E. J. BROOKS.

SNAP SEAL.

APPLICATION FILED MAY 3, 1911.

997,234. Patented July 4, 1911.

Fig. 1.

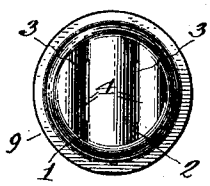


Fig. 8.

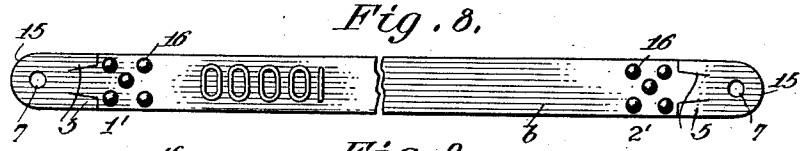


Fig. 9.

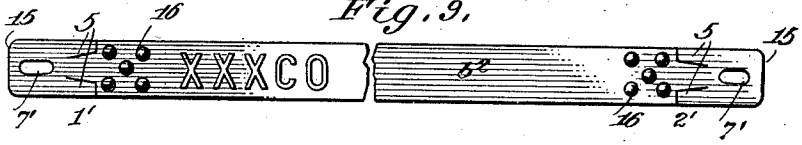


Fig. 2.

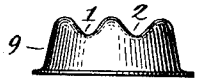


Fig. 3.

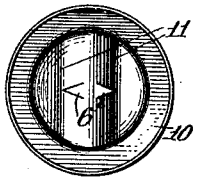


Fig. 4.

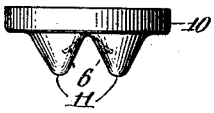


Fig. 5.

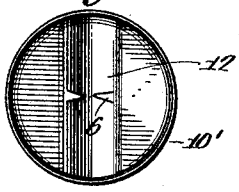


Fig. 6.

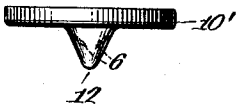


Fig. 10.

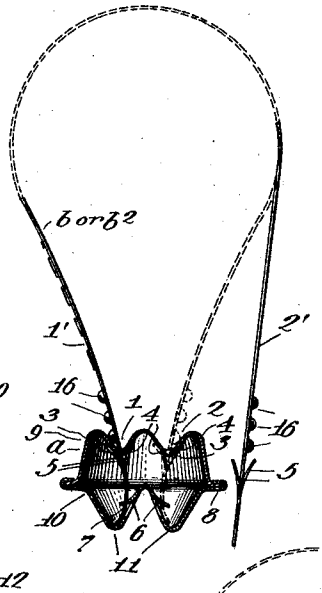


Fig. 11.

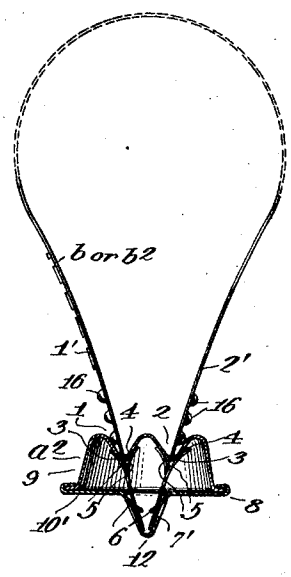


Fig. 12.

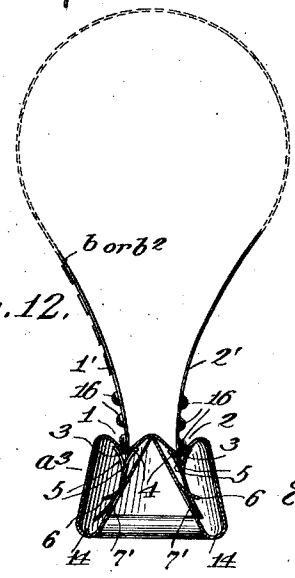
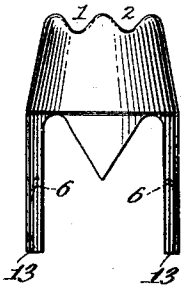


Fig. 7.



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SNAP-SEAL.

997,234. Specification of Letters Patent. Patented July 4, 1911.

Application filed May 3, 1911. Serial No. 624,699.

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, in common with previous improvements, 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 or press-fastenable sealing devices, to secure the doors of railway freight cars and for other like purposes. Examples of such snap seals are set forth in my previous specifications forming part of United States Letters Patent No. 679,104, dated July 23, 1901, and previous Letters Patent therein referred to, and No. 988,169, dated March 28, 1911. The present invention is more particularly additional to the improvements in snap seals set forth in said specifications forming part of Letters Patent No. 679,104 and No. 988,169, which relate in common to snap-seals made wholly of sheet-metal (or the like) and having flexible shackles both ends of which are provided with snap catches. In practice the shackles are made of very thin resilient and polished strap iron instead of tin plate as heretofore, and the inlet slots are cut to snugly fit a single thickness of the shackle metal; the catches carried by the shackle ends being adapted to be sprung into the plane of the body of the shackle in the act of inserting the shackle end.

The present invention consists in certain novel combinations of parts in such seals, and in an improved snap seal embodying the same in a preferred form, as hereinafter particularly described and claimed.

The leading objects of this invention are to hold the shackle ends against wabbling within the seal part, and to increase the security of the seal by further fastening each of the shackle ends by means of a supplemental snap catch, without complicating the structure of the seals, or interfering with their production by means of dies and automatic machinery as heretofore.

Other objects will be set forth in the general description which follows.

A sheet of drawings accompanies this specification as part thereof.

Figures 1 and 2 are respectively bottom and side views of one of two cup-shaped blanks for one species of the seal part; Figs. 3 and 4 are respectively top and side views of the other of said blanks; Figs. 5 and 6 are views similar to the two last described, showing a substitute for the blank shown therein; Fig. 7 is a side view of the cup-shaped blank of a one-piece seal part for another species of the improved seal; Figs. 8 and 9 are face views of two species of the shackle of the improved seal; Fig. 10 is a sectional elevation of one of the improved seals including a seal part made up from the blanks shown by Figs. 1–4; Fig. 11 is a like view of another including a seal part made up from the blanks shown by Figs. 1, 2, 5 and 6; and Fig. 12 is a like view of a third species of the improved seals including a seal part made up from the blank shown by Fig. 7.

Like reference characters refer to like parts in all the figures.

The improved snap seals in each of the species include a hollow, catch-inclosing seal-part, a or a^2 or a^3, made from cup-shaped blanks of malleable sheet metal, which may be a suitable grade of "tin" (tin plate); and the other member, in each species, is a resiliently flexible shackle, b or b^2, preferably made of suitable thin and polished strap iron, as hereinbefore described. In each species, moreover, the top of the seal part a or a^2 or a^3 is constructed with two vestibule forming depressions, 1 and 2, each containing an inlet slot, 3, closely fitted to one thickness of the shackle metal, the metal therefrom being inturned to form rigid lips, 4; and each of the shackle ends, 1′ and 2′, of the shackle b or b^2 is matchingly constructed with a pair of integral snap catches, 5, normally projecting from the opposite sides of the shackle end and each adapted to be sprung into the plane of the body of the shackle in the act of inserting the shackle end through either of said inlet slots 3 and to interlock with either of said lips 4 at the sides of the inlet slots. Also, in each species, the seal part a or a^2 or a^3 is provided with a pair of supplemental snap catches, 6, integral with the main walls of the seal part, and arranged in the paths of the shackle ends 1′ and 2′ within the seal part; and each of the resilient shackle ends of the shackle b or b^2 is provided with a catch hole, 7 or 7′, adapting it to interlock with either of said supplemental catches 6. The supplemental catches 6 in each species are

adapted to be formed in the cup-shaped blanks before the final bending operation which completes the seal part, as represented in Figs. 3–7, and may be V-shaped as shown in Figs. 3 and 5, or of any approved shape.

The seal part *a* shown in Fig. 10 is formed by uniting by a circumferential joint, 8, two cup-shaped members, 9 and 10, the blanks of which are shown respectively by Figs. 1 and 2 and Figs. 3 and 4 as aforesaid; the slotted top of the seal part, already described, being formed by said member 9; and the supplemental catches, 6, cut from the inner sides of a pair of V-shaped portions 11 of the bottom member 10, projecting downward side by side, and forming V-shaped spaces in communication with the interior of the seal part, into which the supplemental catches 6 project beneath the shackle inlets 3. The seal part a^2 shown in Fig. 11 is formed by uniting by a like circumferential joint, 8, the same top member 9 with a substitute bottom member 10′ the blank of which is represented by Figs. 5 and 6 as aforesaid; and this bottom member 10′ is constructed with a single V-shaped depending portion, 12, forming a space of like shape in communication with the interior of the seal-part; the supplemental catches being cut from the sides of said V-shaped portion 12, and projecting into said space within the same; this space being central with reference to the pair of shackle-end inlets 3; and the same being adapted to admit and hold both shackle ends.

The one-piece seal part a^3 shown in Fig. 12 is formed from the "open front" cup-shaped blank represented by Fig. 7, in the manner set forth in said previous specification forming part of Letters Patent No. 988,169; the slotted top of the improved seal part hereinbefore described being formed by the upper end of the blank, and the supplemental catches 6 cut from the broad flaps of the blank shown at 13 in Fig. 7, and projecting into the internal spaces, 14, at the sides of the seal part, beneath the respective shackle inlets 3.

The shackles *b* and b^2, in common, are preferably further constructed with rounded extremities, 15, Figs. 8 and 9, to prevent cutting the hands in handling them, and to facilitate inserting them; inlet guards, or original-end indicators, 16; and distinguishing marks, represented by the serial number "00001" and the lettering "XXX CO" in Fig. 8 and Fig. 9 respectively.

The shapes of the rounded shackle ends 15 and catch holes 7 or 7′ may vary, as represented in Figs. 9 and 10; and other like modifications will suggest themselves to those skilled in the art.

One shackle end may be fastened at the factory or station as is customary, leaving the other end free until the sealing operation, as represented in full lines in Fig. 10; or both ends may be fastened successively at the sealing operation, as may be preferred.

It will be understood that the supplemental catches 6 and catch holes 7 or 7′ interlock when the principal snap catches 5 become effective by springing apart after passing through the inlet slots 3.

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

1. The combination, in a snap seal, of a hollow sheet-metal seal part having in its top a pair of shackle-end admitting slots parallel with each other and inwardly projecting rigid lips formed by the inturned metal from said slots, and provided subjacently with internal catches integral with the main walls of the seal part; and a flexible shackle, of resilient strap iron or the like, having normally projecting snap catches adapted to be sprung into the plane of the body of the shackle and integral therewith, adapted to interlock with said lips, and catch holes near its extremities adapted to interlock with the catches first named.

2. The combination with a resilient shackle of thin strap iron or the like having normally projecting snap catches at each end adapted to be sprung into the plane of the body of the shackle and integral therewith, and catch holes between said catches and the extremities of the shackle, of a hollow sheet-metal seal part having in its top a pair of inlet slots parallel with each other each fitted to a single thickness of the shackle metal, and provided subjacently with a pair of supplemental snap catches integral with the main walls of the seal part and adapted to interlock with the respective catch holes in the shackle ends when the respective catches first named become effective.

3. The combination, in a snap seal, of a hollow sheet-metal seal part, and a flexible shackle of resilient strap iron or the like, preliminarily united at one end of the shackle; the other shackle end being constructed with a pair of normally projecting snap catches adapted to be sprung into the plane of the body of the shackle and integral therewith, and having a catch hole between said catches and its extremity; and the seal part having an internal V-shaped space at its bottom adapted to admit and hold the shackle end, and a supplemental snap catch integral with the main walls of the seal part, projecting into said space, and adapted to interlock with said catch hole when the catches first named become effective.

4. An improved snap seal composed of a hollow seal part of sheet metal constructed with a top member having a pair of inlet slots in its top parallel with each other and inturned rigid lips at the sides of said slots, and a bottom member constructed with a

pair of depending V-shaped portions forming like spaces within the seal part and provided with snap catches cut from the inner walls of said V-shaped portions and projecting into said spaces respectively beneath the respective inlet slots, and a flexible shackle of resilient strap iron or the like having its ends provided with snap catches adapted to interlock with said lips, and catch holes adapted to interlock with the supplemental catches first named, substantially as hereinbefore specified.

EDWARD J. BROOKS.

Witnesses:
ELINOR BROOKS,
ELLEN J. BROOKS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."