

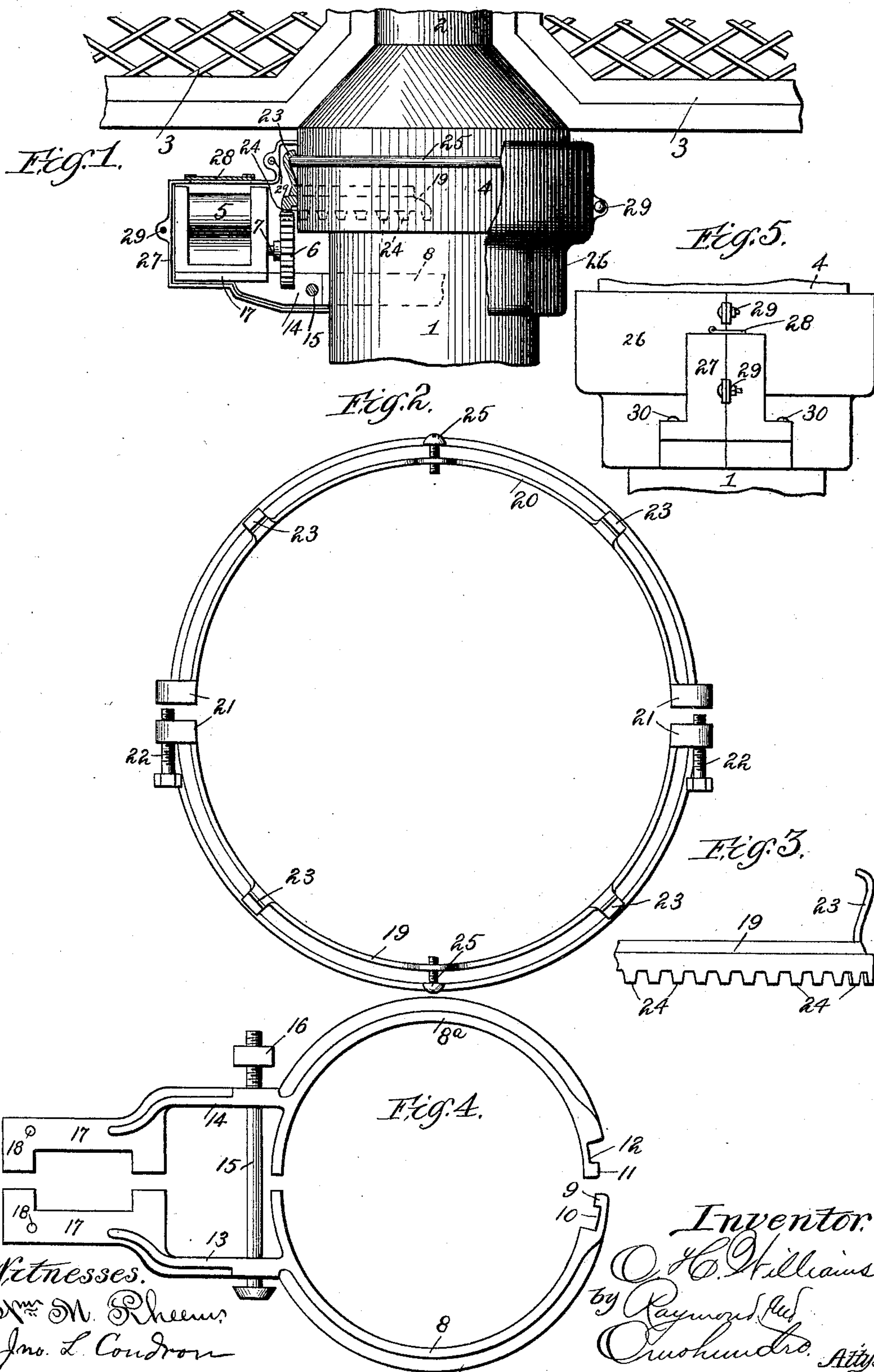
(No Model.)

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REGISTER ACTUATING ATTACHMENT FOR TURNSTILES.

No. 529,007.

Patented Nov. 13, 1894.



UNITED STATES PATENT OFFICE.

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REGISTER-ACTUATING ATTACHMENT FOR TURNSTILES.

SPECIFICATION forming part of Letters Patent No. 529,007, dated November 13, 1894.

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To all whom it may concern:

Be it known that I, ORION H. WILLIAMS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Register-Actuating Attachments for Turnstiles, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to attachments or appliances for transmitting the movements of a movable gate, such as a turnstile or any kind of movable gate, to a stationary registering mechanism, so that successive partial or complete movements of the movable part shall be accurately indicated by a register.

Among the primary objects of my invention are included that of producing attachments which shall be capable of application to a great variety of gates and similar structures and also to a great variety of register mechanisms and which shall require no material structural alterations in such gates or registers; furthermore, to produce attachments which shall be simple, strong and durable in construction, reliable in operation, not liable to derangement, and proof against being mischievously tampered with.

The above-mentioned objects, and also such others as may appear from the ensuing description, are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a view, in side elevation, of the adjacent stationary and movable parts of a turnstile, and registering-actuating attachments embodying my invention applied thereto; the attachments being shown as partly in side elevation, partly in transverse vertical section, and partly broken away. Fig. 2, is an enlarged plan view of the gear-rack detached from the gate-hub, and having its two sections slightly separated from each other. Fig. 3 is a side elevation of a fragment of the gear-rack also detached from the gate-hub. Fig. 4 is an enlarged under side or inverted plan view (on a smaller scale, however, than that of Fig. 2) of the supporting-collar for the registering-mechanism, detached from the gate-post; the two sections of the collar

being slightly separated from each other. Fig. 5 is an outer end elevation of the casing for the register and attachments.

As above stated, the attachments embodying my invention are applicable to a great variety of gates used for permitting entrance into places of exhibition, amusement, &c., and also to a great variety of registering mechanisms for such gates. Therefore, I have shown, merely for purposes of illustration, certain parts of a turnstile; such parts being a vertical stationary post or standard 1 of cylindrical form, and a vertical hub 2 carrying a plurality of wings, arms, or bars 3 and having a bell-shaped lower end portion 4 which surrounds the upper end of the post or standard 1.

The hub 2 is supported in any suitable manner upon the post 1 so as to turn axially thereon, while the post or standard 1 is always stationary; the bell-shaped lower end-portion 4 turning, with the hub 2, around the upper end of the post 1.

I have also shown, at 5, a registering-mechanism, which may be of any preferred type capable of indicating the total number of complete or partial rotations of the hub 2; a gear-pinion 6 being shown as mounted upon the outer end of the rotatable actuating-shaft 7 of said register. The actuating-shaft 7 is shown as projecting horizontally outward from one end of the register-casing and the gear-pinion 6 is shown as mounted upon the shaft that the pinion and shaft shall always rotate together.

As will be apparent from the ensuing description, the actuating-shaft may occupy any position relative to the indicating mechanism, as a whole, according to the structural type of indicating-mechanism and of the gate to which the attachments may in any given instance be applied.

The registering device 5 is supported upon the post or standard 1 by a collar 8 which closely embraces the upper portion of the post, at a point below the lower end of the bell-shaped portion 4 of the hub 2. This collar is shown as extending horizontally around the post 1 and as composed of two sections 8 and 8^a, each of which is of semicircular form. At one end, the collar-section 8 is shown as formed at its inner side with an inwardly ex-

tending lug 9 and also with a recess 10 located just back of said lug, and at its corresponding end, the companion-section 8^a is shown as formed at its outer side with an outwardly extending lug 11 and also with a recess 12 located just back of the lug 11. Thus when the two sections of the collar are in proper relative position the lug 9 of one section fits into the recess 12 of the companion section, and the recess 10 of the first section receives the lug 11 of the companion section; a strong but detachable connecting-joint being thus formed for the two sections or members of the collar.

At a point precisely opposite from the detachable joint just described, the collar is also divided and from the adjacent end of the section 8 extends horizontally outward a bracket-arm 13 which is either formed integrally with the section 8, or suitably secured thereto as preferred. A bracket-arm 14, in all respects similar to the bracket-arm 13, projects horizontally outward from the collar-section 8^a; and, when the two collar-sections 8 and 8^a are in proper relative position, a connecting-bolt 15 can be inserted transversely through the bracket-arms, so as to draw the two collar-sections firmly against the post or standard 1; a retaining-nut 16 being screwed upon the bolt 15 to insure and maintain this result.

I wish it to be distinctly understood that I do not propose to confine myself exclusively either to the precise form of the collar or of the collar-sections, or to the precise form of detachable connections for said sections. The sections 8 and 8^a are shown as semicircular simply to accord with a cylindrical post 1, but where a different form of post or standard is present, the sections of the collar will be accordingly varied in form. Any suitable form of detachable connections may be substituted for the lugs 9 and 11 and recesses 10 and 12, and also for the bolt 15 and nut 16, and the collar may be otherwise divided than into two sections, if circumstances so require.

In any event, the bracket-arm 13 and 14, or parts which would be the equivalents thereof, support a registering-mechanism, such for example, as is indicated at 5, and the outer ends 17 of the bracket-arms 13 and 14 are shown as enlarged and flattened to afford stable support for the register; suitable rivets being inserted through holes 18, to retain the register in position upon the brackets.

The gear-pinion 6 of the register is rotated, as the hub 2 of the gate rotates, by a gear-rack 19 carried by the gate-hub and moving with said hub. As shown, this gear-rack is composed of two semi-circular sections 19 and 20 and each of said sections is provided at each end with a lug 21 through which is inserted a coupling-bolt 22. Each section is also formed, provided in any suitable manner, with two or any desired number of upwardly and inwardly extending supporting-arms 23, for a purpose to be presently explained. The lower edge or margin of the gear-rack 19 is formed,

or provided in any suitable manner, with a series of rack-teeth 24.

When in proper operative position, the two sections 19 and 20 of the gear-rack surround the lower end-portion of the hub 2, and are supported in such position by the engagement of the upper ends of the supporting-arms 23 with the upper side of an external shoulder 25 which is carried by the lower end-portion 4 of the hub 2. The two gear-rack sections are held together by the connecting-bolts 22 one of which passes through each pair of lugs 21. It is to be understood that the gear-rack may be of such dimensions that the connecting-bolts 22 shall firmly press or draw the gear-rack sections against the outer surface of the lower end of the hub 2. In such event, the supporting-arms 23 might be dispensed with if so preferred. When, however, the gear-rack is considerably larger than the lower end of the hub, the connecting-bolts 22 cannot be depended upon to hold the body of the rack 19, from movement independently of the hub, and the supporting-arms 23 must be employed. In this latter instance, one or more set-screws 25 may be threaded transversely through one or both of the rack-sections 19 and 20, so as to impinge against the outer surface of the lower end of the hub 2, and thus prevent the rack 19 from moving independently of the hub.

I desire it to be distinctly understood that I do not propose to confine myself exclusively either to the precise form of the gear-rack or of the gear-rack sections, or to the precise form of connections, shown and described.

The gear-rack may, if desired, be formed integrally with the gate-hub, or with a movable part of the gate, and the relative arrangement of parts may be such that the rack-teeth may be formed upon the upper or upon the outer part of the rack-body. Furthermore, the rack-sections 19 and 20 are shown as of semicircular form, but this is simply so in order that the rack as a whole may accord with the cylindrical shape of the end-portion 4 of the gate-hub. In instances where the movable portion of the gate is of other than cylindrical form, the rack as a whole may be of any other than circular form, the gear section however, generally remaining circular and it may, in any event, be composed of two similar or unequal sections, or of as many sections as may be desired.

Still further, I desire to state here that the brackets 13 and 14, for supporting the register, may be formed integrally with or secured directly to a stationary part of the gate, or that the collar 8 may be formed integrally with a stationary part of the gate or be secured thereto in any desired manner. Obviously also the gear-rack could be made the stationary member of the attachments, while the register with its gear-wheel could be carried by a movable part thereof, without departing from the essential spirit of my invention.

With the structure arranged as illustrated in the drawings, I have also shown an inclosing casing or housing 26, which surrounds the adjacent portions of the stationary and movable parts of the gate and which is also formed with an extension 27 surrounding the register 5 and its brackets 13 and 14. A suitable door or lid 28 is shown as provided for the upper part of the extension 27, so as to permit inspection of the dials of the register, when necessary, and the casing is divided vertically and bolted together as at 29. This casing may be of suitable sheet metal, or of boiler-iron, or of any material which will effectively protect the parts against injury by weather, or other causes, and also against being tampered with, and the casing may be of any suitable general form and ornamented or plain as preferred. As shown, the casing is retained in position by bolts or rivets 30, which are passed through the sides of the extension 27 and also through the brackets 13 and 14, but said casing may be secured in position in any desired manner.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. An actuating-mechanism for the registers of turn stiles, &c., comprising a registering-mechanism carried by a stationary portion of the gate, and having an actuating-shaft provided with a gear-wheel, and a gear-rack secured to and entirely surrounding a movable part of the gate and engaging the gear-wheel, substantially as set forth.

2. An actuating-mechanism for the registers of turn stiles, &c., comprising a registering-mechanism carried by a stationary portion of the gate, and a sectional supporting collar also secured to said stationary portion and provided with bracket-arms extending at right angles to said portion for sustaining the register, substantially as set forth.

3. An actuating-mechanism for the registers of turn stiles, &c., comprising a registering-mechanism, a sectional collar for supporting said mechanism having at one end of each section a lug and a recess to engage a corresponding lug and recess at the adjacent end of another section, and at its opposite end a bracket-arm terminating in a flattened end-portion, and a connecting-bolt extending through said bracket-arms; said bracket-arms

being designed to sustain a register, and the collar being designed to securely embrace a stationary part of the gate structure, substantially as set forth.

4. An actuating-mechanism for the registers of turn stiles, &c., comprising a sectional gear-rack secured to a movable part of the gate structure having its sections detachably connected together, and entirely surrounding the same and also provided with gear-teeth for engaging the gear-wheel of a register, and also designed to embrace a part of a gate-structure, substantially as set forth.

5. An actuating-mechanism for the registers of turn stiles, &c., comprising a sectional gear-rack secured to a movable part of the gate-structure having its sections detachably connected together, and entirely surrounding the same and also provided with gear-teeth for engaging the gear-wheel of the register, and further provided with supporting arms for engaging a protuberance upon the lower part of said movable gate-structure, substantially as described.

6. An actuating-mechanism for the registers of turn stiles, &c., comprising a sectional gear-rack secured to a movable part of the gate structure having its sections detachably connected together and entirely surrounding the same, and provided with gear-teeth for engaging the gear-wheel of the register, and also provided with a set screw for impinging against said movable portion of the gate-structure, so as to prevent independent movement of the rack upon said portion, substantially as set forth.

7. An actuating-mechanism for the registers of turn stiles, &c., comprising a register having its actuating-shaft provided with a gear-wheel, and supported by a stationary portion of the gate-structure, and a gear-rack carried by and entirely surrounding a movable portion of the gate-structure and engaging the gear-wheel, and a casing provided with an extension, said casing and extension surrounding the register and its attachments and also the gear-rack, substantially as set forth.

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Witnesses:

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