No. 619,704. Patented Feb. 14, 1899.

# E. J. BROOKS.

## SNAP SEAL.

(Application filed Dec. 8, 1898.)

(No Model.)

Fig. 1.

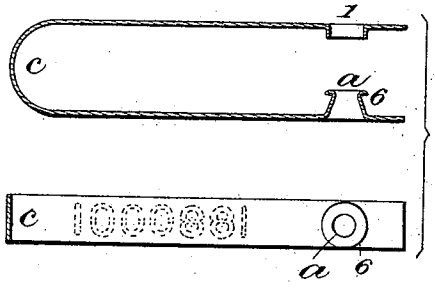



Fig. 6. Fig. 7. Fig. 8. Fig. 9.

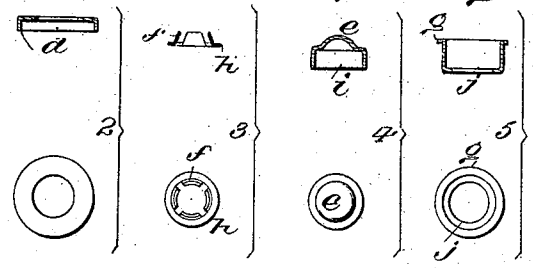



Fig. 2.

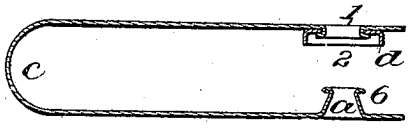



Fig. 10. Fig. 11. Fig. 12.

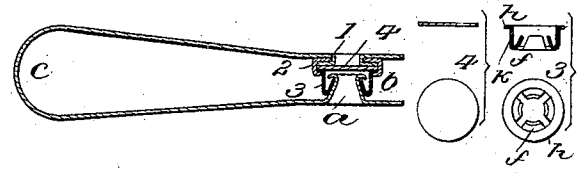



Fig. 3.

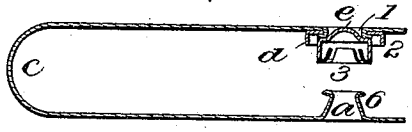



Fig. 13. Fig. 14. Fig. 15.

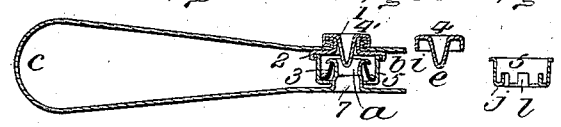



Fig. 4.

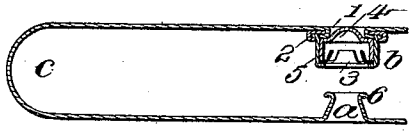



Fig. 16. Fig. 17. Fig. 18.

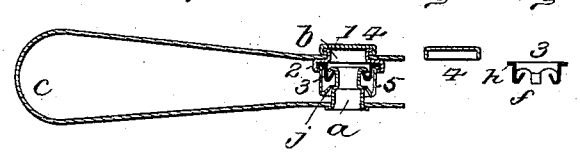
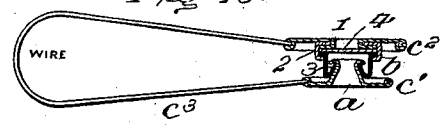



Fig. 5.




Fig. 19.




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# UNITED STATES PATENT OFFICE.

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## SNAP-SEAL.

SPECIFICATION forming part of Letters Patent No. 619,704, dated February 14, 1899.

Application filed December 8, 1898. Serial No. 698,621. (No model.)

*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 improvements in those seals known as "self-fastening" seals or "snap-seals" and designed for use like press-fastened seals for securing the doors of railway freight-cars and for other purposes for which such seals are or may be employed. Previous forms of such snap-seals are set forth in my specification forming part of United States Letters Patent No. 538,892, dated May 7, 1895, and previous specifications therein referred to.

The present invention consists in an improved snap-seal and certain novel combinations of parts in such seals, as hereinafter set forth and claimed. Its objects are, first, to provide for making a secure seal of this description wholly from sheet metal, so that its parts may be made by inexpensive stamping operations and united permanently at the factory by machinery; secondly, to provide for making one member of the fastening integral with one end of a sheet-metal shackle or its equivalent; thirdly, to provide for securely attaching the other members of the fastening device to the other end of the flexible shackle; fourthly, to effectively guard the snap part against being tampered with through the eyelet by which the connection last named is made, and, fifthly, to effectively guard the lateral edges of the fastening device.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 of the drawings represents a sectional edge view with an appended sectional plan view of the sheet-metal shackle part of a snap-seal embodying all the present improvements. Figs. 2 and 3 are sectional edge views illustrating successive stages in the manufacture of a seal embodying said shackle part. Fig. 4 is a like view of the seal as it leaves the factory. Fig. 5 is a like view of the same seal fastened; and Figs. 6 to 9, inclusive, are sectional edge views with appended plans of the parts of the seal additional to the shackle part as they appear before being assembled. Fig. 10 is a sectional edge view of a modified snap-seal fastened, and Figs. 11 and 12 are sectional edge views with appended plans of the distinguishing parts of this seal. Figs. 13, 14, and 15 are sectional edge views of another modified seal and its principal distinguishing parts. Figs. 16, 17, and 18 are like views illustrating another modification, and Fig. 19 is a sectional edge view of a modified seal in which a pair of sheet-metal disks united by a flexible shackle-wire take the place of the ends of the sheet-metal shackle.

Like letters and numbers refer to like parts in all the figures.

The improved snap-seals in common comprise seal parts *a* and *b*, that are carried by the respective ends of a sheet-metal shackle *c* or its equivalent, such equivalent consisting of a pair of disk-shaped sheet-metal shackle ends $c'$ $c^2$, Fig. 19, connected by a flexible wire $c^3$, and wired by the same to inseparably attach the wire.

The "seal part" *a* in each of the improved seals consists of a rigid catch-collar, which may be and preferably is integral with one of the sheet-metal shackle ends, as shown in Figs. 1 to 5, inclusive, Figs. 10, 13, and 19. Another feature common to all the seals is an eyelet-collar 1, which is one member of said seal part *b* and is adapted to be and is preferably integral with the other shackle end, as shown in said Figs. 1 to 5 and Fig. 10. Another common feature is a bezel 2 for attaching the remainder of said seal part *b* to the shackle, the same being preferably a distinct part stamped in the form represented by Fig. 6 and so shown in said Figs. 1 to 5 and Fig. 10. Another part common to all is a snap part 3, which is one of the members of said seal part *b* and is annular in form, with slight modifications in shape, but comprising in all cases converging spring-fingers *f*, Figs. 7, 12, and 18. Another feature of all the seals is an eyelet-mask 4, four shapes of which are represented by Figs. 8, 11, 14, and 17. The function common to all is the prevention of any tampering with the snap part 3 through the opening of the eyelet-collar 1. Moreover, in all the seals one or each shackle end is

designed to have printed or embossed thereon while the metal is flat or after the parts of the seal are united with each other suitable permanent distinguishing-marks, illustrated by the serial number "1000881" in Fig. 1. The name of a railroad and the name or number of a sealing-station, either or both, may be substituted for such number or added thereto to locate violations of the seal. When disk-formed shackle ends are used, Fig. 19, such marks or those requiring to be most legible are carried by the larger disk $c^2$.

In the specific seal represented by Figs. 1 to 9, inclusive, the catch-collar $a$ is integral with the sheet-metal shackle $c$, as aforesaid, and its diameter is immaterial, but is limited by the width of the shackle. The eyelet-collar 1 is likewise integral and limited as to diameter and projects from the "back" of the shackle. It serves to attach the bezel 2 as aforesaid, as illustrated by Fig. 2, which is the first operation in assembling the parts. The next operation (illustrated by Fig. 3) consists in putting together the snap part 3, Fig. 7, and the eyelet-mask 4, Fig. 8, and inserting these into the bezel 2 with the centering protuberance $e$ of the eyelet-mask within the opening of the eyelet-collar 1. At the final operation (illustrated by Fig. 4) an outer shell or edge shield 5 is attached by interlocking the previously-projecting crown-rim $d$, Figs. 2, 3, and 6, of the bezel 2 with the marginal rim $g$, Fig. 9, of said shield. With the parts thus assembled the marginal rim $h$, Fig. 7, of the snap part 3 is clamped between the crown-flange $i$, Fig. 8, of said eyelet-mask 4 and an inturned flange $j$, Fig. 9, within the shield 5. The parts are thus tightly united, while the inclosed fingers $f$ are left free to spring back to admit the catch-collar $a$ and to interlock with its recurved rim 6, which then guards the ends of the fingers $f$ against access thereto through the opening of said catch-collar in the fastened seal, Fig. 5.

In the modified seal represented by Figs. 10, 11, and 12 the shackle $c$, with its eyelet-collar 1 and seal part $a$, and the bezel 2 of the seal part $b$ are identical with those above particularly described. The snap part 3 is cup-shaped, with an imperforate curb $k$, Fig. 12, which connects its fingers $f$ with its marginal flange $h$, while its eyelet-mask 4 is a flat disk and is held, together with said marginal flange $h$, within the bezel 2, as in Fig. 10.

In the modified seal represented by Figs. 13, 14, and 15 the eyelet-collar 1 of the shackle $c$ projects from its face and the catch-collar $a$ is constructed with an enlargement 7 to coact with the inturned flange $j$ of the edge shield 5. Otherwise the shackle $c$, Fig. 13, is identical with those above particularly described. The bezel 2, Fig. 13, is shouldered, so as to interlock with said collar 1 on the face of the shackle and with a shell or edge shield 5 at its back. The snap part 3, identical with the form represented by Fig. 7, is held in place within said edge shield upon its inturned flange $j$ by clenches $l$, Fig. 15, which are clenched between the fingers $f$ of the snap part before the edge shield is attached. This, as before, is the last operation in assembling the parts. The eyelet-mask 4 has an inwardly-projecting protuberance or teat $e$, Fig. 14, to occupy the eyelet-opening, and its crown-flange $i$ interlocks with the eyelet-collar 1, together with the bezel 2.

The modified seal represented by Figs. 16, 17, and 18 has a sheet-metal shackle $c$, the respective ends of which are provided with its snap-collar $a$ and eyelet-collar 1 by eyeleting these parts into holes in the shackle ends, which provides for making them of thinner or more ductile metal than the shackle. The snap-collar $a$ is otherwise substantially like that shown in Fig. 13, and the eyelet-collar 1 is formed in one part with the bezel 2 and serves to attach the bezel, as in the other forms. The snap part 3 (shown detached by Fig. 18) has hooked fingers $f$ to interlock with the catch-collar. The bezel 2 and an eyelet-mask 4, Fig. 17, in the form of a flat cap, are simultaneously attached in the act of interlocking the latter with the eyelet-collar 1. The edge shield 5, which completes the seal, is substantially like the form shown by Fig. 9, except that its sole function in this arrangement is to inclose and protect the snap part 3. As shown in Fig. 16, the inturned flange $j$ of the edge shield is conveniently recurved, so as to interlock with and prevent the withdrawal of hooked tools such as would be inserted in attempts to unfasten the seal by bending back the fingers $f$. The snap part 3 and edge shield 5 are simultaneously attached by means of the bezel 2, as in the first arrangement.

The shackle shown at $c'$, $c^2$, and $c^3$ in Fig. 19 has already been described. Otherwise this modified seal may be like any of those before described. As represented in the figure, its other parts are substantially identical with those shown in Fig. 10, comprising an eyelet-collar 1 on the back of the shackle end $c^2$, a bezel 2, interlocked with said collar, a cup-shaped snap part 3, and an eyelet-mask 4 in the form of a flat disk attached by said curb, and a catch-collar $a$ integral with the other shackle end.

The sheet-metal shackles $c$, shackle-end disks $c'$ and $c^2$, bezels 2 of the form represented by Fig. 6, eyelet-masks 4, and edge shields 5 are intended to be made of ordinary tin-plate. The shouldered bezels may preferably be made of soft brass or other more ductile metal, and the snap parts 3 are intended to be made of thin steel or other spring metal.

It will be apparent that the eyelet-masks, Figs. 14 and 17, are interchangeable with each other, that the fingers $f$ of each snap part may be two, three, or more in number, and that the disks $c'$ and $c^2$ may be of uniform diameter, if preferred, and as large as may be required, and like additional modi-

fications 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. An improved snap-seal comprising a flexible shackle having sheet-metal shackle ends provided respectively with a catch-collar and an eyelet-collar integral therewith, a snap part to interlock with said catch-collar, and means for attaching said snap part to said eyelet-collar, substantially as hereinbefore specified.

2. In combination with a snap part and means for attaching the same, a flexible shackle to one extremity of which said snap part is attached and constructed with a sheet-metal shackle end at the other extremity having a catch-collar integral therewith and which has a recurved rim to interlock with said snap part.

3. The combination with a flexible shackle, in a snap-seal, of an eyelet-collar carried by one end of the same, a bezel attached by said collar, an annular snap part attached by said bezel, and a catch-collar carried by the other end of the shackle to interlock with said snap part.

4. The combination with a flexible shackle, in a snap-seal, of an eyelet-collar carried by one end of the same, a bezel attached by said collar, an annular snap part and an eyelet-mask attached by said bezel, and a catch-collar carried by the other end of the shackle to interlock with said snap part.

5. The combination with a flexible shackle, in a snap-seal, of an eyelet-collar carried by one end of the same, a bezel attached by said collar, an annular snap part and a surrounding shield for the same attached by said bezel, and a catch-collar carried by the other end of the shackle, substantially as hereinbefore specified.

The foregoing specification signed by me this 1st day of December, 1898.

EDWARD J. BROOKS.

Witnesses:
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