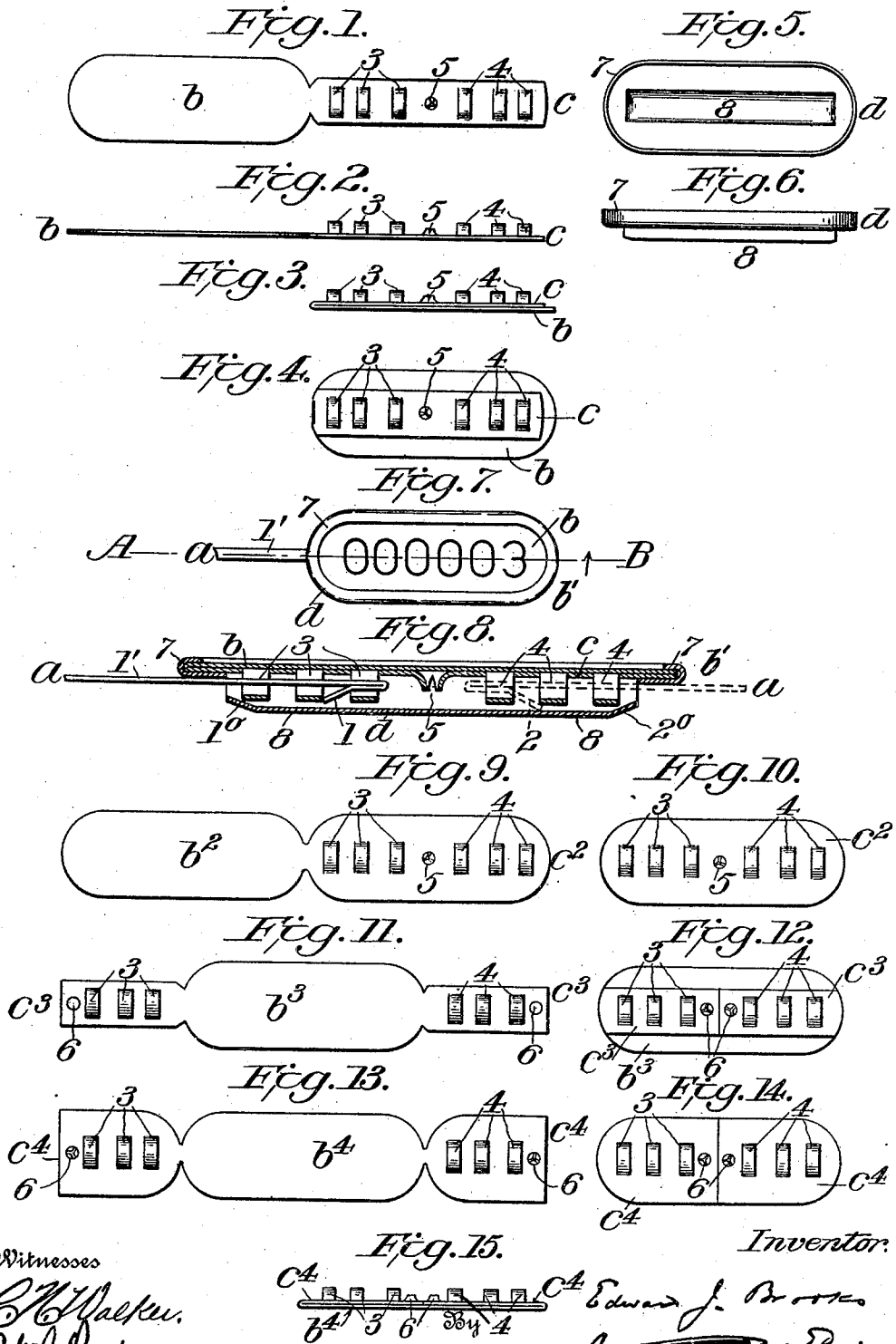


E. J. BROOKS,
SNAP SEAL,
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UNITED STATES PATENT OFFICE.

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SNAP-SEAL.

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Specification of Letters Patent.

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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 is additional to my improvements in snap seals set forth in previous specifications forming part of United States Letters Patent No. 942774 dated December 7, 1909, and an allowed patent application filed February 2, 1910, Serial No. 541582, (Patent No. 956,931 dated May 3, 1910.)

It relates, in common with said previous improvements, to self-fastening seals 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 consists in a sheet-metal seal part for such self-fastening or "snap" seals, containing a "center-piece" catch member in one part with the front or label member and of improved construction, and in certain novel combinations of parts including said catch member and label member, or the former, as hereinafter particularly described and claimed.

The leading objects of the present invention are to provide for making the improved snap seal of three (3) pieces, including a shackle of flat wire, instead of four (4) pieces as heretofore, and thus to save time and expense in making and, more particularly, in assembling the pieces of the seal part, which is one of the largest items of expense in manufacturing these seals. According to the present invention it is only necessary to put two pieces together in "capping" or completing the seal part, whereas heretofore it was necessary to insert two separate pieces in proper succession into the outer or cap piece. The combined pieces can, moreover, be manufactured by suitable machinery at practically a single operation and with nearly as little expense as the catch member alone.

Another object is to provide by different means for properly stopping and locating one of the shackle hooks within the seal part in preliminarily uniting the seal part with one shackle end at the factory, so that the

hook of such preliminarily fastened-in shackle end shall not encroach upon the space for the other shackle hook within the seal part.

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 face and edge views of a first species of the combined catch member and front or label member as it appears before the final bending or doubling operation; Figs. 3 and 4 are edge and face views of the same doubled; Figs. 5 and 6 are face and edge views of the back or cap member of the improved seal; Fig. 7 is a face view of an improved seal containing said first-species catch member and label member, as it leaves the factory, with the free end of the shackle broken off; Fig. 8 represents a longitudinal section on the line A—B Fig. 7; Figs. 9 and 10 are face views of a second species of the combined catch member and label member before and after the doubling operation; Figs. 11 and 12 are face views of a third species of the same showing the piece before and after the metal is doubled; and Figs. 13, 14 and 15 illustrate a fourth species of the same, showing respectively face views before and after the doubling operation and an edge view of the doubled piece.

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

In each of the species, the improved seal is composed of a flexible shackle, *a*, of flat wire, preferably provided with resilient terminal hooks, 1 and 2, at both extremities, and a sheet metal seal part, *b'*, to which the present invention exclusively relates, and which is composed of a combined front or label member and "center piece" catch member, *b—c*, or *b² c²*, or *b³ c³*, or *b⁴ c⁴*, and a back or cap member, *d*, which latter, in common with the shackle, may be of one and the same construction in all the species, as represented by the drawings, or of any known or improved construction consistent with the employment of the combined label member and catch member as herein specified. In all the species said combined label member and catch member is stamped flat, except as hereinafter described, and in one piece, from suitable sheet metal (which may be scrap tin) as illustrated in Figs. 1 and 2,

Fig. 9, Fig. 11 and Fig. 13. The label member b or b^2 or b^3 or b^4 is preferably and conveniently flat in all cases, and of the outline of the interior of the seal part, except that the serial number or other distinguishing mark with which it is provided, represented by "000003" in Fig. 7, may be embossed if so preferred. The catch member c or c^2 or c^3 or c^4 is preferably and conveniently provided with two series of successive-hold catch portions, 3 and 4, formed by transverse slits and staple-shaped raised catch portions between said slits, and adapted to interlock with the respective shackle hooks 1 and 2; and it is furthermore preferably and conveniently constructed with a projection or projections, 5 or 6, on the same side as the raised catch portions 3 and 4, and between the two series of catch portions, to form a stop for the preliminarily-fastened-in shackle end, 1', Figs. 7 and 8, by which the shackle wire and seal part are permanently united at the factory. After being stamped in the shape represented by Figs. 1 and 2, Fig. 9, Fig. 11, or Fig. 13, the combined label member and catch member is doubled by folding the metal upon itself, and assumes the shape represented by Figs. 3 and 4, or Fig. 10, or Fig. 12, or Figs. 14 and 15, and may be stamped and completed in this shape at practically a single operation by means of automatic machinery.

The cap member, d , Figs. 5, 6, 7 and 8, is stamped with the customary front crown flange, 7, and with a tunnel-shaped inlet forming an inclosing projection, 8, on its back.

In assembling the parts, the combined label member and catch member $b-c$ or b^2-c^2 or b^3-c^3 or b^4-c^4 , as a single piece, is dropped into the open side of the cap member d , that is to say within its crown flange 7, the cap member being in the shape or condition illustrated by Figs. 5 and 6, and the cap member is then shoved beneath a reciprocating plunger or die by which the flange 7 is turned in so as to permanently unite the pieces of the seal part as in Figs. 7 and 8. The open inlet ends of the tunnel-shaped projection 8 may conveniently be beveled at the same operation as represented at 1° and 2° in Fig. 8, and, owing to the provision of the catch member with said stop projection or stop projections 5 or 6, said tunnel-shaped projection 8 may be otherwise of uniform shape and dimensions from end to end, as represented in Figs. 5, 6 and 8.

In the first species (Figs. 1 to 8 inclusive) the combined label member and catch member $b-c$ has its members united at one end of each, and the catch member narrowed so as to omit unnecessary metal and provided with a single stop projection, 5.

In the second species (Figs. 9 and 10)

both members of the combined label member and catch member b^2-c^2 are of one and the same outline but otherwise identical with those of the first species.

In the third species (Figs. 11 and 12) the catch member c^3-c^3 of the combined label member and catch member b^3-c^3 is composed of two portions, united with the respective ends of the label member b^3 , and each portion is conveniently provided with a stop projection, 6, in proper juxtaposition to its series of catch portions 3 or 4; the catch member as a whole being otherwise of the narrowed form above described with reference to the first species.

In the fourth species (Figs. 13, 14, and 15) the construction of the combined label member and catch member b^4-c^4 is identical with that of the third species, except that the catch member as a whole corresponds with that of the second species, that is to say it is of the same outline as the label member b^4 .

It will be understood that the outline of the seal part as a whole may be varied, and therewith that of the label member and catch member or of the former; 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. A sheet-metal seal part for snap seals having, in combination, a front or label member and a catch member in one doubled piece, the catch member being constructed with staple-shaped catch portions between transverse slits, and a back or cap member constructed with a front crown flange by which the pieces are permanently united and an open-ended tunnel-shaped projection on its back forming hook inlets and inclosing said catch portions of the catch member.

2. A sheet-metal seal part for snap seals having, in combination, a label or front member and a catch member, the catch member being constructed with two series of staple-shaped catch portions between transverse slits and with a stop projection between said series of catch portions, and a back or cap member constructed with a front crown flange by which the pieces are permanently united and an open-ended tunnel-shaped projection forming hook inlets at its ends and of uniform shape and dimensions between such hook inlets.

3. The combination, in a snap seal, of a flexible shackle of flat wire and a substantially flat seal part of sheet metal united at one of the shackle ends; said shackle having at its other end a resilient terminal hook, and said seal part containing a front or label member and a catch member formed in one piece of suitable sheet metal doubled upon

itself, said catch member having staple-shaped catch portions adapted to interlock with said hook within the seal part.

4. The combination, in a snap seal, of a
5 flexible shackle of flat wire having a resilient terminal hook at each end, and a substantially flat seal part of sheet metal composed of a front or label member and a catch member in one piece, and a cap member
10 having a front crown flange by which the pieces of the seal part are permanently united with each other and an open-ended

tunnel-shaped projection on its back, said catch member being constructed with two series of staple-shaped catch portions in- 15 closed within said tunnel-shaped projection and adapted to interlock with the respective shackle hooks, substantially as hereinbefore specified.

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