D. B. WHISTLER,

COIN TICKET REGISTERING FARE BOX.

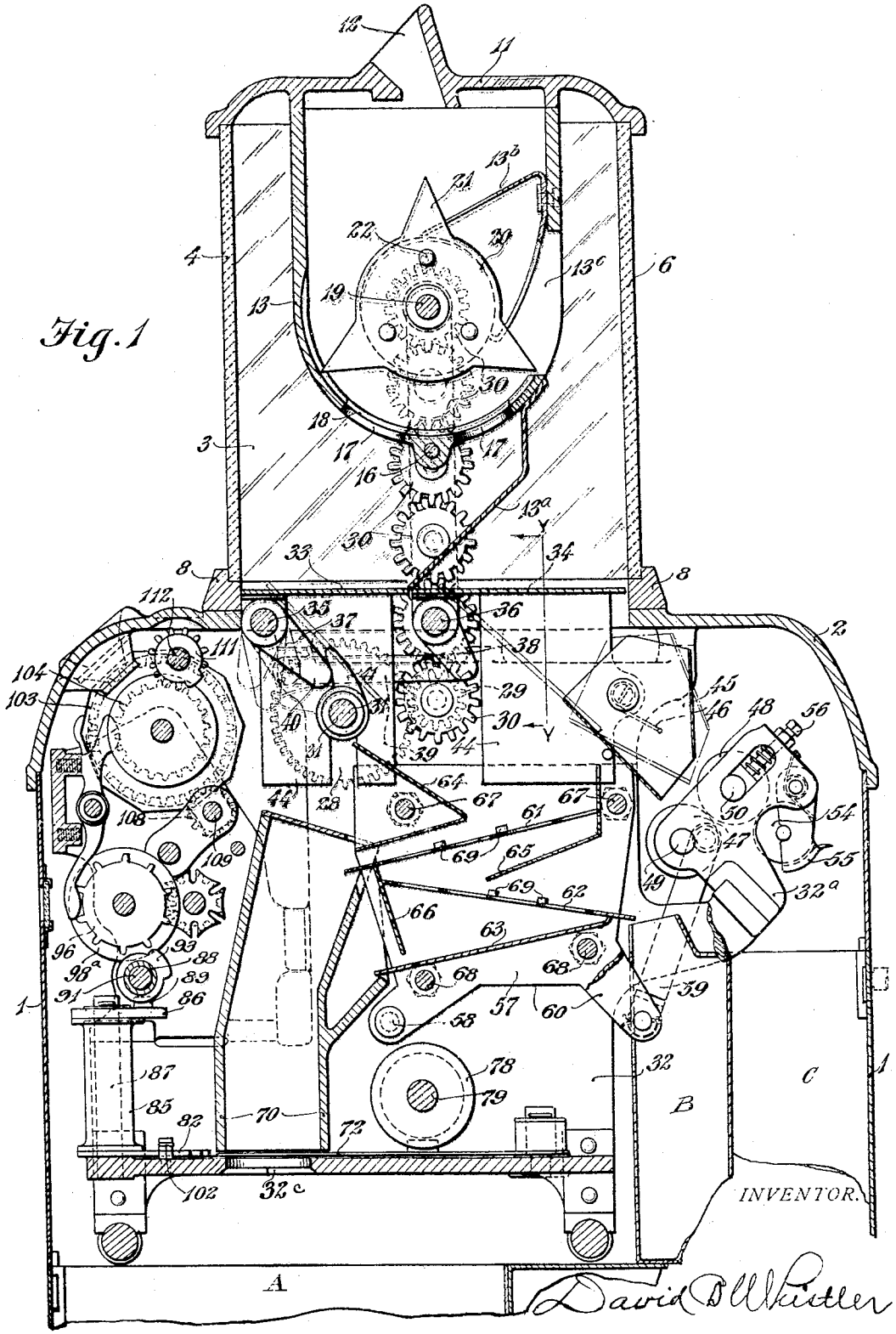
APPLICATION FILED SEPT. 21, 1916.

1,234,707.

Patented July 24, 1917.

4 SHEETS—SHEET 1.

Fig. 1



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4 SHEETS—SHEET 2.

Fig. 2

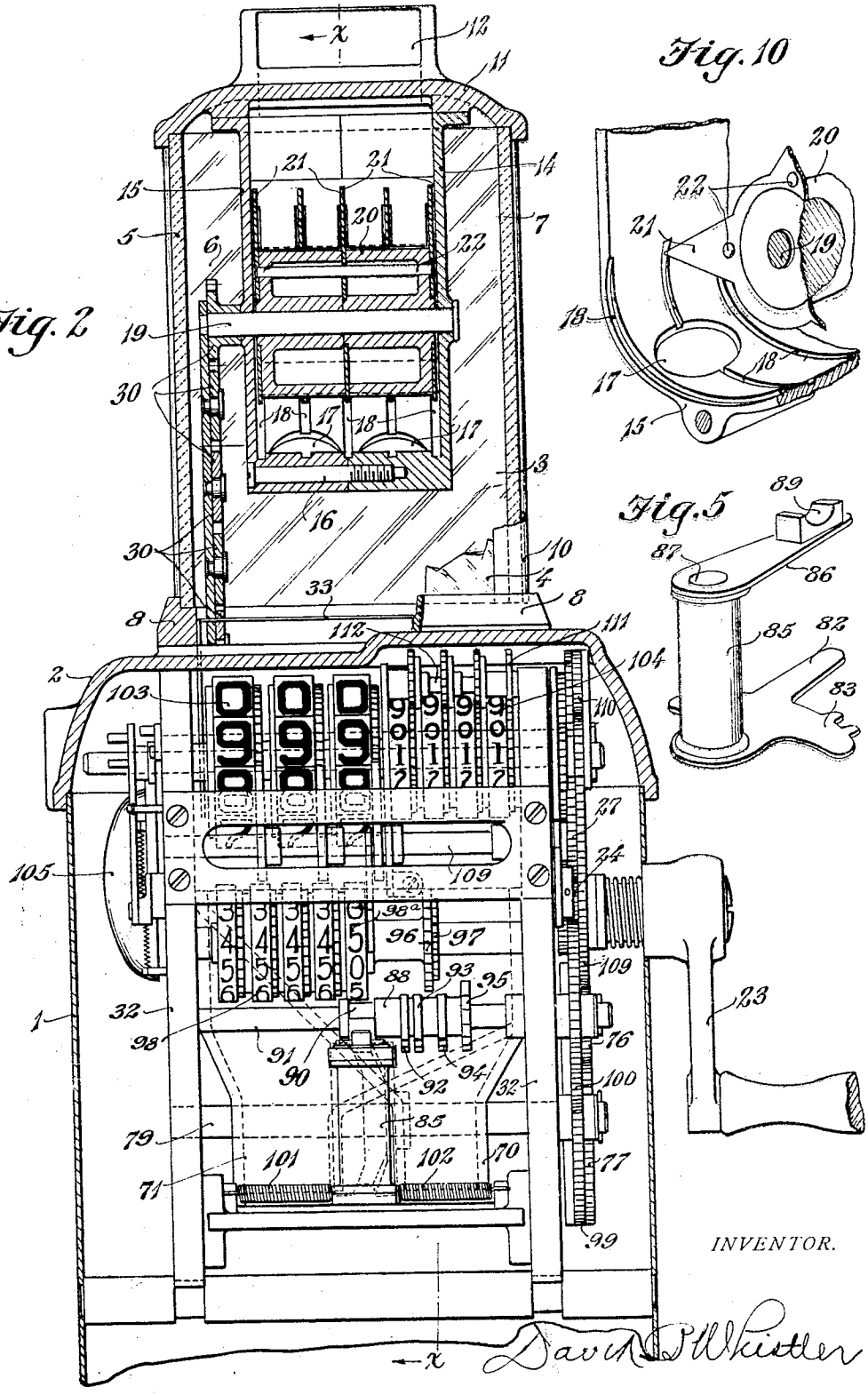

Fig. 10

Fig. 5

INVENTOR.

David B. Whistler

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4 SHEETS—SHEET 3.

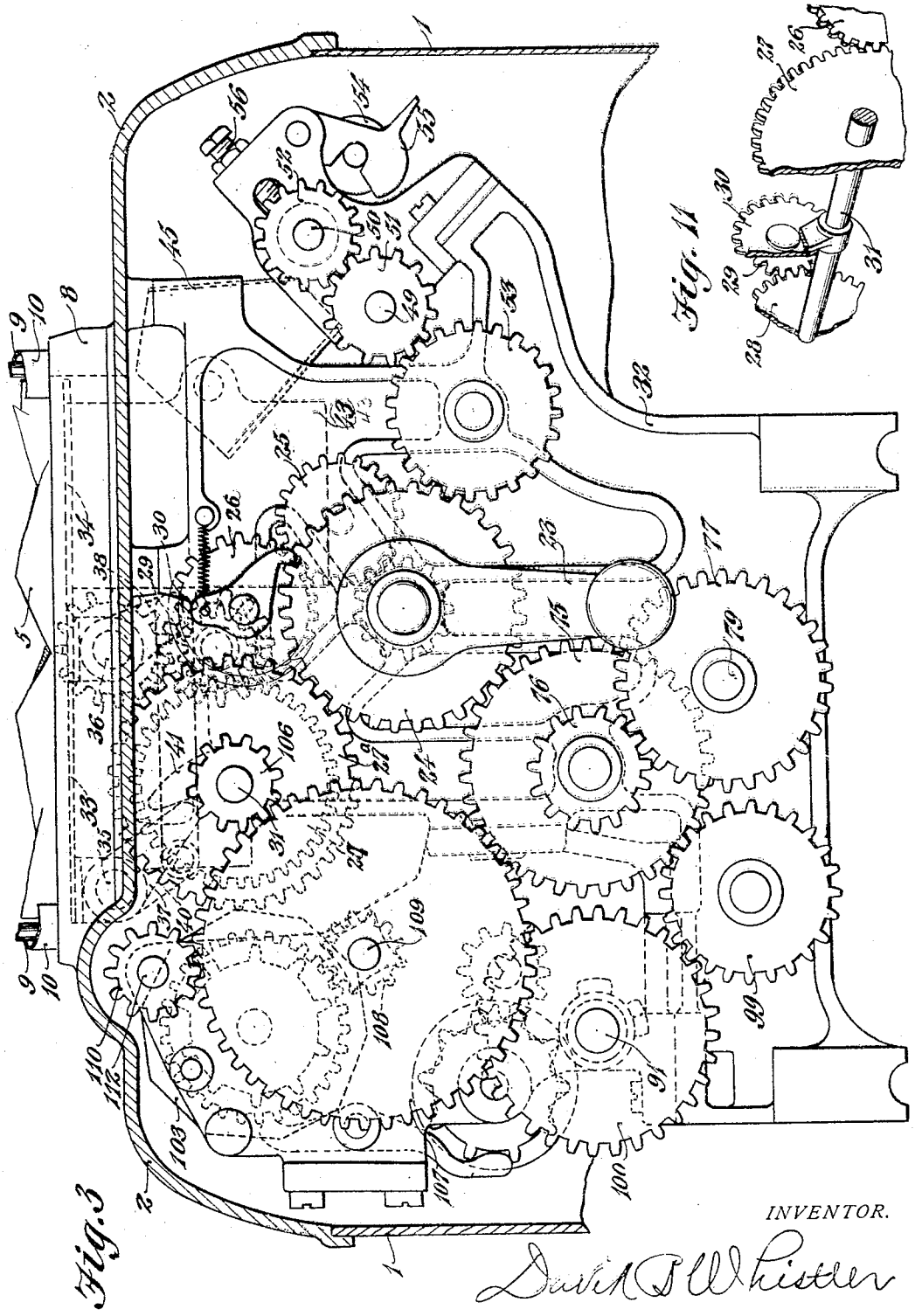

Fig. 3

Fig. 11

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4 SHEETS—SHEET 4.

Fig. 4

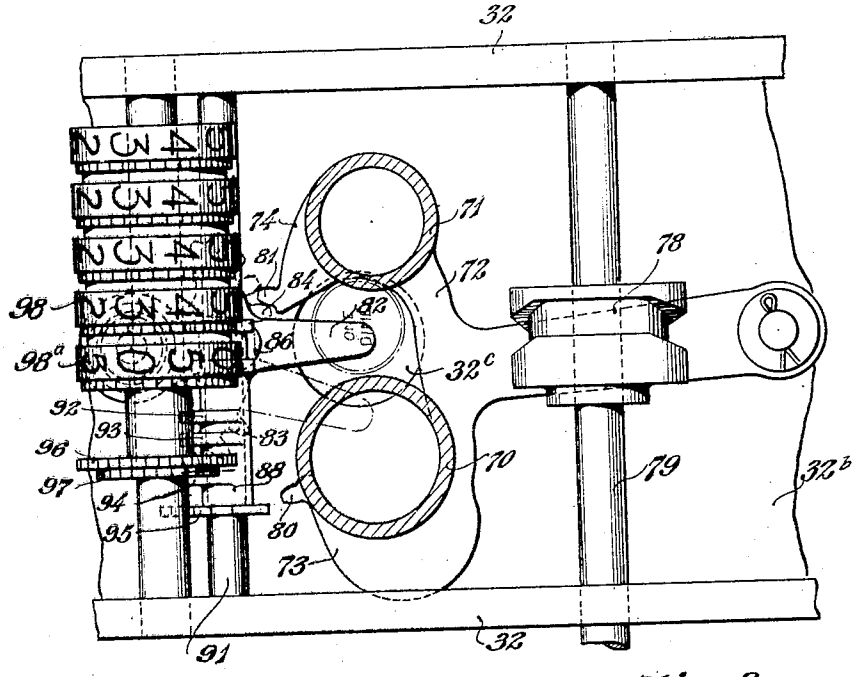


Fig. 6

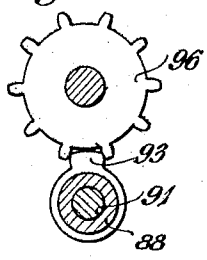


Fig. 7

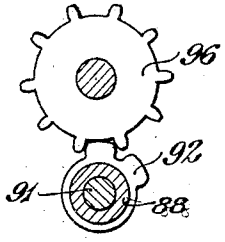


Fig. 8

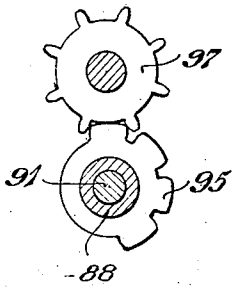
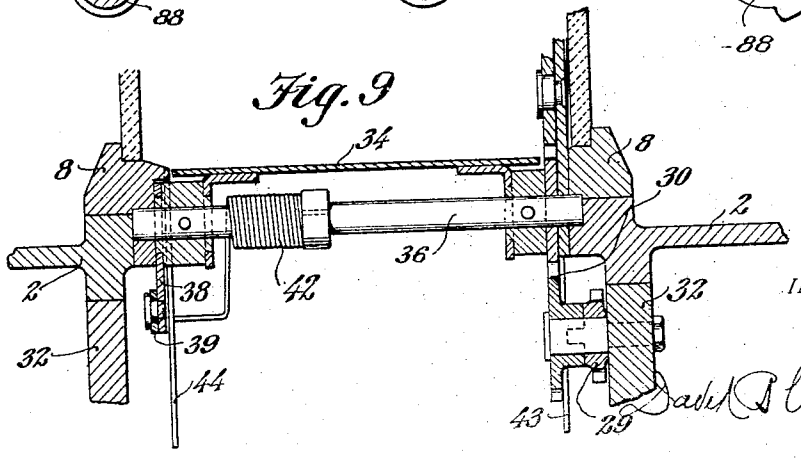


Fig. 9



INVENTOR.

David B. Whistler

UNITED STATES PATENT OFFICE.

DAVID B. WHISTLER, OF DAYTON, OHIO, ASSIGNOR TO THE AMERICAN RAILWAYS EQUIPMENT COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO.

COIN-TICKET-REGISTERING FARE-BOX.

1,234,707. Specification of Letters Patent. Patented July 24, 1917.

Application filed September 21, 1916. Serial No. 121,344.

To all whom it may concern:

Be it known that I, DAVID B. WHISTLER, 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 Coin-Ticket-Registering Fare-Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to combination coin-ticket registering fare boxes and has for its object to provide a fare box adapted to the prepayment system of fare collection, that will meet all requirements in a unitary machine of fare register and coin-ticket registering fare box, of simple, durable construction, and adapted in all respects to the purposes intended.

Coin-ticket registering fare boxes, of practicable, commercial construction have long been sought by manufacturers and users of fare register devices. The present invention is a complete realization of this object. So far as applicant is aware, he is the first to produce a commercially successful machine of this character. The principles of construction and functional organization of the machine are broadly new, and an invention of first importance in devices of this character has resulted. The present invention is a further development of the fare box which forms the basis of an application for patent filed by me July 10, 1916, Serial No. 108355. The fundamental idea of the invention is to provide a unitary machine upon which fares of all kinds can be registered, and through which mixed coin and ticket fares can be received and registered without intermediate handling by conductors. Such a combination of fare register and fare box functions in a unitary machine affords the greatest possible safeguards to both kinds of money-value fares, and simplifies and renders more effective the whole method and work of fare collection.

The present invention pertains especially to an improved mechanism for receiving in a common receptacle mixed coin and ticket fares and for separating the coins and tickets delivered therein; also improved mechanism for registering the value of the coins. A further object accomplished is to provide fare separating and registering mechanism that will handle a greater variety of coins in order to adapt the fare box for use on interurban railways where fares of a wide range of value are collected.

In the drawings, Figure 1 represents a front elevation, in section, of the fare box mechanism, taken on a line x—x of Fig. 2; Fig. 2 represents an end elevation of the mechanism, viewed from the left, with the outer case broken away; Fig. 3 represents a front elevation of the mechanism assembled on the front frame of the machine, showing the various gear trains which are operated direct from the operating crank; Fig. 4 is a detail plan view, partly in section, of the coin tubes, and coin-value registering mechanism, showing position of a coin therein about to be discharged from one of the tubes; Fig. 5 is a detail view, in perspective, of the register control mechanism to effect registration of the value of coins; Figs. 6, 7 and 8 are detail views of the coin-value counter actuators; Fig. 9 is a detail sectional view taken on a line y—y of Fig. 1, viewed from the right, of one of the fare inspection plates which form the bottom of the examination box, and the means for retaining the plates in their normal, raised position; Fig. 10 is a detail, perspective view, partly in section, of the coin and ticket separator; Fig. 11 is a detail, perspective view with part of the mechanism broken away, of part of the gear transmission mechanism for operating the fare separator.

In carrying out my invention I have provided a fare receiving device into which mixed coin and ticket fares may be deposited indiscriminately, and which has separate discharge openings for coins and tickets. In the present construction this receiving device is in the form of a housing having a single opening through which fares may be deposited and having a curved lower portion provided with a plurality of coin discharge openings, to which and through which the coins will pass by gravity and having a ticket discharge opening arranged beyond the coin discharge openings. Coöperating with the fare receiving device is a movable member having projections, or

teeth, to move the tickets to the ticket discharge opening. In the present construction this coöperating member is in the form of a rotatable device having radial teeth and constitutes in effect a star-wheel, the teeth of which move over the inner surface of the fare receiving device and engage the tickets resting upon this surface and move them to the discharge opening, through which they pass to a suitable display device where they may be examined. I further provide separate display devices for the coins and tickets, respectively, these devices being so arranged that the coins and tickets, when discharged through their respective openings, will pass by gravity to the proper display devices, and after a suitable interval these devices are actuated to discharge the fares therefrom to the coin registering and ticket canceling mechanisms. It will be understood, however, that the particular mechanism here shown has been shown for the purpose of illustration only and that the several parts thereof may take various forms. Preferably the movable parts of the mechanism are actuated from a single operating device, which also operates the registering mechanism and is actuated upon the receipt of each fare to cause the same to be registered, this actuation also serving to impart movement to the movable member of the separating device upon the receipt of each fare. Obviously, however, the device may be operated in any suitable manner and from any suitable source of power.

Referring to the drawings, 1 is a case which forms the lower part of the inclosure for the fare box mechanism; 2 is a top cover for the case and also forms a base for the receiving and examination box 3 which is rectangular in shape and comprises four walls, 4, 5, 6 and 7 which are preferably made of glass or other transparent material. The four plates 4, 5, 6, and 7 are supported in a base 8 which rests upon the cover base 2, and are held together at the four corners where the edges of the plates meet, by means of bolts 9 and strips 10 which are secured in base 8 and a top cover 11 which forms the top of box 3. The top cover 11 has an opening 12 through which fares of both kinds,—coins and tickets, may be paid into the box, and has secured thereto, suspended within box 3, a housing 13 formed of two parts, 14 and 15 which are fastened together at their lower edges by a bolt 16. Each of the parts 14 and 15 is provided in the lower walls thereof with apertures 17 of suitable shape and size to permit coins of the various denominations to be received in the box, to pass therethrough by gravity action and fall upon coin inspection plate 33 which forms the bottom of the left side of the fare examination box. Suspended within housing 13, and secured to and rotatable with shaft 19, which has bearings in the walls of the two sides of the housing 14 and 15, is a cylinder 20 which is provided with one or more sets of teeth 21; the cylinder and teeth being secured together by means of bolts 22. Operating movement is transmitted to the cylinder from crank 23 through gears 24, 25, 26, 27, 28, 29, and the gear train 30; gears 27 and 28 being secured to and rotatable with shaft 31 which has bearings in the two main frames 32 of the fare box. The ratio of the gears which transmit movement to cylinder 20 is such that shaft 31 is rotated one-third turn and cylinder 20 one complete turn at each full rotation of operating crank 23. The bottom of the fare receiving box is formed by two plates 33 and 34 upon which the fares fall from the separator, and are exposed to full view thereon for visual examination through glass walls 4, 5, 6, and 7. Plates 33 and 34 are secured to shafts 35 and 36 respectively; the shafts being provided with arms 37 and 38 respectively which are secured to the shafts and are joined together at their lower free ends by a link 39. Shaft 35 is further provided with an arm 40 which is actuated at each third operation of the machine by a tripping cam 41 secured to shaft 31, which causes plates 33 and 34 to be lowered to the position indicated in dotted lines in Fig. 1. Shaft 36 is provided with a spring 42 which acts to normally hold plates 33 and 34 in horizontal position as shown in Fig. 1, and to restore the plates to normal position after each actuation thereof. Secured to base 8 and extending downwardly therefrom, are guard plates 43 and 44 which guide the fares in their downward movements into the registering and canceling mechanisms. Suspended between plates 43 and 44 is a chute 45 which receives the ticket fares from plate 34 when the plate is moved to its lower position, and delivers the same to the ticket canceling mechanism. The chute is normally held in the position shown in Fig. 1 by means of a spring 46, but is slightly tilted rearward by contact of plate 34, to receive the tickets from the plate, when the plate is moved to its lowered position.

It will thus be observed, when coin and ticket fares are paid into the fare receiving box through the common opening 12, that the coins will move by gravity to the bottom of housing 13, pass through the apertures 17, and fall upon inspection plate 33 where the same may be visually examined by the conductor; plate 13ª serving to guide the coins to fall fully upon the plate. It will be noted that the curved wall of the fare receptacle extends upwardly beyond the coin apertures. This extension tends to overcome the momentum of the coins and prevents them from being carried through the

ticket discharge opening. Tickets will be retained in housing 13 until crank 23 is operated,—one operation of the crank being required for each fare paid into the box, when the ticket will be engaged by one or more of teeth 21 and swept over apertures 17 and discharged from the separator through opening 13^c. As the tickets are discharged from the separator they fall upon inspection plate 34 where, as in the case of cash fares, they may be visually examined by the conductor. Plate 13^b, positioned within housing 13, serves to prevent fares paid into the box from moving in the wrong direction; also to strip tickets from teeth 21 at the discharge opening. Grooves 18 are also provided in parts 14 and 15 as clearance for teeth 21, and the teeth are made correspondingly longer to cause the ends thereof to penetrate the tickets and positively remove the same from the separator. As above explained, plates 33 and 34 are moved to their lower position at each third operation of crank 23, and the coins and tickets thereon are delivered respectively to the coin separating mechanism and to the ticket canceling mechanism.

So far as applicant is aware, he is the first to provide a coin and ticket fare separator of practical, commercial form of any construction wherein the fares are received in a common receptacle; and the first to provide a fare separator which effects separation of the coins and tickets immediately as paid and registered, and which immediately delivers the coins and tickets separately for visual examination; also the first to combine these functions with the functions of a fare register in a unitary machine upon which fares of every character, including fares collected over the fare box, can be registered. These inventions are of first importance in devices of this character and are a long step forward in the development of the ultimate device which will be required for fare collection.

Any suitable construction may be employed in the ticket canceling device, and no claim of novelty is made for the specific construction shown. However, there is certain coöperation of the canceling mechanism with other parts of the organization which is new and which is important to the purposes of the present invention. The canceling device comprises rollers 47 and 48, secured to and rotatable with shafts 49 and 50 which have bearings in frame 32^a secured to main frames 32. Shafts 49 and 50 extend through frame 32^a, and have secured to their projecting ends, respectively, gears 51 and 52 which mesh and, through intermediate gear 53, cause the canceling rollers 47 and 48 to be rotated in opposite directions when crank 23 is operated, thus causing tickets delivered from plate 34 to be fed between the rollers and canceled. The canceling rollers can be of any suitable form. In the present construction, I have employed both inking and nurling devices which effect cancellation of tickets passing between the rollers by perforating and ink-marking the same. For this purpose an ink supply roller 54 is also provided, and is placed in contact with canceling roller 48, being held in contact therewith by a suspended yoke and sheath 55. Tension is provied for rollers 47 and 48 by means of adjusting devices 56.

The coin separator 57 is similar in its main features of construction to a separator employed by me in an earlier development of the machine. In the present construction, however, the separator has a swinging, vibratory movement upon shaft 58, transmitted from shaft 49 by means of connecting link 59, whereas, in the earlier construction referred to, the separator has a rocking, vibratory movement transmitted from four rocker arms. The separator comprises side plates 60; apertured plates 61 and 62, and bottom plate 63; also guard plates 64, 65 and 66; the plates being held together to form an integral device by bolts 67 and 68. The apertured plates 61 and 62 are disposed between plates 60 at opposite angles, and are provided with pins 69 which guide coins moving upon the plates into or over the apertures therein. All coins discharged from plate 33 fall upon plate 61, the apertures in which are graduated to prevent coins of the largest sizes to be registered,—in the present construction, United States quarters and nickels, from passing through them; consequently coins of these denominations are discharged from the plate, due to the angle of the plate and the vibratory movement thereof, into coin tube 70. Coins of smaller sizes to be registered, in the present instance, United States pennies and dimes, and Canadian half-dimes, pass through the apertures in plate 61 and fall upon plate 62, the apertures in which are smaller in diameter and prevent pennies from passing through them. Pennies, therefore, are discharged from plate 62 into money box B; dimes and half-dimes pass through the apertures in plate 62 and fall upon plate 63 from which they are discharged into coin tube 71. Mutilated coins and foreign objects of irregular shape and size, thicker than the coins to be registered, cannot pass through the coin separator in view of the graduated discharge openings formed by guard plates 64, 65 and 66.

As above indicated, provision is made in the present machine to register a greater variety of coins of different values than is customary in the ordinary types of registering fare boxes. For this purpose I have used in the present instance a modified construc-

tion of the coin registering mechanism shown in my earlier application for patent above referred to. Two coin tubes are used from each of which coins of two different values, or coins of two sizes, can be registered through a single coin-discharge and register-control mechanism. This principle is shown in modified form in the earlier construction referred to, but an important improvement has been made in the present mechanism. The coins as they are discharged from the registering tubes, cause the coin discharge arm to positively engage the register control arm and to move the same the required amount to set the mechanism to effect registration of the value of the coin, the coin acting merely to cause the coin-discharge member to properly contact with the register-control member in the initial part of the registering operation, whereas in the earlier construction the coin sustained the relation between these parts throughout the registering operation. Coin tubes 70 and 71, preferably cast integral and secured to frames 32, are set sufficient distance above base plate 32[b] to permit coins to be removed from the lower ends of the tubes;—tube 70 being set above the plate a distance approximately equal to the thickness of a United States quarter; tube 71 being set somewhat closer to the plate, or at a distance approximately equal to the thickness of a dime. Above plate 32[b], secured thereto and movable in a horizontal plane thereon, is coin discharge arm 72 which has two laterally extending arms 73 and 74 of suitable form and thickness to pass under the lower, open ends of tubes 70 and 71, respectively, to discharge coins therefrom. Movement is imparted to arm 72 from operating crank 23, through gears 24, 75, 76, and 77 and cam 78 secured to shaft 79 which has bearings in frames 32; the relation of the parts being such that arms 73 and 74, respectively, are moved through the space under the lower ends of the respective coin tubes upon the alternate operations of crank 23. Arms 73 and 74 are provided with teeth 80 and 81 respectively which mesh with teeth 83 and 84 respectively of register control arm 82 as determined by the size or value of the coin being registered. Register control arm 82 is made integral with sleeve 85 and arm 86, the part being centered upon vertical shaft 87 which is rigidly secured in base 32[b]. Arm 86 is connected with sleeve 88 by a yoke 89 and groove 90, and acts to move the sleeve laterally, longitudinally of shaft 91, upon which the sleeve is slidably and rotatably mounted, when arm 86 is actuated. Sleeve 88 is provided with four sets of actuators, 92, 93, 94 and 95, made integral of the sleeve, and comprising two, one, one, and four teeth respectively, which are moved into operative relation with gears 96 and 97, respectively, secured to the units wheel 98[a] of counter 98, when coins of different values are discharged from tubes 70 and 71. Thus, when a nickel is discharged from the tube 70 by the arm 73 it will engage the arm 82 and move the same a distance sufficient to bring the first tube 83 of the arm 82 into a position to be engaged by the tooth 80 of the arm 73, and the further movement of the arm 73 will be transmitted through the teeth 80 and 83 to the arm 82. The movement thus imparted to the arm 82 is such that, through the interconnecting parts 85, 86 and 88, the actuator 94 will be moved into alinement with gear 96, which has ten teeth, and one 5¢-unit will be caused to be registered on counter 98; the registering movement being transmitted from crank 23 through gears 24, 75, 99 and 100; gear 100 being secured to shaft 91, and the ratio of the gears being such that shaft 91 and the counter actuators 92, 93, 94, and 95 are rotated one complete turn at each full operation of crank 23. When a quarter is discharged from the tube 70 by the arm 73 it will engage the arm 82 and move the same a distance sufficient to cause the second tooth 83 of the arm 82 to be moved into a position to be engaged by the tooth 80 of the arm 73, and consequently the arm 82 will be moved a greater distance than it was moved when the nickel was discharged from the tube and the first tooth 83 meshed with the tooth 80. This further movement of the arm 82 is such as to cause the actuator 95 to be moved into operative position with relation to the gear 97, which has eight teeth, and five 5¢ units will be caused to be registered on the counter 98 when the crank 23 is operated. Dimes and half-dimes are registered in like manner from tube 71. It will be observed that coins of different values, as they are discharged from the tubes, determine by their respective diameters, the positive engagement which will be formed between the coin-discharge mechanism and register-control mechanism, and that the registering alinement of the counter actuators is accomplished thereafter entirely independent of the coins. Immediately after the coin-discharge arm and register-control arm have been brought into contact and are in positive engagement one with the other, the coin is released between them and will be free to fall through discharge opening 32[c] into coin box A. To insure full return to normal position of the register-control mechanism, after each operation, springs 101 and 102 are attached to arm 82 and serve to draw the arm centrally between the coin tubes after each operation of the registering mechanism.

I also employ in the present machine, a trip-passenger register 103, and a total-pas-

senger register 104, and bell mechanism 105. The construction of these parts may be of any well known character and need not be here described in detail. The trip-passenger counter is actuated at each operation of the fare box from crank 23, through gears 24, 27a, 106, 107 and counter actuator 108. Gear 107 and actuator 108 are secured to and rotate with shaft 109, and are operated one-quarter turn at each full operation of crank 23, which effects registration of one unit on counter 103. Counter 104 is operated from crank 23 through gears 24, 27a, 106, 107, 110, and counter actuator 111. Gear 110 and actuator 111 are secured to shaft 112 and are rotated one complete turn at each full operation of crank 23. Thus, it will be observed, that one unit of registration will be effected on both the trip-passenger counter and total-passenger counter at each operation of the fare box, and that these passenger registrations are entirely independent of the money value registrations of coins paid into the fare box. This provides for what is known in railway operation as the "double-check" system of fare registration and, as applied to the coin-ticket registering fare box of the present invention, a combination of fare register and fare box unitary in construction and operation, a highly efficient device has resulted. In its mechanical organization, simplicity of design, positive relation of movements, and durability of construction have been realized in an unusual degree in devices of this character, and a machine has been produced which is in all respects well adapted to the requirements of use to which it will be subjected. It is obvious, of course, that various modifications of the mechanism can be made by a person skilled in the art without departing from the principles of construction employed, or from the spirit of the invention. I desire it to be understood therefore, that I do not wish to be limited to the exact construction shown, nor to the single use of the invention specified.

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

1. In a machine of the character described; an examination box for coin and ticket fares, comprising a plurality of devices to separately display said fares, means to receive and separate mixed coins and tickets and to deliver the same respectively to said devices, and an inclosure for said devices having means to permit visual examination of fares thereon.

2. In a machine of the character described; an examination box for coin and ticket fares, comprising means to separately display said fares, single means to receive and separate mixed coins and tickets and to deliver the same respectively to the fare displaying means, and an inclosure for said means having walls through which fares displayed therein may be visually examined.

3. In a machine of the character described; an examination box for coin and ticket fares, comprising a plurality of plates upon which the fares are separately displayed, mechanism to receive and separate mixed coins and tickets and to deliver the same respectively to said plates, and an inclosure having glass walls through which fares displayed on said plates may be visually examined.

4. In a machine of the character described; an examination box for coin and ticket fares, comprising intermittently operable means to separately display the fares, and operable means to receive and separate mixed coins and tickets and to deliver the same respectively to the fare displaying means, and an inclosure for said means through which fares displayed therein may be visually examined.

5. In a machine of the character described; an examination box for coin and ticket fares, comprising a plurality of intermittently operable devices upon which the fares may be displayed, an operable device to receive and separate mixed coins and tickets and to deliver the same respectively to said devices, and an inclosure for said devices through which fares displayed thereon may be visually examined.

6. In a machine of the character described; a plurality of intermittently operable devices upon which coin and ticket fares may be separately displayed, and operable mechanism to receive and separate mixed coins and tickets and to deliver the same respectively to said devices.

7. In a machine of the character described; intermittently operable means upon which coin and ticket fares may be separately displayed, and operable means to receive and separate mixed coins and tickets and to deliver the same respectively to said fare displaying means.

8. In a machine of the character described; a plurality of devices upon which coin and ticket fares may be displayed, and a single device to receive and separate mixed coins and tickets and to deliver the same respectively to said displaying devices.

9. In a machine of the character described; an examination box for coin and ticket fares, comprising means to display fares therein for visual examination, means to receive and separate mixed coins and tickets and to deliver the same respectively to said displaying means, other devices to act on said fares after their examination, and means to discharge the fares from said box to said other devices.

10. In a machine of the character described; an examination box for coin and ticket fares, comprising a plurality of plates upon which the fares may be separately dis-

played for visual examination, single means to receive and separate mixed coins and tickets and to deliver the same respectively to said plates, and means to operate the plates to remove fares therefrom.

11. In a machine of the character described, a casing, a receptable for mixed coin and ticket fares mounted within said casing and having an aperture through which the fares may be received, and also having an aperture through which coins may pass, and operable means arranged within said receptacle to remove the tickets therefrom.

12. In a machine of the character described, a casing, a receptacle for mixed coin and ticket fares mounted within said casing and having a single aperture through which fares may be received, and also having a plurality of apertures through which coins may pass, and operable means mounted within said receptacle to remove the tickets therefrom.

13. In a machine of the character described; a separator for mixed coin and ticket fares, comprising a housing having a single aperture through which the fares may be received, a plurality of apertures through which coins may pass and operable means within said housing to remove tickets therefrom.

14. In a machine of the character described; a separator for fares, comprising a housing in which mixed coins and tickets may be received, and having an aperture through which coins may pass by gravity movement, and operable means within said housing to remove tickets therefrom.

15. In a machine of the character described, a separator for mixed coin and ticket fares comprising a housing having an aperture through which coins may pass, and an operable device mounted within said housing to remove the tickets therefrom.

16. In a machine of the character described; a separator for mixed coin and ticket fares, comprising a housing having an aperture through which coins may pass, and a rotatable device within said housing to remove tickets therefrom.

17. In a machine of the character described, a separator for mixed coin and ticket fares comprising a rotatable member having piercing teeth, and a fixed member curved about the axis of said rotatable member and from which the tickets are moved by said rotatable member, said fixed member having grooves in which the ends of said teeth travel during part of each rotation and which cause said teeth to pierce the tickets.

18. In a machine of the character described; a separator for mixed coin and ticket fares, having an apertured part adapted to retain tickets and to permit coins to pass through the apertures thereof, and a star-wheel to remove the tickets therefrom.

19. In a machine of the character described; a separator for mixed coin and ticket fares, having an aperture through which coins may pass, means to guide the movement of fares in the separator, and operable means to remove tickets therefrom.

20. In a machine of the character described; a plurality of plates to display coin and ticket fares separately for visual examination, a single device to receive and separate mixed coins and tickets and to deliver the same from the separator, and means to guide the fares respectively to said plates.

21. In a machine of the character described; a plurality of mechanisms to act upon coin and ticket fares separately, a plurality of devices to display the fares separately for visual examination, a device to receive and separate mixed coins and tickets and to deliver the same respectively to said displaying devices, and means to actuate said displaying devices to deliver coins and tickets thereon respectively to said mechanisms.

22. In a machine of the character described; a plurality of mechanisms to act upon coin and ticket fares separately, a plurality of devices to display the fares separately for visual examination, an operable device to receive and separate mixed coins and tickets and to deliver the same respectively to said displaying devices, and means to intermittently actuate said displaying devices to deliver the coins and tickets thereon respectively to said mechanisms.

23. A separator for coin and ticket fares comprising a device to receive mixed fares and having an opening to permit the passage of coins, and also having a ticket discharge opening, and a part coöperating with said apertured device to move the tickets past the first-mentioned opening and through the last-mentioned opening.

24. A separator for coin and ticket fares comprising a device to receive mixed fares and having an opening to permit the passage of coins, also having a second opening above the level of the first opening, and means to move the tickets past the first opening and discharge them through said second opening.

25. A separator for coin and ticket fares comprising a device to receive mixed fares, said device being substantially semicircular in cross-section, having its open side upward and having an aperture in the lower portion thereof, and a toothed device rotatably mounted on an axis concentric with said semicircular device and having its teeth arranged to travel along the surface thereof.

26. In a machine of the character described; an examination box for coin and ticket fares, comprising a plurality of means to separately display the fares for visual ex-

amination thereof, a housing within said box to receive mixed coins and tickets and having an aperture through which coins pass from the housing to one of said displaying means, and an aperture and means within the housing to move tickets therethrough to another of said displaying means.

27. In a machine of the character described; an examination box for coin and ticket fares, having separate means to visually display said fares therein, a device within said box to receive and separate mixed coins and tickets and to deliver the same respectively to said means.

28. In a machine of the character described; a plurality of devices to visually display coin and ticket fares, a device to receive and separate mixed coins and tickets and to deliver the same respectively to said devices, and means to simultaneously operate said devices to remove fares therefrom.

29. In a machine of the character described; a housing to receive mixed coin and ticket fares, and having an aperture in the bottom thereof through which coins may pass from the housing, and an aperture in the side thereof, and means within the housing to raise tickets and discharge the same therethrough.

30. In a machine of the character described; a housing to receive mixed coin and ticket fares, having a plurality of apertures in the bottom thereof through which coins may pass from the housing by gravity, an aperture in the side thereof, and operable means within the housing to move tickets over said bottom apertures and discharge the same through the side aperture.

31. In a machine of the character described; a housing to receive mixed coin and ticket fares, having an inclined wall and an aperture at the bottom thereof through which coins may pass by gravity, an aperture at the side thereof, and operable means within the housing to raise tickets therein and discharge the same through said side aperture.

32. In a machine of the character described; a housing to receive mixed coin and ticket fares, having an inclined, wall and an aperture at the bottom thereof to which and through which coins move by gravity, and an aperture in the side thereof, and operable means within the housing to discharge tickets through said side aperture.

33. In a machine of the character described; a housing to receive mixed coin and ticket fares, having a curved wall and an aperture therein to which and through which coins move by gravity, a second aperture, and a rotatable device within said housing, and adapted to remove tickets from the housing through said second aperture.

34. In a machine of the character described; a housing open at the top to receive mixed coin and ticket fares, and curved at the bottom and having a plurality of apertures therein to which and through which coins move by gravity, and an aperture in the side thereof to which tickets are moved and discharged therefrom by operable means within the housing.

35. In a machine of the character described, a device to receive mixed coin and ticket fares, said device having a curved wall provided with an aperture to which and through which coins may move by gravity, and also having a ticket discharge opening, and a device rotatably mounted at the axis of said curved wall and adapted to discharge tickets from the first-mentioned device to said discharge opening.

36. In a machine of the character described, a housing open at the top to receive mixed coin and ticket fares, and having a curved wall with apertures therein to which and through which the coins move by gravity, an extension to said curved wall beyond said apertures to prevent the excessive movement of the coins thereon, and operable means to remove the tickets from the housing.

In testimony whereof I affix my signature hereto.

DAVID B. WHISTLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington. D. C."