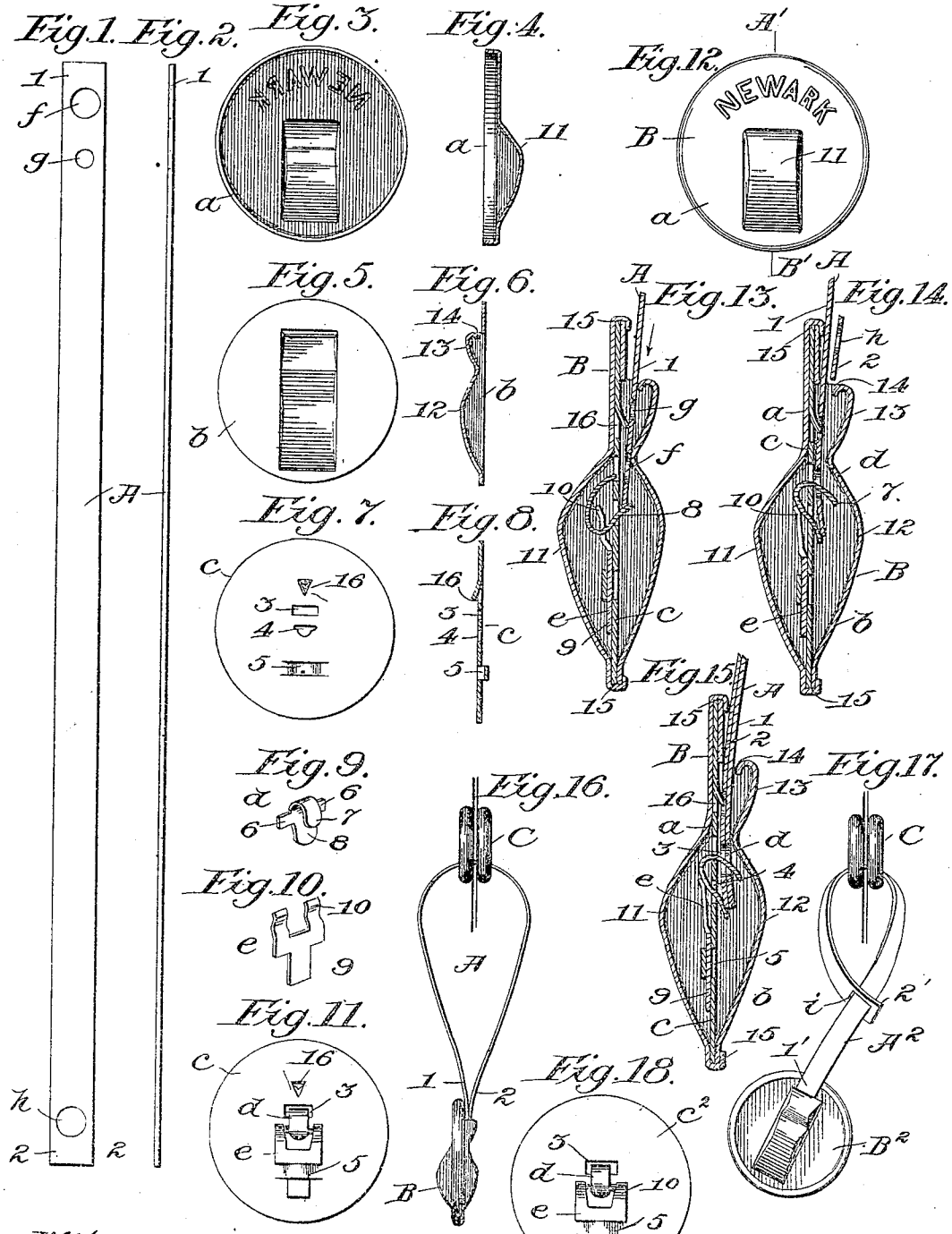
No. 800,545. PATENTED SEPT. 26, 1905.

E. J. BROOKS.

SNAP SEAL.

APPLICATION FILED MAY 8, 1905.

Fig. 1. Fig. 2. Fig. 3. Fig. 4. Fig. 12. Fig. 5. Fig. 6. Fig. 13. Fig. 14. Fig. 7. Fig. 8. Fig. 9. Fig. 10. Fig. 11. Fig. 15. Fig. 16. Fig. 17. Fig. 18.



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SNAP-SEAL.

No. 800,545. Specification of Letters Patent. Patented Sept. 26, 1905.

Application filed May 8, 1905. Serial No. 259,458.

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 to self-fastening seals or "snap-seals," as they are commonly termed, adapted for use as substitutes for lead and wire seals and other press-fastened sealing devices to secure the doors of railway freight-cars and for other like purposes. Previous forms of such snap-seals are set forth in my specification forming part of United States Letters Patent No. 679,104, dated July 23, 1901, and in previous specifications therein referred to, and in my specifications forming part of United States Letters Patent No. 696,002, dated March 25, 1902; No. 696,003, dated March 25, 1902; No. 697,375, dated April 8, 1902; No. 712,250, dated October 28, 1902; No. 719,642, dated February 3, 1903; No. 719,643, dated February 3, 1903; No. 736,682, dated August 18, 1903, and No. 768,510, dated August 23, 1904.

The leading object of the present invention is to free such seals from dependence on the elasticity of the necessarily small catches within the seal part.

Another object is to provide in a peculiar manner for locking one end of a sheet-metal shackle within the seal part by means of a hook moved into effective position by such end.

Another object is to supplement such hook by a guard-catch between said hook and the inlet of the seal part so as to prevent tampering with said hook and also to protect the same against excessive strain in testing the seal.

A sheet of drawings accompanies this specification as part thereof.

Figures 1 and 2 are respectively face and edge views of the shackle straight. Figs. 3 and 4 are respectively a back view and a section of the front shell-piece of the seal part. Figs. 5 and 6 are like views of the back shell-piece. Figs. 7 and 8 are like views of the middle piece of the seal part. Figs. 9 and 10 are perspective views, respectively, of the hook and spring of the seal part. Fig. 11 is a face view of the middle piece with the hook and spring in place thereon. Fig. 12 is a face view of the completed seal part. Figs. 13, 14, and 15 are enlarged sections on the line A′ B′, Fig. 12, illustrating the interlocking therewith of the shackle represented by Figs. 1 and 2. Fig. 16 is a small-scale edge view of the fastened seal applied to a pair of car-door staples. Fig. 17 is a small-scale view of the same or a similar seal part applied to a looped shackle; and Fig. 18 is a reproduction of Fig. 11 in part, illustrating a modification.

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

The improved seal consists of a flexible shackle A or A^2 and a seal part B or B^2, both of which are adapted to be and are preferably made of sheet metal exclusively.

The shackle A or A^2 has in both species perforated shackle ends 1 and 2 or 1′ and 2′ and is adapted to interlock with the seal part B or B^2 within the latter and to fasten together or guard the fastening of a pair of car-door staples C or in like manner to insure the detection of the separation of any two things the connection of which with each other the seal may serve to protect.

The seal part B or B^2 in both species is composed of a pair of shell-pieces *a* and *b*, (represented, respectively, by Figs. 3 and 4 and Figs. 5 and 6, as they appear before the pieces are assembled,) a middle piece *c* or c^2, (shown detached by Figs. 7 and 8 and Fig. 18,) a hook *d*, (shown detached by Fig. 9,) and a spring *e*. (Shown detached by Fig. 10.) The middle pieces *c* and c^2 have in common holes 3 and 4 and a keeper 5 integral with the body of the piece. The hook *d* is substantially U-shaped and is constructed with a pair of flat trunnions 6, Fig. 9, midway between its nose end 7 and its heel end 8, which project, respectively, through said holes 3 and 4 of the middle piece. The spring *e* has an attaching end 9, Fig. 10, which interlocks with said keeper 5 of the middle piece *c* or c^2, and a bifurcated pressing end 10, which straddles the body of the hook *d* and presses its trunnions 6 against the middle piece, so as to attach the hook and to hold it in one or the other of the two positions in which it is shown, for example, in Figs. 13 and 14, respectively. These three pieces are thus united with each other, as in Fig. 11 or Fig. 18, with the hook *d* in its first position, Fig. 13, in which its nose end 7 is retracted and its heel end 8 protrudes through the middle piece. The seal part B or B^2 is completed by inserting the middle piece *c* or c^2, with its attachments, into the front

shell-piece *a*, so that the body of the retracted hook *d* and the spring *e* are within a suitable space formed by a raised portion 11 of the front of said shell-piece *a*, then inserting the back shell-piece *b*, which has a matching space-forming portion 12 and above the same a raised portion 13, having at top an inlet-hole 14, and then permanently uniting the shell-pieces *a* and *b* with each other on all sides by bending a flange 15 on one of the pieces around the edges of the other piece by suitable dies. The end 1 of the shackle A may then be inserted through the inlet-hole 14, as in Fig. 13, to preliminarily attach the seal part B at the factory, or the end 1′ of the shackle A^2 may be inserted to complete the sealing operation after looping the shackle to a pair of car-door staples C or the like. In either case the substantially rigid end of the shackle presses against the protruding heel end 8 of the hook *d*, overcoming the resistance of the spring *e* and causing the hook *d* to turn on its trunnions 6 into its second position. (Represented by Figs. 14 and 15.) In so turning the hook *d* thrusts its nose end 7 into and through a hole *f*, provided for the purpose in the shackle end 1 or 1′, and fastens the shackle against withdrawal.

In the first species (represented by Figs. 1 to 16, inclusive) the middle piece is further constructed with a V-shaped supplemental catch 16 integral with the body of the piece, which projects into the space formed by said raised portion 13 of the back shell-piece *b* and interlocks with a second hole *g* in the shackle B simultaneously with the protrusion of the hook *d*, as above described. (See Fig. 14.) This supplemental catch forms an inlet-guard to prevent tampering with the hook *d* in the fastened seal and also protects the hook against excessive strain when the seal is pulled to test it. In said first species the shackle B is further provided with a catch-hole *h* in its second end 2 to adapt this end to interlock with the hook *d* in the sealing operation by elasticity—that is to say, by springing sufficiently to ride over the hook *d* until the nose of the hook enters said hole *h* and then springing back into line with the adjoining portion of the shackle and so as to be inseparable from the hook. In the second species (illustrated by Figs. 17 and 18) the second end 2′ of the shackle A^2 has instead a longitudinal slot *i*, through which the end 1′ is threaded to form a loop by which the shackle is attached to a pair of car-door staples C or the like, and there is but one end to interlock with the seal part B^2. In this second species, moreover, said supplemental catch 16 is or may be omitted, as illustrated by Fig. 18.

The front piece *a* may conveniently be embossed with any suitable distinguishing-marks, as represented by the word "Newark" in Figs. 3 and 12.

The outline of the shell-pieces *a* and *b* and middle piece *c* is of course immaterial, 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 snap-seal having, in combination, a pair of shell-pieces permanently united with each other on all sides at their edges, a substantially flat middle piece held between said shell-pieces at its edges and provided with holes and a keeper, a substantially U-shaped hook movable endwise within said holes and constructed with trunnions, a bifurcated spring held in place by said keeper and pressing on said trunnions to hold said hook in either of two positions in one of which its nose is retracted and its heel projects at the back of said middle piece, and a shackle adapted to engage endwise with said heel and to move said hook into its second position, and provided with a catch-hole through which the nose of the hook is thus made to protrude to fasten the shackle against withdrawal; said shell-pieces having raised portions to form sufficient spaces within the seal part, and the back piece having an inlet-hole to admit the shackle end.

2. A sheet-metal snap-seal having, in combination, a pair of shell-pieces permanently united with each other on all sides at their edges, a substantially flat middle piece held between said shell-pieces at its edges and provided with holes and a keeper, a substantially U-shaped hook movable endwise within said holes and constructed with trunnions, a bifurcated spring held in place by said keeper and pressing on said trunnions to hold said hook in either of two positions in one of which its nose is retracted and its heel projects at the back of said middle piece, and a flexible shackle having catch-holes in both ends and adapted to engage endwise with said heel and to move said hook into its second position, and provided with a catch-hole through which the nose of the hook is thus made to protrude to fasten the shackle against withdrawal, one end of the shackle being thus preliminarily fastened in place and the other end adapted to interlock with the protruding nose of the hook by elasticity; said shell-pieces having raised portions to form sufficient spaces within the seal part, and the back piece having an inlet-hole to admit the shackle ends.

3. A sheet-metal snap-seal having, in combination, a pair of shell-pieces permanently united with each other on all sides at their edges, a substantially flat middle piece held between said shell-pieces at its edges and provided with holes and a keeper and with a supplemental catch, a substantially U-shaped hook movable endwise within said holes and constructed with trunnions, a bifurcated spring held in place by said keeper and pressing on said trunnions to hold said hook in either of

two positions in one of which its nose is retracted and its heel projects at the back of said middle piece, and a flexible shackle having catch-holes in both ends and a supplemental catch-hole in one end and adapted to engage endwise with said heel and to move said hook into its second position, and provided with a catch-hole through which the nose of the hook is thus made to protrude to fasten the shackle against withdrawal, one end of the shackle being thus preliminarily fastened in place and the other end adapted to interlock with the protruding nose of the hook by elasticity; and said supplemental catch being arranged to interlock with said supplemental catch-hole at the preliminary fastening operation; said shell-pieces having raised portions to form sufficient spaces within the seal part, and the back piece having an inlet-hole to admit the shackle ends, substantially as hereinbefore specified.

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