E. J. BROOKS.

METALLIC SEAL.

No. 192,735. Patented July 3, 1877.

Fig. 1.

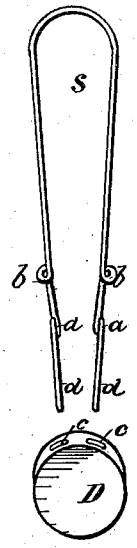


Fig. 2.

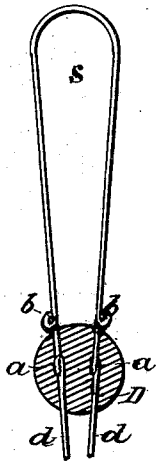


Fig. 3.

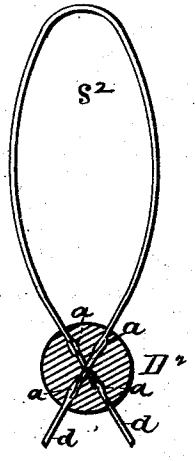


Fig 4.

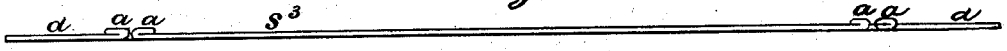


Fig 5

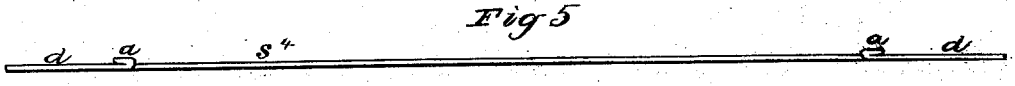


Fig 6

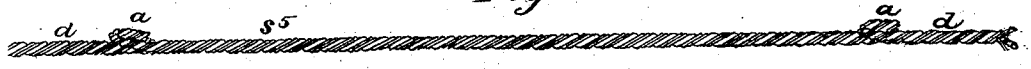
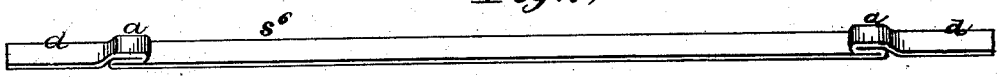


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWARD J. BROOKS, OF NEW YORK, N. Y.

IMPROVEMENT IN METALLIC SEALS.

Specification forming part of Letters Patent No. **192,735**, dated July 3, 1877; application filed June 22, 1877.

To all whom it may concern:

Be it known that I, EDWARD J. BROOKS, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Metallic Seals, of which the following is a specification:

This invention relates to those seals which are commonly made of lead and wire, and are used for securing the doors of railway freight-cars, and for other similar purposes.

The present improvement consists, first, in a peculiar form of anchoring projections applicable to different forms of metallic shackles for the described type of seals, the same being formed by simple transverse bends, compressed or flattened so as to retain their shape, and adapted to be very quickly and cheaply produced.

The improvement consists, secondly, in stop projections or enlargements formed on or applied to the ends of the shackle at proper points to locate the anchoring projections within the seal-disks. The form of these projections or enlargements is not essential, and they are obviously applicable to all metallic shackles which carry their own anchoring devices of any form where the latter have to be located in the seal-disks. Said stop projections obviate any necessity for seal-disks having threading-holes of peculiar shape, and they greatly facilitate adjusting the seal preliminary to pressing.

Referring to the drawing, Figure 1 is a perspective view of the parts of a metallic seal illustrating this invention. Fig. 2 is a sectional elevation of the same united and pressed. Fig. 3 is a sectional elevation of another pressed seal, illustrating certain modifications of the shackle, and the employment of a different seal-disk. Figs. 4 to 7, inclusive, are elevations of metallic shackles, illustrating additional modifications.

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

This improved seal, under any of its modifications, will consist of a metallic shackle, S, adapted to be passed through or around the parts of a lock or fastening, or otherwise to embrace or unite the parts whose separation is to be prevented or detected, and a soft-metal seal-disk, D, adapted to be pressed upon the ends of the shackle, so as to permanently unite the same and constitute the seal proper.

S S^2 S^3 S^4 S^5 S^6 represent a number of shackles, each embodying one or both of the features of my present improvement.

a a represent lateral projections, formed by compressed transverse bends or doublings of the shackle at proper points to serve as anchors on the respective ends of the shackle within the seal-disk. These projections may be quickly formed, either by hand or by machinery, and the thinnest and weakest wire that can be desired will receive them. A light tap of the hammer, or its equivalent, after each bend of the malleable metal, imparts the final shape, so that it will be retained. In use, these anchoring projections form very effective holds, as they oppose distinct shoulders to the withdrawal of the shackle, while they are adapted to be very readily inserted. The employment of two or more anchoring projections on each end of the shackle is illustrated in Figs. 3 and 4, and the former illustrates also the employment of a space between duplicate projections to facilitate interlocking them with each other, as in my crossed-aperture seal-disk, patented March 30, 1875, one of which is shown at D^2, Fig. 3. Either single or double, the projections are adapted to engage with an anchor cast in the seal-disk, as in the "safety" and "cross-wire" seals, patented, respectively, September 1, 1874, and September 7, 1875.

b b represent supplemental lateral projections or enlargements, which, in the illustration, are single coils, with their axes at right angles to those of the shackles on which they are formed. The object of these projections is to locate the anchoring projections *a*, or any similar anchoring devices, within the seal-disk, by contact with the upper edge of the disk, as illustrated in Fig. 2, being made of sufficient size or sufficiently prominent not to enter the threading-apertures.

The shackles S to S^4, inclusive, are of single wire.

Fig. 6 illustrates the application of the projections to twisted shackles of two or more strands. The illustrative shackle S^5 is composed of three wires of different thickness, for the purpose of forming concavities superior to

those of the ordinary twist, composed of uniform wires, and, more particularly, to insure the detection of attempts to strip the seal by providing a very weak wire, which will be sure to break under a less strain than will suffice to withdraw either end of the shackle. The shackle S^6, Fig. 7, is of sheet metal, which is peculiarly adapted to receive the described form of anchoring projections.

D, Fig. 1, may represent an ordinary seal-disk, having two cylindrical threading-apertures, *c c*. The anchoring projections *a a* are guided into these apertures by straight extensions *d d* of the respective ends which carry the projections.

I am aware that shackle-wires have been knotted and provided with coils as anchoring devices, and am also aware that previously shackles had been provided with rebent ends in the form of hooks for the same general purpose. None of these devices are included in my present invention, and an extension of the shackle ends beyond the anchoring projections, as above described, is considered important and essential.

The following is what I claim as new and of my own invention, and desire to secure by Letters Patent, namely:

1. A metallic shackle having lateral anchoring projections formed by repeated transverse bends or folds, and compressed or flattened to preserve their shape, the ends of the shackle being extended beyond said projections in the form of guides, substantially as herein shown and described.

2. A metallic shackle having the stop projections or enlargements thereon, and smaller or less prominent anchoring devices between said stop projections and its extremities, substantially as herein shown and described, for locating said anchoring devices within the seal-disk, in the manner set forth.

E. J. BROOKS.

Witnesses:

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