

April 30, 1929.

B. C. PALMER

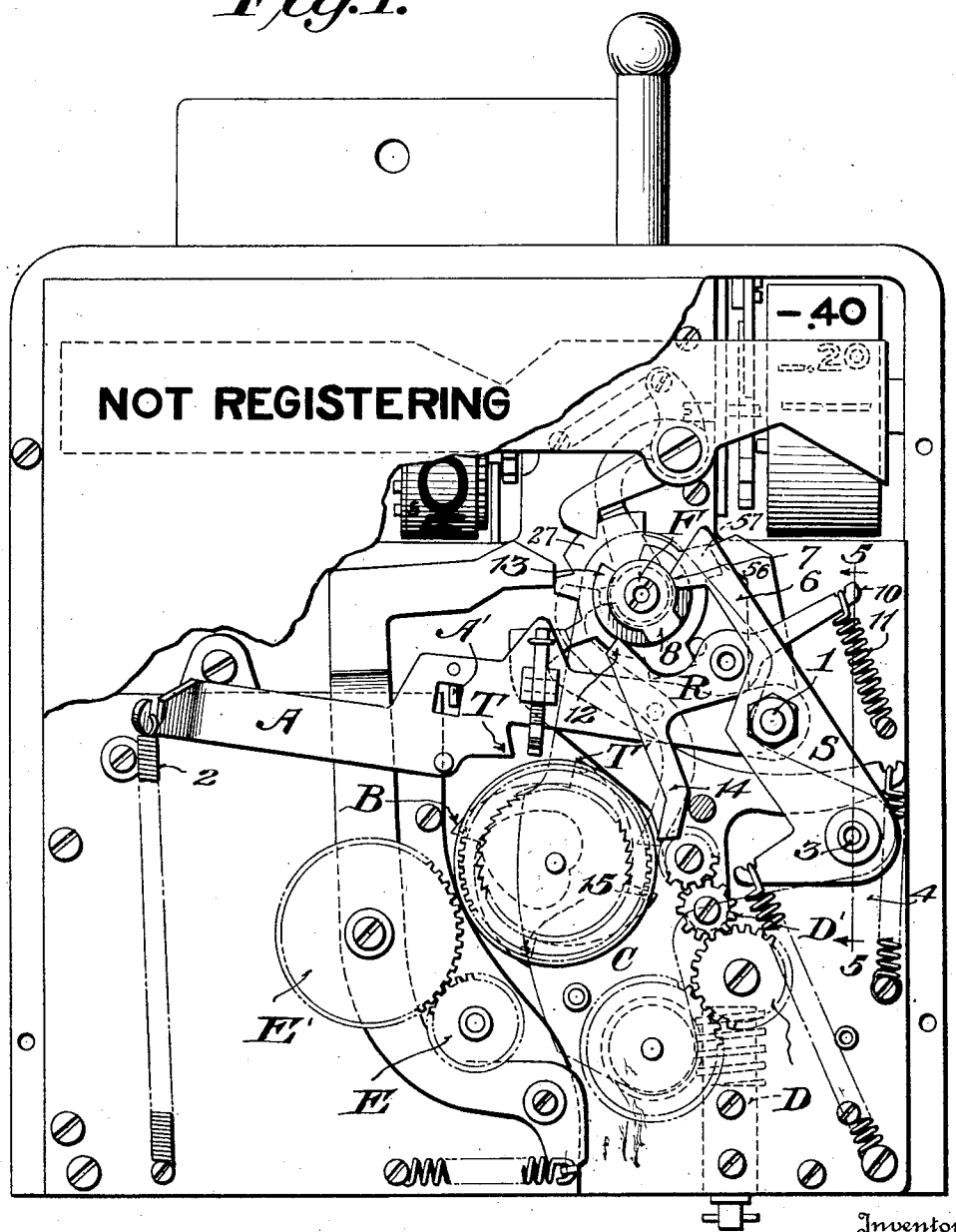
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DRIVER'S TOLERANCE MEANS FOR TAXIMETERS

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3 Sheets-Sheet 1

Fig. 1.



Inventor

Brian C. Palmer,

WITNESSES:-

Chas. L. Griesbauer
Emory D. Groff

By

D. F. W. Chaffin

Attorney

April 30, 1929.

B. C. PALMER

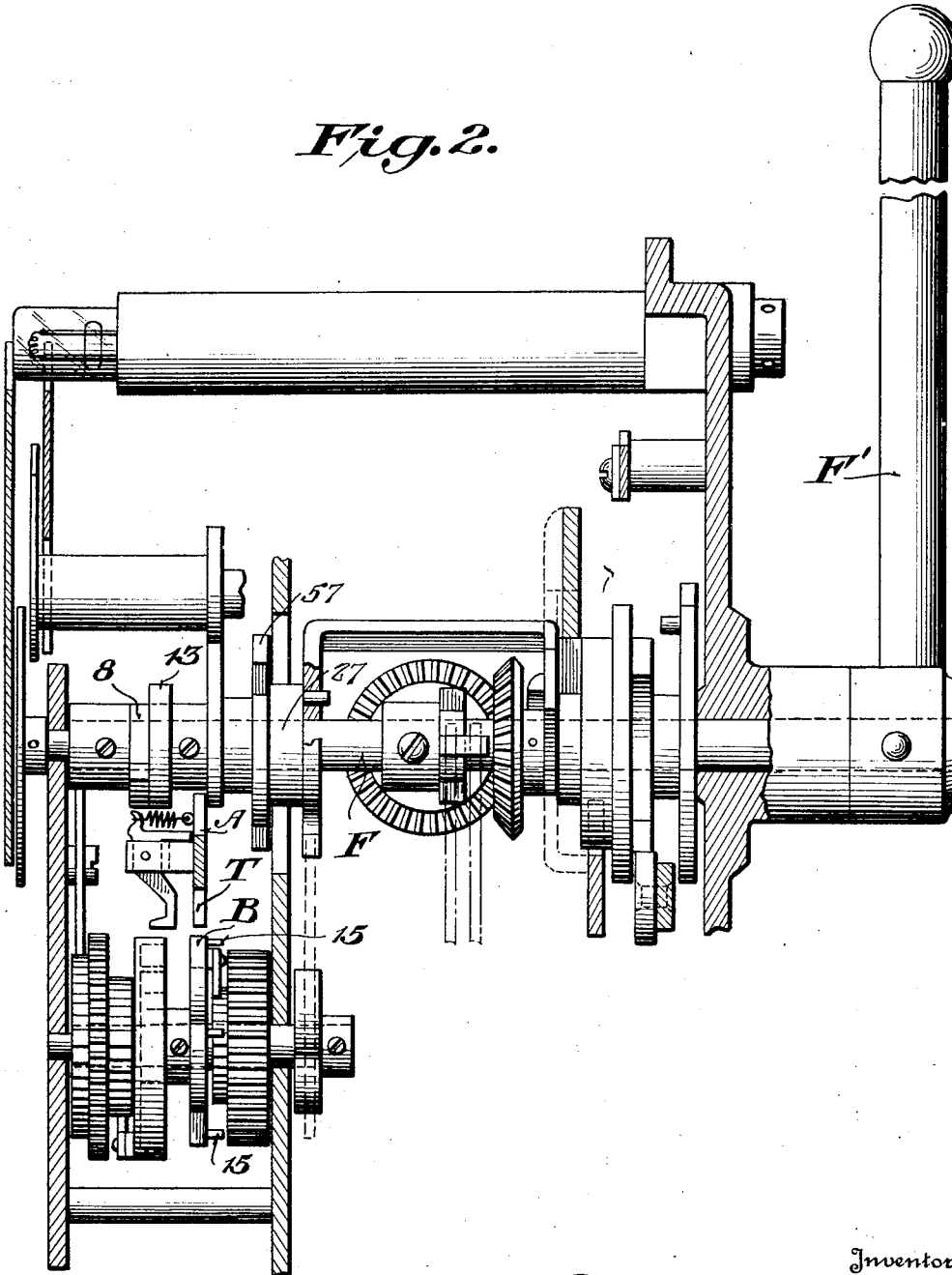
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3 Sheets-Sheet 2

Fig. 2.



WITNESSES:-

Chas. L. Griesbauer

Emory D. Goff

Inventor

Brian C. Palmer,

By

S. F. Walchman

Attorney

April 30, 1929.

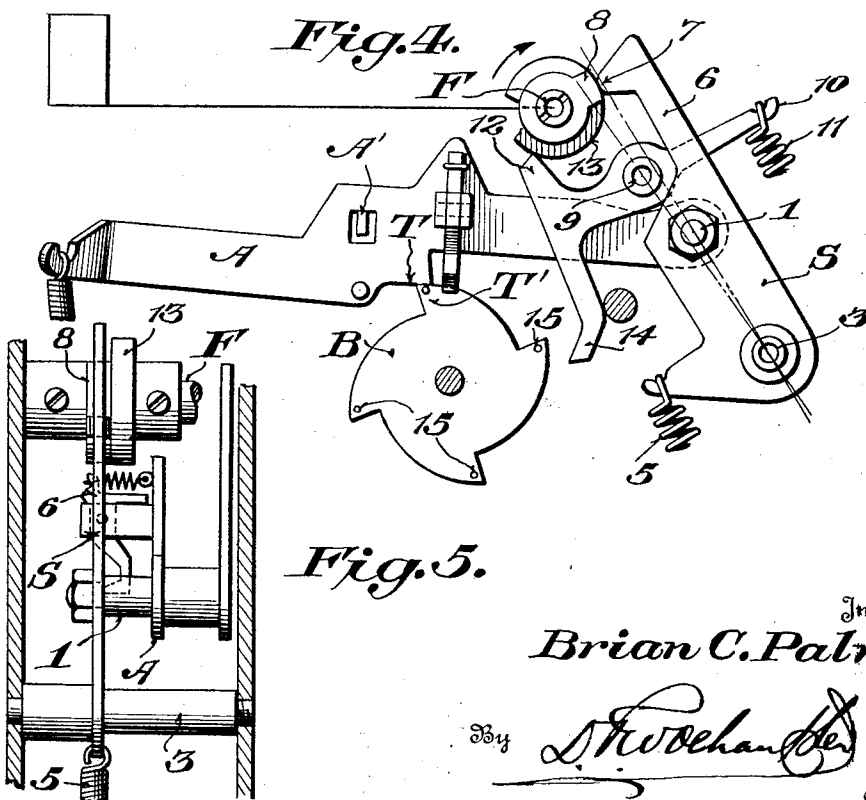
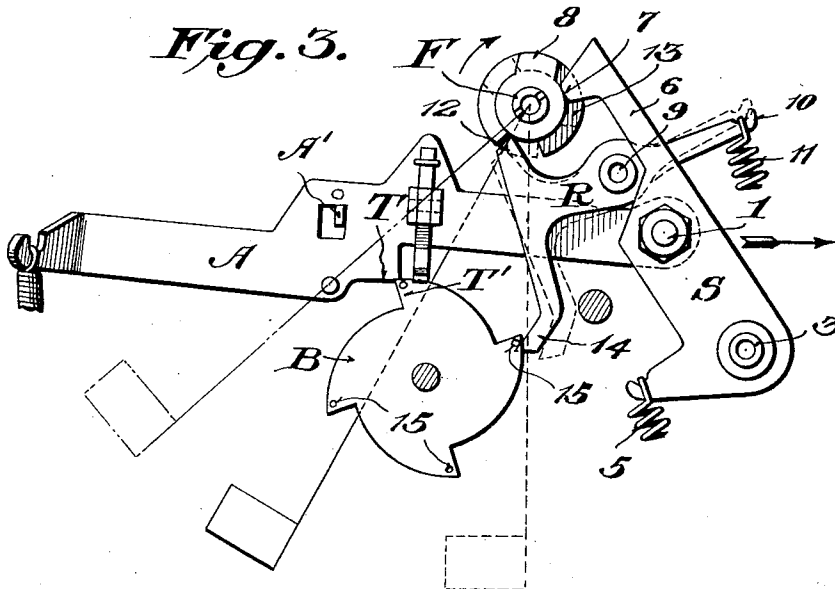
B. C. PALMER

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DRIVER'S TOLERANCE MEANS FOR TAXIMETERS

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3 Sheets-Sheet 3



Inventor
Brian C. Palmer;

By Stevenson

UNITED STATES PATENT OFFICE.

BRIAN C. PALMER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
OHMER FARE REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF NEW
YORK.

DRIVER'S TOLERANCE MEANS FOR TAXIMETERS.

Application filed August 13, 1923. Serial No. 126,955.

This invention relates to taximeters and more particularly to an improvement therein which affords the driver of the cab a certain leeway or tolerance in the manipulation of the meter to prevent him from being charged with cash which he has not received from the passenger.

To that end, the invention contemplates a simple, practical and reliable construction which automatically functions at a predetermined point in the cycle of the flag to obviate unintentional or accidental actuation of the so-called "drop lever" by the star-wheel unit.

A primary object of the construction referred to is to provide means to prevent dispute between the taxicab driver and the owner, due to the cash records of the meter indicating an amount of money greater than that actually collected by the driver. This condition is brought about through two causes, the first of which is due to the negligence of the driver (usually unconsciously) in the operation of the meter, and, second, if the flag has been thrown to the "not recording" position and it happens that the nose of the fare drum operating or "drop" lever is poised at the edge of one of the teeth of the star-wheel, a relatively slight vibration or jar of the meter will be sufficient to throw the lever off of the cam causing a unit of fare to be registered on the totalizer for which the driver is charged.

It is customary for a driver to put the flag of the meter in the 270° or "not recording" position when the passenger is in the act of paying the fare. This "not recording" position is so arranged that the meter is in operative condition with the exception of the clock which means that if the cab is driven while the flag is in "not recording" position, then the meter will register additional cash. The driver instead of throwing the flag from the "not recording" position to the "vacant" position immediately after the passenger has paid his fare will frequently start the cab in motion and only then throw the flag to the "vacant" position. If the meter happens to be in such a condition that increment of fare is about to be registered on the face of the meter, (due to the drop lever being about to drop off of a tooth of the star-wheel) then it is probable that another increment of fare will be

registered as the flag is thrown up to the "vacant" position and the driver is not aware of the fact.

According to the present invention, means is provided to permit the driver to run about 30 or 40 feet with the flag in "not recording" position, but delaying the operation of the taximeter for this distance, thereby meeting the first condition set forth; and, also since the drop lever is moved sufficiently to one side of the axis of the main cam or star-wheel when the flag is moved to "not recording" accidental movement of the drop lever from shock or jar will be avoided, thus taking care of the second contingency.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:—

Figure 1 is a front elevation of a meter, partly in section, showing the application of the present invention.

Figure 2 is a detail vertical sectional view showing the location and an arrangement of the present device.

Figure 3 is a detail diagrammatic view illustrating the relative position of the parts with the flag in the "second tariff" position, about to pass through the arc of movement, approaching the "not recording" position.

Figure 4 is a diagrammatic view similar to Figure 3 showing the relative position of parts when the flag has reached the "not recording" position.

Figure 5 is a detail sectional view taken on the line 5—5 of Figure 1.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

The present improvements are susceptible of embodiment in meters of standard construction and design now in use generally, but for purpose of illustration it has been found convenient to illustrate the same with the type and construction of meter shown in the application of Messrs. Gluck and Karich Serial No. 91,566, filed March 1, 1926. Accordingly, reference will only be made herein to the essential parts of the meter necessary to obtain an understanding of the present improvements. The "drop-lever" is designated generally as A and the main cam, fare drum operating cam or, as it is frequently called the

"star-wheel" B of the main operating unit C; operates the drop lever in the usual manner when the tooth T of the lever falls off of a tooth of the cam or star-wheel. The lever A and cam B constitute the primary actuator for the fare drums, and while the cam B is shown as having a plurality of teeth, nevertheless since the lever A is actuated by only one tooth at a time, it will be readily apparent that the invention is adaptable to main cams having one of more teeth, as shown herein.

In accordance with the usual custom, the increment of fare registered by the drums on the face of the meter takes care of the charge in either time or distance for the equivalent in length of one of the teeth of the star-wheel. In other words, the increment of fare on the face of the meter is always a prepayment for the unit of time or distance to be used by the passenger, and it sometimes happens that the tooth T will be poised at or near the end of one of the teeth of the star-wheel when a passenger leaves the cab. Under these conditions the running of the cab but a short distance before the flag is pushed back to "vacant" or a sufficient jar will cause the star-wheel to move or slide from under the drop-lever tooth and thus permit the same to fall and register a new increment of fare for which the driver is held responsible, it being understood that the drop-lever is not returned to its inoperative or raised position until the flag has approximately completed its cycle and reaches the "vacant" position.

Therefore, it is the purpose of the present invention to provide a construction which will shift the drop-lever to one side so that the tooth T will be temporarily moved to a safety position when the flag is in the "not recording" position. Generally, the means for accomplishing this novel result includes a novel shifter lever S and a restraining lever R which cooperates to maintain the star-wheel unit C in its proper position and yet permit of the shifting of the drop lever to the safety position.

Before proceeding to a more detained description of the means for carrying the invention into effect it may be pointed out that the star-wheel unit C may be driven in the conventional manner from the wheel of the vehicle through the driving connections D and clutching means D' or the clock device instrumentalities E and E'; both the distance and time actuating means for the star-wheel unit being controlled by suitable cams carried by the flag shaft F. The drop-lever A actuates the fare drums through the medium of its associated lever A' which is interlocked therewith and operates in a plane substantially at right angles thereto. In that connection it may be noted from Figure 1 that the drop lever A is provided with an opening of sufficient width to permit of its longitudinal movement without affecting the portion of

the lever A' with which it engages. The vertical movement of the drop-lever A is the effective movement which operates the lever A'.

The said drop lever is pivotally supported on the post 1 carried by the shifter lever S and its opposite end is tensioned by the spring 2. According to past practice the pivot center 1 for the lever A has been fixed to the meter frame but the purpose of the present invention is to mount this lever on the shifter lever S; which is pivotally mounted as at 3 to the frame 4 of the meter; so that the drop-lever may be shifted in the direction of its length to change the position of the tooth T. The shifter lever S is tensioned by a spring 5 and its upper arm portion 6 is provided with a nose 7 adapted to be engaged by the cam 8 on the flag shaft F. This cam will move the entire lever against the tension of the spring 5.

The restraining lever R is pivotally mounted to frame 4 of the meter is indicated at 9 and has its arm 10 tensioned by the spring 11 while the end opposite the spring is formed with a controlling arm 12 actuated by a cam 13 (also on the flag shaft F) and a depending pawl portion 14. The said pawl portion of the restraining lever is adapted to be moved into abutting or obstructing relation to suitable pins or projections 15 carried by the star-wheel B when the drop lever A is being shifted for the purpose of breaking the friction between the drop-lever and the star-wheel so that the drop-lever in its movement will not drag the star-wheel out of position.

The operation of the device is substantially as follows:—When the flag is in the upright or "vacant" position the parts are in the relative positions shown in Figure 1 that is, the nose 7 of the shifter lever S is resting on the body of the cam 8 and the restraining lever R is held out of the path of the pins on the star-wheel due to the fact that the controlling portion 12 of the lever is riding on the periphery of the cam 13.

In the above position the pivot point 1 of the drop-lever A is normal, and it remains in this position throughout the "first" and "second tariff" positions of the meter which covers the first 180° of the cycle of the flag. As a matter of fact, when the flag is in the "second tariff" or 180° position, as shown in the first set of dotted lines in Figure 3, none of the parts of the present device have as yet moved. However, after the flag moves a few degrees past 180° the controlling portion 12 of the restraining lever R falls into the notch of the cam 13 so that the pawl 14 will come into abutting relation to one of the pins 15 on the star-wheel. The controlling portion 12 will continue to ride in the said notch until the nose 7 of the shifter lever S has been moved fully onto the zenith of the cam 8. In other words, the pawl 14 remains in abutting relation to one of the

pins 15 on the star-wheel while the shifter lever is moving the pivot in the direction of the arrow in Figure 3 so as to break the friction between the tooth T and the star-wheel and prevent the latter from being dragged out of position.

When the flag reaches the full "not recording" position the parts are as shown in Figure 4. From this figure it will be observed that the tooth T of the lever A has been moved to the right on the tooth T' of the star-wheel. With this additional movement to the right a safety margin or tolerance is provided which prevents an accidental falling of the drop-lever, or on the other hand gives the driver a chance to run his cab for a few feet without causing a new increment of fare to be registered on the face of the meter. When the flag is moved back to "vacant" the shifter lever is immediately reset and the drop lever is ready to again function.

It may also be pointed out in connection with the drop lever that the same is controlled with reference to its operative relation to the star wheel B, that is, the lever A is raised and lowered toward the star wheel unit through the upwardly extending lever arm 56, whose free end is admitted to engage with the projection 57 of the master controlling cam 27. This cam operates with an oscillating motion or "snap movement" as fully set forth and described in the application of Messrs. Gluck and Karich previously referred to herein. It will, therefore, be understood that the timing or setting of the cam projection 8 with reference to the movement of the cam projection 57 is such that the drop lever A will be lifted from engagement with the tooth T' before the cam 8 moves away from the nose 7 of the lever 6 to again permit the drop lever to move to the left to its normal position, that is, the position shown in Fig. 3.

The invention is very advantageous since it prevents disputes with drivers, and for large operators means the saving of much time in adjusting disputes as well as satisfying the driver that he is not being charged for something which he did not collect.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course, be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or scope of the appended claims.

I claim:—

1. In a taximeter, the combination with the main cam and the drop-lever for actuating the fare drums, of means for shifting the drop lever while in operating relation to the main cam to a safety position.

2. In a taximeter, the combination with the

main cam and the drop-lever for actuating the fare drums, of means for shifting the drop-lever forward with reference to the progressive movement of the main cam while engaged therewith.

3. In a taximeter, the combination with the main cam and the drop-lever for actuating the fare drums, of flag controlled means for shifting the drop-lever forward to a safety position with reference to a tooth of the main cam while engaged therewith.

4. In a taximeter, the combination with the main cam and the drop-lever for actuating the fare drums, of flag controlled means for moving the drop-lever longitudinally at right angles to the axis of the main cam while engaged therewith.

5. In a taximeter, the combination with the main cam and the drop-lever for actuating the fare drums, of flag controlled means for shifting the drop-lever tangentially with reference to the peripheral plane of the main cam while engaged therewith.

6. In a taximeter, the combination with the star-wheel and the drop-lever for actuating the fare drums, of means for shifting the drop-lever while operatively engaged with the star wheel, and means for restraining the star-wheel before it is reset and during the shifting of the drop-lever.

7. In a taximeter, the combination with the star-wheel and the drop-lever for actuating the fare drums, of flag controlled means for shifting the drop-lever while engaged with the star-wheel unit, and flag controlled means for restraining the star-wheel unit before it is reset and during the shifting movement of the drop-lever.

8. In a taximeter, the combination with the star-wheel and the drop-lever for actuating the fare drums, of a shifting lever pivotally mounted in a fixed position on a part of the meter, a pivot member mounted on the shifting lever and carrying the drop-lever, a flag shaft, and cam means on the flag shaft for actuating said shifter lever during a portion of the movement of the flag shaft.

9. In a taximeter, the combination with the star-wheel and the drop-lever for actuating the fare drums, of a shifter lever pivotally mounted in a fixed position on a meter part, a pivot member on the shifter lever for carrying the drop-lever and moving the same while engaged with the star-wheel, a restraining device for engaging the star wheel while the drop-lever is moved by the shifter lever, a flag shaft, and cams on the flag shaft for respectively controlling the restraining device and the shifter lever at certain points in the cycle of the flag shaft.

10. In a taximeter, the combination with the star-wheel and the drop-lever for actuating the fare drums, of a shifter lever pivotally mounted in a fixed position on a meter part and adapted to drag the drop lever over

- the star wheel while the latter is in operating condition, a spring for tensioning the shifter lever, a restraining lever pivotally mounted on a meter part and having a pawl portion adapted to engage with the star-wheel unit, while it is operative and before it is reset, a flag shaft, and cam means on the flag shaft for controlling the restraining means and the shifter lever.
- 10 11. In a taximeter, the combination with the flag shaft and fare drums, of actuating means for said fare drums, and means controlled by the flag at a predetermined point in its cycle for automatically adjusting said actuating means to a safety position while all the parts of the meter are in operative condition.
12. In a taximeter, a fare drum operating cam, a flag controlled shaft and means controlled by the flag controlled shaft to restrain said cam from movement in a forward direction while it is in operative relation to the fare drum.
- 15 20
- In testimony whereof I hereunto affix my signature.
- BRIAN C. PALMER.