

Oct. 7, 1930.

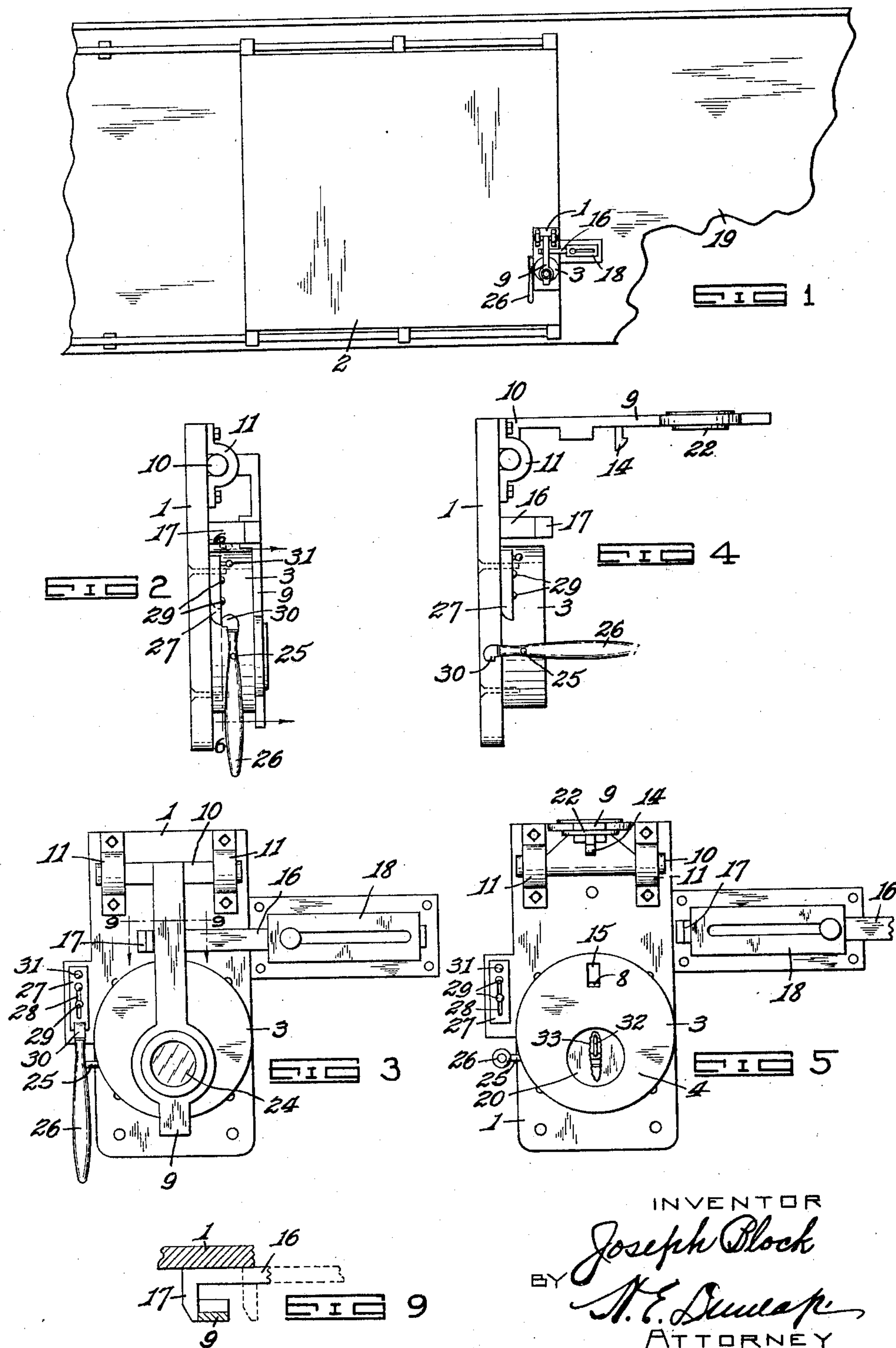
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CAR DOOR FASTENER AND SEAL

Filed Feb. 27, 1950

2 Sheets-Sheet 1



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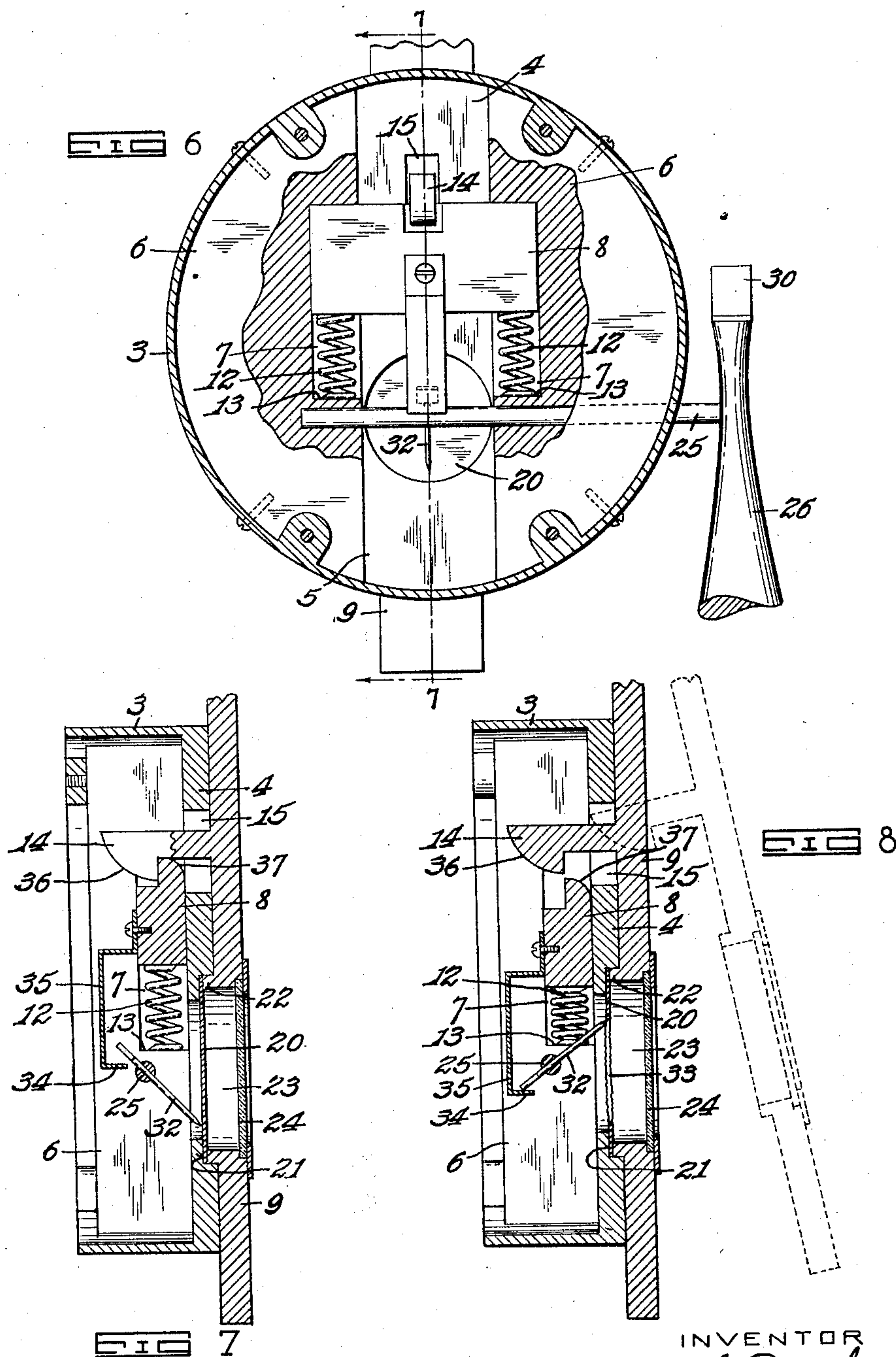
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2 Sheets-Sheet 2



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CAR-DOOR FASTENER AND SEAL

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This invention relates broadly to car door fasteners, and more particularly to a combined fastener and seal for the doors of railway cars, the seal being of that type designed to indicate whether or not the door has been opened or tampered with following its application to the door.

The primary object of the invention is to provide a novel and efficient car door fastener embodying a seal of the character mentioned which shall at all times truly indicate to an inspector or others the condition of the car to which it is applied; that is to say, plainly indicate that the door has been, or has not been, tampered with, as the case may be.

A further object is to provide a car-door fastener embodying a plate or disk which, in the act of unfastening to permit opening of the door, becomes mutilated or deformed to the extent that it clearly presents visual indication of the fact.

With these and other objects in view, the invention resides in the features of construction, arrangement of parts and combinations of elements which will hereinafter be fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a car illustrating my invention applied thereto;

Figure 2 is an enlarged elevation of the invention detached from the car door, parts being shown in fastening position;

Figure 3 is a front elevation of the same;

Figure 4 is a view similar to Fig. 2, showing said parts occupying non-fastening position;

Figure 5 is a front elevation of the same;

Figure 6 is an enlarged section on line 6—6, Fig. 2, with parts shown broken away to illustrate features of the mechanism;

Figure 7 is a section on line 7—7, Fig. 6, showing the latch members occupying their closed, or door-fastening, positions;

Figure 8 is a similar view showing said members shifted to door-releasing positions; and—

Figure 9 is a detail section on line 9—9, Fig. 3.

Referring to said drawings, 1 designates a

base plate adapted to be rigidly mounted upon the outer face of a car door 2 adjacent to the forward lateral edge of the latter. Rigidly mounted on said base 1 is a casing 3, shown herein as cylindrical in form, having a fixed outer face portion 4. Secured within opposite sides of said casing so as to form therebetween a vertically extending open space 5 are segment-like blocks 6 which have formed in the confronting faces thereof recesses 7 in the upper portions of which are vertically slidable the opposite ends of a crossbar 8. Said crossbar constitutes a vertically shiftable member of a latch by means of which an arm 9 is normally held in seated overlying relation to the face 4 of the casing 3. Said arm has pivoted or hinge-like connection with the base 1 adjacent to the upper end of the latter, having its upper end rigidly carried by a cross-bar 10 having trunnion-like ends mounted for rotary movement in suitable bearings or mountings 11 carried by said base.

The vertically shiftable latch member, or bar, 8 rests upon the upper ends of a pair of compression springs 12 which have their lower ends supported by the upwardly facing shoulders 13 formed on the blocks 6 by the provision of the recesses 7 hereinbefore referred to. A companion latch member 14 of hook form is rigidly carried by, or formed integral with, the arm 9, being directed inwardly from the rear face of said arm, as shown. In the normal lowered position of said arm, said latch member 14 projects through an opening 15 provided therefor in the face 4 of the casing and has the hook end thereof engaged with the upper edge of the bar 8, as is clearly shown in Figs. 6 and 7.

A function of the hinged arm 9 is to cooperate with a laterally slidable bar 16 to secure the car door 2 against movement from its closed position. Said bar 16, which has an outwardly directed hook-like front end 17, is designed to underlie said arm 9 at a point above the casing 3 when said arm occupies its seated operative position and to be retained by said arm against shifting movement from its said underlying position, the hook-end 17 thereof being engaged with the said arm at the side opposite that toward which said bar

is shiftable in withdrawing movement thereof. Said bar is mounted for longitudinal sliding movements in a suitable keeper plate 18 which is rigidly mounted on the side of the car body 19 adjacent to the door 2, as shown.

A second function of said arm 6 is normally to retain in position a destructible or deformable member 20 which is insertable and removable with respect to a countersunk seat 21 provided therefor in the face 4 of the casing 3. Said deformable member, preferably provided in the form of a heavy paper or cardboard disk, is held firmly upon its seat 21 by a rearwardly directed boss 22 formed on the rear face of said arm 9 in encircling relation to a circular sight opening 23 provided in the latter. A transparent glass face or covering 24 for said opening 23 is preferably provided, as shown, for preventing access to the disk through said opening.

Journalled for rotary movements in the opposite blocks 6 and crossing the intermediate open space 5 is a shaft 25 which has one end thereof projecting outwardly through the casing wall. Fixed on said projecting end of said shaft at a right angle thereto is an operating lever 26 which is normally maintained inoperative for rotating the shaft by a movement-preventing plate 27 which is mounted upon an adjacent portion of the base 1. Said plate 27, herein shown as provided with a vertical slot 28 through which project the headed ends of bolts or screws 29 fixed in the base 1, is vertically shiftable to and from a position wherein its lower edge portion underlies the upper end, or nose portion, 30 of the operating lever 26, as shown in Figs. 2 and 3. A knob or other suitable projecting member 31 carried by said shiftable plate 27 provides means whereby the latter may be manually grasped for effecting the required shifting movements thereof.

Directed radially through and fixed in the shaft 25 midway between the blocks 6 is a pin 32 which, in rotary movements of said shaft effected by raising and lowering the operating lever 26, is designed to have its pointed end penetrate or puncture and to effect mutilation of the disk 20, a vertically disposed incision 33 of more or less irregular or ragged form, and, consequently, of readily noticeable appearance, being produced in said disk by said pin as rotation of the latter is continued following the puncturing of said disk.

The opposite end of the pin 32 projects in a rearward direction from the shaft 25 and is adapted, as said shaft is rotated by elevating of the lever 26, as aforesaid, to engage and carry downward therewith a forwardly directed lug 34 formed on the lower end of a metal tongue 35 which is fixed to and depends from the rear face of the latch bar 8.

This movement, through the intermediacy of said tongue 35, serves to retract said latch bar

in a downward direction and against the tension of its supporting springs 12, effecting disengagement of said bar from its companion member 14. With said lever 26 held in its elevated position, the arm 9 is released and may freely be swung outwardly and upwardly, or toward the elevated position shown in Figs. 4 and 5. In such position of said arm, not only may the door securing bar 16 be freely shifted to a position permitting opening of the car door, but also free access is afforded for the removal of the mutilated disk and for the introduction of a new disk, it being understood that the operating lever is dropped to its normal position prior to the insertion of the new disk.

To render futile attempts of persons to introduce substitute or duplicate disks for genuine disks which have been mutilated, the genuine disks may have printed thereon data or information (not herein shown) which is not readily accessible to, or not readily applicable by, unauthorized persons.

In practice, with the arm 9 occupying elevated position, a disk 20 is introduced in proper position upon the seat 21, and the door securing bar 16 is shifted to its extended position wherein it overlies the base 1, whereupon said arm is lowered and forced inward to its seated position with respect to the casing 3. In approaching said position the curved nose portion 36 of the hook end of the latch member 14 carried by said arm 9 engages and rides over a corresponding nose curvature 37 formed on the upper edge portion of the vertically movable latch member, or bar, 8 and acts to thrust the latter downward against the tension of the springs 12. When said hook-end of the member 14 has passed over the bar 8, said springs 12 return said bar to its normal elevated position wherein it interlocks with said member 14, as shown in Figs. 6 and 7. In its said seated position, the arm 9 not only retains the disk 20 in place, but also secures the door-securing bar against shifting movement to the position in which the car door is released. Finally, the plate 27 is shifted to its lowered position wherein it partially underlies the nose of the operating lever 26 for preventing elevation of the latter. In this connection it is to be understood that the plate 27 may be omitted without in any way affecting the function of any other parts of the structure, its purpose being merely to deter tampering with said lever by rendering the elevation of the latter to disk-puncturing position slightly more difficult, in that the use of both hands and consequent stopping alongside the car is required to effect elevation.

To effect opening of the car, the plate 27, when such is employed, must be elevated to permit initiation of elevating movement of the operating lever 26. Such movement of

said lever actuates rotary traveling movement of the shaft-carried pin 32 wherein the pointed end of the latter is carried into puncturing and incision-producing relation to the rigidly held disk 20, thus to present positive visual proof of the fact of said lever movement when the disk is inspected through the sight opening 23. Additionally, and at the same time, said lever movement causes the opposite end of said pin 32, acting through the intermediacy of the tongue 35, to retract the latch bar 8 from interlocking relation to the latch member 14, whereupon the arm 9 becomes released and may be swung to its elevated position, releasing the door-securing bar 16, which latter is then freely shiftable within its keeper 18 to its withdrawn position with respect to the door.

It will be noted that, whereas the casing and the therewith associated mechanism are herein shown, described and claimed as mounted on the car door, and the door-securing bar and its keeper are described and claimed as mounted on the car body, this arrangement may be reversed. Therefore, the appended claims are to be understood as applying to either of the two arrangements noted.

What is claimed is—

1. A combined car door fastener and seal comprising a shiftable bar for mounting on a car body, and mechanism carried by the car door for releasably holding said bar in door securing position, said mechanism including a pivoted arm adapted for movement into and out of holding relation to said bar when the latter occupies its securing position, interengageable means whereby said arm is normally held in its bar holding position, an operating lever whereby said means may be disengaged for releasing said arm, a deformable disk adapted to be retained in non-accessible visually exposed position by said arm when the latter occupies its bar holding position, manually operable means for disengaging the arm-holding means, and means actuated by arm releasing movement of said lever whereby said disk is caused to be deformed.

2. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a movable arm adapted to releasably secure said member against movement from its fastening position, interengageable means whereby said arm is secured in its securing relation to said member, manually operable means for disengaging said interengageable means for releasing said arm, a deformable element removably mounted in a visually exposed position wherein it is retained by said arm when the latter occupies securing relation

to said member, and means actuated by arm-releasing actuation of said manually operable means whereby said element is caused to be deformed.

3. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a movable arm adapted to releasably secure said member against movement from its fastening position, interengageable latch elements whereby said arm is secured against movement from its member-securing position, manually operable means for effecting relative disengagement of said latch elements whereby said arm is released, a removably mounted deformable element retained in visually exposed position by said arm when the latter occupies member-securing position, and means adapted to be actuated by arm-releasing actuation of said manually operable means to effect deformation of said deformable element.

4. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a movable arm adapted to releasably secure said member against movement from its fastening position, interengageable latch elements whereby said arm is secured against movement from its member-securing position, one of said elements being carried by said arm and the other being shiftable to and from interengaging relation therewith, manually operable means for effecting shifting of the shiftable element from said relation for releasing said arm, a removably mounted deformable element retained in visually exposed position by said arm when the latter occupies member-securing position, and means adapted to be actuated by arm-releasing actuation of said manually operable means whereby deformation of said deformable element is effected.

5. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a movable arm adapted to releasably secure said member against movement from its fastening position, interengageable latch elements whereby said arm is secured against movement from its member-securing position, one of said elements being carried by said arm and the other being shiftable to and from interengaging relation therewith, a rotary shaft, an operating lever fixed on said shaft, a member carried by said shaft and adapted upon forward rotation of the latter to effect shifting

of the shiftable latch element to its disengaged position for releasing said arm, a deformable element located in underlying relation to and retained in position by said arm when the latter occupies said member-securing position, said arm having therein an opening through which said deformable element is visible, and means adapted to be actuated by forward rotation of said shaft whereby deformation of said element is produced.

6. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a movable arm adapted to releasably secure said member against movement from its fastening position, interengageable latch elements whereby said arm is secured against movement from its member-securing position, one of said elements being carried by said arm and the other being shiftable to and from interengaging relation therewith, manually operable means for effecting shifting of the shiftable element from said relation for releasing said arm, a replaceable paper disk retained in visually exposed position by said arm when the latter occupies member-securing position, and means actuated by arm-releasing actuation of said manually operable means whereby said disk is mutilated.

7. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a movable arm adapted to releasably secure said member against movement from its fastening position, interengageable latch elements whereby said arm is secured against movement from its member-securing position, one of said elements being carried by said arm and the other being shiftable to and from interengaging relation therewith, manually operable means for effecting shifting of the shiftable element from said relation for releasing said arm, and visually exposed means whereby is indicated whether or not said manually operable means has been operated to effect release of said arm following initial interengagement of said latch elements.

8. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a movable arm adapted to releasably secure said member against movement from its fastening position, interengageable latch elements whereby said arm is secured against movement from its member-securing position, one of said elements being carried by said arm and the

other being shiftable to and from interengaging relation therewith, manually operable means for effecting shifting of the shiftable element from said relation for releasing said arm, and visually exposed means adapted to be mutilated by actuation of said manually operable means to a position disengaging said latch elements whereby the fact of such actuation is visually indicated.

9. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a casing having a closed face portion provided with an opening, an arm movable into and out of seated relation to said face of said casing, said arm in seated position being adapted to retain said member against movement from its fastening position, interengageable latch elements whereby said arm is secured in its said seated position, one of said elements being carried by said arm and being movable through the opening of said face portion, and the other of said elements being mounted interiorly of said casing, a deformable element removably mounted on said face portion of the casing and adapted to be retained in visually exposed position by said arm when the latter occupies its seated position, manually operable means for disengaging said latch elements for releasing said arm, and means associated with said manually operable means whereby actuation of the latter to arm-releasing position produces deformation of said deformable element.

10. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position, said mechanism including a casing having a closed face, an arm movable into and out of seated relation to said face and adapted in such seated relation to retain said member against movement from its fastening position, shiftable means located interiorly of said casing and engageable with said arm whereby the latter is held seated, said face portion having therein a seat, a deformable and renewable disk mounted on said seat and continuously exposed to view, said disk being retained on said seat by said arm when the latter occupies seated position, manually operable means for retracting said shiftable means to release said arm, and means actuated by arm-releasing movement of said manually operable means whereby deformation of said disk is produced.

11. A combined car door fastener and seal comprising a shiftable member carried by the car body, and mechanism carried by the car door adapted to cooperate with said member for fastening said door in closed position,

said mechanism including a casing having a closed face provided with a disk seat, a deformable and renewable disk mounted on said seat, an arm movable into and out of
5 overlying relation to said face whereby said member is secured against movement from its fastening position and also whereby said disk is maintained seated, said arm having therein an opening through which said disk is visible,
10 interengageable means whereby said arm is secured in its seated position, manually operable means for disengaging said arm-securing means, and means actuated by movement of said manually operable means to arm-re-
15 leasing position whereby said disk is mutilated.

In testimony whereof, I affix my signature.
JOSEPH BLOCK.

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