J. E. ALLISON.

REGISTERING DEVICE FOR TURNSTILES.

APPLICATION FILED AUG. 28, 1908.

954,846. Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

Fig. 1

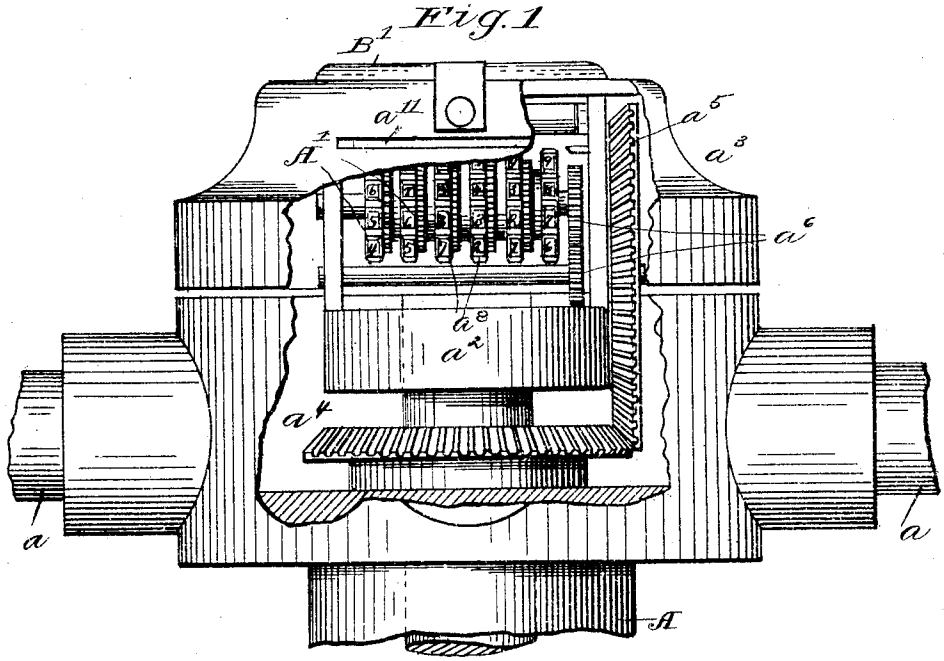
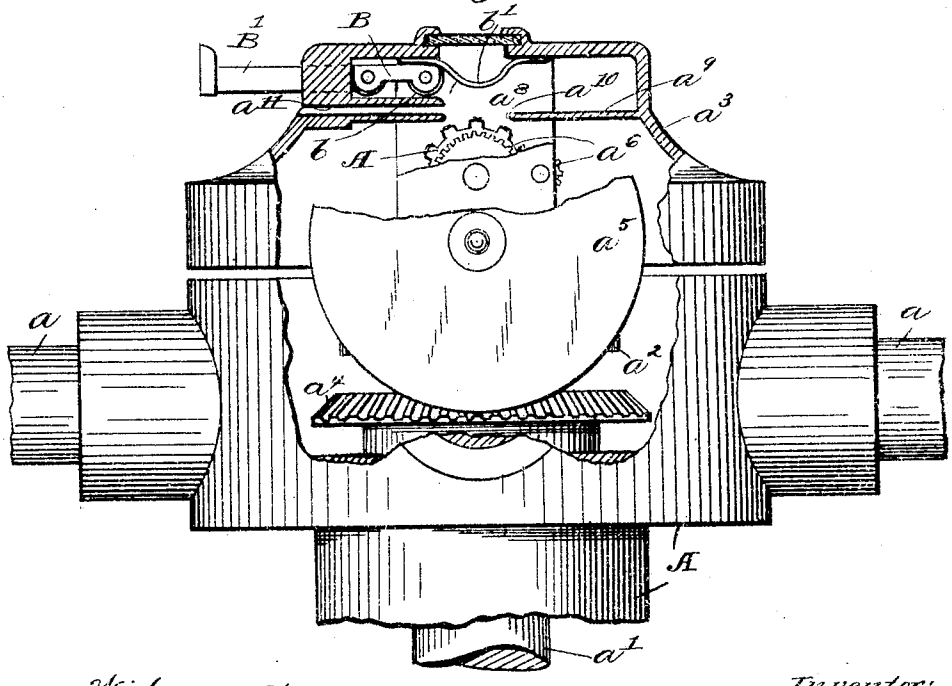


Fig. 2



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2 SHEETS—SHEET 2.

Fig. 3

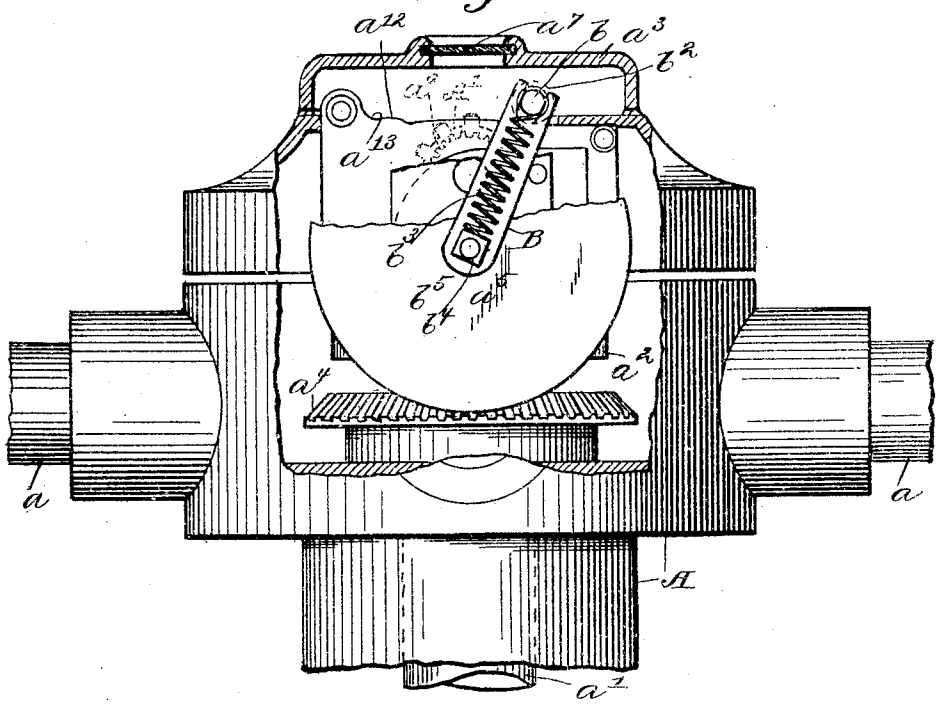
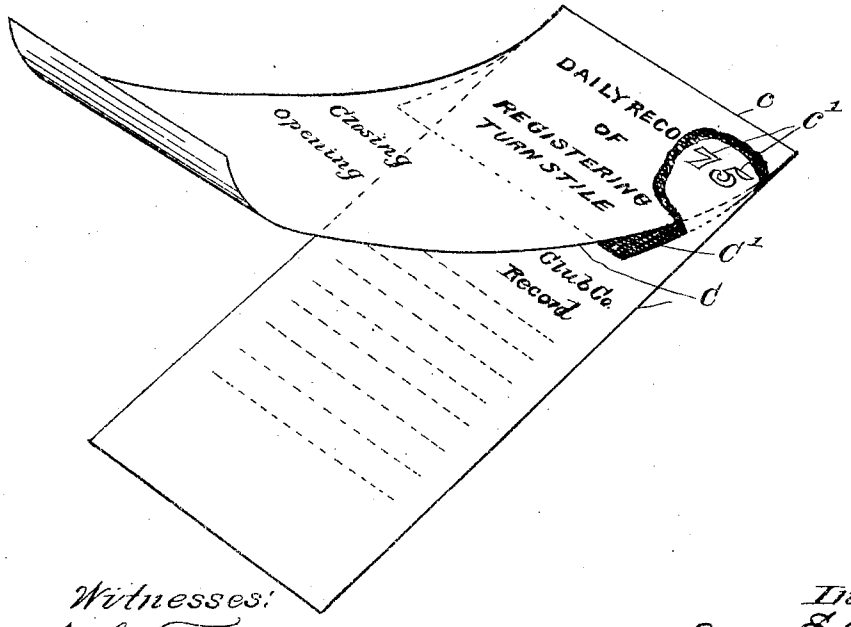


Fig. 4



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UNITED STATES PATENT OFFICE.

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REGISTERING DEVICE FOR TURNSTILES.

954,846. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed August 28, 1908. Serial No. 450,642.

To all whom it may concern:

Be it known that I, JAMES E. ALLISON, citizen of the United States, resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Registering Devices for Turnstiles, of which the following is a specification, the principle of the invention being herein explained, and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The object of my invention is to provide a simply constructed and efficient registering mechanism for use in turnstiles and analogous devices wherein the register can be easily read, and from which a printed, or embossed, statement of such reading can also be taken on a card, paper or the like provided for this purpose. It will, of course, be understood that this latter feature may be employed independently, if desired, of the visual means for reading the register.

To the accomplishment of the above and related objects said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings: Figure 1 is an elevational view of the upper central part of a turnstile, with a portion of the walls of the cap and the revolving sleeve cut away to show the interior mechanism; Fig. 2 is a similar view, but at right angles from the view in Fig. 1; Fig. 3 is a view corresponding to that of Fig. 2, but showing a modification in the construction of the printing mechanism; Fig. 4 is a perspective view, with a portion broken away, of the record sheet which I have devised for use in my registering turn-stile.

Referring first of all to Figs. 1 and 2, A will be seen to designate the sleeve or hub of the turnstile, which carries arms a and revolves on a shaft or spindle a'. The latter is stationary in the pedestal or base of the structure (not shown) and has its top end squared to receive the casting a^2 whereon is supported the cap a^3. Such cap bears the registering and printing mechanism which are thus held stationary with respect to the base while the sleeve and arms of the turnstile revolve thereabout. A beveled gear a^4, attached to the hub or sleeve A, revolves with it around the spindle a' and serves to drive a corresponding gear a^5 supported by casting a^2, from which movement is communicated through suitable intermediate pinions a^6 to the wheels A′ of the registering device. The latter are inter-connected by suitable intermittent gearing such as is ordinarily employed in connection with apparatus such as that in hand. The details of such gear, as also of the other features for limiting the motion of the turnstile and preventing its being turned backward are not here shown, forming no part of the present invention.

To permit direct reading of the register a transverse opening a^7 is provided across the top of the cap in which is suitably held a glass plate, the opening in question being located directly over the row of numbers a^8 on register wheels A′ which it is intended should constitute the record of the register. These numbers in the present instance are shown as being embossed, see Fig. 2, and the faces of the wheels therebetween are cut away so as to still further raise said numbers from said wheels. Directly below this aperture a^7 is provided a transverse partition a^9 having a corresponding aperture a^{10} whereby all but the desired row of numbers on the register wheels is concealed from view. Movable across partition a^9 and the intervening aperture is a carriage B provided with a steel roller b that, as the carriage is moved back and forth, is depressed downwardly upon the register wheels by springs b', at either end thereof, only one such spring appearing in Fig. 2. This carriage is pivotally connected to one end of a plunger B′, the other end of which lies without the cap and is adapted to be seized by the hand in order thus to reciprocate the carriage.

In the portion of the partition a^9 located beneath the carriage B, when in its normal inoperative position, there is provided a narrow slot a^{11} forming a guideway through which the sheet, upon which the record is to be taken, may be inserted. When thus inserted the inner end of such sheet will lie directly over the aperture a^{10} in the par-

tition and above the row of numbers on the register wheel alined therebelow. The means for thus taking an imprint from the alined row of members preferably comprise a folded record sheet C, Fig. 4, and a sheet C′ of carbon paper, shorter than the folded portions of such record sheet and secured between the same along the line *c* of fold, see Fig. 4. It is the folded end, accordingly, that is thus inserted into the register casing and when the plunger B′ for actuating the carriage is moved across the partition the springs *b′* will press the sheet against the wheels, whereby an imprint *c′* of the numbers upon said wheels is received as will be readily understood.

In the modified form of register construction illustrated in Fig. 3, I substitute for the transversely movable carriage B, two oscillatory arms B^2 having as a pivotal axis the same axis as that of the bevel gear. The outer end b^2 of each arm is slotted to receive and movably hold the corresponding end of the roller *b*, such ends being drawn inwardly by coil springs b^3 as shown. To oscillate the arms and thereby the roller, the former are fixedly secured to shaft b^4 and such shaft provided with a squared end b^5 adapted to receive a key or like device. Upon such oscillation, the roller presses the sheet into contact with the exposed portion of the register wheels, as in the case of the form of mechanism last described so as to cause an imprint of the numbers to be taken thereon. Ways a^{12}, constituting a part of the frame that supports the register wheels, are so disposed as to permit the rollers thus to contact with the alined row of type constituting the record, but to hold the same out of contact with the adjacent rows of numbers. Such ways further have a terminally depressed portion a^{13} wherein the roll normally rests. The mode of taking an imprint with this modified construction will obviously be the same as in the case of the other form of device.

The simple construction for securing a printed statement of the state of the register, as above described, will obviously prove of great convenience in the use of turnstiles and like devices, inasmuch as mistakes frequently occur as at ball parks and similar places, causing discrepancies in accounts and consequent disputes. It also renders it impossible for dishonesty to be successfully carried out by collusion between the person taking off the statement and the person responsible for receipts, as not infrequently occurs where the records require to be taken in the old fashioned way.

Other means of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any one of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In a device of the character described, the combination of a turnstile, a casing, a registering device within said casing comprising a series of register wheels adapted to be operated by said turnstile, said register wheels bearing numbers on their peripheries and said casing being provided with an aperture transversely of said wheels permitting the row of numbers alined therewith to be read, guide means for directing a record sheet into contact with such row of numbers, a roller disposed parallel with the axis of said wheels and mounted so as to be movable across said sheet when thus positioned, and tension means adapted to press said roller against said wheels as it is thus moved.

2. In a device of the character described, the combination of a turnstile, a casing, a registering device within said casing comprising a series of register wheels adapted to be operated by said turnstile, said register wheels bearing numbers on their peripheries and said casing being provided with an aperture transversely of said wheels permitting the row of numbers alined therewith to be read, guide means for directing a record sheet into contact with such row of numbers, an oscillatorily mounted roller disposed parallel with the axis of said wheels and movable across said sheet when thus positioned, and springs connected with said roller to press the same against said wheels as it is oscillated.

3. In a device of the character described, the combination of a turnstile, a registering device comprising a series of register wheels adapted to be operated by said turnstile, said register wheels bearing numbers on their peripheries, guide means for directing a record sheet into contact with a line of numbers on said wheels, a member movable across said sheet when thus positioned, tension means adapted to press said member and thereby said sheet against said wheels, and ways holding said member off said wheels save for one alined row of numbers thereon.

4. In a device of the character described, the combination of a turnstile, a registering device comprising a series of register wheels adapted to be operated by said turnstile, said register wheels bearing numbers on their peripheries, guide means for directing a record sheet into contact with a line of numbers on said wheels, pivotal arms, one on each side of said wheels, oscillatory about an axis parallel with that of said wheels, a roller movably held in the outer ends of said arms, and springs adapted to press said roller against said wheels as said arms are oscillated.

5. In a device of the character described, the combination of a turnstile, a registering device comprising a series of register wheels adapted to be operated by said turnstile, said register wheels bearing numbers on their peripheries, guide means for directing a record sheet into contact with a line of numbers on said wheels, pivotal arms, one on each side of said wheels, oscillatory about an axis parallel with that of said wheels, a roller movably held in the outer ends of said arms, springs adapted to press said roller against said wheels as said arms are oscillated, and ways holding said roller off said wheels save for one alined row of numbers thereon.

Signed by me this 31 day of July, 1908.

JAMES E. ALLISON.

Attested by—
LEWIS PERRY,
R. E. PERRY.