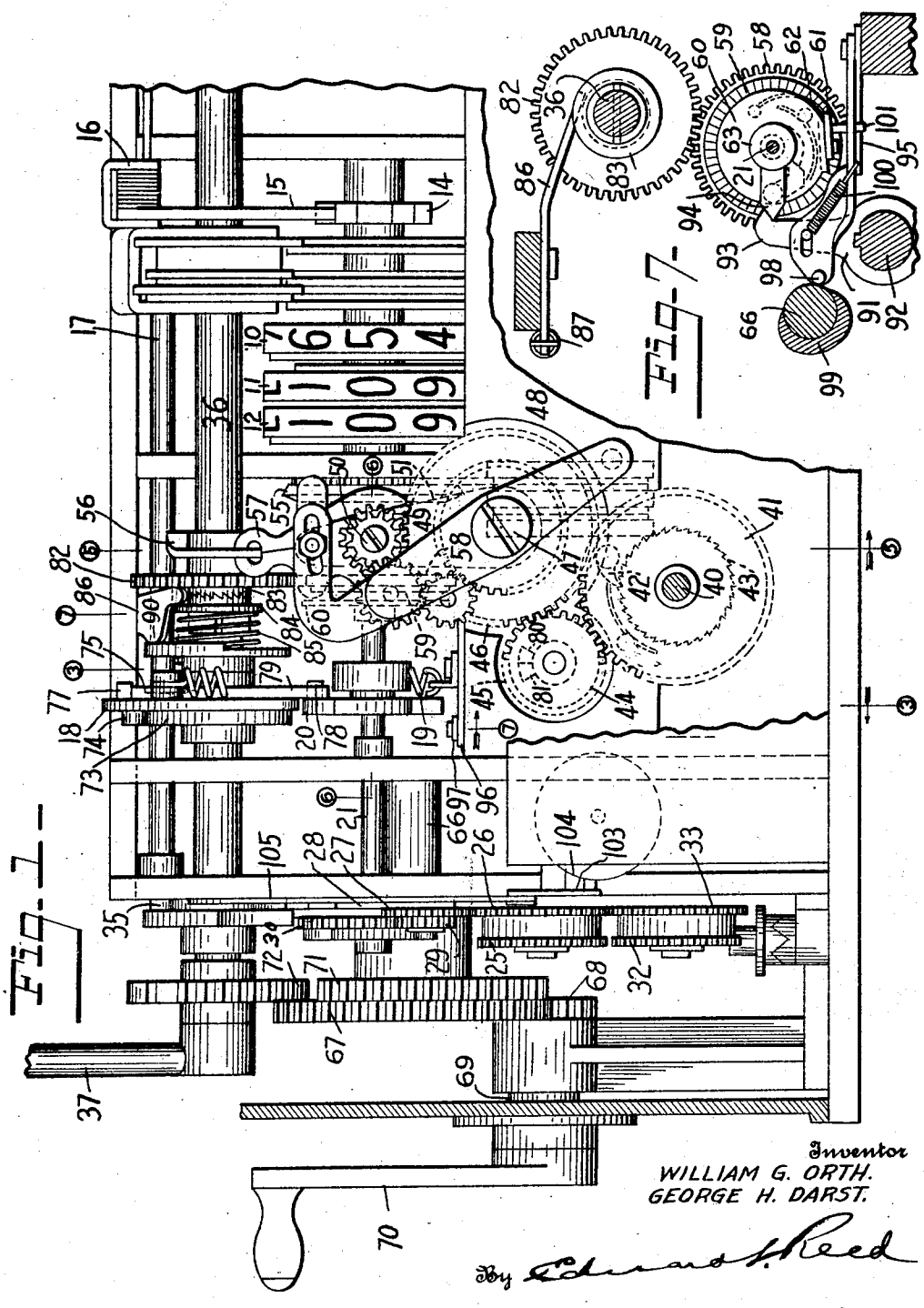
Nov. 23, 1926. 1,608,117

W. G. ORTH ET AL

INITIAL CHARGE CONTROLLING MECHANISM FOR TAXIMETERS

Filed May 19, 1922 3 Sheets-Sheet 1



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Filed May 19, 1922 3 Sheets-Sheet 2

Fig. 3.

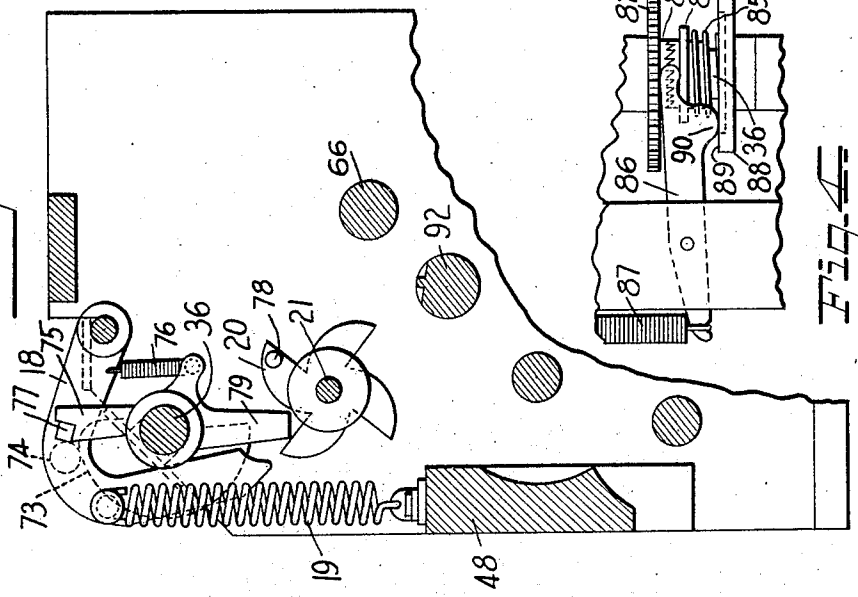
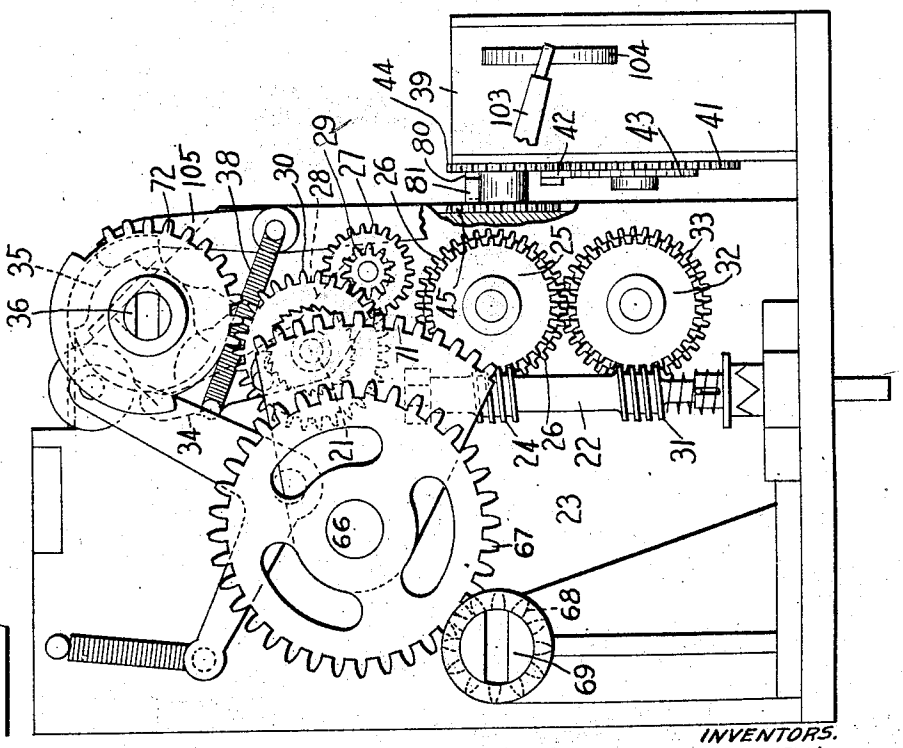


Fig. 4.

Fig. 2.



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Filed May 19, 1922 3 Sheets-Sheet 3

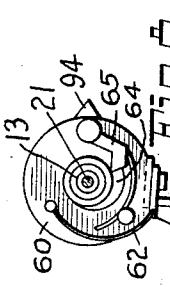

Fig. 8.

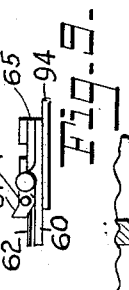

Fig. 9.

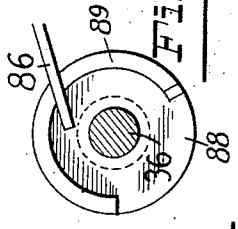

Fig. 11.

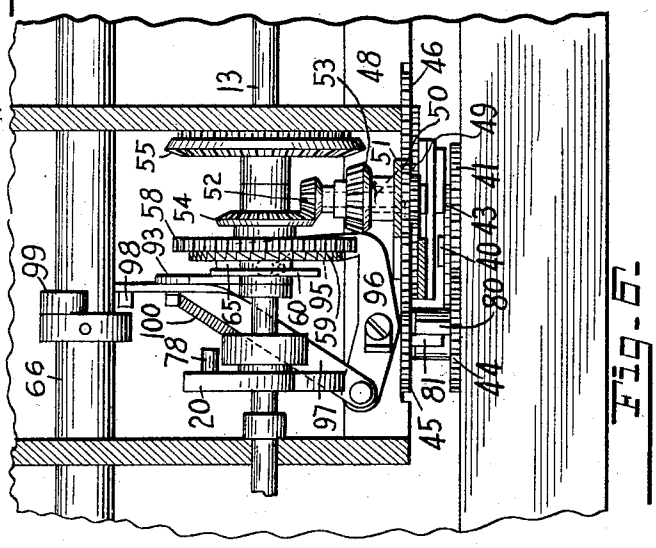

Fig. 6.

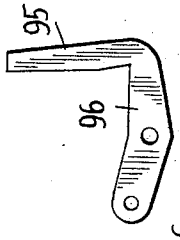

Fig. 10.

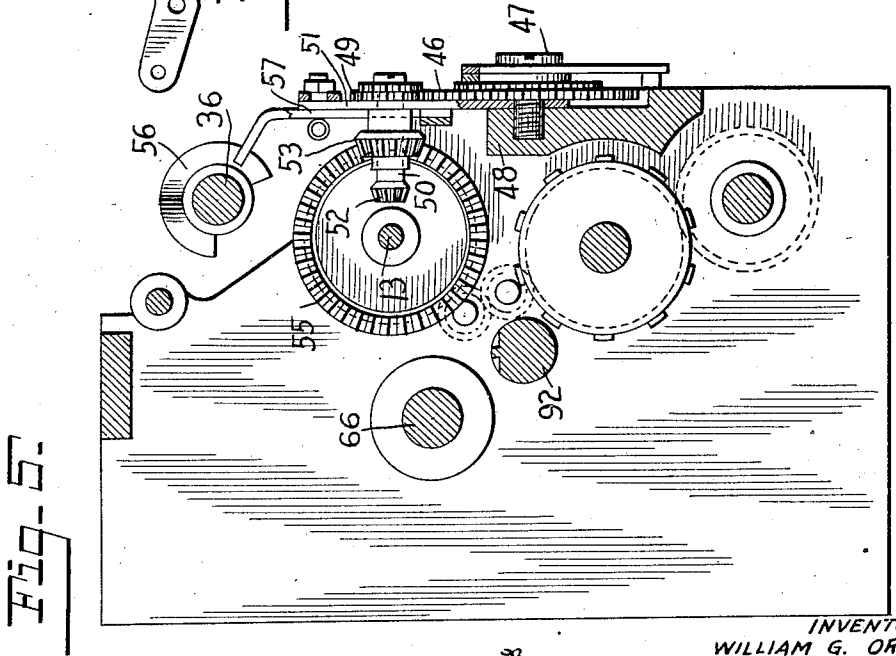

Fig. 5.

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UNITED STATES PATENT OFFICE.

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INITIAL-CHARGE-CONTROLLING MECHANISM FOR TAXIMETERS.

Application filed May 19, 1922. Serial No. 562,122.

This invention relates to taximeters and is in the nature of an improvement on the taximeter shown and described in the patent to Ohmer and Bridenbaugh, No. 1,136,164, of April 20, 1915.

One object of the invention is to provide means for adjusting the waiting time with relation to the minimum fare, without affecting the relation of the minimum fare to the distance travelled.

The machine of the above mentioned patent registers a certain minimum fare when the vehicle is hired and the flag moved to its "engaged" position to place the meter in operation. After the registration of this minimum fare the fare registering devices do not begin to operate until the vehicle has traveled a distance equal to the minimum fare, or has stood idle for a specified time but will thereafter register a fixed unit of registration for each specified fraction of a mile traveled by the vehicle or for each specified period of waiting time. For example, we will assume that the minimum fare registered by the lowering of the flag is 20 cents and that the subsequent charge is 10 cents for each quarter of a mile, or for each four minutes of waiting time. The actuating device for the fare counter is driven both by the vehicle and by the clock and the connection between this actuating device and the fare counter is so controlled that the actuating device will begin to operate the counter after it has been moved a distance equal to a quarter of a mile. However, the actuating device will be moved this same distance by the clock in four minutes, if the vehicle is standing idle, and will then begin to operate the fare counter. As a result, if after hiring the vehicle, the passenger allows it to stand idle for some time before beginning the trip he is charged with twenty cents for what is in fact only 10 cents worth of time. The purpose of the present invention is to correct the variance by increasing the waiting time allowed for the minimum fare.

A further object of the invention is to provide means for accomplishing this result without material modification of the present taximeter.

It is also an object of the invention to provide a device of this kind which will not interfere with the accurate resetting of the taximeter mechanism.

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

In the accompanying drawings Fig. 1 is a front elevation of a portion of a taximeter showing the present invention embodied therein; Fig. 2 is an end elevation of such a mechanism; Fig. 3 is a section taken on the line 3—3 of Fig. 1; Fig. 4 is a plan view of the clutch mechanism on the flag shaft; Fig. 5 is a section taken on the line 5—5 of Fig. 1; Fig. 6 is a horizontal section taken on the line 6—6 of Fig. 1 showing part of the mechanism in plan; Fig. 7 is a section taken on the line 7—7 of Fig. 1; Fig. 8 is a detail view of the disk forming part of the connecting mechanism between the cam shaft and the resetting shaft and the clock operating gear; Fig. 9 is a bottom plan view of the device shown in Fig. 8; Fig. 10 is a detail view of the trip arm; and Fig. 11 is a detail view of the clutch operating cam on the flag shaft.

In these drawings we have illustrated one embodiment of our invention and have shown the same as applied to a taximeter which in the main features of its construction corresponds to the taximeter of the above mentioned patent, but it will be understood that the mechanism may take various forms and that it may be applied to registering mechanisms of various kinds without departing from the spirit of the invention.

In these drawings we have shown and will now describe only that part of the taximeter mechanism which is necessary for an understanding of the present invention.

As here shown, the taximeter comprises a group of fare counters which, in the present instance, are visual counters but may, if desired, be printing counters. The machine of the above mentioned patent embodies both types of counters, but only the visual counters are here shown. In this counter we have provided a tens of cents counter wheel only, as shown at 10, because the fare is registered in units of ten cents and the final numeral is always a cypher. This cypher is placed upon a fixed part of the casing adjacent to the sight opening so that it will appear in its proper relation to that

numeral on the tens of cents counter wheel which is in line with the sight opening. The count is transferred from the cents counter wheel to the units of dollars counter wheel, 11, and from the units dollar counter wheel to the tens dollar counter wheel by transfer mechanism of any suitable character. These counter wheels are loosely mounted on a shaft 13 which may be characterized as the resetting shaft as means are provided whereby the rotation of this shaft will reset the counter wheels to zero. The cents counter wheel 10 is actuated by a ratchet wheel 14 mounted on the shaft 13 and suitably connected with the counter wheel. Cooperating with the ratchet wheel 14 is a pawl 15 carried by an arm 16 mounted on a shaft 17 journaled in the frame of the machine and extending lengthwise thereof. Mounted on the shaft 17 at the left hand end of the machine, as shown in Figs. 1 and 3 is an arm 18 which is acted upon by a spring 19 which tends to move the same downwardly. A suitable actuating device, such as a cam 20 mounted on a cam shaft 21, acts on the arm 18 when the latter is in its operative position to raise the same against the tension of the spring 19 and then release it to permit it to be moved downwardly by the spring, thus rocking the shaft 17 and actuating the pawl 15 to advance the ratchet wheel 14 and cents counter wheel 10 one step and thus add ten on the fare counter.

The actuating device, or cam 20, is driven both from the vehicle and from a clock mechanism, the former operating the actuating member whenever the vehicle is moving at a speed in excess of a certain predetermined speed and the clock mechanism operating the actuating device when the vehicle is standing still or moving at a speed less than said predetermined rate of speed, thus in the first instance the fare is charged according to distance, and in the second instance the fare is charged according to time, which is herein characterized as "waiting time." The operating connection between the actuating device and the vehicle may take any suitable form. As here shown, a worm shaft 22 is journaled on the end frame member 23 of the machine, and is adapted to be connected in any suitable manner with a movable part of the vehicle, such as one of the wheels. The shaft is provided with a worm 24 which meshes with a worm wheel 25 having connected therewith a gear 26, which is adapted to mesh with a gear 27 mounted on a rock arm 28 and having connected therewith a pinion 29 which in turn meshes with the gear 30 on the shaft 21 which carries the actuating device. In the present construction the worm shaft 22 is also provided with a second worm 31 which meshes with a worm wheel 32 having connected therewith a gear 33 corresponding to and meshing with the gear 26. These two gears are connected with their worm wheels by overrunning clutch mechanism so arranged that when the gear 26 is driven from the worm 24 the gear 33 will run idly and when the gear 33 is driven from the worm 31 the gear 26 will act as an intermediate gear to connect the gear 33 with the gear 27, thus the shaft 21 will be driven in the same direction regardless of the direction in which the vehicle is moving. The gear 27 is movable into and out of mesh with the gear 26 to establish or interrupt the connection between the vehicle and the cam shaft 21. To this end an arm 34 is connected with the arm 28 which carries the gear 27 and is arranged to be actuated by a cam 35 on the flag shaft 36. This shaft carries the usual signal, or flag, 37, which when in its normal position, which in the present instance is its uppermost position, indicates that the vehicle is for hire. When the flag is in another position, in the present instance its horizontal position, it indicates that the vehicle is engaged and this position of the flag is herein referred to as the "engaged" position. The cam 35 is so arranged with relation to the flag that when the flag is in its normal, or uppermost, position the cam will be in engagement with the arm 34 and will hold the gear 27 out of mesh with the gear 26 but when the flag is moved to its engaged position the cam will release the arm and permit the gear 27 to be moved by a spring 38 into mesh with the gear 26, thus establishing an operative connection between the actuating device and the movable part of the vehicle.

The clock for operating the fare counter to register waiting time is shown at 39 and has loosely mounted on the shaft 40 thereof a gear 41 which carries a pawl 42 cooperating with a ratchet wheel 43 rigidly secured to the shaft 40, so that the rotation of the ratchet wheel by the clock mechanism will rotate the gear. The gear 41 meshes with the gear 44 which is adapted to actuate a second gear 45 which in the present instance is identical with the gear 44 and rotates on an axis coincident with the axis of the gear 44, the two gears being capable of independent movement and being connected one to the other in a manner that will be hereinafter explained. The gear 45 meshes with the gear 46 mounted on a stud shaft 47 supported by one of the frame members 48 of the machine. The gear 46 in turn meshes with a pinion 49 mounted on a shaft 50 which is journaled in an arm, or lever, 51 which is pivotally mounted, preferably on the stud 47 carrying the gear 46. The shaft 50 has secured to the inner portion thereof two beveled gears 52 and 53 which are adapt-

ed to mesh respectively with a beveled gear 54 and a beveled gear 55, both of which are loosely mounted on the resetting shaft 13. The beveled gear 54 is operatively connected with the cam shaft 21, as will be hereinafter explained, and the power is thus transmitted from the clock through the beveled gears and cam shaft to the actuator 20. The gear 52 is normally in mesh with the gear 54 but in the event of a break down or other delay which is not properly chargeable to the passenger, the gear 52 is moved out of mesh with the gear 54 and the gear 53 is moved into mesh with the gear 55, this latter gear being connected with a separate registering device which registers the length of time that the machine is out of operation. The fare counter being disconnected from the clock and the vehicle being idle because of the break down no fare will be registered. The shifting of the gears 52 and 53 is preferably accomplished by the controlling device, or flag, 37, and to this end this flag is movable to a third position, which in the present instance is its lowermost position, and the movement of the flag from its horizontal position to its lowermost position serves to shift the beveled gears 52 and 53. For this purpose there is mounted on the flag shaft 36 a cam 56 which engages an extension 57 of the lever 51 and is so arranged that when the flag is in either its normal position or its engaged position the beveled gear 52 will be held in engagement with the beveled gear 54, but when the flag is moved to its lowermost position the cam will actuate the lever 51 to move the beveled gear 53 into mesh with the beveled gear 55.

The beveled gear 54 is connected with the cam shaft 21 by a suitable one way clutch which will cause the cam shaft to rotate with the beveled gear, but will permit the shaft to run ahead of the gear. As here shown the beveled gear 54 has rigidly connected therewith and loose on the resetting shaft 13 a spur gear 58 provided on that face opposite the beveled gear with laterally extending ratchet teeth 59. Mounted on the cam shaft 21 is a connecting member, or disk, 60 having pivotally mounted thereon a pawl 61 which is held normally in engagement with the ratchet teeth 59 by a spring 62. As here shown, the shaft 13 and the shaft 21 are coaxial and the end of the shaft 13 is supported in the hub 63 of the disk 60. The resetting shaft 13 is provided with a one toothed ratchet 64 adapted when the shaft is rotated forwardly to engage a pawl 65 on the disk 60, thus causing the resetting shaft to pick up the disk and rotate the actuating device to its initial position, thereby resetting the same at the end of each trip. It will be understood that the resetting shaft 13 is actuated to reset the counters and the cam to zero when the flag 37 is returned to its normal or "for hire" position. This may be accomplished in any suitable manner, but in the present instance is accomplished through the printing mechanism which comprises a shaft 66 operatively connected with the resetting shaft and having secured thereto a gear 67 which meshes with a pinion 68 on a stud 69 which is provided with an operating handle 70. Mounted on the stud 66 is a segmental rack 71 which, during the last portion of the movement of the printing shaft, 66 engages a mutillated gear 72 on the flag shaft and restores the flag to its normal position. It will be obvious, of course, that the flag might be returned by hand and the resetting accomplished directly from the movement of the flag, or in any other suitable manner.

When the flag is returned to its normal position the cam actuated arm 18 is lifted out of the path of the cam and is retained in that position by a cam 73 on the flag shaft 36. The cam 73 is so arranged that the movement of the flag to its "engaged" position will carry the cam out of the path of the pin 74 on the arm and thus release the arm for movement downwardly by the spring 19. As has been stated, when the vehicle is hired and the flag moved to its "engaged" position, a certain minimum fare is charged which must be paid by the passenger whether he rides the distance covered by that fare or retains the vehicle for the time covered by that fare, or discharges the vehicle before he has received this amount of service. Inasmuch as this minimum, or initial fare is registed by the movement of the flag to its "engaged" position it is necessary that some means be provided to prevent the further operation of the fare counter until the vehicle has traveled the specified distance, or the specified waiting time has elapsed. In the present device we have loosely mounted on the flag shaft a latch arm 75 which is acted upon by a spring 76 which moves the same into the path of a stud 77 on the arm 18, when the latter is in its elevated position, and which retains the arm in this elevated position after the flag has been lowered and the cam 73 moved into its inoperative position. A projection, or pin, 78 is mounted on the cam to engage a trip arm 79 connected with the latch arm 77 and move the latch out of the path of the stud 77, thereby permitting the arm 18 to move into its operative relation with the actuating device, or cam, 20. The pin 78 is so arranged on the cam 20 that the cam must travel from its initial position a distance equal to the minimum fare before the latch will be tripped. However, as has been explained, the time required for the clock mechanism to advance the cam through this same distance does not equal the minimum fare and, there-

fore, if the vehicle stands idle for a period of time immediately following its engagement by the passenger he will be charged an unduly high rate for this waiting time. The position of the trip pin 78 with relation to the trip arm 79 is controlled by distance, and in order to provide an increased period of waiting time we have provided means for rendering the connection between the actuating device, or cam, and the clock inoperative during a period of time immediately following the lowering of the flag. Consequently, when the vehicle stands idle immediately following its engagement there will be first a period of time during which the actuating device is inoperative and, second, a period of time which will elapse before the latch 75 will be released by the actuating device, and the sum of these two periods of time will equal in value the amount of the minimum fare.

This result may be accomplished in various ways but in the present mechanism we have utilized the twin gears 44 and 45 forming part of the gear train between the clock and the actuating device. As has been noted, these gears are mounted on a common axis but are rotatable relatively one to the other. The two gears are provided with cooperating parts, here shown as overlapping lugs 80 and 81, which, when brought into operative engagement will connect the gears and cause movement to be transmitted from the gear 44 to the gear 45, and, consequently, from the clock to the actuating device. To provide a dwell in the operation of the actuating device at the beginning of the operation of the clock the gear 45 is advanced to separate the lug 81 from the lug 80 and, consequently, no movement will be imparted to the gear 45 until the gear 44 has rotated far enough to cause the lug 80 to engage the lug 81. In the present instance the clock is idle when the meter is not in operation, the clock being started and stopped by the movement of the flag into and out of its engaged position, this being accomplished by mechanism similar to that shown in the above mentioned patent. This mechanism consists of a detent 103 adapted to engage the balance wheel 104 of the clock mechanism. The detent is actuated from the flag shaft by means of a lever 105 which is operated by the cam 35 on the flag shaft. The arrangement of the cam is such that when the flag is moved to its normal, or "for hire" position the detent will be moved into contact with the balance wheel and will hold the same against movement. When the flag is moved into its engaged position the detent will be moved out of engagement with the balance wheel and will release the clock for operation. The arrangement of the detent is such that in moving out of engagement with the balance wheel it will impart a slight movement thereto so as to start the clock in operation. We therefore, prefer to advance the gear 45 at the end of each trip and at the same time that the counter and actuating device are reset to their initial positions. For this purpose we have utilized the gear train which connects the gear 45 with the gear 58 and have loosely mounted on the flag shaft 36 a gear 82 which meshes with the gear 58 and is adapted to be connected with the flag shaft during the return movement of the flag so that it will impart movement to the gear 58 and through the gear train to the gear 45, thus advancing this latter gear the desired distance, and placing it in position for the next operation of the meter. The gear 82 is so connected with the flag shaft that the downward movement of the flag will not rotate the same and when the flag has been moved to its "engaged" position the gear is disconnected from the shaft so that it can rotate freely with the gear 58. To this end the gear is connected with the shaft by a one way clutch which, as here shown, comprises laterally extending ratchet teeth 83 formed integral with the gear 82 and a clutch member 84 splined on the shaft 36 and having ratchet teeth to cooperate with the ratchet teeth 83. This clutch member is acted upon by a spring 85 which tends to move it into its operative position. To hold the clutch member 84 in its inoperative position when the flag is in its engaged position we employ a lever 86 pivotally mounted on the frame of the machine and having one end extending between the gear and the clutch member 84. A spring 87 acts on the other end of the lever and is of sufficiently greater strength than the spring 85 to move the clutch member against the tension of that spring. Mounted on the shaft 36 is a cam 88 having a laterally extending flange 89 extending for a portion of its circumference and arranged to engage a projection 90 on the lever 86 and thus force the lever toward the gear 82 and permit the clutch member to be moved into its operative position by the spring 85. This cam is so arranged with relation to the shaft 36 that when the flag is in its "for hire" position the clutch member will be in its operative position and when the flag is in its "engaged" position the clutch member will be in its inoperative position. When the flag is moved from its "engaged" position to its "for hire" position the clutch member will be moved to its operative position at the beginning of the movement of the flag and the further movement of the flag will rotate the gear 82 and thus advance the gear 45. To permit the gear 45 to complete its movement regardless of the position of the lug 80 on the gear 44 the gear 44 is connected with the clock shaft

by the pawl and ratchet mechanism above described so that after the lug 81 has engaged the lug 80 the gear 44 can move with the gear 45 until the latter has completed its movement.

It will be apparent that during the resetting of the meter mechanism the gear 58 may be rotated both from the resetting shaft 13 and from the cam shaft 21. The movement of the cam shaft 21 is positively stopped when the actuating cam has been restored to its initial position, and if the movement of this shaft is checked before the gear 45 has completed its movement it will prevent the further movement of that gear. To avoid the possibility of such a condition arising we have provided means which will disconnect the gear 58 from the shaft 21 and thus permit the movement of the gear 45 to be completed. The movement of the shaft 21 is checked by means of a stop arm 91 mounted on a shaft 92 and having a nose 93 adapted to be moved into and out of the path of a stop finger 94 which is rigidly secured to the shaft 21. The shaft 92 is rocked to move the nose 93 of the stop arm into the path of the finger 94 by the operation of the resetting mechanism, through connections not here shown, and remains in this position until the completion of the resetting operation, at which time it is retracted to its inoperative position and leaves the shaft free to rotate when the meter is again placed in operation. Obviously when the finger 94 is in engagement with the nose of the stop arm 91 the gear 58 can not be rotated because of its clutch connection with the shaft 21. We have, therefore, provided the pawl 61, forming part of that clutch mechanism, with a pin 101 adapted to engage a trip device to move the pawl out of engagement with the ratchet teeth and thus release the gear 58 for rotation relatively to the shaft 21. The trip member is movable into and out of its operative position so that normally it will not interfere with the pawl. As here shown, the trip member is in the form of an arm 95 carried by a lever 96 pivotally mounted between its ends on the frame member 48. A link 97 is pivotally connected with the lever and is slidably mounted at its rear end where it is provided with a pin 98 arranged in the path of a cam 99 on a printing shaft 66. A spring 100 acting on the link 97 holds the trip arm 95 normally in an inoperative position. The cam 99 is so arranged that it will actuate the lever and move the trip arm into operative relation to the pin 101 during the later portion of the resetting operation. The arrangement of the pawl 61 and the pin 101 with relation to the trip arm is such that the pin will engage the cam surface of that arm just before the finger 94 engages the stop arm 91, thus causing the pawl to be disengaged from the ratchet teeth just as the finger engages the stop arm, thereby leaving the gear 58 free to rotate to any extent necessary to complete the movement of the gear 45.

The operation of the mechanism will be readily understood from the foregoing description of the several parts thereof and it will be apparent that we have provided means for increasing the waiting time allowed on the minimum fare without in any way modifying the relation of the minimum fare to the distance, this being accomplished by rendering the connection between the actuating device or cam and the clock inoperative for a period of time at the beginning of the operation of the meter, that is, the clock is not connected with the actuating device until the gear 44 has rotated far enough to cause the lug 80 on the gear 44 to pick up the lug 81 on the gear 45, which in the present instance, is substantially a full revolution of the gear 44 and will require four minutes of time. After the clock mechanism is connected with the actuating device the latter is prevented, in the usual way, from operating the fare counter until a further period of time has elapsed, that is, another four minutes, thus making a total of eight minutes which must elapse after the meter has been placed in operation and before the fare counter will be actuated to register a fare beyond the minimum fare. It will be further apparent that the mechanism is of such a character that it can be added to the taximeter of the above mentioned patent without material modification thereof and that it does not in any way interefer with the resetting or other operation of the taximeter parts.

While we have shown and described one embodiment of our invention we wish it to be understood that we do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described out invention, what we claim as new and desire to secure by Letters Patent is:

1. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a clock, a train of mechanism comprising relatively movable parts to connect said clock with said actuating device, means for resetting said fare counter to its initial position, and means actuated by said resetting mechanism to separate said relatively movable parts, whereby movement will not be imparted from said clock to said actuating device until one of said parts has traversed the distance separating it from the other of said parts.

2. In a fare registering device for vehicles, a fare counter, an actuating device for

said fare counter, a clock, a normally operative connection between said clock and said actuating device comprising cooperating members one of which is movable relatively to the other, a device to control the operation of said actuating device, and means actuated by said controlling device to positively move said connecting member with relation to the other connecting member to render said connection inoperative for a limited period of time after said clock has been started.

3. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, means actuated by a moving part of said vehicle to operate said actuating device, a clock, a connection between said clock and said actuating device, a controlling device, means controlled by said controlling device to prevent the operation of said fare counter by said actuating device until said actuating device has completed a predetermined movement, said connection between said clock and said actuating device comprising two gears connected respectively with said clock and with said actuating device, parts connected with said gears and cooperating to transmit movement from one gear to the other, one of said parts being movable relatively to the other of said parts to interrupt their cooperative relation, and means controlled by said controlling device to move said movable part relatively to said other part and thereby delay the operation of said actuating device by said clock.

4. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, means actuated by a moving part of said vehicle to operate said actuating device, a clock, a connection between said clock and said actuating device, a controlling device, means controlled by said controlling device to prevent the operation of said fare counter by said actuating device until said actuating device has completed a predetermined movement, said connection between said clock and said actuating device comprising two parts, one of which is connected with said clock and the other of which is connected with said actuating device and arranged in the path of the first mentioned part, and means actuated by said controlling device to move one of said parts away from the other, thereby preventing the operation of said actuating device by said clock until the first mentioned part has traversed the distance between the same and the last mentioned part.

5. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a clock, a gear connected with said clock, a second gear connected with said actuating device, said gears being independently rotatable about a common axis, cooperating parts carried by said gears to cause movement to be transmitted from the first mentioned gear to the last mentioned gear, and means to positively actuate one of said gears independently of the other to separate said parts.

6. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a clock, a gear connected with said clock, a second gear connected with said actuating device, said gears being independently rotatable about a common axis, cooperating parts carried by said gears to cause movement to be transmitted from the first mentioned gear to the last mentioned gear, a controlling device, and means actuated by said controlling device to rotate the last mentioned gear relatively to the first mentioned gear and thereby separate said cooperating parts.

7. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a clock, a gear connected with said clock, a second gear connected with said actuating device, said gears being independently rotatable about a common axis, cooperating parts carried by said gears to cause movement to be transmitted from the first mentioned gear to the last mentioned gear, a controlling device, a gear having a one way clutch connection with said controlling device and having a geared connection with the last mentioned gear, whereby the movement of said controlling device in one direction will actuate said last mentioned gear to separate said cooperating parts.

8. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a clock, a gear connected with said clock, a second gear connected with said actuating device, said gears being independently rotatable about a common axis, cooperating parts carried by said gears to cause movement to be transmitted from the first mentioned gear to the last mentioned gear, a device to reset said fare counter to zero, and means actuated by said resetting device to move one of said gears relatively to the other and separate said cooperating parts.

9. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a clock, a gear connected with said clock, a second gear connected with said actuating device, said gears being independently rotatable about a common axis, cooperating parts carried by said gears to cause movement to be transmitted from the first mentioned gear to the last mentioned gear, a controlling device, a shaft operated by said controlling device, a gear loosely mounted on said shaft, a one way clutch

connection between said shaft and said gear, and a geared connection between the last mentioned gear and said second gear to rotate the same independently of the first mentioned gear to separate said cooperating parts.

10. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a clock, a gear connected with said clock, a second gear connected with said actuating device, said gears being independently rotatable about a common axis, cooperating parts carried by said gears to cause movement to be transmitted from the first mentioned gear to the last mentioned gear, a controlling device, a shaft operatively connected with said controlling device, a gear mounted on said shaft and having geared connection with said second gear, means for connecting said last mentioned gear with said shaft when the latter is rotated in one direction to cause said second gear to be rotated relatively to the first mentioned gear to separate said cooperating parts, and means to disconnect said last mentioned gear from said shaft when the latter is rotated in the other direction.

11. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a controlling device, the movement of which in one direction will render said registering device operative and the movement of which in the opposite direction will render said registering device inoperative and reset said fare counter to its initial position, a clock, a gear connected with said clock, a part carried by said gear, a second gear rotatable about an axis coincident with the axis of the first gear and having a part arranged in the path of the first mentioned part, an operative connection between said second gear and said actuating device, a shaft actuated by said controlling device, a gear loosely mounted on said shaft and having a geared connection with said second gear to move the same relatively to the first gear and separate the parts carried by said gears, a one way clutch to connect the last mentioned gear with its shaft whereby said gear will be actuated only when said controlling device is moved in one direction, and means controlled by the movement of said actuating device in the opposite direction to disconnect said last mentioned gear from said shaft.

12. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a controlling device the movement of which in one direction will render said registering device operative and the movement of which in the opposite direction will render said registering device inoperative and move said fare counter to its initial position, a clock, a gear connected with said clock, a part carried by said gear, a second gear rotatable about an axis coincident with the axis of the first gear and having a part arranged in the path of the first mentioned part, an operative connection between said second gear and said actuating device, a shaft actuated by said controlling device, a gear loosely mounted on said shaft, a clutch member carrier by said gear, a second clutch member slidably mounted on said shaft, a spring tending to move said second clutch member into operative relation to the first mentioned clutch member, a lever engaging said second clutch member, a spring acting on said lever to move said second clutch member into its inoperative position, and a cam actuated by said controlling device to move said lever against the tension of its spring to permit said second clutch member to move into its operative position.

13. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a controlling device the movement of which in one direction will render said registering device operative and the movement of which in the other direction will render said registering device inoperative and reset said fare counter to its initial position, a clock, a gear connected with said clock, a part carried by said gear, a second gear rotatable about an axis coincident with the axis of the first gear and having a part arranged in the path of the first mentioned part, an operative connection between said second gear and said actuating device, a shaft actuated by said controlling device, a gear loosely mounted on said shaft, a clutch member carried by said gear, a second clutch member slidably mounted on said shaft, a spring tending to move said second clutch member into operative relation to the first mentioned clutch member, a lever engaging said second clutch member, a spring acting on said lever to move said second clutch member into its inoperative position, and a cam mounted on said shaft and arranged to engage a part of said lever to move the same against the tension of its spring and permit said second clutch member to be moved into its operative position.

14. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a controlling device the movement of which in one direction will render said registering device operative and the movement of which in the other direction will render said registering device inoperative and cause said fare counter and said actuating device to be reset to their initial positions, a clock, a gear connected with said clock, a second gear rotatable independently of the first mentioned gear about an axis coincident with the axis thereof, parts carried by the respective gears

and cooperating to establish an operative connection between them, a connection between said second gear and said actuating device comprising a third gear having a clutch connection with said actuating device, a gear connected with said controlling device and meshing with said third gear to actuate the second gear and separate said cooperating parts, the last mentioned gear having a one way clutch connection with said controlling device whereby it will be operated only when said controlling device is moved in a direction to reset said fare counter and said actuating device, and means to automatically disconnect said third gear from said actuating device when said resetting movement has been completed.

15. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a controlling device, the movement of which in one direction will render said registering device operative and the movement of which in the other direction will render said registering device inoperative and cause said fare counter and said actuating device to be reset to their initial positions, a clock, a gear connected with said clock, a second gear rotatable independently of the first mentioned gear about an axis coincident with the axis thereof, parts carried by the respective gears and cooperating to establish operative connection between them, a connection between said second gear and said actuating device comprising a third gear, a pawl and ratchet connection between said third gear and said actuating device, means actuated by the movement of said controlling device in a direction to reset said fare counter and said actuating device to impart movement through said third gear to said second gear, a trip arm movable into and out of a position to actuate said pawl, cooperating stops to limit the resetting movement of said fare counter and said actuating device, and automatically operated means to move said trip arm into a position to actuate said pawl just prior to the engagement of said cooperating stops, whereby said third gear will be disconnected from said actuating device and permitted to rotate relatively thereto.

16. In a fare registering device for vehicles, a fare counter, an actuating device for said fare counter, a controlling device the movement of which in one direction will render said registering device operative and the movement of which in the other direction will render said registering device inoperative and cause said fare counter and said actuating device to be reset to their initial positions, a clock, a gear connected with said clock, a second gear rotatable independently of the first mentioned gear about an axis coincident with the axis thereof, parts carried by the respective gears and cooperating to establish operative connection between them, a connection between said second gear and said actuating device comprising a third gear, ratchet teeth connected with said gear, a pawl connected with said actuating device, adapted to engage said ratchet teeth and having a projection, means actuated by said controlling device when it is moved in a direction to reset said fare counter and said actuating device to impart movement through said third gear to said second gear, cooperating stops to limit the resetting movement of said parts, a lever, a trip arm carried by said lever, a link connected with said lever, and a cam acting on said link to cause said lever to move said trip arm into the path of the projection on said pawl, whereby said third gear will be disconnected from said actuating device.

In testimony whereof, we affix our signatures hereto.

WILLIAM GEORGE ORTH.
GEORGE HENRY DARST.