F. W. BROOKS.

METALLIC-SEAL.

No. 172,698. Patented Jan. 25, 1876.

FIG. 1.

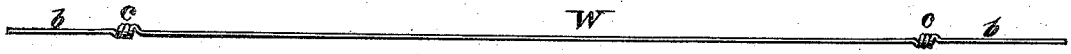


FIG. 2.

FIG. 3.

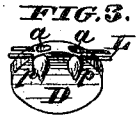


FIG. 4.

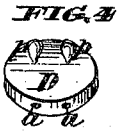


FIG. 5.

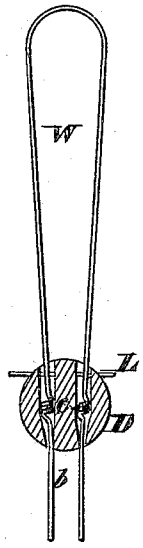


FIG. 6.

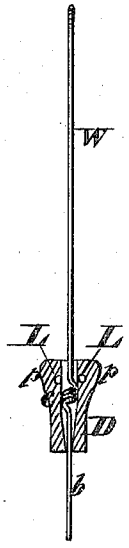


FIG. 7.

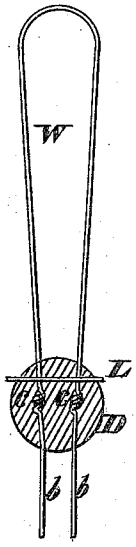


FIG. 8.

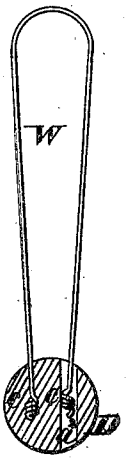


FIG. 9.

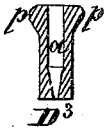


FIG. 10.

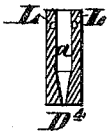
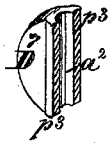


FIG. 11.

FIG. 12.

FIG. 13.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANKLIN W. BROOKS, OF NEW YORK, N. Y.

IMPROVEMENT IN METALLIC SEALS.

Specification forming part of Letters Patent No. **172,698**, dated January 25, 1876; application filed November 6, 1875.

To all whom it may concern:

Be it known that I, FRANKLIN W. BROOKS, of the city and county of New York, in the 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 what are termed lead and wire seals for securing the doors of railway freight-cars, and for other purposes.

The present improved seal has the following distinct features of novelty, namely: First, a bow or shackle of single wire of the required strength, having, in lieu of other anchoring provision, short integral coils, which are easily inserted in the seal-disk, and present good holding-shoulders, while they render practicable the employment of single wire of any preferred size and quality, and are adapted to be readily and cheaply formed by machinery; second, one or a pair of locking-wires within the seal-disk, in combination with a shackle-wire carrying its own anchors, and apertures so constructed as to locate the latter below the locking-wires, as hereinafter more fully set forth; third, external lugs or projections on the seal-disk, so arranged as to cause the apertures of the disk to be closed first, when the seal is pressed, and to equalize the compression.

Figures 1 and 2 are elevations of the shackle-wire of this improved seal. Figs. 3 and 4 are perspective views of the seal-disk. Figs. 5 and 6 are sectional elevations of the parts as put together preliminary to pressing. Fig. 7 is a sectional elevation of a pressed seal. Fig. 8 is a sectional elevation of an unpressed seal, illustrating modification. Figs. 9, 10, 11, 12, and 13 are sectional edge views of seal-disks, illustrating other modifications.

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

W, Figs. 1, 2, 5, 6, and 7, represents a piece of ordinary metallic wire, say ten inches long, having a short coil, *c*, integral with the remainder, formed about one inch from each extremity, so as to leave straight ends *b*. Annealed iron wire, equal, or nearly equal, in strength to ordinary double or triple twist, is preferred, and the employment of single wire of this description, or of any preferred size and quality, is rendered practicable by the adoption of this form of anchor, which is formed by easy bends, and is also adapted to be made by machinery, so as to render the improved shackles cheaper than those made by hand.

D, Figs. 3 to 7, inclusive, represents a disk of lead or other soft metal, having two apertures, *a*, extending from orifices of greater diameter than the coils *c* in the edge at top, as seen in Fig. 3, to concentric orifices small enough to simply accommodate the straight ends *b* of the wire at the bottom, as seen in Fig. 4, the lower ends of the apertures tapering from at or above the points where the lower ends of the coils should be located, as shown in Figs. 5 and 6. The coils are thus arrested in proper position, while the presence of any shoulder on which the straight end *b* might catch is avoided, which is a matter of considerable importance in view of the haste with which seals must be applied frequently.

L L represent transverse locking-wires, on which the seal-disk is cast, and which are arranged with reference to the contracted lower ends of the apertures *a*, so that the latter will locate the coils below the locking-wires.

p p represent external lugs or projections of the material of the seal-disk, formed thereon, over or opposite the apertures *a*, to insure the closing of these first when the seal is pressed, and to equalize the compression of the seal-disk in the press.

The improved shackle-wire W is intended to be furnished straight, as represented in Fig. 1. Before or after its application to the object which it is to secure, it is bent into yoke shape, as represented in Fig. 2. Its ends *b* are then introduced through the large orifices into the apertures *a* in the seal-disk D, Figs. 3 and 4, which locate the coils *c*, as illustrated in Figs. 5 and 6.

When the seal is pressed, the receiving-orifices of the apertures *a* are closed first by the metal from the projections *p*, and the soft metal is then forced around and into the coils *c*, while, to preclude their release by re-opening the apertures, the pins L bite the necks of the shackle above the coils, as represented in Fig. 7.

The straight ends *b* of the shackle-wire and the tapering lower ends of the apertures *a* may be omitted in some seals, while the peculiar

advantages of the coils *c* will be retained; and one or both of the locking-wires L and the filling projections *p*, either or both, may be omitted in some seals, as illustrated in Figs. 9, 10, and 11, without losing all the advantages of the seal-disk, having apertures with tapering lower ends.

The filling-projections *p* may also be applied in different forms to seal-disks having cylindrical apertures a^2, as illustrated in Figs. 12 and 13.

Shackle-wires carrying their own anchors, and apertures made smaller below than above, to locate anchors on the shackle-wires within the seal-disks, are hereby disclaimed as not included in the present invention.

Transverse locking-wires not employed in combination with apertures having tapering lower ends, or their equivalent, are also disclaimed.

The following is claimed as new and of this invention, namely:

1. The shackle-wire, having ends formed with short coils, constructed as herein shown and described, for anchoring them in the compressed seal-disk, for the purposes set forth.

2. The combination of a shackle-wire, carrying its own anchoring-coils, and a seal-disk having tapering apertures to receive and locate said anchoring-coils, and one or more locking-wires within the disk transverse to the apertures at their upper ends, substantially as herein shown and described, for the purpose set forth.

3. The external lugs or projections on the seal-disk, arranged with reference to the apertures, so as to insure the closing of these first, when the seal is pressed, and to render the compression equal, or more nearly equal, as herein set forth.

FRANKLIN W. BROOKS.

Witnesses:

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JAS. L. EWIN.