E. J. BROOKS.

SNAP SEAL.

APPLICATION FILED FEB. 2, 1910.

956,931. Patented May 3, 1910.

Fig. 1.

Fig. 2.

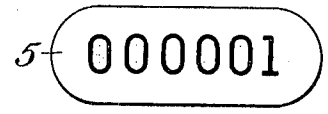


Fig. 3.

Fig. 4.

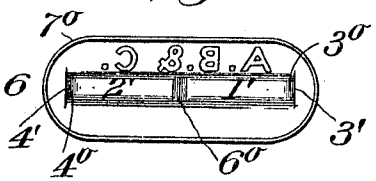


Fig. 5.

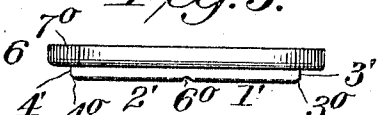


Fig. 6.

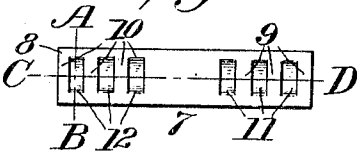


Fig. 7.

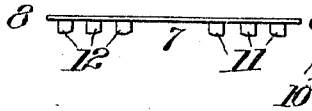


Fig. 8.

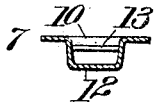


Fig. 9.

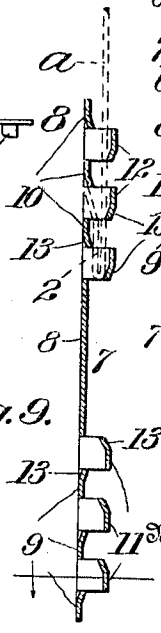


Fig. 10.

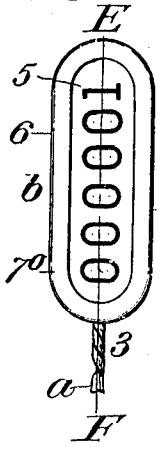


Fig. 11.

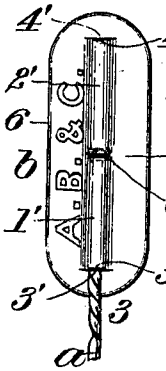


Fig. 14.

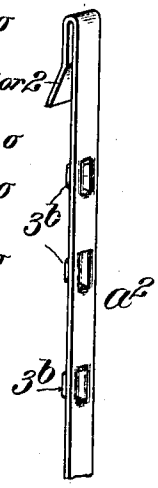


Fig. 12.

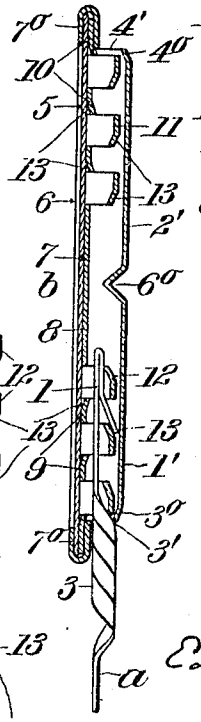


Fig. 13.

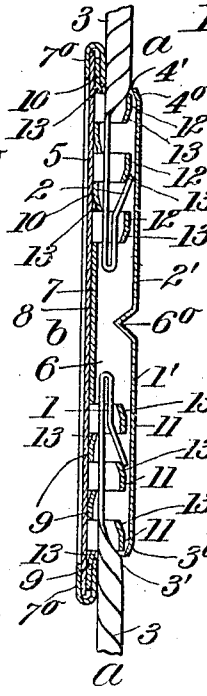
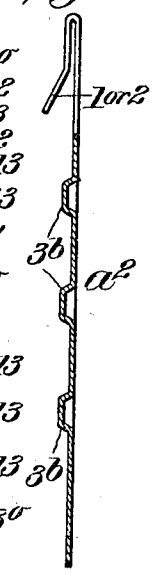


Fig. 15.



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UNITED STATES PATENT OFFICE.

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SNAP-SEAL.

956,931. Specification of Letters Patent. Patented May 3, 1910.

Application filed February 2, 1910. Serial No. 541,582.

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.

The present invention is additional, more particularly, to that improvement in snap seals set forth in my previous specification forming part of United States Letters Patent No. 942774 dated December 7, 1909, characterized by a flexible shackle of flat wire and a substantially flat seal part wholly or mainly of sheet metal, said shackle having at one or each end a resilient terminal hook, and said seal part containing a peculiarly constructed successive-hold catch member to interact with such hook or hooks.

The present invention consists in a seal part for such snap seals containing a sheet-metal "center piece" forming successive-hold catch portions of improved construction; a resilient-hook shackle of flat wire for such snap seals having at one end or each end a combined shackle stiffener and inlet guard of novel construction; and in certain novel combinations of parts embodying said center piece and combined shackle stiffener and inlet guard, or either of them, as hereinafter particularly described and claimed.

The leading objects of this invention are to provide the seal part with a successive-hold catch member which is at once less expensive and more secure than those set forth in said Letters Patent No. 942774, and to stiffen the shank or each shank of the resilient-hook shackle wire by a highly efficient inlet guard.

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

A sheet of drawings accompanies this specification as part thereof.

Figure 1 is an edge view of a resilient-hook shackle, embodying the construction of such shackles hereinafter specifically claimed; Figs. 2 and 3 are respectively face and edge views of the label member of the seal part; Figs. 4 and 5 are like views of the back member of the seal part; Figs. 6 and 7 are like views of the center piece which constitutes the improved catch member; Fig. 8 represents a magnified cross section on the line A—B, Fig. 6; Fig. 9 represents a magnified longitudinal section on the line C—D, Fig. 6; Figs. 10 and 11 are respectively front and back views of the improved snap seal as it leaves the factory, the parts being shown on the same scale as in Figs. 1 to 7 inclusive; Fig. 12 represents a magnified longitudinal section on the line E—F, Fig. 10; Fig. 13 represents the same section showing the seal as it appears with both shackle ends snap fastened; and Figs. 14 and 15 are respectively a perspective view and a longitudinal section on substantially the same scale as Figs. 8, 9, 12 and 13, showing a second species of the resilient-hook shackle.

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

Each of the improved snap seals is composed of a flexible flat-wire shackle, a or a^2, and a substantially flat "sheet metal" seal part, b, the members of which are shown detached by said Figs. 2 to 9, inclusive, as they appear before being assembled and united.

The shackles a and a^2 are preferably characterized in common by resilient terminal hooks, 1 and 2, at both extremities, and combined shank-stiffeners and inlet-guards, shown respectively at 3 and 3^b, adjacent to both hooks.

The shackle a shown detached by Fig. 1 is constructed with combined shank-stiffeners and inlet-guards, 3, in the form of helical coils of the flat wire sufficient in extent to form a stiff cylindrical portion adjacent to each hook which can be readily grasped between fingers and thumb in thrusting the shackle hook 1 or 2 into the seal part b, and which is at the same time adapted in a superior manner to obstruct the corresponding inlet of the seal part as shown in Figs. 12 and 13, so as to prevent the insertion of tampering devices after the seal is fastened. To this end the coils are made to project at the face of the shackle in line with the respective hooks; the back of the shackle being in line with one side of each coil as shown in Figs. 1, 12 and 13.

The shank stiffeners and inlet guards 3^b

of the shackle a^2, Figs. 14 and 15, are formed by oblong rectangular indentations in the back of the shackle and are intended to perform the same functions as said helical coils 3, in a different manner.

The improved seal part b has a pair of hook-admitting passages, 1′—2′, with inlets, 3′—4′, at opposite ends of the seal part, and includes front and back members, 5 and 6, of which the back member 6 is stamped with a flat tunnel-shaped projection on its back forming said passages 1′—2′ and said inlets 3′—4′, and with a central depression, 6^0, separating said passages to a sufficient extent. Said back member is intended to be in all cases of sufficiently ductile sheet metal, and the front or label member 5 is preferably of taggers tin or like very thin sheet metal, with or without a superposed label of waterproof paper or the like, being in that way or by printing or stamping conveniently provided with a serial number or like distinguishing mark represented by "000001" in Figs. 2 and 10. The back number 6 is further constructed with inwardly bent inlet edges, 3^0 and 4^0, to assist in protecting the interior of the seal part against being tampered with; a continuous crown flange, 7^0, by which the seal-part members are permanently united, and embossed characters represented by "A. B. & C." in Figs. 4 and 11, to indicate a particular railway or the like. The dies by which the back member is stamped into the shape represented by Figs. 4 and 5 are conveniently provided with such characters so as to locate the same in the space at one side of the passages 1′ 2′. The matching space, 8^0, Fig. 11, may be left blank, to receive the impression of a rubber stamp or the like.

A center piece, 7, which forms the catch member of the seal part b, is of sheet metal adapted to be stamped like that of the back part 6, and includes a flat body-portion, 8, which may be rectangular as shown or of the same shape and dimensions as the label member 5, and catch portions, 9—10 and 11—12, in groups of preferably three each, the former (9—10) in the plane of said body portion and the latter (11—12), stamped from between parallel transverse incisions in said body portion; said catch portions in common being adapted to form successive holds for the interacting shackle hooks 1 and 2. Said catch portions 11—12, which are the main catch portions, are in part parallel with said body portion 8, as shown in Figs. 8 and 9, and are adapted to fit loosely within said passages 1′ and 2′ of the seal part as represented in Figs. 12 and 13. Each of said catch portions 9—10 and 11—12 is conveniently and preferably provided in the stamping dies with an inturned effective edge, 13, which materially increases its efficiency. When the shackle and seal part are preliminarily united as in Figs. 10, 11 and 12 so that the hooks 1 and 2 project rearwardly, the main catch portions 11 and 12 interact with the respective hooks. The catch portions 9 and 10 provide for securely fastening the shackle if it should be inserted so that the hooks project toward the front, being adapted to interact with the reversed hooks in the manner illustrated by dotted lines at 2 near the top of Fig. 9.

Owing to the construction of the catch member as above described, a flat-wire shackle of appropriate size cannot be turned within the seal-part passages, but must be inserted and remain either in the position represented in Figs. 12 and 13 or in the position represented by dotted lines in Fig. 9, and in either case is securely fastened.

The shackle and seal part will ordinarily be united at the factory at one of the shackle ends as illustrated by Figs. 10, 11 and 12, and for some of the purposes of this invention that end and its accessories may be of any known or improved construction.

The improved seal is finally snap-fastened as illustrated by Fig. 13, so that the seal part b unites the two ends of the shackle a or a^2, and both shackle ends are preferably and conveniently fastened in one and the same way, as provided for by the construction above particularly described.

The hook inlets 3′ and 4′ of the seal part may obviously be made to admit the inlet guards 3 or 3^b in part; the outline of the seal part b in front or back view, represented in Figs. 10 and 11 may vary, as the length of the shackle may vary to any desired extent; 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. The combination, in a snap seal, of a flexible shackle of flat wire and a substantially flat seal part, united at one of the shackle ends; said shackle having at its other end a resilient terminal hook, and said seal part containing a sheet-metal center piece having a flat body and transverse catch portions integral with said body substantially parallel therewith and constructed with inturned effective edges forming successive holds for said hook within the seal part.

2. The combination, in a snap seal, of a flexible shackle of flat wire and a substantially flat seal part, united at one of the shackle ends; said shackle having at its other end a resilient terminal hook, and said seal part containing a sheet-metal center piece having a flat body and transverse catch portions integral with said body and substantially parallel therewith, forming successive holds for said hook within the seal part, supplemental catch portions of said body of the center piece being also constructed with in-

turned edges forming alternative holds for the hook.

3. In combination with a flexible shackle of flat wire having a resilient terminal hook at each end, a flat label member at the front of the seal part, a substantially flat sheet-metal back member provided on its back with a pair of endwise adjoining tunnel-shaped projections forming an inlet and passage for each shackle end and constructed with inturned edges at each inlet, and a center piece of sheet-metal having a flat body held between said label member and said back member and catch portions projecting into each of said passages and forming successive holds parallel with said body for the respective hooks.

4. The combination, in a snap seal, of a flexible shackle of flat wire and a seal part, united at one of the shackle ends; said seal part having an inlet and passage for the other shackle end, and containing catch portions which project into said passage and form successive hook holds, and said other shackle end having a resilient terminal hook to interact with said hook holds within the seal part and a combined shank stiffener and inlet guard in the form of a helical coil of the flat wire suitably adjacent to said hook and arranged to interact with said inlet of the seal part.

5. The combination, in a snap seal, of a flexible shackle of flat wire and a seal part, united at one of the shackle ends; said seal part having an inlet and passage for the other shackle end and containing catch portions which project into said passage and form successive hook holds, and said other shackle end having a resilient terminal hook to interact with said hook holds within the seal part and a combined shank stiffener and inlet guard in the form of a helical coil of the flat wire suitably adjacent to said hook, the back of the hook being in line with one side of said coil, whereby the full diameter of the coil is made to project in line with the hook.

6. In combination with a seal part provided with a pair of hook inlets, passages leading inward from said inlets, and internal catch portions forming hook holds, a flexible shackle of flat wire having a resilient terminal hook at each end and a combined shank stiffener and inlet guard in the form of a helical coil of the flat wire suitably adjacent to each hook, the back of each hook being in line with one side of the adjacent coil, substantially as hereinbefore specified.

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