

E. J. BROOKS.
SNAP SEAL.

APPLICATION FILED JUNE 11, 1912.

1,035,526.

Patented Aug. 13, 1912.
2 SHEETS-SHEET 1.

Fig. 1.

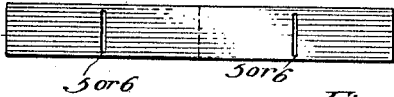


Fig. 2.

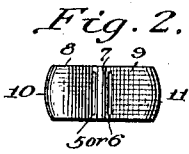


Fig. 3.

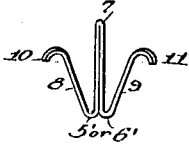


Fig. 4.

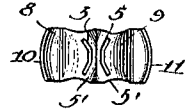


Fig. 5.

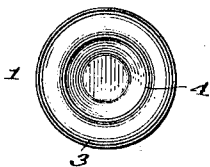


Fig. 6.

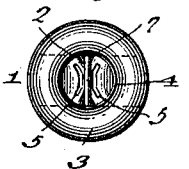


Fig. 7. Fig. 8. Fig. 9.

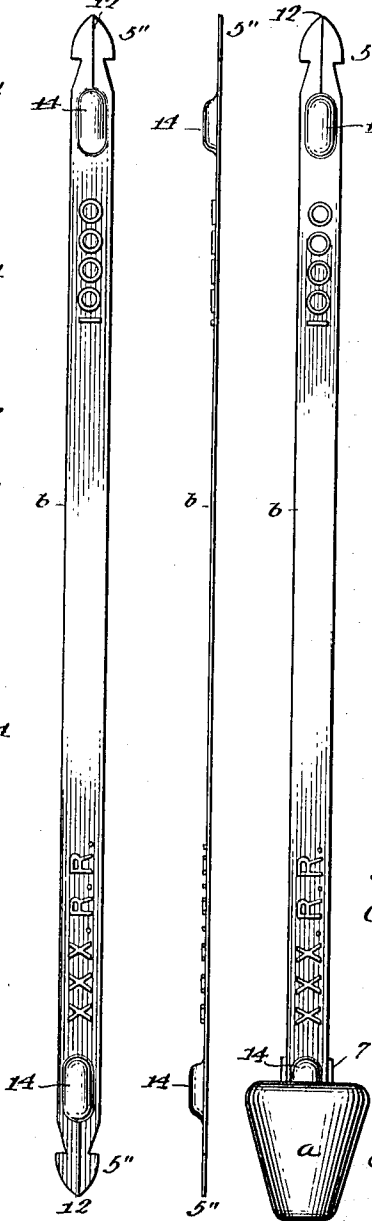


Fig. 10.

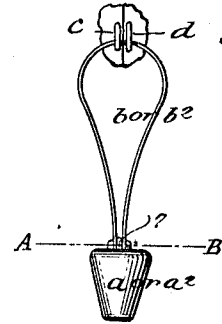


Fig. 12.

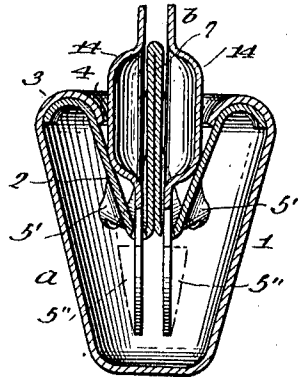
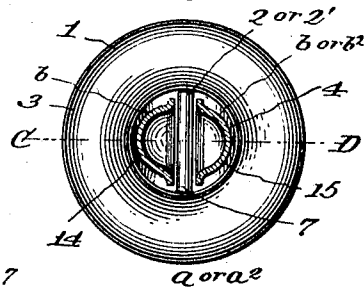


Fig. 11.



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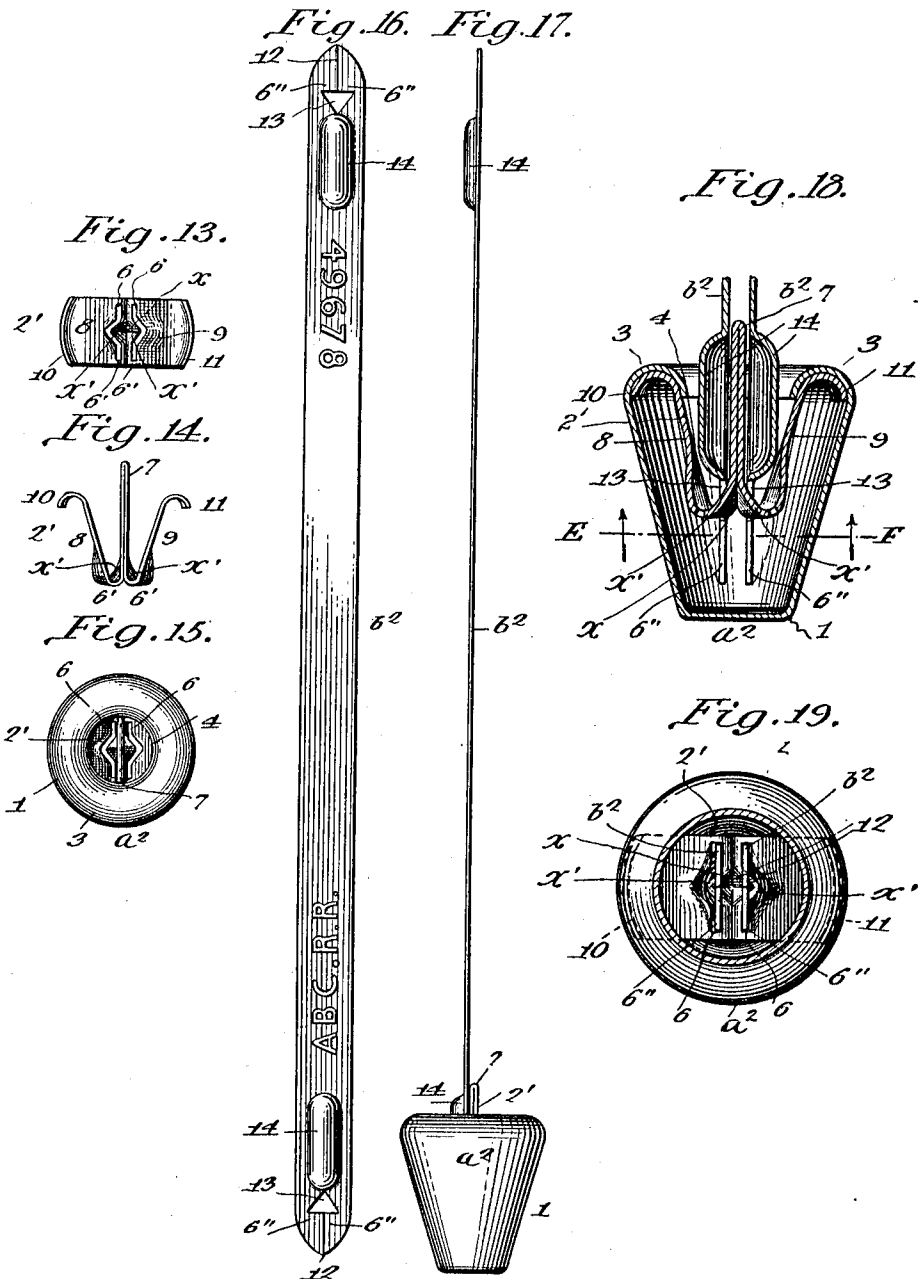
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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

EDWARD J. BROOKS, OF EAST ORANGE, NEW JERSEY.

SNAP-SEAL.

1,035,526.

Specification of Letters Patent.

Patented Aug. 13, 1912.

Application filed June 11, 1912. Serial No. 702,949.

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. 1,017,950, patented February 20, 1912, No. 1,030,458 patented June 25, 1912, and other Letters Patent therein referred to.

The present invention is more particularly additional to the improvements in snap seals set forth in said Letters Patent dated February 20 and June 25, 1912. In common with the former, it includes a seal-part bulb adapted to be and preferably made in one piece; and in common with the other, it includes a "double" center-piece for the seal part, and a one-piece flexible shackle both ends of which are snap fastened within the seal part, the catch members of the shackle being normally flat in the preferred construction.

The present invention consists in certain novel combinations of parts, and in an improved snap seal embodying said combinations or any of them, as hereinafter specifically described and claimed.

The leading objects of this invention are to embody the aforesaid features of my snap seals patented February 20 and June 25, 1912, in one and the same improved snap seal; to render such normally flat snap catches still more secure; and to adapt the improved seal to be made of a relatively small size, with the shackle not more than one-fourth of an inch wide.

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

Two sheets of drawings accompany this specification as part thereof.

Figure 1 is a plan view of the blank of a center piece of taggers tin or the like; Figs. 2 and 3 are respectively top and edge views of the same after a bending operation; Fig. 4 is a bottom view of the finished

center piece of a first species of the improved snap seal; Fig. 5 is a top view of the seal-part bulb before the insertion of the center piece; Fig. 6 is a top view of the finished first species seal part; Figs. 7 and 8 are respectively face and edge views of the first species shackle detached; Fig. 9 is a face view of the first species snap-seal as it leaves the factory with one shackle end snap fastened within the seal part; Fig. 10 is an elevation of the improved snap seal in use as a car-door seal; Fig. 11 represents a magnified horizontal section on the line A—B, Fig. 10; Fig. 12 represents a longitudinal section of said first species snap seal on the line C—D, Fig. 11; Figs. 13 and 14 are respectively bottom and edge views of the finished center piece of a second species of the improved snap seal; Fig. 15 is a top view of the finished seal part of said second species; Fig. 16 is a face view of the shackle of said second species; Fig. 17 is an edge view of the same with said second species seal part preliminarily attached to one end thereof; Fig. 18 represents a magnified longitudinal section through the seal part and shackle ends of the second species snap seal on said line C—D, Fig. 11; and Fig. 19 is an inverted plan, with the bulb in section on the line E—F, Fig. 18, showing a bottom view of the center piece and fastened snap catches of said second species snap-seal, which is selected for such claims herein as are not generic to both species.

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

The improved snap seal in either of its species is composed of a bulb-shaped seal part, a or a^2 , and a flexible shackle, b or b^2 , both of which may be made of suitable sheet metal, and both of improved construction.

The members 1 and 2 or 2' of the seal part a or a^2 are respectively a "bulb" (1) and a "double" center piece (2 or 2'); the former being preferably and conveniently of the one-piece construction set forth in said Letters Patent No. 1,017,950, that is to say in the shape of a downwardly tapered vase, round in cross section, with its upper edge or lip, 3, turned inward and downward, and a central round inlet hole, 4, thus formed. It is originally stamped with said inlet sufficiently large to freely admit the center-piece 2 or 2', in the final shape of the latter represented by Fig. 4 or Figs. 13-14, and is subsequently contracted in suitable

dies around the center piece, so as to fixedly fasten the latter within the finished seal part as represented by Fig. 6 and Fig. 15.

The centerpiece blank, Fig. 1, for either species, may be rectangular as shown, and is stamped flat with its pair of catch slots, 5 or 6, equidistant from a center line on which it is bent to form a middle portion 7 adapted to protrude centrally through said round inlet hole 4 and to form a shackle-end guide, especially in preliminarily attaching the seal part a or a^2 to one end of the shackle b or b^2 at the factory, as represented by Fig. 9 and Fig. 17. Said middle portion 7 of the center piece 1 extends downward to the desired level of the catch slots 5 or 6, which are located within narrow bottom portions, 5' or 6', Fig. 3, from which side portions 8 and 9 extend upward and outward to the level of the top of the interior of the seal-part bulb 1, and thence downward and outward, forming rounded top portions 10 and 11, adapted to be tightly embraced within said inturned and down-turned lip 3 of said bulb at opposite sides of the latter. Finally said slotted bottom portions 5' and 6' are bent as shown in Fig. 4 and Fig. 12, or as shown in Figs. 13-14 and 18-19, so as to adapt the seal-part catch members so formed to interlock securely with normally flat resilient snap catches 5'' or 6'' at the respective extremities of the shackle b or b^2 .

Other characteristics common to both species of the improved shackle b or b^2 , are central longitudinal end slits 12 by which the pair of resilient snap catches 5'' or 6'' at each end of the shackle are separated; and embossed inlet guards, 14, adjoining said slits and adapted throughout their length to render those portions of the narrow shackle approximately semi-cylindrical and adapted to substantially fill the round inlet hole 4 of the seal-part bulb 1 on each side of the middle portion 7 of the center piece 2 or 2', as shown in Fig. 11. The shackle is also preferably and conveniently provided with embossed (or printed) distinguishing marks or lettering and a serial number, represented by "X X X. R. R." and "00001" in Figs. 7 and 9 and by "A B C. R. R." and "49678" in Fig. 16.

Taking one of the improved snap seals of either species, (Fig. 9 or Fig. 17) as it leaves the factory, the free end of the shackle b or b^2 is passed through a pair of car-door staples, c , d , Fig. 10, or the like, and then snap fastened, as was the other end, by thrusting it lengthwise into the inlet 4 of the seal part a or a^2 on one side of the protruding middle portion 7 of the center piece 2 or 2', until its catches 5'' or 6'' snap beneath the slotted bottom portions 5' or 6' of the center piece.

In the fastened snap seal of either species (shown in magnified section by Fig. 11,

and Fig. 12 or Figs. 18-19) the center piece 2 or 2' of the seal part a or a^2 is fixedly held in place by the interaction of the inturned and downturned lip 3 of the seal-part bulb 1 with the top portions 10 and 11 of the center piece; the middle portion 7 protruding as aforesaid between the shackle ends and so as to close the hollow backs of the embossed inlet guards 14, if desired, as shown in Fig. 12 and Fig. 18; the round inlet hole 4 of the seal part is effectively filled by said inlet guards in connection with said middle portion as shown by Fig. 11, so as to prevent tampering with the snap catches 5'' or 6'', and these catches resuming their normally flat shape beneath the slotted catch portions 5' or 6' of the center piece 2 or 2' from their transient deflected positions represented by dotted lines in Fig. 12 and Fig. 18, project across interlocking portions of the center piece and effectively resist the withdrawal of either shackle end through the center piece, while the latter is fixedly held in place by said inturned and downturned lip 3 of the seal-part bulb.

In the first species of the improved snap seal, represented by Sheet 1 of the drawings, the catch members 5, 5' of the center piece 2 and the snap-catches 5'' of the shackle b are of the same construction as those set forth in said specification of my snap seal with double center piece, patented June 25, 1912, and in my previous specification forming part of Letters Patent No. 1,027,812, patented May 28, 1912. That is to say, the normally flat snap catches 5'' project outward, and the bottom portions 5' are adapted to interlock therewith by so bending them that the ends of each of the catch slots 5 are deflected with reference to its middle portion.

The preferred species—represented by Figs. 13 to 19 inclusive, Sheet 2, in connection with Figs. 1-3, Figs. 5-6 and Figs. 10-11, Sheet 1—include catch members 6, 6' and snap catches 6'' of novel construction. That is to say, the shackle ends are smooth and preferably rounded externally, rendering any manipulation of the catches 6'' by tampering means still more difficult or impossible; the catches 6'' project inwardly, toward each other, and their shoulders are exposed to interlocking means by holes, 13, into which the end slits 12 extend; and the double center piece 2' is constructed to interlock therewith by pressing the folded blank (Figs. 2-3) between suitable dies, to form a central recess, x , Figs. 13, 18 and 19, at its bottom, between the two thicknesses of the middle portion 7 in the plane of the bottom portions 6', and to so bend these bottom portions as to form central locking projections, x' , with which the snap catches 6'' effectively interlock in the fastened snap seal as shown by 130

Figs. 18 and 19; the width of the slots 6 being maintained at all points, as shown in Figs. 15 and 19, by correspondingly bending the side portions 8 and 9 of the center piece. The recess *x* is preferably and conveniently pyramidal as shown, rendering the deflected portion of each slot V-shaped; but it may obviously be of other effective shapes.

The snap-catch members of the seal-part center-piece and shackle-ends may obviously be of other known or improved shapes without affecting their relation to some features of the improved construction peculiar to the present improvement; 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 seal-part bulb having an inturned and downturned lip surrounding a round inlet hole and adapted to be contracted in suitable dies, a center piece fixedly held in place by and beneath said lip and constructed with snap-catch members, and a flexible shackle having snap catches at its respective extremities constructed to interlock with said snap-catch members of the seal part.

2. The combination, in a snap seal, of a seal-part bulb having an inturned and downturned lip surrounding a round inlet hole and adapted to be contracted in suitable dies, a center piece having rounded top portions constructed to be fixedly held in place at opposite sides of the bulb by and beneath said lip and slotted bottom portions forming the snap-catch members of the seal part, and a flexible shackle having snap catches at its respective extremities constructed to interlock with said snap-catch members of the seal part.

3. The combination, in a snap seal, of a seal-part bulb having an inturned and downturned lip surrounding a round inlet hole, a center piece having top portions constructed to be fixedly held in place at opposite sides of the bulb by and beneath said lip, slotted bottom portions bent to form locking portions, the same forming the snap-catch members of the seal part, and a flexible shackle having normally flat resilient snap catches at its respective extremities constructed to interlock with said snap-catch members of the seal part.

4. The combination, in a snap seal, of a seal-part bulb having an inturned and downturned lip surrounding a round inlet hole, a center piece having top portions constructed to be fixedly held in place at opposite sides of the bulb by and beneath said lip, slotted bottom portions forming the snap-catch members of the seal part and a middle portion protruding from said bulb through said inlet hole, and a flexible

shackle having snap catches at its respective extremities constructed to interlock with said snap catch members of the seal part and approximately semi-cylindrical inlet guards adapted to effectively obstruct the spaces within said round inlet hole on the respective sides of said middle portion.

5. The combination, in a snap seal, of a seal-part bulb, a double center piece within said bulb constructed with downwardly extending middle and side portions and slotted bottom portions and provided with a central recess between said middle portions in the plane of said bottom portions and corresponding central locking projections at said slots respectively, and a flexible shackle having each end provided with a pair of inwardly projecting and normally flat resilient snap catches and a hole exposing the shoulders of the same, said snap-catches being adapted to be inserted through said slots and to interlock with said central locking projections within said seal part.

6. The combination, in a snap seal, of a seal-part bulb, a double center piece within said bulb constructed with downwardly extending middle and side portions and slotted bottom portions and provided with a central pyramidal recess between said middle portions in the plane of said bottom portions and corresponding central locking projections at said slots respectively, each slot being thus provided with a V-shaped central deflected portion, and a flexible shackle having each end provided with a pair of inwardly projecting and normally flat resilient snap catches and a hole exposing the shoulders of the same, said snap-catches being adapted to be inserted through said slots and to interlock with said central locking projections within said seal part.

7. The combination, in a snap seal, of a seal-part bulb, a double center piece within said bulb constructed with downwardly extending middle and side portions and slotted bottom portions and provided with a central recess between said middle portions in the plane of said bottom portions and corresponding central locking projections at said slots respectively, and a flexible shackle having each end provided with a longitudinal end slit, a hole into which said slit extends and a pair of inwardly projecting and normally flat resilient snap catches separated by said slit and hole, the shackle ends being adapted to be inserted through said slots and to interlock with said central locking projections within said seal part.

8. An improved snap seal having, in combination, a one-piece seal-part bulb round in cross-section constructed with an inturned and downturned lip surrounding a round inlet hole and adapted to be finished by contracting its lip portion, a double center piece for the same adapted to be formed from a

rectangular blank and comprising a middle portion constructed to protrude centrally through said round inlet hole and to extend downward to the desired plane of the snap-
5 catch members of the seal part, bottom portions forming said snap-catch members, side portions extending upward and outward therefrom and top portions constructed to be fixedly held by and beneath said lip, and
10 a flexible shackle constructed with snap-catch members at its respective extremities adapted to interlock with said snap-catch members of the seal-part and approximately semi-cylindrical inlet guards adapted to substantially fill said round inlet holes on 15 the respective sides of said middle portion of the center piece of the seal part, substantially as hereinbefore specified.

EDWARD J. BROOKS.

Witnesses:

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