S. F. ESTELL.

CAR SEAL.

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955,638. Patented Apr. 19, 1910.

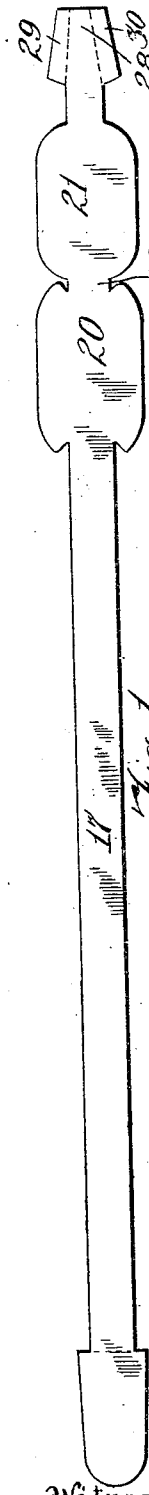

Fig. 1.

Fig. 2.

Fig. 3.

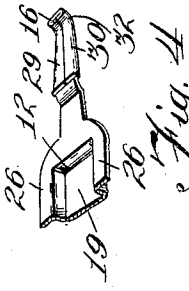

Fig. 4.

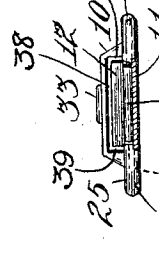

Fig. 7.

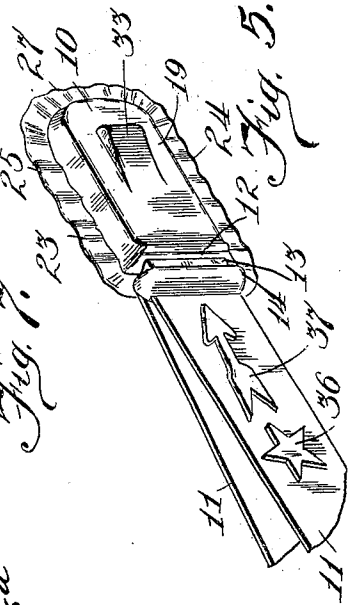

Fig. 5.

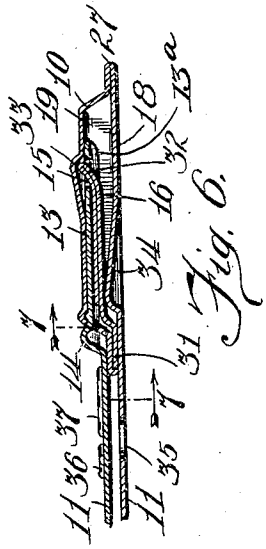

Fig. 6.

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UNITED STATES PATENT OFFICE.

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CAR-SEAL.

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To all whom it may concern:

Be it known that I, SAMUEL F. ESTELL, a citizen of the United States, and resident of Florence, county of Los Angeles, and State of California, have invented certain new and useful Improvements in Car-Seals, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to seals of the form particularly intended for securing the doors of railway freight cars in such a way that they cannot be opened without destruction of the seal.

More specifically, the invention relates to that type of car seals termed automatic seals, and comprising a chambered head and a flexible metallic shackle secured to the head at one of its ends, an opening for receiving the free end of the shackle being provided in the wall of the head, and locking means being inclosed within the head for automatically securing the free end of the shackle when inserted therein through the opening.

The object of the invention is to provide a car seal of the type described, which shall be effective in operation and of simple and inexpensive construction.

The invention is exemplified in the structure to be hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a metallic blank from which a seal embodying the features of the invention may be constructed; Figs. 2 and 3 are perspective views showing the blank as it appears at different stages in the construction of a seal therefrom; Fig. 4 is similar to a detail of Fig. 3 but illustrates a still further step in the construction of a seal; Fig. 5 shows in perspective a car seal embodying the features of the invention as constructed from the blank illustrated in Figs. 1, 2, 3 and 4, a part of the shackle of the seal being broken away; Fig. 6 is a detail longitudinal central section of the seal illustrated in Fig. 5, showing the parts of the seal in locked position, and some of the parts being shown in side elevation; and Fig. 7 is a cross-section of the same as viewed from the broken line 7—7 on Fig. 6 the tongue 13 being omitted in this figure.

The car seal illustrated in the drawings comprises a chambered head 10, and a flexible metallic shackle 11, which preferably takes the form of a strap. The walls of the chambered head 10 are provided with a slotted opening, generally designated by the numeral 12. As viewed in Fig. 7 of the drawings this slotted opening has a horizontal intermediate portion 38 and vertical end portions 39, 40, and is therefore of flattened U-shape. A tongue 13 having flanges 13^a whereby it is made of channel form adapted to enter the chamber of the head 10 through the U-shaped opening 12 is formed upon one of the ends of the shackle 11. Preferably a shoulder 14 is also formed on the shackle 11 at the base of the tongue 13, to serve as a cover for the opening 12 when the tongue is inserted therein.

Automatic locking means are provided for securing the tongue 13 within the chamber of the head 10. As shown, an aperture 15 is formed in the tongue 13, preferably adjacent its outer end, and a spring barb 16 is housed within the chamber of the head 10 to enter the aperture 15.

The walls of the head 10, the shackle 11, and tongue 13, and the spring barb 16 are most conveniently formed integral, as from a blank 17 of sheet metal. As shown, the walls of the head 10 comprise a base 18 and bowed cover 19, formed, respectively, from widened portions 20, 21, of the blank 17. In the formation of the head 10 of the seal, the base 18 and cover 19 are brought together by folding the blank 17 at the part 22 connecting the widened portions 20 and 21. For permanently closing the head the side edges of the base and cover are interfolded and crimped, as shown at 23, 24 (Figs. 5 and 7), this interfolding of the edges being preferably effected through the formation of flanges 25 extending along the side edges of the widened portion 20 of the blank 17, for receiving and being folded over upon the side edges 26 of the widened portion 21 of the blank, when these parts are brought together by folding the part 22. As shown at 27 (Fig. 5) the folded part 22 of the blank constituting the end of the head 10 of the seal, is preferably crimped to prevent access to the head by opening this fold. The U-shaped slotted opening 12 is preferably provided by aperturing the cover member 19 of the wall of the head adjacent the base of the barb 16, as most clearly shown in Fig. 4.

The shackle 11 of the seal is preferably

formed from that part of the blank 17 extending away from the widened portion 20, the tongue 13 being formed upon the outer free end of the shackle. The U-shaped slotted opening 12 provided in the wall of the chambered head 10, is preferably formed in the bowed or offset end of the cover 19, as most clearly shown in Fig. 3 of the drawings, this opening being thus located in that part of the head 10 adjacent the base of the shackle 11 when the parts of the blank forming the head are folded together, as shown in Figs. 5, 6 and 7. The spring barb 16 is most desirably formed from a part 28 of the blank 17, projecting from the end of the widened portion 21 employed for the formation of the bowed cover 19. For stiffening the barb 16 the blank 17 is preferably formed with lateral wings 29, 30, which are folded over the part 28, as is shown in Fig. 4, to increase the thickness of the barb. In the formation of the seal the barb 16 is inclosed within the chamber of the head 10 by folding it over upon the cover member 19, as shown at 31 in Fig. 6, this folded part of the barb thus providing a closure for the head at the point where the outer end of the cover member 19 meets the base member 18 at the base of the shackle 11.

To insure that the end of the barb 16 will enter the aperture 15 of the tongue 13 formed on the end of the shackle 11, when the tongue is inserted into the chamber of the head 10 through the opening 12, the end of the barb is upturned, as shown at 32 (Figs. 4 and 6). Preferably a socket 33 is formed in the cover member 19 of the head 10 for receiving the upturned end 32 of the barb 16, and the end of the barb is pressed into this socket by means of a lug 34 (Fig. 6) which bears upwardly on the barb adjacent its base and is formed by striking up a portion of the base member 18 of the head, as most clearly shown in Fig. 3 of the drawings.

When the tongue 13 is inserted into the chamber of the head through the opening 12, the barb 16 is yieldingly depressed by a cam engagement of the end of the tongue with the upwardly curved end 32 of the barb, thus permitting the end of the tongue to pass the end of the barb. When the aperture 15, provided in the tongue, comes into register with the end of the barb, the barb reenters the socket 33 through the aperture 15 by reason of its elasticity, and by reason of upward pressure of the lug 34 upon the barb adjacent its base, thus securely locking the free end of the shackle in the chamber of the head.

Preferably indicators are formed on the shackle 11 adjacent its ends to prevent the shackle from being cut and the severed ends again secured to the head 10 without detection. As shown, these indicators take the form of an aperture 35, provided in the inner end of the shackle, and a star and dart 36, 37, struck up in the material of the shackle adjacent its outer end.

Preferably the shoulder 14 is formed by striking up a rib in the material of the shackle 11 extending transversely across the face and sides of the chambered tongue 13 adjacent its base. The lug 34 struck up from the base 18 of the head 10, in addition to bearing upwardly on the barb 16, serves as a stop for preventing the insertion of a tool into the shoulder of the head between the folded part 31 (Fig. 6) of the barb and the base of the shackle 11.

I claim as my invention—

1. In a car seal, in combination, a chambered head having a U-shaped slotted opening in its wall, a shackle, one end of the shackle being provided with a channeled tongue, the cross-sectional configuration of the tongue being the shape of the U-shaped slotted opening in the wall of the head whereby the tongue fills the opening when inserted therein, and a lock for securing the tongue within the chamber of the head.

2. In a car seal, in combination, a chambered head having a U-shaped slotted opening in its wall, a shackle one end of the shackle being provided with a channeled tongue and with a shoulder at the base of the tongue, the cross-sectional configuration of the tongue being the shape of the U-shaped slotted opening in the wall of the head whereby the tongue fills the opening when inserted therein, and a lock for securing the tongue within the chamber of the head.

3. In a car seal, in combination, a chambered head having a U-shaped slotted opening in its wall, a shackle, one end of the shackle being provided with an apertured channeled tongue and with a shoulder at the base of the tongue, the cross-sectional configuration of the tongue being the shape of the U-shaped slotted opening in the wall of the head, whereby the tongue fills the opening when inserted therein, and a spring barb within the chamber of the head for entering the aperture of the tongue.

4. In a car seal, in combination, a chambered head having a U-shaped slotted opening in its wall, a shackle, one end of the shackle being provided with an apertured channeled tongue, the cross-sectional configuration of the tongue being the shape of the U-shaped slotted opening in the wall of the head whereby the tongue fills the opening when inserted therein, and a spring barb within the chamber of the head for entering the aperture of the tongue.

5. In a car seal, in combination, a chambered head comprising a base and a bulging cover having their side edges interfolded, a spring barb integral with the cover member

of the head folded into the chamber of the head from the end of the cover, an opening in the wall of the head above the base of the barb, a lug formed on the base member of the head bearing upwardly on the barb, and a shackle adapted to enter the chamber of the head through the opening and engage the barb.

6. A car seal formed from an integral blank of sheet metal comprising, in combination, a chambered head including a base member and a bulging cover member joined at one end, the cover member having a U-shaped slotted aperture constituting an entrance to the chamber of the head remote from that end of the head at which the base and cover members are joined, the side edges of the base and cover members being interfolded, a shackle joined to the base member of the head at that end adjacent the aperture of the cover, the outer free end of the shackle being apertured and being channeled, its cross-sectional configuration being the shape of the U-shaped slotted aperture of the cover whereby the shackle fills such aperture when inserted therein, and a spring barb joined to the cover member at that end adjacent the cover aperture and crossing the chamber of the head behind such aperture.

7. A car seal formed from an integral blank of sheet metal comprising, in combination, a chambered head including a base member and a bulging cover member joined at one end, the cover member having a U-shaped slotted aperture constituting an entrance to the chamber of the head remote from that end of the head at which the base and cover members are joined, the side edges of the base and cover members being interfolded, a shackle joined to the base member of the head at that end adjacent the aperture of the cover, an apertured channeled tongue formed on the free end of the shackle, the cross-sectional configuration of the tongue being the shape of the U-shaped slotted aperture of the cover whereby the tongue fills such aperture when inserted therein, a transverse rib formed on the shackle at the base of the tongue, and a spring barb joined to the cover member at that end adjacent the cover aperture and crossing the chamber of the head behind such aperture.

8. A car seal formed from an integral blank of sheet metal comprising, in combination, a chambered head including a base member and a bulging cover member joined at one end, the cover member having a socket at its top and a U-shaped slotted aperture constituting an entrance to the chamber of the head remote from that end of the head at which the base and cover members are joined, the side edges of the base and cover members being interfolded, a shackle joined to the base member of the head at that end adjacent the aperture of the cover, the outer free end of the shackle being apertured and being channeled, its cross-sectional configuration being the shape of the U-shaped slotted aperture of the cover whereby the shackle fills such aperture when inserted therein, and a spring barb joined to the cover member at that end adjacent the cover aperture and crossing the chamber of the head behind such aperture, the point of the barb entering the socket at the top of the cover.

9. A car seal formed from an integral blank of sheet metal comprising, in combination, a chambered head including a base member and a bulging cover member joined at one end, the cover member having a socket at its top and a U-shaped slotted aperture constituting an entrance to the chamber of the head remote from that end of the head at which the base and cover members are joined, the side edges of the base and cover members being interfolded, a shackle joined to the base member of the head at that end adjacent the aperture of the cover, the outer free end of the shackle being apertured and being channeled, its cross-sectional configuration being the shape of the U-shaped slotted aperture of the cover whereby the shackle fills such aperture when inserted therein, a spring barb joined to the cover member at that end adjacent the cover aperture and crossing the chamber of the head behind such aperture, the point of the barb entering the socket at the top of the cover, and a lug formed on the base member of the head and bearing upwardly on the barb.

10. A car seal formed from an integral blank of sheet metal comprising, in combination, a chambered head including a base member and a bulging cover member joined at one end, the cover member having a socket at its top and a slotted aperture constituting an entrance to the chamber of the head remote from that end of the head at which the base and cover members are joined, the side edges of the base and cover members being interfolded, a shackle joined to the base member of the head at that end adjacent the aperture of the cover, the outer free end of the shackle being apertured, a spring barb joined to the end of the cover member adjacent the aperture and crossing the chamber of the head behind the aperture, the point of the barb entering the socket at the top of the cover, and a lug formed on the base member of the cover and bearing upwardly on the barb.

11. In a car seal, in combination, a chambered head comprising a base member and a bulging cover member having a socket at its top, the side edges of the base and cover members being interfolded, a spring barb integral with the cover member folded into

the chamber of the head from the end of the cover, the point of the barb entering the socket at the top of the cover, an opening in the wall of the head above the base of the barb, a lug formed on the base member of the head bearing upwardly on the barb, and a shackle adapted to enter the chamber of the head through the opening and engage the barb.

12. In a car seal, in combination, a chambered head having a base and a cover, the cover member having a socket and the base member having a lug, a spring barb extending over the lug and entering the socket, an opening in the wall of the head in front of the barb, and a shackle having an apertured tongue for entering the chamber of the head through the opening and engaging the barb.

13. In a car seal, in combination, a chambered head having an opening at one end, a socket in one of its side walls and a lug upon the opposite side wall, a barb extending backwardly from the open end of the head obliquely across the chamber of the head over the lug and into the socket, and a shackle having an end adapted to enter the chamber of the head through the opening and having a barb-receiving aperture adjacent such end.

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