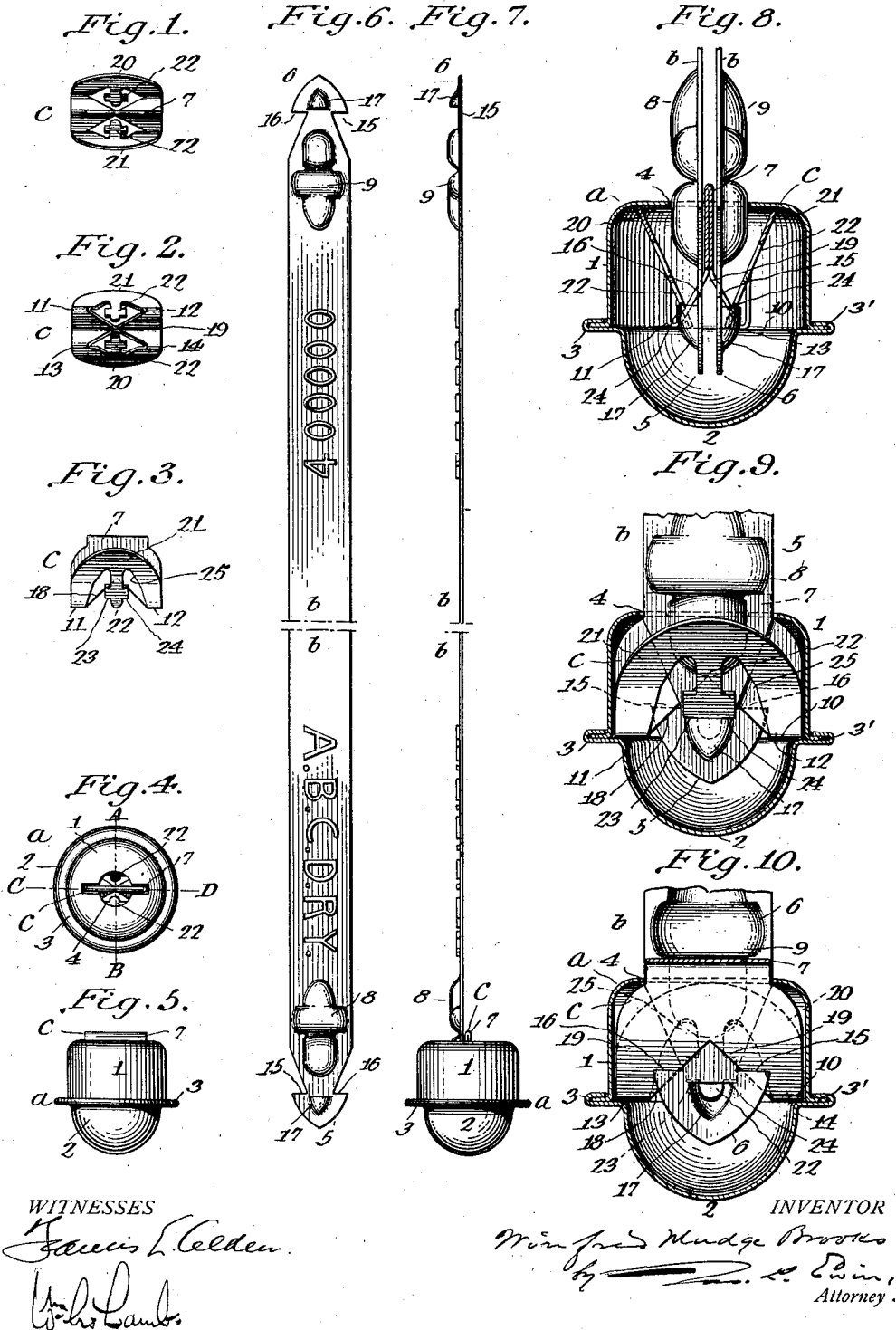


W. M. BROOKS.
SNAP SEAL.
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1,056,623.

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WINFRED MUDGE BROOKS, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO E. J. BROOKS & CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

SNAP-SEAL.

1,056,623.

Specification of Letters Patent. Patented Mar. 18, 1913.

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To all whom it may concern:

Be it known that I, WINFRED MUDGE 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 numerous improvements by Edward J. Brooks and myself 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. Recent examples of such snap seals are set forth in the specifications forming part of United States Letters Patent for improvements in snap seals invented by Edward J. Brooks, No. 1,030,458, patented June 25, 1912, and No. 1,035,526, patented August 13, 1912, and in a subsequent specification of said Edward J. Brooks forming part of his application for patent filed November 12, 1912, Serial No. 730,924 (patented February 11, 1913, No. 1,052,562).

The present invention is more particularly additional to the improvements in snap seals set forth in the specification last referred to; relating in common therewith to a snap seal in which the seal part includes two bulb members united by a circumferential joint, and to double catch engaging center pieces for such seal parts, and flexible sheet-metal shackles adapted to interlock therewith, including normally flat snap-catch shackle ends.

The present invention consists in improved constructions of the center piece and the inlet forming bulb member, and in a snap seal embodying such improved center piece and such improved bulb member, or either of them, as hereinafter particularly described and claimed.

The leading objects of this invention are to so fasten the shackle ends that they will not pull out of the seal part so far as heretofore, and to prevent successfully tampering with the fastened seal.

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

A sheet of drawings accompanies this specification as part thereof.

Figures 1, 2 and 3 are respectively top,

bottom and side views of the center piece of the improved snap seal; Figs. 4 and 5 are respectively top and side views of the seal part inclosing said center piece; Fig. 6 is a face view of the shackle; Fig. 7 is an edge view of the shackle with the seal part attached, representing the seal as it leaves the factory; Figs. 8, 9 and 10 are magnified sectional views of the improved seal with both shackle ends snap-fastened—Fig. 8 showing the seal part and center piece broken away approximately on the line A—B, Fig. 4, Fig. 9 the seal-part bulb members only in section on the line C—D, Fig. 4, and Fig. 10 the seal part and center piece in section on said line C—D.

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

The present snap seal, like those on which it is an improvement, is composed of a hollow sheet-metal seal part *a*, a flexible sheet-metal shackle *b* having both ends provided with snap-catch members, and a center piece, *c*, which is inclosed by and forms the snap-catch members of the seal part.

The seal part *a* is composed as heretofore of bulb members 1 and 2 permanently united after the insertion of the center piece by a circumferential joint 3, the top of the upper bulb member being slotted to form the inlet hole 4. In the improved seal this slotted member 1 is hardened so as to prevent stretching or distorting the inlet hole in attempts to pick the seal, and the same is preferably and conveniently provided with the inner flange 3' of the circumferential joint 3, instead of the outer crown flange. See Figs. 8–10.

The inlet hole 4 is preferably and conveniently fitted as heretofore to the two ends 5 and 6 of the shackle *b* with a protruding guide portion 7 of the center piece *c* between them, and to inlet guards 8 and 9 on the respective shackle ends formed by embossing the sheet metal and including semi-cylindrical portions which enter the seal part through central enlargements of said inlet hole 4.

The lower bulb member 2 forms within the seal part *a* as heretofore an annular shoulder 10, Figs. 8–10; and the center piece *c* is constructed as heretofore with points or bends 11, 12, 13 and 14 at bottom adapted to rest on said shoulder 10 when the parts are united; whereby the center piece is held

accurately in position within the seal part, with its guide portion 7 protruding as aforesaid. Each of the shackle ends 5 and 6 as heretofore is notched to form a pair of lateral catch shoulders, 15, 16, and each is provided with an open-ended catch projection 17; but these parts are differently located with reference to each other and to the stop shoulders of the inlet guards 8 and 9, so as to change the mode of operation within the seal part of the fastened seal as hereinafter more particularly described. Between the inlet guards 8 and 9 and the middle of the shackle *b* it may be provided with any desired distinguishing lettering, serial numbers or the like, either embossed or printed, as represented by "A. B. C. D. Ry." and "400000" in Fig. 6.

The center piece *c*, in addition to the guide portion 7 and supporting bends 11, 12, 13, 14, already described, is provided as heretofore with recesses 18 and 19 at its bottom; the latter being V-shaped, extending from side to side of the center piece, and formed by bends which adapt the center piece to temporarily deflect or flex each entering shackle-end; and said recess 18 extending through the inner walls of said recess 19 and being of sufficient width at its bottom for the passage therethrough of the shouldered portion of each shackle end 5 or 6 as it approaches the limit of its inward movement as determined by the stop shoulders of the corresponding inlet guard 8 or 9. At the limit of this inward movement of each shackle end it springs inward, and its shoulders 15, 16 are drawn upward into said recess 19 by the interaction of the upwardly extending side portions 20, 21 of the center piece with the inner end of the adjoining inlet guard 8 or 9. In this position the catch shoulders 15, 16 interact with the inner walls of said recess 19 as withdrawal resisting means. The center piece *c* is further constructed with a pair of downwardly projecting spring-fingers 22, integral at their upper ends with said side portions 20, 21, and arranged to interact with said catch projections 17 on the shackle ends 5 and 6. But, instead of so constructing and arranging said spring fingers that they only become effective in case the respective shackle ends are tampered with, those of the improved center piece are each constructed with a pair of withdrawal-resisting shoulders, 23, 24, near the lower end of the finger, and are freely exposed within shank-reducing recesses, 25, in said side portions 20, 21, and so proportioned, as shown, that each shackle end, at or instantly after its shoulders 15, 16 become effective, interlocks with the corresponding spring finger 22, and is secured by two additional withdrawal-resisting contacts formed by the interaction of the corresponding finger shoulders 23, 24

and catch projection 17. Compare Figs. 8, 9 and 10; all four of the withdrawal-resisting shoulders 15, 16, 23, 24, for each shackle end, being simultaneously effective; so also that each of said spring fingers is made of increased flexibility, and freed from any possible obstruction by adjoining edges of the metal.

For the purposes of this invention the bottom bulb member 2 may be of any preferred sheet metal that will form the joint 3, and the shackle *b* may be cut from practically any grade of tin plate; the shackle end that is fastened at the factory may if preferred be secured in any other known or improved way; 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. In a snap seal composed of a bulb-shaped seal part, a flexible shackle one end of which is preliminarily attached to said seal part and a center piece of resilient sheet metal within said seal part, said center piece being constructed with recesses crossing each other at the bottom of the center piece, the combination with a flexible shackle end constructed with a pair of laterally disposed catch shoulders adapted to interlock with the inner walls of one of said recesses and a supplemental open-ended catch projection, of a downwardly projecting spring finger forming part of said center piece, constructed with a pair of shoulders and arranged to interlock with said catch projection, whereby the shackle end last named is secured by four simultaneously effective withdrawal resisting shoulders.

2. In a snap seal composed of a bulb-shaped seal part, a flexible shackle one end of which is preliminarily attached to said seal part and a center piece of resilient sheet metal within said seal part, said center piece being constructed with recesses crossing each other at the bottom of the center piece, the combination with a flexible shackle end constructed with a pair of laterally disposed catch shoulders adapted to interlock with the inner walls of one of said recesses and a supplemental open-ended catch projection, of a downwardly projecting spring finger forming part of said center piece, constructed with a pair of shoulders and arranged to interlock with said catch projection, said center piece being further constructed with a shank-reducing recess, whereby the shackle end last named is secured by four simultaneously effective withdrawal resisting shoulders, the flexibility of said spring is effected and said finger is freed from edge contact with the body of the center piece.

3. In a snap seal of the type shown, the combination of a seal part composed of top

and bottom bulb members permanently united by a circumferential joint, said top member being slotted to form an inlet hole and said bottom member forming an annular shoulder within the seal part, a flexible sheet-metal shackle each end of which is notched to form a pair of laterally disposed catch shoulders and provided with an open-ended catch projection, and a center piece of resilient sheet-metal constructed with bends at bottom arranged to rest upon said annular shoulder, a guide portion arranged to protrude through said inlet hole, upwardly extending side portions and downwardly extending spring fingers integral with said side portions at their upper ends, said center piece being further provided with suitable recesses including a bottom recess extending from side to side, the walls of which are adapted to interlock with said catch-shoulders of the shackle ends, and each of said spring fingers being constructed with a pair of laterally disposed shoulders arranged to interact with the upper end of the catch projection on the corresponding shackle end, whereby each shackle end is

secured by four simultaneously effective withdrawal-resisting shoulders.

4. An improved sheet-metal snap seal of the type shown having, in combination, a seal part composed of top and bottom bulb members permanently united by a circumferential joint, said top member being slotted to form an inlet hole and hardened to prevent the enlargement or distortion of said inlet hole, and said bottom member forming an annular shoulder within the seal part, a flexible shackle each end of which is provided with catch members and an inlet guard fitted to said inlet hole, and a center piece supported upon said annular shoulder within the seal part and constructed with a guide portion adapted to protrude between the fastened shackle ends and withdrawal-resisting surfaces arranged to interact with said catch members of the shackle within said hardened bulb member, substantially as hereinbefore specified.

WINFRED MUDGE BROOKS.

Witnesses:

MARIE C. DEMPSEY,
ALICE BOSHATT.

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