

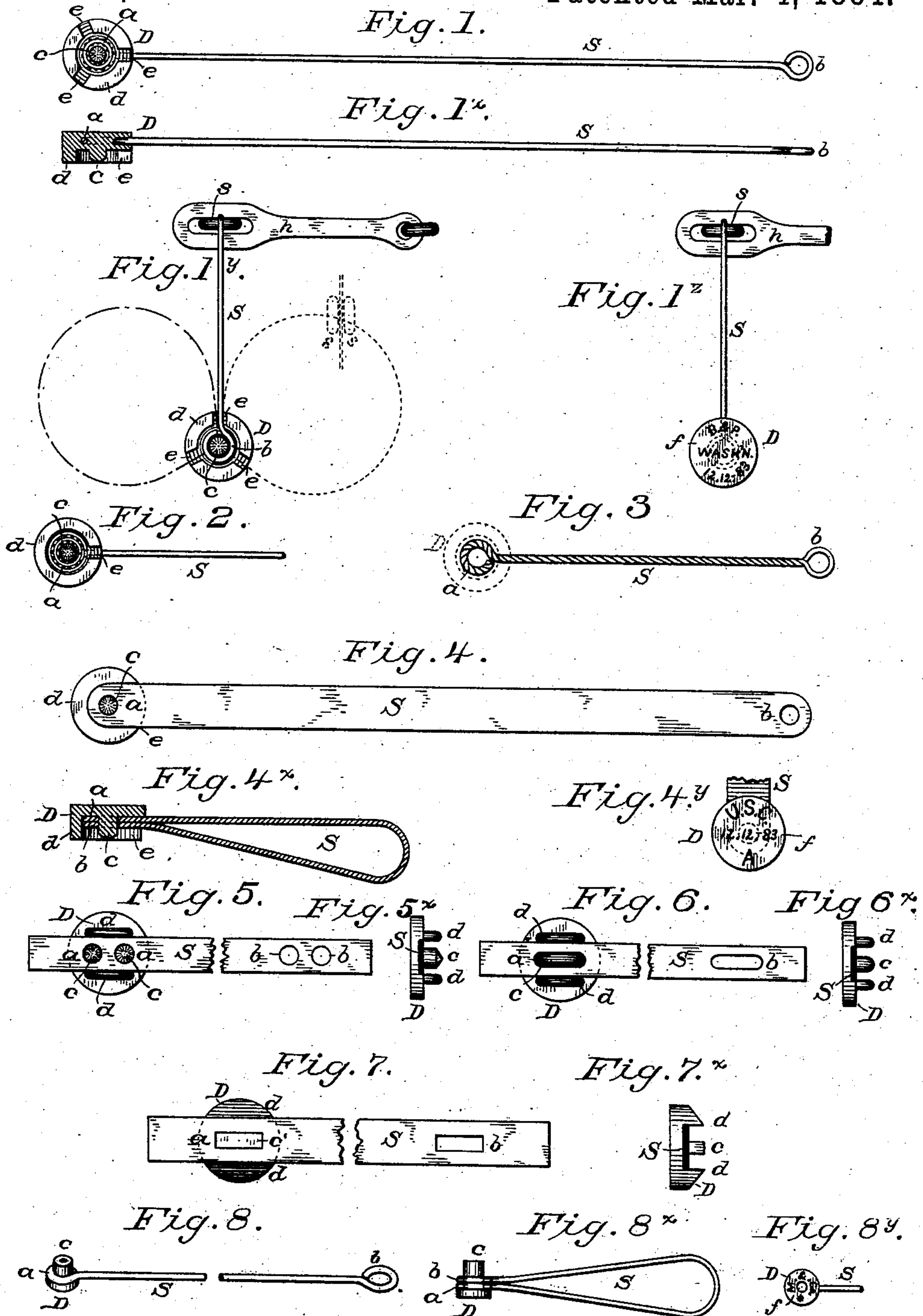
(No Model.)

E. J. BROOKS.

METALLIC SEAL.

No. 294,576.

Patented Mar. 4, 1884.



WITNESSES

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METALLIC SEAL.

SPECIFICATION forming part of Letters Patent No. 294,576, dated March 4, 1884.

Application filed December 29, 1883. (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 Metallic Seals, of which the following is a specification.

This invention relates, primarily, to improvements in lead and wire seals, but may in part be embodied in other metallic seals. It is in continuation of my series of improvements in what I term "cast-in" seals, several of which have already been patented by United States Patents No. 154,639, dated September 1, 1874; No. 246,068, dated August 23, 1881; No. 253,674, dated February 14, 1882; No. 260,279, dated June 27, 1882; No. 278,866, dated June 5, 1883, and No. 286,775, dated October 16, 1883.

The present invention is more particularly additional to my rivet-seal invention described and claimed in said Patent No. 260,279, and my eyelet-seal invention described and claimed in said Patent No. 286,775. In both of these, in addition to the advantages incident to the cast-in feature, there is an important advantage in the facility with which the seal is prepared for the seal-press. The movement by which the leaden part, being cast fast on one end of the shackle, is engaged with the previously "free" end of the shackle preparatory to pressing, being the simplest that is known, and adapted to be the most quickly performed, which is of great advantage in sealing and resealing railway-cars in transit, and even in the ordinary sealing operations, which must usually be done with haste.

This invention consists in certain novel combinations of parts in seals adapted to be prepared for pressing in said advantageous manner; and its objects are to embody this principle in a lead-and-wire seal, and to render such seals, whether they be composed of lead and wire or of lead and sheet metal—such as "tin"—more secure against undetectable violation by thieves.

A sheet of drawings accompanies this specification as part thereof. Figure 1 of these drawings is a face view of a lead-and-wire seal "straight," as it comes from the factory, illus-

trating the preferred embodiment of my present invention aforesaid: Fig. 1^x is an edge view of the same, partly in longitudinal section. Fig. 1^y is another face view of the same as applied to a car-door fastening, with its shackle ends preliminarily united, ready for pressing, illustrating different dispositions of the shackle by full, dotted, and broken lines, respectively. Fig. 1^z is a face view of the same pressed. Fig. 2 is a partial face view of another lead-and-wire seal straight, illustrating a modification of the leaden part. Fig. 3 is a face view of a third lead-and-wire seal straight, the leaden part being shown in dotted lines, illustrating a modification of the wire. Fig. 4 is a face view of a lead-and-tin seal straight, illustrating another embodiment of the same invention in part. Fig. 4^x represents a longitudinal section of this fourth seal with its shackle ends preliminarily united. Fig. 4^y is a partial face view thereof pressed. Figs. 5, 5^x are respectively face and end views of another lead-and-tin seal straight. Figs. 6, 6^x are similar views of another; and Figs. 7, 7^x are like views of one more, illustrating additional modifications. Fig. 8 is a perspective view of another lead-and-wire seal straight, illustrating a last modification. Fig. 8^x is an edge view thereof, with its shackle ends preliminarily united; and Fig. 8^y is a partial face view of the same pressed.

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

S in each of the figures represents a flexible metallic "shackle," having eyes *a b* at its respective ends; and D represents a leaden "seal-disk," cast fast on one of the shackle ends, a portion of the lead extending through the eye or eyes *a*, so as to permanently secure this end of the shackle, while the face of the seal-disk is provided with a perpendicular stud or studs, *c*, to penetrate the eye or eyes *b* in the other end of the shackle, the latter being readily engaged with said stud or studs to preliminarily unite the shackle ends, as shown in Figs. 1^y, 4^x, and 8^x, by simply bending the shackle at mid-length and in a plane perpendicular to the face of the seal, at a single continuous movement, easily and quickly effected by the least skillful sealers, the same

means serving in part to permanently unite the shackle ends in the pressed seal, as shown in Figs. 1^z, 4^x, and 8^v.

In said preferred embodiment of this invention, (illustrated by Figs. 1, 1^x, 1^y, and 1^z), the shackle S is of flexible wire. Annealed iron wire of sufficient size to preclude cutting lead therewith is preferred, and of such size the ends may be simply bent up, as represented, to form the eyes *a b*, being sufficiently rigid to preserve the shape of the eyes, even under stripping strains. A great advantage of a wire shackle in this class of seals is its flexibility in all directions, illustrated by said combination of full, dotted, and broken lines in Fig. 1^x. It is thus adapted to be threaded either through the hasp and staple *h s*, or through the pair of staples *ss*, represented in this figure, or through or around the parts of fastenings, in any way that may be most convenient, and at the same time to have its ends united preliminarily, substantially in the manner aforesaid, while under all circumstances it permits the face *f* of the pressed seal to be displayed in front, as represented in Fig. 1^z. Another advantage of the wire shackle is the adaptation of its eyes *a b* to be completely surrounded by the lead at the casting and pressing operations, respectively, so as to preclude access thereto after the seal is pressed without actually cutting the lead, even with a very small seal-disk, (as illustrated by Figs. 8, 8^x, 8^y), while the wire shackle will not cut the hands like those of sheet metal, and can be more cheaply furnished and more readily carried and handled.

In said preferred embodiment of the invention the seal-disk D is, moreover, constructed with a wall or walls, *d*, upon its face, in addition to said stud *c*, the latter being preferably central, and the walls concentric therewith, as shown, the object of said walls being to assist in securely retaining said end of the shackle, which is provided with said eye *b*, by coacting therewith externally, and the walls are continued around the stud *c*, as shown, so as to inclose that end of the shackle which is provided with said eye *b* nearly or quite as fully as the cast-in end, in order that they shall be as nearly as possible equally secure, and with special reference to precluding access to the extremities of the shackle. The shackle end is admitted, in the various dispositions thereof for which provision is made, by means of embrasures *e*, of which three are shown. Less or more than three may be provided, according to the requirements of different users. Finally, the face *f* of the pressed seal, as shown in Fig. 1^z, is provided by the seal-press with press-marks or stamped characters indicating, in addition to ordinary matter, the time when the seal was pressed, to aid in preventing counterfeiting, and to insure the detection of sealers who fail to fully press the seals. In the example, "B. & P., Wash'n, 12, 12, 83," shows that the seal was pressed at the freight-yard of the Baltimore and Potomac Railroad, at Washington, the 12th day

of the twelfth month, (December,) in the eighty-third year of the century. The hour of the day, or "a. m." and "p. m.," may be added. Means for so pressing leaden seal-disks and also tin-strip seals will form the subject of another application for patent.

In the modification illustrated by Fig. 2 the only change consists in the use of a single embrasure, *e*, instead of two or more.

In the modification illustrated by Fig. 3 the use of relatively fine wire in a wire shackle, S, is provided for. The wire, of double length, is bent at mid-length around a mandrel to form the eye *b*, and the two ends are then twisted together for the remainder of the shackle, the eye *a* being finally formed by bending the double end. This precludes loss of shape by said eye *b*, and renders said eye *a* peculiarly rigid and well adapted to unite securely with the molten lead in the casting operation. The seal-disk D (indicated in dotted lines) may be of either of the forms shown in the preceding figures, for example.

In the modification illustrated by Figs. 4, 4^x, 4^y the shackle S is of sheet metal—such as tin—with the eyes *a b* punched, the extremities of the strip being rounded, so as to be embraced by the seal-disk D, as in said preferred form, the latter being constructed with an extremity-embracing wall, *d*, substantially similar to that shown in Fig. 2. This is of special value as applied to a "lead-and-tin seal," the protruding shackle extremities of those in common use forming their most vulnerable point by admitting prying-tools between the ends around the rivet or eyelet-stud. The press-marks on the face *f* of the pressed seal, as shown in Fig. 4^x, in addition to the date, as before explained, are "U. S. C.," for United States Customs, and "A" for an inspector's initial, or the like.

In the additional tin shackle modifications illustrated by Figs. 5, 5^x, 6, 6^x, and 7, 7^x, walls *d* are used on each seal-disk D, lacking said extremity-guarding characteristic, but otherwise similar in function to those already described, while by duplicating the stud *c* and the eyes *b a*, as in Figs. 5, 5^x, or by elongating them, as in Figs. 6, 6^x, and 7, 7^x, prying the ends apart is resisted in other ways. The modification illustrated by said Figs. 7, 7^x includes, moreover, beveling what may be termed the "tops" of the walls *d*, to facilitate bending them inward at the pressing operation, as clearly shown in Fig. 7^x.

The modification illustrated by Figs. 8, 8^x, 8^y consists, as already intimated, in the use of a cast-in eyelet or small rivet of lead as the seal-disk D, in combination with my shackle S of wire, with eyes *a b*, at its ends, the stem of the eyelet or rivet constituting said stud *c*. The press-marks shown in Fig. 8^y represent ordinary press-marks.

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

1. An improved metallic seal composed of a shackle of flexible wire, having eyes *a b*,

formed at its respective ends, and a leaden seal-disk cast fast on one of said shackle ends, a portion of the lead penetrating said eye *a*, so as to permanently secure this end, and constructed with a stud, *c*, on its face, to engage with said eye *b*, substantially as herein specified, for the purposes set forth.

2. The combination, in a metallic seal, of a flexible shackle having eyes *a* *b* at its respective ends, and a leaden seal-disk cast fast on one of said shackle ends, a portion of the lead penetrating said eye *a*, and constructed with a stud or studs, *c*, on its face, to engage with said eye *b*, and a wall or walls, *d*, to coact externally with that end of the shackle which is provided with said eye *b*, substantially as herein specified, for the purposes set forth.

3. In a metallic seal, a flexible shackle having rounded ends provided, respectively, with eyes *a* *b*, in combination with a leaden seal-disk cast fast on one of said shackle ends, portions of the lead penetrating said eye *a* and

forming a central stud, *c*, to engage with said eye *b*, and a wall or walls, *d*, to embrace that end of the shackle which is provided with said eye *b*, including its extremity, the cast-in end being correspondingly inclosed, substantially as herein specified, for the purposes set forth.

4. In combination with a shackle, *S*, of flexible wire, having an eye, *b*, formed at one of its ends, the leaden seal-disk *D*, cast fast on the other end of said shackle, and constructed with a central stud, *c*, on its face, to engage with said eye *b*, and a concentric wall, *d*, to embrace said eye externally, said wall having two or more embrasures, *e*, to provide for different dispositions of the shackle, substantially as herein specified, for the purposes set forth.

EDWARD J. BROOKS.

Witnesses:

N. S. KLINE,
H. L. C. WEST.