

UNITED STATES PATENT OFFICE.

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SNAP-SEAL.

SPECIFICATION forming part of Letters Patent No. 696,003, dated March 25, 1902.

Application filed January 20, 1902. Serial No. 90,579. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. BROOKS, a citizen of the United States of America, and a resident of East Orange, in the State of New Jersey, have invented a new and useful Improvement in Snap-Seals, of which the following is a specification.

This invention relates to self-fastening seals, or "snap-seals," as they are commonly termed, for use as substitutes for lead and wire seals and other press-fastened sealing devices, to secure the doors of railway freight-cars and for other like purposes. Previous forms of such snap-seals are set forth in my specification forming part of United States Letters Patent No. 679,104, dated July 23, 1901, and in my previous specifications therein recited, and in a last previous specification, part of my application for patent filed October 16, 1901, Serial No. 78,819.

The present invention, like that set forth in said last previous specification, is more particularly an improvement on the snap-seal of said Letters Patent No. 679,104.

The leading object of the present invention is to more perfectly guard the inlet to the hollow seal part, so as to prevent tampering with the internal snap-catches, and thus to render it impossible to violate the seal without detection.

Another object is to prevent stretching or spreading the inlet, and thus to facilitate so guarding the same.

Another object is to provide for securing either or both shackle ends within the seal part by an extra secure snap-catch device, as hereinafter specified.

A sheet of drawings accompanies this specification as part thereof.

Referring to the drawings, Figures 1 and 2 represent, respectively, a sectional edge view and a plan view of the seal-part cap of the improved seal. Fig. 3 represents a longitudinal section through the improved seal, fastened. Fig. 4 represents the respective sides of one end of the flexible sheet-metal shackle. Fig. 5 represents the respective sides of the other end of the shackle. Figs. 6 and 7 represent, respectively, a face view of the blank of the middle piece shown in Fig. 3 and an edge view of the middle piece formed therefrom.

Figs. 8 and 9 represent, respectively, a sectional edge view and a plan view of a modified seal-part cap. Figs. 10 and 11 represent, respectively, a sectional edge view and a plan view of another modified cap; and Fig. 12 represents a longitudinal section through a modified seal part embodying the cap shown in Figs. 8 and 9 and illustrating additional modifications.

Like letters and numbers refer to like parts in all the figures.

The improved seal comprises a flexible sheet-metal shackle A, Figs. 3, 4, and 5, the ends of which are provided with snap-holes 1 and 2 or their equivalent and with inlet-guards of peculiar construction. These guards comprise outwardly-projecting corrugations 3 and 4 and inwardly-projecting guards 5 and 6, the latter arranged, as shown in Figs. 4 and 5, so as not to interfere with each other when the shackle ends are successively introduced through the inlet of the seal part. Distinguishing marks 7 and 8 upon the outer side of the shackle are shown in Figs. 4 and 5. Such marks may be of any description and form no part of the present improvement.

The improved seal further comprises a hollow seal part B, such as is shown as a whole in Fig. 3 or Fig. 12. This seal part is composed, as in my last previous improvement, of body and cap pieces *a* and *b*, constituting its shell, and a U-shaped middle piece *c*, the latter carrying the snap catch or catches and constituting therewith the snap-catch device of the seal.

In the present invention the cap *b* is of novel construction. In all its forms this cap is constructed, in addition to the slot-shaped inlet 9 and the downwardly or inwardly projecting rigid vestibule-wall 10, surrounding such inlet, with an upwardly-projecting curb 11, surrounding the same, and preferably and conveniently with gutters 12 within such curb at the sides of the inlet 9 to assist in preventing the introduction of a thin piece of steel at either side of the shackle ends to liberate them. The corrugations 3 and 4 of the shackle A project over the gutters 12 and fill the space within the curb 11 at the sides of the inlet, and thus cooperate therewith to prevent vio-

lation. The introduction of a tampering-tool between the shackle ends is prevented by said inwardly-projecting guards 5 and 6 and may in some cases be sufficiently guarded against by contracting the inlet in width to the utmost extent.

In the species represented by Figs. 1, 2, and 3 the cap *b* is of brittle material, such as cast-iron or glass, to prevent stretching or spreading the inlet 9 in attempts to violate the seal. Guarding such inlets is thus materially assisted. In that species, Figs. 1 to 3, the edges of the cap *b* are flat and are embraced, together with the ends 13 and 14 of the middle piece *c*, by a seaming-flange 15, integral with the sheet-metal body *a*, to form the circumferential joint common to all the species, permanently uniting the pieces of the seal part. The middle piece *c* is bent up from a flat blank, Fig. 6, and comprises between its ends or feet 13 and 14 a pair of downwardly-pointed catches 16 and 17, a hole 18, Fig. 6, partly surrounding said catch 17, through which the point of said catch 16 normally projects, and a hole 19, Fig. 6, in said catch 16, through which the point of said catch 17 normally projects. A very secure double catch is thus formed. Upon the insertion of either or both shackle ends the catches 16 and 17 are by the impact sprung back out of the holes 18 and 19 and in turn spring through the catch-holes 1 and 2 into normal position, thus securely fastening the shackle ends against withdrawal and attesting the same by an audible click or "snap."

In the species of the cap *b* represented by Figs. 8 and 9 it is of sheet metal and provided with a seaming-ring 20 to coact with an outwardly-projecting flange 21 on the body-piece *a* and with the ends 13 and 14 of the middle piece *c*, as in Fig. 12. Otherwise it is or may be identical in construction with the form first described.

The modified cap *b* (represented by Figs. 10 and 11) has flat shoulders 22 within the curb 11 instead of the gutters 12 and is represented as of sheet metal. It may be made either of sheet metal or of brittle material, as preferred.

The middle piece *c* (shown in Fig. 12) has a single rigid catch 16' to interlock with both shackle ends, the elasticity of the latter being relied on for the fastening operation.

Any preferred snap-catch device adapted to interlock with the ends of the sheet-metal shackle may be employed in connection with the improved shackle and seal-part cap, either or both, and in some cases only one shackle end may be thus secured, the other end being preliminarily attached to the seal part at the factory in any known or improved manner. If not so attached at the factory, one shackle end is introduced through the inlet 9 and snapped fast to facilitate carrying the seal. At the place where the seal is to be applied the other shackle end is passed through a pair of car-door staples C, Fig. 3,

or the like, and is then inserted and fastened in like manner.

The shape, size, or color of the body-piece *a* may be utilized as an additional aid in distinguishing the seals of different roads or users, and other like modifications will suggest themselves to those skilled in the art.

Having thus described said improvement, I claim as my invention and desire to patent under this specification—

1. An improved snap-seal composed of a flexible shackle of sheet metal provided with inlet-guards, a seal-part shell composed of body and cap pieces permanently united with each other by a circumferential joint, such cap-piece being provided with an inlet and with an upwardly-projecting curb surrounding such inlet, and a snap-catch device within such shell to fasten one shackle end, the other shackle end being preliminarily attached to the seal part in any approved way.

2. An improved snap-seal composed of a flexible shackle of sheet metal having its ends provided with catch-holes and with outwardly-projecting inlet-guards, a seal-part shell composed of body and cap pieces permanently united with each other by a circumferential joint, such cap-piece being provided with an inlet and with an upwardly-projecting curb surrounding such inlet to coact with such inlet-guards, and a snap-catch device within such shell to fasten the shackle ends.

3. An improved snap-seal composed of a flexible shackle of sheet metal having its ends provided with outwardly-projecting inlet-guards, a seal-part shell composed of body and cap pieces permanently united with each other by a circumferential joint, such cap-piece being provided with an inlet, gutters at the sides of such inlet and an upwardly-projecting curb surrounding such inlet and gutters to coact with such inlet-guards, and a snap-catch device within such shell to fasten the shackle ends.

4. An improved snap-seal composed of a flexible shackle of sheet metal having its ends provided with inlet-guarding corrugations, a seal-part shell composed of body and cap pieces permanently united with each other by a circumferential joint, such cap-piece being provided with an inlet and an upwardly-projecting curb surrounding such inlet to coact with such corrugations, and a snap-catch device within such shell to fasten the shackle ends.

5. An improved snap-seal composed of a flexible shackle of sheet metal having its ends provided with inlet-guarding corrugations projecting outwardly and with inwardly-projecting guards arranged to clear each other when the shackle ends are successively inserted, a seal-part shell composed of body and cap pieces permanently united with each other by a circumferential joint, such cap-piece being provided with an inlet and with an upwardly-projecting curb surrounding

such inlet to coact with such corrugations, and a snap-catch device within such shell to fasten the shackle ends.

5 6. An improved snap-seal composed of a flexible shackle of sheet metal having its ends provided with inlet-guards, a seal-part shell composed of a sheet-metal body-piece and a cap-piece permanently united with each other by a circumferential joint, such cap-piece being of brittle material and provided with a slot-shaped inlet and an upwardly-projecting curb surrounding such inlet to coact with such inlet-guards, and a snap-catch device within such shell to fasten the shackle ends.

15 7. An improved snap-seal composed of a flexible shackle of sheet metal having its ends provided with snap-holes, a seal-part shell composed of body and cap pieces permanently united with each other by a circumferential joint, such cap-piece being provided with an inlet, and a snap-catch device in the form of a U-shaped middle piece provided with in-

wardly and downwardly projecting pointed catches at both sides to interlock with said catch-holes, and holes within which the points of the respective catches are normally masked. 25

8. An improved snap-seal composed of a hollow seal part comprising body or cap pieces permanently united with each other by a circumferential joint, such cap-piece being provided with an inlet, and a snap-catch device in the form of a U-shaped middle piece provided with inwardly and downwardly projecting catches at both sides, and a flexible shackle of sheet metal having one end provided with a snap-hole to interlock with said catches, the other shackle end being preliminarily attached to the seal part in any approved way, substantially as hereinbefore specified. 35

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Witnesses:

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