(No Model.)

E. J. BROOKS.

SEAL.

No. 298,168. Patented May 6, 1884.

Fig. 1.

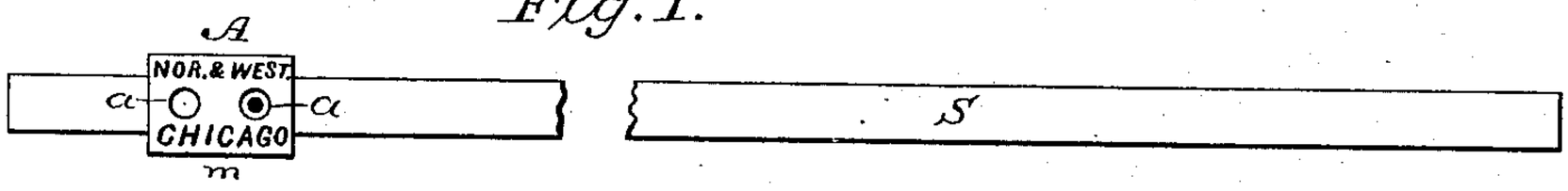


Fig. 2.

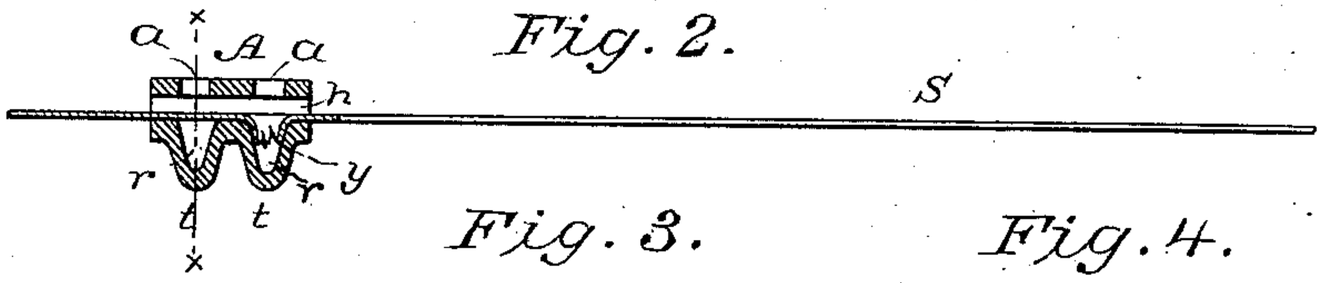


Fig. 2x.

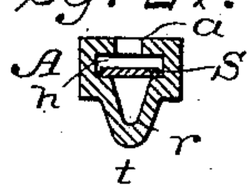


Fig. 3.

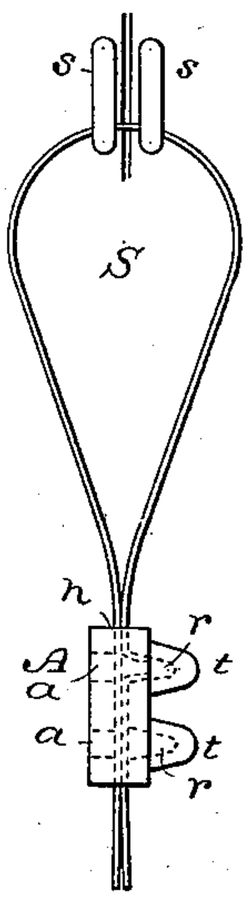


Fig. 4.

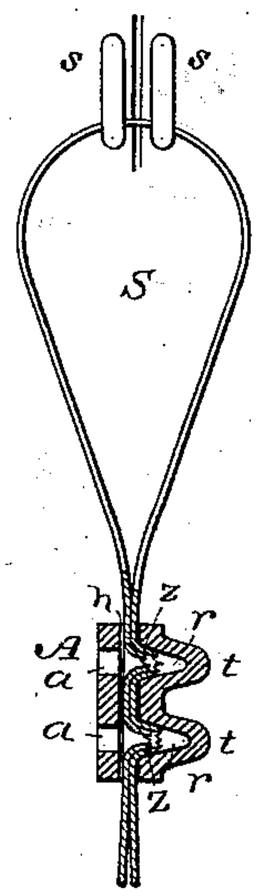


Fig. 8.

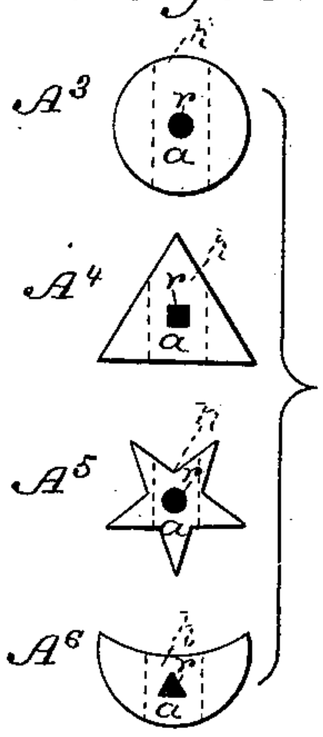


Fig. 9.

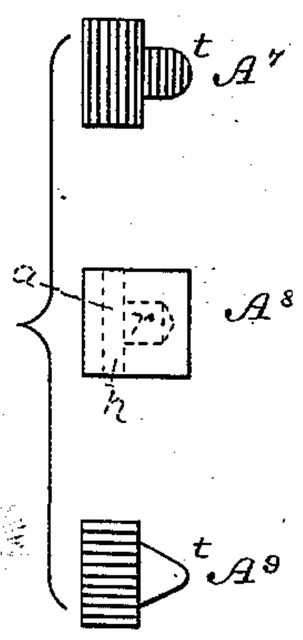


Fig. 5.

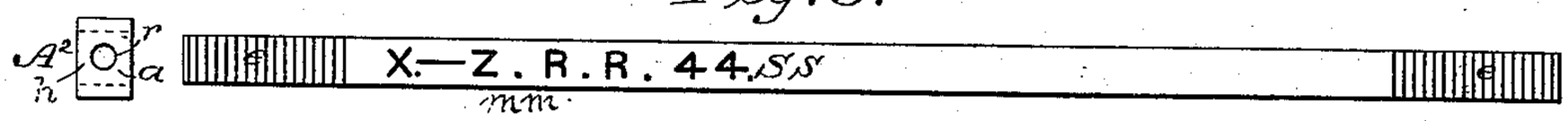


Fig. 6.

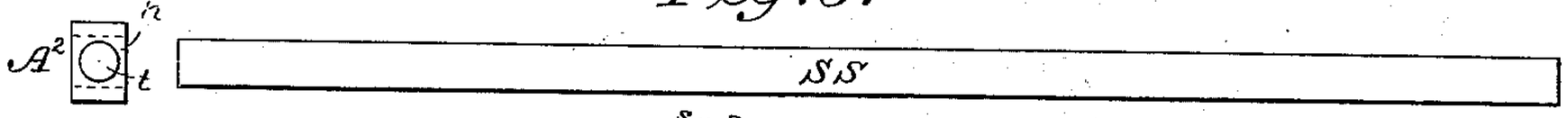
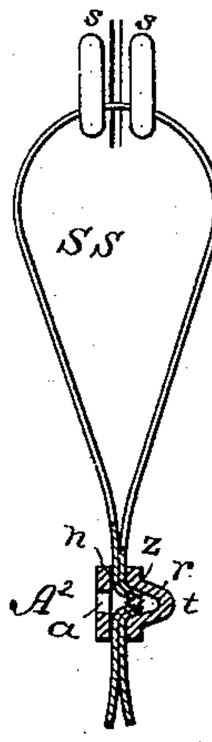


Fig. 7.



WITNESSES

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SEAL.

SPECIFICATION forming part of Letters Patent No. 298,168, dated May 6, 1884.

Application filed March 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. BROOKS, a citizen of the United States, residing at East Orange, in the State of New Jersey, have invented a new and useful Improvement in Seals, of which the following is a specification.

This invention, in common with numerous seal inventions heretofore patented by me, relates to that general class of seals in which flexible shackles are combined with or provided with means for uniting or fastening their ends after they are passed through or around parts of car-door locks and other fastenings which are to be sealed fast or secured, the object being to prevent separating the ends of the shackle so united or fastened without so breaking or marring some part of the seal as to insure the detection of its violation.

The present invention consists, primarily, in the combination, with a sheet-metal shackle, of a "seal-disk" of hard and rigid or substantially rigid material, having an inexpansible threading-hole to receive the threading end or ends of the shackle, a permanent recess or recesses extending inward from behind said threading-hole, and an aperture opposite said recess or each recess to admit a suitable punch for punching said threading end or ends, so as to throw a burr of the sheet metal into said recess, where it is inaccessible, and cannot consequently be tampered with as improved means for securing said threading end or ends of the shackle against withdrawal.

This invention consists, further, in a seal-disk of hard and rigid material, having a teat or teats on its back to accommodate said recess or recesses within them, and thus adapted to be made of light weight; also, in a seal-disk of hard and rigid material, provided, in course of manufacture, with permanent distinguishing marks or lettering, in cameo or intaglio, by which to identify genuine seals; and, finally, in a seal-disk of hard and rigid material, and a shackle of sheet metal, united at or near one end of the latter, to facilitate carrying and applying the seals, by preliminarily threading said end of the shackle into or through the seal-disk and punching it as aforesaid, as hereinafter more fully set forth.

A sheet of drawings accompanies this specification as part thereof. Figure 1 of these drawings is a face view of a seal "straight," as it comes from the factory, embodying my present invention; and Figs. 2, 2^x represent, respectively, a longitudinal section of the same and a cross-section on the line $x\,x$, Fig. 2. Fig. 3 is an edge view of the same applied to the sealing-staples of a railway-freight-car door, showing the seal threaded, but not fastened. Fig. 4 is a sectional edge view showing the same with the shackle ends fastened. Fig. 5 is a face view of the two members of another seal, illustrating the same invention in part. Fig. 6 is a reverse view of the same, and Fig. 7 a longitudinal section of this seal as applied to sealing-staples and fastened; and Figs. 8 and 9 are respectively face and edge views of two series of seal-disks, illustrating additional modifications.

Like letters of reference indicate corresponding parts in the several figures.

A to A^9, inclusive, represent seal-disks, varying more or less in details of construction, and S SS two illustrative sheet-metal "shackles." The several seal-disks are cast, molded, or otherwise manufactured in final shape, as represented, of any hard (relatively hard) and rigid or substantially rigid materials sufficiently adapted to resist bursting strains, such as cast-iron or brass or tin, close-grained wood or wood compounds, and "paper" or compressed paper-pulp. Each seal-disk has a threading-hole, *h*, a recess or recesses, *r*, perpendicular to said hole in the back of the disk, and an aperture or apertures, *a*, in the face of the disk in line with or in front of said recesses, respectively, and in the preferred forms protuberances or "teats" *t* on the backs of the seal-disks, coinciding with the respective recesses *r*, accommodate the latter without unnecessary weight or bulk of material in the disks. The seal-disk A, Figs. 1 to 4, inclusive, is furthermore provided with distinguishing-marks *m* on its face in the form of lettering, descriptive of the railroad (for ex-

ample) owning the seal and the place where the seal was fastened. Other marks (corresponding, for example, with those which would be impressed in a lead seal at the pressing operation, such as station-numbers, initials of sealers, &c.) may be used, and the back or edge or edges of the seal-disk, as well as or instead of its face, may be provided therewith. In either case these marks *m* will be formed in cameo or intaglio at the casting or molding operation; or they may be sunk subsequently by means of steel stamps. Instead of or in addition to said marks *m* on the seal-disks, similar marks, *mm*, may be printed or engraved or embossed or stamped upon the sheet-metal shackle, as illustrated by Fig. 5, in which such marks are shown upon the face of the shackles SS. The original length of the shackles may also be represented by end shading, *e*, Fig. 5, or in other approved ways, to prevent cutting off their ends and using them a second time without detection; and genuine seal-disks, and those appropriated to particular uses, may be distinguished by differences in size, as illustrated by Figs. 5 to 7, inclusive, in comparison with the preceding figures, the seal-disk of hard material being adapted to be made very small, as represented by the seal-disk A^2, and double, triple, &c., as well as of larger sizes single. Genuine seal-disks, and those appropriated to particular uses, may be furthermore distinguished with provision for great variety of styles and facility of comparison by making the respective styles, together with their apertures *a*, of different shapes, as illustrated by Fig. 8, or by making the disks of different colors, as illustrated by Fig. 9, either or both with or without lettering or like marks *m* thereon. The shackles may be likewise made of different widths, and with faces of distinguishing colors, and with or without lettering or like marks *mm* on them for the same purposes. Ample adaptation of the seals for use by different roads and other users without danger of confusion of seals is thus afforded.

The sheet-metal shackles S SS are preferably made of common "tin," (tin-plate,) and may be of ordinary shape, as represented, and sheared from sheets of tin already printed, embossed, or stamped with the marks *mm* and the end shading, *e*, when these are used in customary manner.

To facilitate handling and applying the seals, as aforesaid, the two members of which each seal is composed—viz., a seal-disk, A, for example, and a shackle, S, for example—are preferably united at or near one end of the shackle in the factory. This may be done by casting the seal-disk on the shackle, as in some of my lead and tin seals heretofore patented; but owing to the facility afforded by the construction of the seal-disk of hard material, as aforesaid, I propose, instead, to thread the shackle end which is to be preliminarily fastened into or through the finished seal-disk, and to punch the shackle through one of the apertures *a*, so as to throw a burr of the sheet metal into the matching recess *r*, as represented at *y* in Fig. 2. After applying the seal to car-door staples *s s*, as illustrated by Fig. 3, or to other fastenings, in customary or any appropriate way, both ends, or the threading end or ends of the shackle freely admitted by the threading-hole *h*, are finally fastened in a manner similar to said preferred preliminary union, as represented at *z z* in Fig. 4 and at *z* in Fig. 7—that is to say, a sharp-pointed punch, which may be of round, oval, or angular section, is driven into each aperture *a* against and through the sheet metal of the shackle in line therewith, throwing the latter backward in the form of a burr, *z*, within the corresponding recess, *r*, said burr being of ample prominence to preclude its escape through the threading-hole, and of sufficient rigidity to prevent the withdrawal of the shackle end, or to render such violence necessary in withdrawing it as to insure detection. The fastening thus readily effected is rendered secure by the rigidity of the material of which the seal-disk is composed, which precludes expanding the threading-hole *h*, and the location of each recess *r*, as aforesaid, so that its only opening is covered by the shackle in front, and guarded laterally by the solid edges of the seal-disk, so as to render access to the fastening-burrs therein impossible. Two (or more) fastenings may be used in one seal, as illustrated by Figs. 1 to 4, inclusive; but one, as shown in Figs. 5 to 7, inclusive, is deemed of ample security.

Where two or more fastenings per seal are employed, the corresponding punches may be carried by a single head or jaw in a press or pliers, and a very small punch (one-sixteenth to one thirty-second of an inch in diameter) may be employed with decreased security. The aperture *a* may but need not be reduced in diameter proportionately, and may but need not correspond in shape with the shape of the proper punch in cross-section.

Having thus described my said improvement in seals, I claim as my invention and desire to patent under the present specification—

1. An improved seal composed of a seal-disk of hard and rigid or substantially rigid material, and a flexible shackle of sheet metal, said seal-disk having a threading-hole adapted to receive one or both ends of said shackle, a recess or recesses behind said threading-hole to receive a burr of the sheet metal and render the same inaccessible, and in front of each recess an aperture adapted to admit a sharp-pointed punch for punching the shackle and throwing said burr into said recess to fasten the seal, substantially as herein specified, for the purposes set forth.

2. A seal-disk of hard and rigid or substantially rigid material, having a threading-hole, a recess or recesses behind said thread-

ing-hole, an aperture or apertures in its face opposite or in line with said recesses, and a teat or teats on its back to accommodate said recesses within them, substantially as shown, for the purposes set forth.

3. A seal-disk of hard or rigid or substantially rigid material, having a threading-hole, a recess or recesses behind said threading-hole, and an aperture or apertures opposite or in line with said recesses, and provided with permanent distinguishing-marks formed in or of the material of the seal-disk, as herein described, for the purpose set forth.

4. In combination with a seal-disk of hard or rigid or substantially rigid material, having a threading-hole, a recess or recesses behind said threading-hole, and an aperture or apertures opposite or in line with said recesses, a shackle of sheet metal, preliminarily united with said seal-disk, at or near one end of the shackle, by a burr formed thereon within one of said recesses, substantially as shown, for the purposes set forth.

EDWARD J. BROOKS.

Witnesses:
N. S. KLINE,
H. L. C. WENK.