H. CLARKE.
METALLIC-SEAL.

No. 193,320. Patented July 24, 1877.

Fig 1

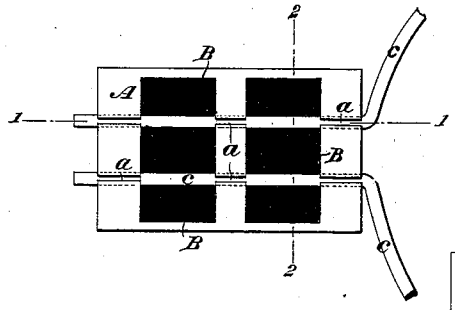


Fig 2.

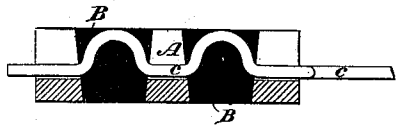


Fig 4

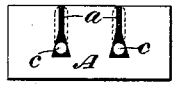


Fig 3

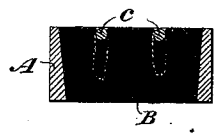


Fig 5.

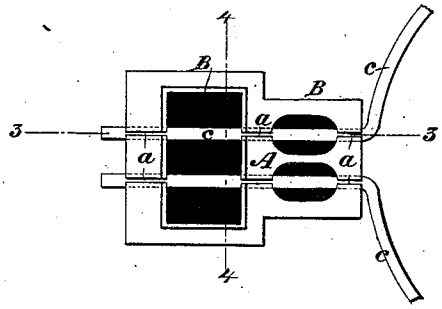


Fig 6

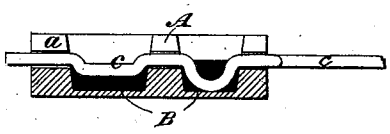


Fig 7

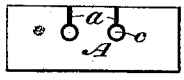
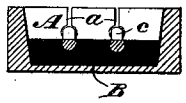


Fig 8



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY CLARKE, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO THOMAS POULTNEY, OF SAME PLACE.

IMPROVEMENT IN METALLIC SEALS.

Specification forming part of Letters Patent No. **193,320**, dated July 24, 1877; application filed December 13, 1876.

To all whom it may concern:

Be it known that I, HENRY CLARKE, of Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Metallic Seals, of which the following is a specification:

My invention relates to that class of metallic seals used for revenue and other purposes, in which a wire is embedded in metal, to prevent access to the article protected by the seal without detection.

Experience has demonstrated that with the metallic seals heretofore in use it is practicable, by working the wire, to break it within the body of the seal, thus enabling the seal to be removed and replaced without detection, as the ends of the wire can be reinserted within the seal, and, by pressing it slightly, will hold it sufficiently to pass inspection.

The object of my invention is to prevent any possible tampering with the seal in this manner; to which end my improvement consists in a novel method of constructing metal seals with a groove, in which the wire is partially embedded in such manner as to leave it always visible, thus enabling the inspector at once to detect any severance of the wire.

My improvements further consist in combining a hard-metal frame or matrix provided with slots, a portion of which are of less diameter than the size of the wire, so as to prevent its removal sidewise, while leaving it free to be moved endwise therein.

My improvement further consists in combining a slotted hard-metal frame or matrix, a soft-metal filling, and a wire passing through both, in such manner as to leave it exposed to view throughout.

In the accompanying drawings, which show my improvements as embodied in the best way now known to me, Figure 1 represents a plan or top view of my improved seal; Fig. 2, a vertical longitudinal section therethrough on the line 1 1 of Fig. 1; Fig. 3, a transverse section therethrough on the line 2 2 of Fig. 1; and Fig. 4, an end view of the seal, showing the form of slots or grooves through which the wire passes.

The seal shown in the preceding figures is composed of a perforated hard-metal frame.

Fig. 5 represents a plan view of a seal having a hard-metal frame and back, the soft metal being put in from the front or top side thereof; Fig. 6, a longitudinal section therethrough on the line *z z* of Fig. 5; Fig. 7, an end view thereof, and Fig. 8 a vertical transverse section therethrough on the line 4 4 of Fig. 5.

The frame, casing, or matrix A of the seal is preferably cast of malleable iron, though brass or other well-known hard metal may be used, if desired. Longitudinal slots or grooves *a* are formed in one side (the top or upper side in the drawings) of this frame for the reception of wires *c*, ordinarily used in connection with such seals. These slots are of such form and size that while the wire is free to be inserted endwise therein, it cannot be drawn out sidewise or vertically. (See Figs. 4 and 7.)

In the drawings, two sets of parallel grooves are shown for the reception of the wires; but obviously one such set would answer a good purpose by making it of sufficient size to receive both wires.

More than two sets of slots might be used, if desired, and they might be made of curvilinear form, or arranged to intersect each other, or at different angles of inclination relative to each other, for greater security of fastening the wire.

The frame, body, or matrix A may have two perforations or openings for the reception of the soft metal, as shown in Figs. 1, 2, and 3; or it may have cavities only, so as to leave a solid back, as shown in Figs. 6 and 8, instead of openings extending entirely through it. The central solid cross-bar or partition between the two cavities or openings of each seal is grooved or slotted in the same manner as the ends or marginal portions of the side or top of the frame or casing. Obviously this central bar or partition might be dispensed with, and the frame have but a single cavity or opening in its center for receiving the bends of the wires and the soft-metal filling; or three or more cavities or openings may be employed, but I prefer two, as shown.

The wires are secured in the frame by pressing in soft metal, B, such as lead or other well-known material, in usual well-known ways, it

only being necessary to insert slips of metal in the slots, so as to bear upon the wires, and prevent their being entirely encircled by the metal; or other well-known means may be used for attaining this end, so as to leave the wire exposed to view throughout its entire length.

It is obvious that when thus secured the wire cannot be tampered with without detection, as it always remains open to inspection, although securely sealed.

Manifestly the indenting or bending of the wires into the cavities of the seals may be accomplished in many ways, one simple way being to strike those parts of the wires lying over the different cavities or depressions in the seal successively with a small hand-punch; or a number of such punches may be employed at once by mounting them in the head of a common hand press or stamp, so that the two wires may be bent or indented by a single application of pressure. To expedite the operation of securing the wires, they may be indented at the same time the soft metal is compressed to form the seal, by means of raised projections or punches on the face of the sealing die or press.

What I claim as of my own invention is—

1. The method hereinbefore described of securing the wire in the body of the seal, which consists in indenting the wire, and compressing the soft metal partially around but not over it, so as to leave the wire always open for inspection, as set forth.

2. A hard-metal seal-frame constructed, substantially as hereinbefore set forth, with grooves for the reception of the wire, of greater diameter at the bottom than at the top, whereby, while leaving the wire free to be inserted endwise, and exposing it to inspection throughout the entire length of the frame, its removal laterally is prevented.

3. The metal seal hereinbefore described, consisting of the hard-metal frame provided with threaded slots, the wire bow or shackle, and a soft-metal filling, in which the wire shackle is embedded securely, while leaving it visible throughout its entire length.

In testimony whereof I have hereunto subscribed my name.

HENRY CLARKE.

Witnesses:

JAMES HYDE,

CHAS. L. BOPP.