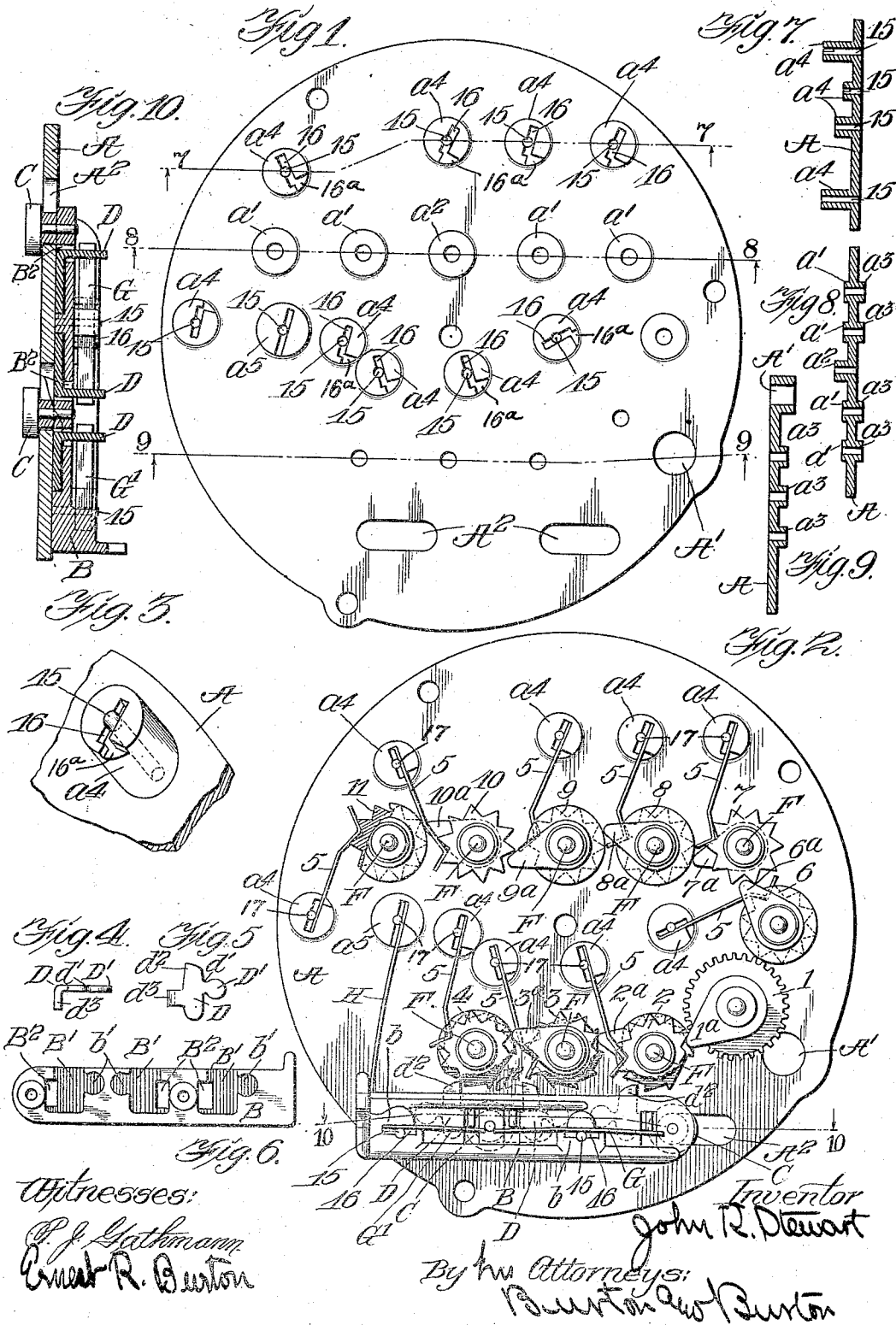


J. K. STEWART.
ODOMETER TRAIN PLATE.
APPLICATION FILED AUG. 20, 1909.

996,294.

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JOHN K. STEWART, OF CHICAGO, ILLINOIS.

ODOMETER-TRAIN PLATE.

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Specification of Letters Patent. Patented June 27, 1911.

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To all whom it may concern:

Be it known that I, JOHN K. STEWART, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Odometer-Train Plates, of which the following is a specification, reference being had to the drawings forming a part thereof.

The purpose of this invention is to provide an improved form and construction of plate for mounting the train of a wheel mechanism, such as the odometer.

It consists in the elements and features of construction herein shown and described as indicated in the claims.

In the drawings, which are double actual size:—Figure 1, is a plan view of the plate or base for an odometer train embodying this invention. Fig. 2, is a plan view of the same plate with the odometer train wheels and detents mounted in position on the bosses provided on the plate for that purpose. Fig. 3, is a perspective view of one of the said bosses and a contiguous portion of the plate from which it protrudes. Fig. 4, is an elevation. Fig. 5, is a plan view of one of the resetting dogs. Fig. 6, is a plan view of slide plate of a die-cast plate in which the resetting dogs are lodged pivoted, and retained by the retention of the slide plate on the base or train plate. Fig. 7 is a section at the line 7—7 on Fig. 1. Fig. 8 is a section at the line 8—8 on Fig. 1. Fig. 9 is a section at the line 9—9 on Fig. 1. Fig. 10 is a section at the line 10—10 on Fig. 2.

The odometer train shown in Fig. 2 of the drawing is substantially familiar, and the present invention is not concerned with this train, which is only illustrated for the purpose of indicating the service performed by the construction of the train plate. This mechanism, however, may be briefly described as comprising an initial gear wheel, 1, which it may be understood, is to be lapped by a pinion (not shown) protruding through the aperture, A^1 , in the train base plate, A. This gear wheel carries a single train-actuating tooth, 1^a , which engages once in each revolution of the wheel a tooth of the second wheel, 2, of the trip train, which has also a single train actuating tooth, 2^a , engaging in each revolution of the wheel, 2, a tooth of the 3rd train wheel, 3, having a single train actuating tooth 3^a , which en-

gages once in each revolution a tooth of the last trip train, wheel 4. Each of the train wheels, 2, 3 and 4 is yieldingly held in position after each actuation by a spring dog, 5, which is rigidly held at one end in a post projecting from the train plate, and the construction of this post for holding the dogs, is a characteristic feature of this invention and will be hereinafter more fully described. The continuous recording train comprises the wheels, 6, 7, 8, 9, 10 and 11, the first actuated by the tooth 1^a of the wheel, 1, and the remainder actuated respectively by the corresponding teeth, 6^a , 7^a , 8^a , 9^a , and 10^a of the preceding wheels of the train, each of said wheels being retained yieldingly in position after each actuation by a spring dog, 5, like those of the trip train.

The resetting device for the trip train comprises slide plate, B, which is mounted and retained for sliding on the train base plate A by the headed studs, C, playing in the slots A of the train base plate, the heads on the outside of the base plate retaining the slide plate in close relation to the inner face of the base plate, and thereby serving to keep the resetting dogs, D, in operative connection without other means than those involved in the formation of said dogs and slide plate, which will now be described.

The under face of the slide plate has recesses, B^1 , formed in it, being die-cast to form the same, which comprise each a bay, b^1 , or lateral extension of the recess, B^1 , which is in the form of a segment of a circle amounting to about 270° , and from each of the recesses, B^1 , an aperture, B^2 , opens entirely through the plate to the upper side thereof. The dogs, D, are each formed with a segmental lug or projection, D^1 , adapted to lodge and fit loosely enough for turning in the bay b^1 . This lug is connected with the main part of the dog by a neck, d^1 , narrower than the 90° opening of the bay, b^1 , into the main recess, so that the dog when lodged in the recess with the lug engaged with the bay, has the necessary range of swinging about the axis of the lug and recess, as about the pivot, for operating the train wheel by its projecting nose, d^2 , as shown in Fig. 2; and when thus lodged, a tail, d^3 , of the dog projects through said opening, B^2 . The purpose of the last mentioned tail of the dog is to receive the pressure of a spring which is mounted on the upper side of the slide plate for holding the dog yieldingly pro-

truding for its work. For the purpose of thus controlling the three dogs, two springs are provided, the first, G, being secured to the plate intermediate its ends and operating by its opposite ends against the dogs which engage respectively the wheels 2 and 3. The other spring G¹, is secured at one end and engages by the other end the tail of the third dog, which acts upon wheel 4.

10 The method of mounting and securing the springs on the slide plate is similar to that employed for mounting spring dogs, 5, which will now be described. The base plate, A, and slide plate, B, are each made in suitable dies and the construction shown is adopted in order that all machine work for fitting the plate to train may be avoided, the plates being completely formed for their service in the die. For this purpose the die is formed to cast the plate, A, with up-

20 standing bosses, a^1 and a^2 , having an axial aperture extending entirely through the plate for receiving the stud pins, F, upon which the train wheels are journaled. By adapting the height of the bosses to the positions of the respective wheels, that is to the distance of those wheels from the plane of the plate, they serve not only to support the pins but to position the wheels. As illustrated, the bosses, a^1 , protrude but slightly above the surface of the plate and the boss a^2 , protrudes to a greater distance as required by the position of the wheel, 9, which is mounted thereon. In case of the low

35 bosses which adding to the thickness of the plate do not afford sufficient depth of metal for strongly holding the stud pin, bosses a^3 , are provided at the opposite side of plate co-axial with the bosses a^1 , thus extending the bearing of the stud pins in the metal of the plate.

The wheels 2, 3 and 4 for their service preferably lie flat upon the upper surface of the plate and to afford substantial securement for the stud pins on which they are mounted, no bosses being permissible on the upper surface of the plate in view of the position of the wheels. As stated, bosses a^3 , are formed on the outer side of the plate about the holes which receive the stud pins.

For holding the several dogs, 5, posts, a^4 , of different heights according to the level of the train wheels to be accommodated by the spring dogs which are mounted on the posts respectively, pin sockets, 15, are formed in the posts, extending from the top downward, and slots, 16, are formed in the top of the post cutting one side of the pin sockets and opening at one side only of the post, preferably as illustrated, by means of a right angular notch, 16^a, whose angle protrudes slightly into one corner of the slot, 16, thus connecting with it and forming the mouth by which it opens through the side of the post as stated. This angular notch

preferably has one side of the angle lapping on to the slot a distance considerably less than the width of the slot and substantially the thickness of the spring dog, so that the dog being entered as shown in the drawings edgewise downward in the slot along the side opposite the pin socket with its inner end reaching the closed end of the slot, extends out through the right angular notch along the side thereof toward the pin socket, and the pin 17 being driven into the pin socket binds the dog securely to the post with its wheel-engaging end projecting in the proper direction for engagement with the proper wheel, this being determined and insured by the position and the direction of the slot in the top of the post and by the closed end of the slot against which the inner end of the dog is stopped. The several posts are moreover so positioned with respect to the train wheels which the dogs they carry are to engage, that the dogs may all be of the same length and so may be made from the same blanks and in the same dies, their trend only being slightly modified, if necessary, by springing them with the fingers in mounting them. The formation of the angular notch, 16^a, at the position shown, instead of making the slot 16 extend directly out through the side of the post, results in affording a second bearing for the spring dog on the same side on which the pin, 17, bears against and binds it, and prevents the dog from having any tendency to pivotal action at its bearing on the pin, and so prevents it from working the pin loose or working itself out longitudinally. The springs G and G¹, for operating on the resetting dogs are secured in the slots in similar manner, the pin sockets, 15, being formed in the ends of bosses, b , on the plate in similar relation to slot, 16, formed in the ends of said bosses, said pin sockets extending through bosses A² formed at the opposite side of plate to give sufficient depth of engagement to the pins in the plates.

The slide B is thrust in one direction by spring H. For holding the spring, a post a^5 is formed quite similar to the post a^4 ; but this spring being substantially as wide as the post, so that the pin has long bearing against it for binding it to the post, it is not necessary to provide the additional stop-shoulder for the spring at the same side as the pin, which is the purpose of the right-angle notch which forms the latter opening of the slide in the post a^4 ; and hence in the post a^5 , instead of having such right-angle notch the slot is extended full width to the side of the post from which the spring protrudes.

I claim:—

1. An odometer train plate having up-standing bosses, provided each with a pin socket and a slot adjacent to and lapping the

pin socket and emerging at one side only of the boss.

2. An odometer train plate having up-standing bosses, provided each with a pin socket and a slot adjacent to and lapping the pin socket and emerging at one side only of the boss, such slot having its emerging end offset from the portion which extends past the pin socket.

3. An odometer train-plate having up-standing bosses provided each with a pin socket and a slot adjacent to and lapping the pin socket, and emerging at one side only of the boss, said slot having one side offset from the pin socket and the other side offset toward the first side at the emerging end of the slot.

4. An odometer train plate having up-standing bosses provided each with a pin socket and the slot adjacent to and lapping the pin socket, and emerging at one side only of the boss, said slot having one wall offset from the pin socket, a portion of said wall being cut away at the emerging end of the slot.

5. An odometer train plate having up-standing bosses for holding the detent dogs of the train, each provided with a pin socket and a slot adjacent to and lapping the pin socket, and emerging at one side only of the boss, in combination with a spring dog lodged in such slot, and a pin fast in the socket to bind the dog against one side of the slot.

6. An odometer train plate having up-standing bosses for holding the detent dogs of the train, each provided with a pin socket and a slot adjacent to and lapping the pin socket and emerging at one side only of the boss, in combination with a spring dog lodged in such slot, and pins fast in the socket to bind the dog against one side of the slot, the slot having its emerging end portion offset toward the side against which the dog is thus bound to the pin.

7. In an odometer in combination with the train base-plate and trip train journaled thereon, resetting dogs, a resetting slide mounted for sliding on the base plate, and having recesses in its face toward said base plate for receiving the resetting dogs, said dogs having each a circular lug connected with the body of the dog by a neck and the recess in the slot having a circular segmental bay of more than 180°, adapted to receive such lug for pivoting the dogs, said slide having apertures leading through it from the recesses, the dogs having respectively tails extending through said apertures and springs mounted on the opposite side of the slide for action upon such tails.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 18th day of August, 1909.

JOHN K. STEWART.

Witnesses:

CHAS. S. BURTON,
M. GERTRUDE ADY.