

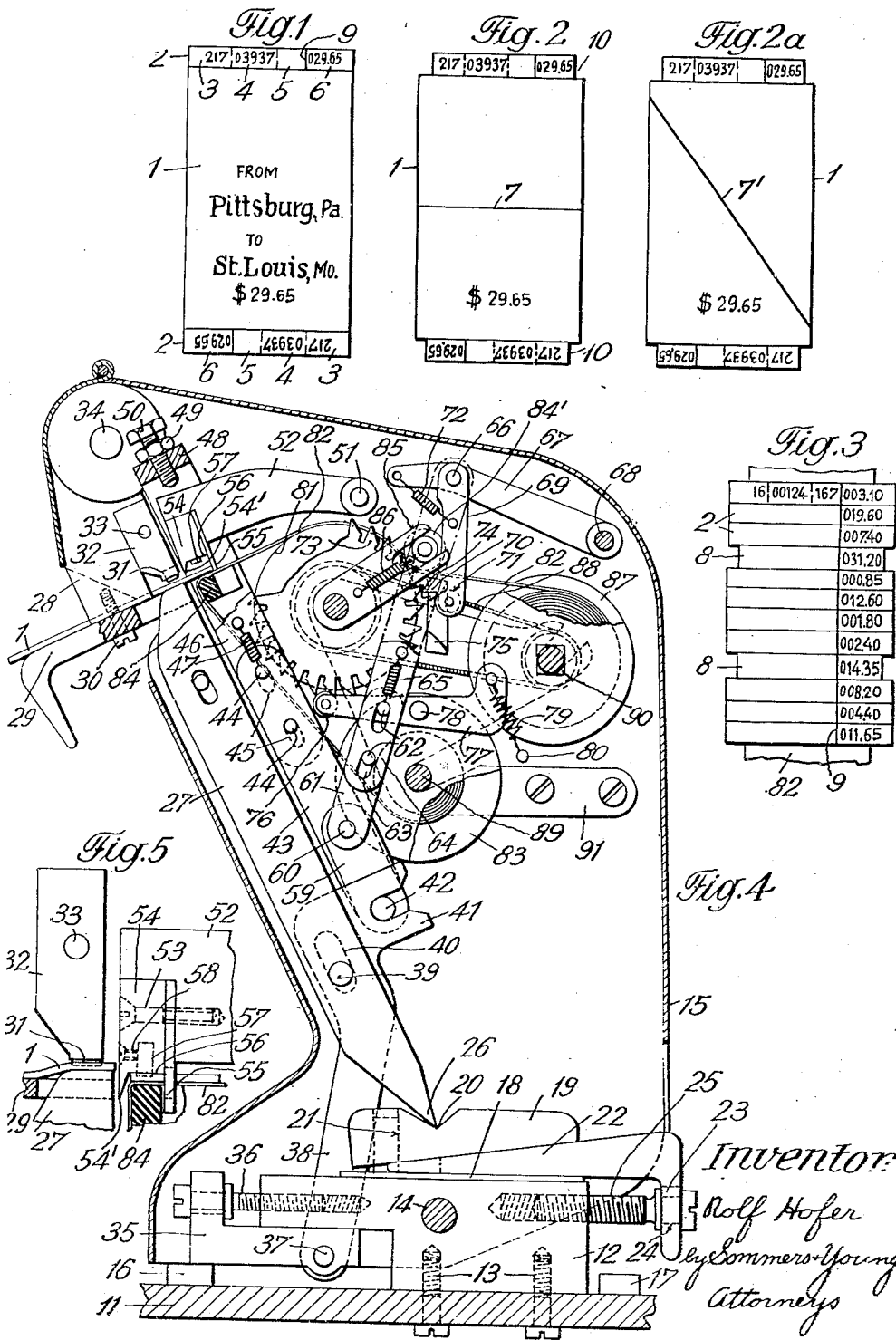
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TICKET CONTROLLING MEANS

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TICKET CONTROLLING MEANS

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This invention relates to a ticket controlling means. It has always been a delicate problem to control the sale of tickets, such as for example railway or motor coach fare tickets. It would be desirable to make a daily control for each collector who sells tickets, but this is practically impossible in a ticket sales office having a continuous large sale of tickets. Therefore a checking of issued tickets has usually been limited to a periodical inventory of the remaining ticket numbers.

In offices having a large sale of tickets which often takes place during rush hours, and in which several fare collectors are working in shifts, it is impossible to avoid differences in the cash-balance, and, particularly when the employees of the several shifts handle the same cash box, the problem of cash differences is a very delicate one.

There are known ticket printing and issuing machines having series of counting mechanisms, but these machines are quite expensive, require much space and are not economical for smaller ticket offices. Also such machines do not solve the problem, because they cannot be used to give a daily account for each fare collector.

An object of the present invention is the provision of a machine for controlling issued tickets and which avoids the mentioned difficulties. According to the invention a portion of each ticket is provided with certain statistical data specific to the ticket, and when the ticket is issued, this portion is severed therefrom; the severed portions of all tickets issued are collected and a control of the issued tickets is effected by means of the data given on these portions. Severing of these data carrying portions from the tickets is conveniently effected simultaneously with stamping the date on the issued ticket. The severed portions can be successively attached on a strip of material or secured together to form a control strip so as to obtain an easily controllable band of data from issued tickets.

It is a further object of the invention to provide a ticket control apparatus comprising means for severing a portion from the ticket and means for collecting the severed portions. More specifically it is an object of the invention to provide operating mechanism actuated upon a pivoting movement of the apparatus to effect severing of the data carrying portions of the tickets simultaneously with printing the date of issue on the ticket.

Other objects of the invention and details of construction will become apparent from the following description of a preferred embodiment of

a control apparatus, reference being had to the accompanying drawing in which,

Figure 1 represents a railway ticket of standard size,

Figures 2 and 2a represent tickets destined to be sold for the price of one half of the indicated normal fare.

Figure 3 shows a control strip formed by the portions severed from issued tickets,

Figure 4 is a vertical section through the control apparatus, and

Figure 5 is a fragmentary section drawn to a larger scale.

The railway fare ticket 1 shown in Fig. 1 is of standard size and can be stored in the ordinary ticket containers which are used in ticket sales offices. This ticket 1 is of rectangular shape and distinguishes from ordinary tickets in that its two narrow sides are provided with marginal portions 2, each of which is subdivided into four separate spaces 3, 4, 5 and 6. The space 3 carries the printed number of the section of the road for which the ticket is valid; the space 4 contains the consecutive number of the ticket; the space 5 is empty and destined to receive a control number or sign of the fare collector who issues the ticket, and the space 6, separated by a line 9, carries the printed amount of the fare. Instead of having marginal indicia containing portions 2 at both narrow sides of the ticket, only one of these sides could be provided with such a portion 2.

When a ticket 1 is issued, the control apparatus hereinafter described simultaneously effects the impression of the date stamp on the ticket and of the above mentioned control number of the fare collector on the space 5, the severing of one of the portions 2 from the ticket and the sticking of the severed portions 2 on a transparent adhesive band 82, to form the control strip. Fig. 3 represents a fragment of such a control strip to which a number of control portions 2 of issued tickets 1 have been successively attached.

When the represented ticket 1 is to be sold for one half of the indicated fare, for example when it is sold for a child or other persons paying only one half of the ordinary fare, the ticket can be cut in two by means of scissors along a transverse line 7 (Fig. 2) or a diagonal line 7' (Fig. 2a), and one of the halves is handed over to the person using the ticket, while the other half is retained for control purposes. In this case, when checking the amount received for sold tickets the fare indicated on the retained halves of tickets will be added, the sum divided

by two and the result subtracted from the total amount obtained by adding the fares indicated by the control strip 82.

The ticket can also be cut in two transversely or diagonally, by means of an additional stamping apparatus, which simultaneously cuts off the four corners 10 of the ticket at the control portions 2, as indicated in Figs. 2 and 2a. It can then be seen from the control strip 82 that the shorter cuttings 8 correspond to the sale of one half ticket, and in this case both halves of the ticket can be sold to travelers.

The control apparatus represented in Figs. 4 and 5 comprises a base plate 11 to be attached to a table or the like in a fare collector's office and to which plate a support 12 is secured by means of screws 13. The support 12 carries a bearing bolt 14 on which is pivotally mounted a casing 15. In the represented position of rest, the casing 15 bears on rubber cushions 16. From this position the casing 15 can be tilted rearwardly until it abuts against rear rubber cushions 17. The support 12 also carries a steel plate 18 upon which is disposed the body 19 of a pin bearing 20. The bearing body 19 is maintained in its position, by means of a pin 21, and a wedge 22 is inserted between the bearing body 19 and the steel plate 18. This wedge has a bent down fork-shaped end 23 engaged in an annular groove 24 of a regulating screw 25, so that turning of the screw causes a displacement of the wedge 22 to adjust the level of the bearing body 19. The point 26 of a pressure rod 27 is engaged in the pin bearing 20, while the rod 27 is slidably guided in the casing 15 to effect a longitudinal movement relatively to the casing. The casing 15 is provided with a funnel-shaped portion 28 to which is attached, by means of screws 30, a brass table 29 for receiving a ticket 1. The date stamp 31 can be inserted from the top into a date stamp casing 32. The date stamp is, as usual, composed of several parts disposed side by side and each provided with a transverse hole to be traversed by a pin 33 and disposed outside of the median plane of the part, so that the different parts of the stamp cannot be inserted in reversed position in the stamp casing 32. This casing can be turned about an axis 34 in order to change the stamp portions.

The support 12 serves as guide to a longitudinally movable slide 35. A screw 36, screwed into the support 12 and rotatably engaged in the slide 35, serves to displace the said slide which carries a bearing pin 37 pivotally carrying a pull arm 38. This arm 38 is provided with a slot 40 engaged by a pin 39 of the push rod 27, and with an actuating fork 41 at its upper end engaging a pin 42. This pin 42 is secured to two parallel connecting rods 43 extending upwardly from either side of the fork 41, while for the sake of clearness only the rod 43 situated behind the fork 41 has been shown. Both rods 43 are connected by means of pins 44 and slots 45 to further rods 46, and a tension spring 47 tends to pull the rods 43 and 46 towards each other, whereby a yieldable movement transmission is realized.

The rods 46 carry at their upper end a cross piece 48 into which is screwed an adjusting screw 50 which can be locked by means of a nut 49. The end of the screw 50 cooperates with a knife arm 52 pivotally mounted on a journal pin 51. The arm 52 carries a knife 54 provided with a sharp beveled edge 54'. Screws 53 (Fig. 5) are used to secure the knife 54 and a stop plate 55 to the arm 52, against which plate the ticket 1

abuts when it is inserted into the funnel-shaped portion 28 of the casing 15 along the table 29. The knife 54 is provided on its lower side with a straight pressure surface 56 and with a recess in which a stamp 57 is inserted and secured by a screw 58. This stamp 57 carries a control number of the fare salesman using the machine. The knife arm 52 can be rocked upwardly about the pin 51 in order to easily remove and exchange the knife 54 or the stamp 57.

The pin 42 cooperating with the actuating fork 41 is also connected to a link 59 which itself is connected by means of a journal pin 60 to a pull rod 61 carrying pins 62 engaging slots 63 of a pull rod 64. A tension spring 65 tends to pull the two rods 61 and 64 towards each other whereby a further resiliently yieldable movement transmission is formed. The pull rod 64 is rotatably connected by means of a pin 66 to a lever 67 which can rock about a pin 68. The lever 67 is connected by means of the pin 66 to an actuating rod 69 provided with a pawl 70 and carrying a roller 71. A spring 72 acts on the rod 69 and tends to turn the rod in clockwise direction. The pawl 70 can cooperate with a ratchet wheel 73 and the roller 71 cooperates with a cam 74 and with an abutment 75. The teeth of the wheel 73 coact with a brake roller 76 which acts to cause the wheel 73 to turn through exactly one tooth. The roller 76 is carried by a lever 77 mounted on an axis 78 and is subjected to the action of a spring 79 having one end attached to the lever and the other end to a pin 80 carried by the casing 15. The spring 79 tends to keep the roller 76 engaged between two teeth of the wheel 73.

The ratchet wheel 73 is coupled with a rubber cylinder 81 over which passes a transparent band 82 consisting, for example, of Celluloid foil. The band 82 is unwound from a supply roll 83 and passes over a resilient guide member 84 where the cut off portions 2 of the tickets are attached to the upper face of the band provided with a layer of adhesive. A pressure roller 84' cooperates with the rubber cylinder 81 and is carried by the forked end of a supporting arm 85, and is pressed towards the cylinder 81 by means of springs 86. The band 82 with the attached cuttings 2 of the tickets is successively wound on a roll 87 driven by means of a square shaft 90 and an endless belt 88 from the ratchet wheel 73, the transmission ratio being such that the band 82 is tightly wound even when the roller 87 is empty.

The different members of the mechanism serving to pass the band 82 from the supply roller to the control strip collector 87 are carried in lateral frame members 91 secured to the casing 15, which, at the place where this mechanism is mounted, is larger than at the place where the tickets are fed into the apparatus and stamped.

The described apparatus operates as follows: A ticket 1 is placed on the table 29 and pushed inwardly until it abuts against the stop plate 55. Then the casing 15 is rocked about the bearing bolt 14. During this rocking movement of the casing 15 the push rod 27 moves upwardly relatively to the casing and the upper end of this rod 27 pushes the ticket 1 against the date stamp 32 so that the date is impressed on the ticket (Fig. 5). Also, during rocking movement of the casing 15 the pull arm 38 moves the actuating fork 41 downwardly. The fork pulls the rods 43 and 46 downwardly whereby the screw 50 carried by the cross piece acts upon the knife arm 52 and urges this arm downwardly so that

the knife edge 54' severs the marginal portions 2 of the ticket, and the surface 56 of the knife presses this cut off portion against the band 82 which is coated with adhesive on its upper side, while it passes over the guide piece 84 consisting of buna or the like material. Simultaneously the stamp 57 impresses the control number of the ticket salesman in the space 5 of the cutting 2. The fork 41 upon moving downwards takes the link 59 along which moves the rods 61 and 64 downwardly so as to rock the lever 67 and thereby also move the rod 69 downwardly. During this movement of the rod 69 the roller 71 moves away from the cam 74 and the pawl 70 can engage the teeth of the wheel 73 and turn the wheel until the roller 71 abuts against the stop 75, whereby the pawl 70 is brought out of engagement with the teeth of the wheel 73. At each working stroke of the driving pawl 70, the wheel 73 turns through substantially one tooth. The exact adjustment of the movement of rotation is obtained by cooperation of the wheel 76 with the teeth of the wheel 73. The movement of rotation of the wheel 73 is transmitted to the cylinder 81 and the band 82 is advanced through the width of one cutting 2 of a ticket, so that the successively severed cuttings are arranged one after the other on the band 82 as shown in Fig. 3.

In this manner a control of the issued tickets is made possible without any supplementary work, since at the end of his daily period of service, the ticket salesman can remove the band 82 wound up on the roller 87 with the ticket cuttings 2 attached thereon. Naturally, after the issue of tickets is finished, the band 82 must be advanced so far that all cuttings arrive on the roller 87, then the band can be severed between the roller 87 and the pressure roller 84', and the portion of the band on the roller 87 can be removed, while the end of the remaining supply of band material will be attached to the roller 87, so that the apparatus is again ready to operate for the succeeding ticket salesman. In order to check the cash received for the issued tickets it is now only necessary to add the amounts appearing on the control band 82 at the right hand side of the line of separation 9, by taking care to add only one half of the amount appearing on the shorter cuttings 8. Accordingly, the received money can be carefully checked at any time without much trouble, while succeeding ticket salesmen can operate on the same apparatus without any interruption.

The described apparatus has the following advantages:

Owing to the fact that each ticket salesman after his daily service period can immediately check the issued tickets and the received money, any mistakes or errors made in exchanging cash with customers can be at once located.

The control strips constitute an accurate document for settling the relations with other railway companies for issued tickets which are valid on different roads. Such tickets which concern routes requiring to travel with different roads can be marked accordingly on the data receiving portion 2.

The control strip can be used for various statistical purposes, and since the band 82 is transparent, data can also be printed on the rear face of the portions 2 of the tickets.

The apparatus enables the performance of the daily checking of the sale of tickets at any time

convenient to the fare collector; it does not require more space than the date impression devices which are now in use.

It is possible to provide the casing 15 with a lock, so that removal of the control strip with the attached ticket cuttings can only be made by a special control employee.

The operation of the apparatus is simple and its price as well as the cost of maintenance are low. The sale of tickets can be performed as quickly as is the case now, and the control of the issued tickets can be made by a second person without interfering with the continuance of the sale.

Instead of sticking the cuttings 2 on the band 82, they could be fixed thereto by tacks or stitches, or secured to each other without the intermediary of a band, or they could be collected in a container, and if desired the control operation could be performed by an automatic control machine.

While one illustrative embodiment of my improved ticket control apparatus has been shown and described, it is not my intention to limit the scope of the invention to that particular embodiment or otherwise than by the terms of the appended claims.

I claim:

1. In apparatus for controlling tickets being issued, a base, a housing pivotally mounted on said base to be tilted rearwardly by the operator, a pair of stamps slightly spaced apart one in rear of the other in said housing, said housing having a ticket insertion opening in its forward wall substantially in alignment with the stamps, a stamping device fixed in the housing adjacent the forward matrix to stamp a portion of a ticket when the housing is tilted rearwardly, a knife arm having a knife edge adjacent the space between the stamps, means for moving the knife arm against the ticket to sever a portion of the ticket when the housing is tilted rearwardly, a stamping device on said knife arm rearwardly of the knife adjacent the rear stamp for stamping the severed portion of the ticket as it is being severed, and an adhesive strip extending over the rear stamp and through the space between the stamps to the rear of the knife edge so as not to be cut thereby, said stamping device on the knife arm serving to press and secure the severed portions of the tickets on the adhesive strip at the same time as stamping said portions.

2. In apparatus for controlling tickets being issued, a base, a housing pivotally mounted on said base to be tilted rearwardly by the operator, a pair of stamps slightly spaced apart one in rear of the other in said housing, said housing having a ticket insertion opening in its forward wall substantially in alignment with the stamps, pressure means coacting with one of said stamps to stamp a portion of a ticket when the housing is tilted rearwardly, a knife arm having a knife edge extending between said two stamps, means for moving the knife arm against the ticket to sever a portion of the ticket when the housing is tilted rearwardly, said knife arm carrying the other of said stamps rearwardly of said knife edge for stamping the severed portion of the ticket as it is being severed, and an adhesive strip passing beneath said stamp and rearwardly of the knife edge so as not to be cut thereby, said stamp on the knife arm serving to press and secure the severed portion of the ticket on the adhesive strip at the same time as stamping said portion.

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