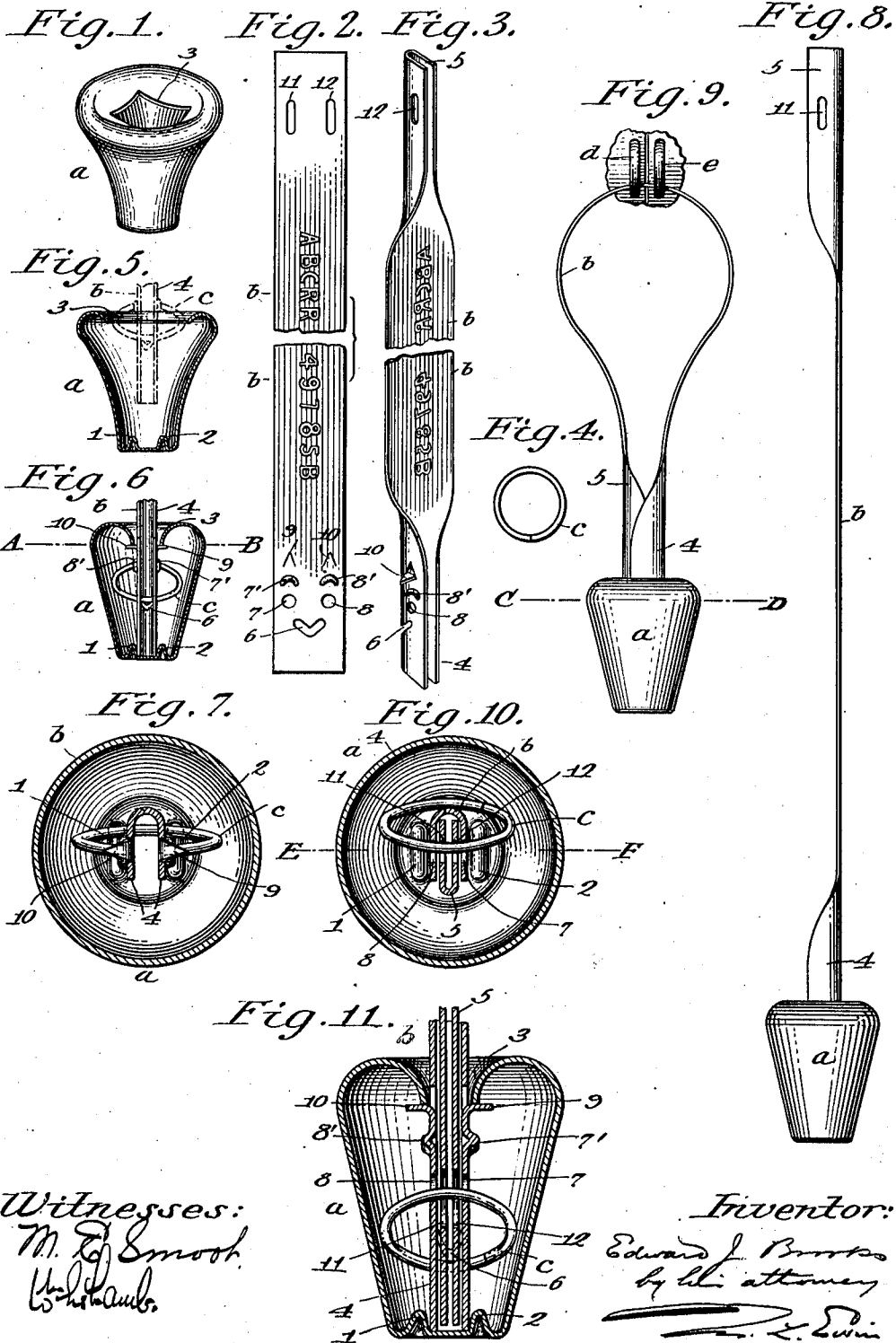


E. J. BROOKS.
SNAP SEAL.
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1,026,943.

Patented May 21, 1912.



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UNITED STATES PATENT OFFICE.

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SNAP-SEAL.

1,026,943.

Specification of Letters Patent.

Patented May 21, 1912.

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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 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, dated February 20, 1912, and other Letters Patent therein referred to.

The present invention is more particularly additional to the improvement set forth in said specification of Letters Patent dated February 20, 1912, which relates to those snap seals in which the ends of a sheet-metal shackle are inclosed within a bulb-shaped seal part, and only one end of the shackle is snap-fastened.

The present invention consists in certain novel combinations of parts, and in an improved snap-seal of the ring tumbler type embodying said combinations as a whole, as hereinafter particularly described and claimed.

The leading objects of this invention are to fasten a "sheath" end of the shackle within the seal part at the factory so that it shall be both secure and rigid, and to provide for making a highly effective shackle for a snap seal of said ring tumbler type from a symmetrical rectangular strip having a longitudinal fold at each end.

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 a perspective view of a one-part sheet-metal seal part as it appears before uniting the parts of the improved snap seal; Fig. 2 is a face view of the shackle blank; Fig. 3 is a perspective view of the shackle provided with its longitudinal folds; Fig. 4 is a view of the ring tumbler detached; Fig. 5 is a longitudinal section of the seal part as in Fig. 1, illustrating the insertion of the sheath end of the shackle;

Fig. 6 is a sectional elevation of the seal part fastened on the sheath end of the shackle; Fig. 7 represents a magnified cross section on the line A—B, Fig. 6; Fig. 8 is an elevation of the improved snap seal as it leaves the factory; Fig. 9 is an elevation of the seal in use as a car-door fastening; Fig. 10 represents a magnified cross-section through the seal part on the line C—D, Fig. 9, and through the shackle ends in the plane of the ring tumbler; and Fig. 11 represents a longitudinal section on the line E—F, Fig. 10, showing the ring tumbler in elevation.

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

The improved snap seal is composed of a bulb-shaped seal part, *a*, and a flexible shackle, *b*, each of which may be made of a suitable grade of "tin" (tin plate) or other suitable sheet-metal, in one piece, and a locking device, *c*, which is preferably and conveniently in the form of a ring-shaped spring or ring tumbler. The one-piece bulb-shaped seal part *a* is first shaped substantially as represented by Fig. 1 and in Fig. 5, with its bottom finished and provided with parallel seat-forming indented ribs, 1 and 2, and its top provided with a shackle-admitting aperture, 3, of suitable form but sufficiently expanded to admit the sheath end 4 of the shackle *b* and therewith the ring-tumbler *c* in its expanded or set position, as represented by dotted lines in Fig. 5. The shackle *b* is made from a symmetrical rectangular strip, Fig. 2, the respective ends, 4 and 5, of which have central longitudinal folds and are stamped with the shackle members of the fastening devices before or after the folding operation; while its intermediate flat portion accommodate any desired distinguishing marks, represented by "A B C R R" and "49875B" which may be embossed or printed as is customary. The sheath end 4 is provided with a substantially U-shaped mouth-forming slot, 6, having upturned ends, a pair of "eye" holes, 7 and 8, above the ends of the mouth, eyebrow-like projections, 7' and 8', above the respective eyes, and a pair of substantially rigid horns, 9 and 10, bent outward from V-shaped cuts in the sheet metal, above said projections. The other shackle end, 5, is simply provided with a pair of longitudinal slots 11 and 12

on the respective sides of its fold, in line with the eyes 7 and 8. Said horns 9 and 10 are the aforesaid shackle members of the fastening device by means of which the sheath end of the shackle *b* is preliminarily fastened within the seal part; and said slot 6, holes 7 and 8, projections 7' and 8' and slots 11 and 12 are the aforesaid shackle members of the snap fastening device. The ring tumbler *c*, which is the other member of said snap-fastening device, is preferably made from round wire of any suitable size and of sufficient resiliency, and is in the shape of a cut or split ring or single coil.

Hooked beneath the nose-like projection formed by the slot 6, the tumbler *c* crosses the space within the sheath end of the shackle *b*—beneath the eyes 7 and 8. Its ends are then sprung apart and adjusted beneath the "eyebrow" projections 7' and 8' by which they are held in place above said eyes. Said sheath end of the shackle *b* with the tumbler *c* in position thereon is then inserted through the expanded aperture 3 of the open seal part *a*, Figs. 1 and 5 as aforesaid. The extremity of the sheath end 4 is seated between the ribs 1 and 2 and the upper portion of the seal part is then contracted in suitable dies until the edges surrounding the aperture 3 press downward on the horns 9 and 10, and securely fasten said sheath end of the shackle in place within the seal part. The improved snap seal in this condition in which it leaves the factory is represented by Figs. 6 and 7, as well as by Fig. 8 aforesaid. After passing the end 5 of the shackle *b* through a pair of car-door staples, *d* and *e*, Fig. 9, or the like, said end 5 is inserted endwise into the open upper extremity of the sheath end 4; its extremity, coming in contact with that portion of the tumbler *c* which bridges the space within the sheath end (Figs. 6 and 7), moves the tumbler downward therewith out of the slot 6 by which the tumbler is guided out of the path of said shackle end 5, and, practically at the same instant, the ends of the tumbler *c*, coming into alinement endwise with the eyes 7 and 8, which are then in communication with the slots 11 and 12 of said shackle end 5, spring through said eyes into said slots, and the inertia is sufficient to turn the loose tumbler until its opening is safely away from the sides of the shackle. The improved seal as thus snap-fastened is represented by Figs. 9, 10 and 11.

The bulb-shaped seal part *a* may obviously be made in two pieces if preferred with a circumferential joint as shown for example in my drawings forming part of United States Letters Patent No. 719,642, dated February 3, 1903 (Fig. 7); it may also be made of celluloid, hard rubber and other plastic materials adapted to be molded with the air of heat and pressure, as may

also the shackle *b*; two or more of the ring tumblers *c* may be used if preferred; 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 bulb-shaped seal part having a pair of upwardly projecting seat-forming ribs indented in its lower end and a shackle admitting aperture in its upper end surrounded by downwardly pressing edges, a flexible shackle having a sheath end formed by a longitudinal fold and provided on its sides with a pair of laterally projecting horns, the extremity of said sheath end being seated between said ribs and said horns co-operating with said downwardly pressing edges surrounding said aperture to fasten said sheath end within said seal part, the other end of said shackle being adapted to be inserted endwise into said sheath end, and a snap fastening device within said seal part adapted to fasten said other end of the shackle at the sealing operation.

2. The combination, in a snap seal, of a bulb-shaped seal part made in one piece of sheet-metal, having seat-forming ribs indented in its lower end and a shackle-admitting aperture formed in its upper end surrounded by edges turned inward and downward, a flexible shackle having a sheath end formed by a longitudinal fold and provided with laterally projecting horns, the extremity of said sheath end being seated between said ribs and said horns co-operating with the edges surrounding said aperture to fasten said sheath end within said seal part, the other end of said shackle being adapted to be inserted endwise into said sheath end, and a snap fastening device within said seal part adapted to fasten said other end of the shackle at the sealing operation.

3. The combination, in a snap seal, of a bulb-shaped seal part having a shackle-admitting aperture surrounded by edges turned inward and downward in its upper end, a flexible shackle having a sheath end formed by a longitudinal fold provided with laterally projecting horns adapted to co-operate with the edges surrounding said aperture to fasten said sheath end within said seal part, eyebrow-shaped projections beneath said horns, eyes formed by holes beneath said projections, and a slot forming a mouth having upturned ends beneath said holes and a ring-tumbler of resilient material adapted to be set under tension with a portion bridging the space within said sheath end of the shackle and its respective ends seated beneath said eyebrow-shaped projections and above said eyes, the other end of said shackle being slotted and adapted to be inserted endwise into said sheath end and to

move said tumbler therewith out of said mouth, and into end alinement with said eyes at the sealing operation.

4. A snap seal having, in combination, a
5 bulb-shaped seal part constructed with a
shackle-admitting aperture surrounded by
downwardly pressing edges turned inward
and downward in its upper end, a flexible
shackle formed from a rectangular strip
10 folded longitudinally at each end and pro-
vided with portions adapted to coöperate
with said downwardly pressing edges to
preliminarily fasten one end of the shackle
within the seal part, and a ring-tumbler
15 adapted to interlock with the shackle ends

at the sealing operation; said preliminarily
fastened end being a sheath end, the other
longitudinally folded shackle end being
adapted to be inserted endwise into said
sheath end; and the two shackle ends being 20
provided respectively with duplicate holes
and slots arranged to admit the ends of said
ring tumbler within said seal part in the
snap-fastened seal, substantially as herein-
before specified.

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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."
