2 Sheets--Sheet 1.

E. J. BROOKS.

Metallic Seals.

No. 154,639. Patented Sept. 1, 1874.

FIG. 1.

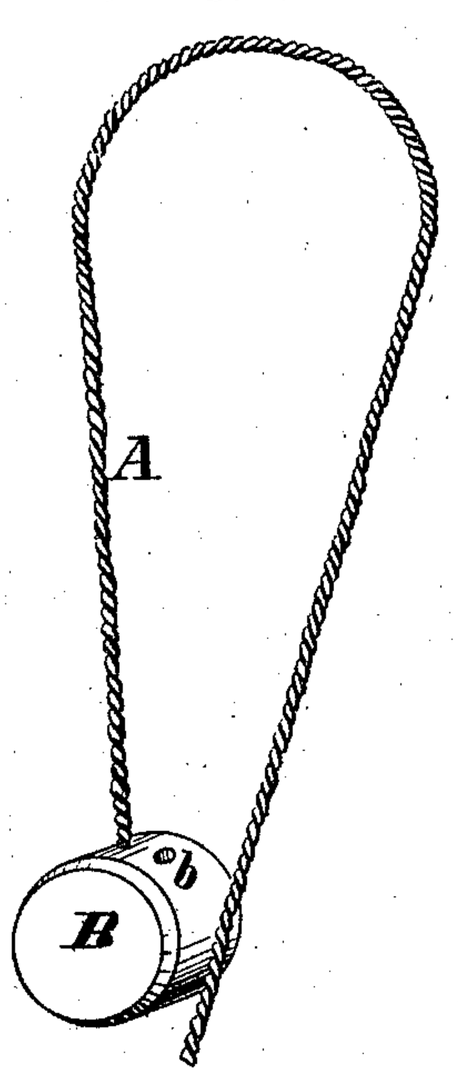


FIG. 2.

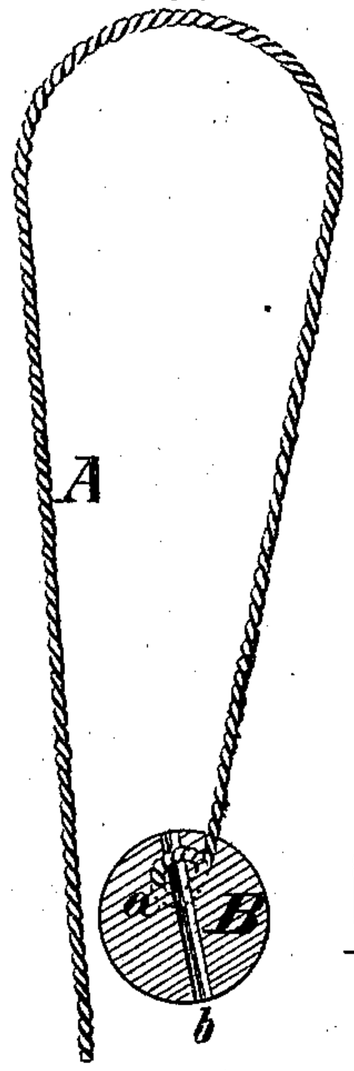


FIG. 3.

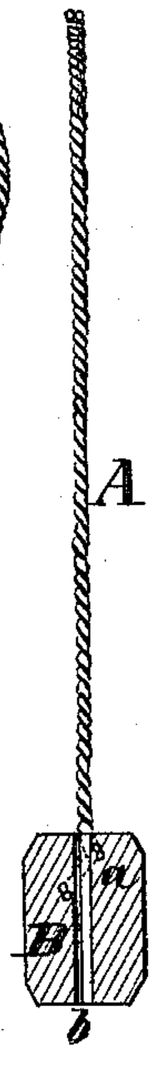


FIG. 4.

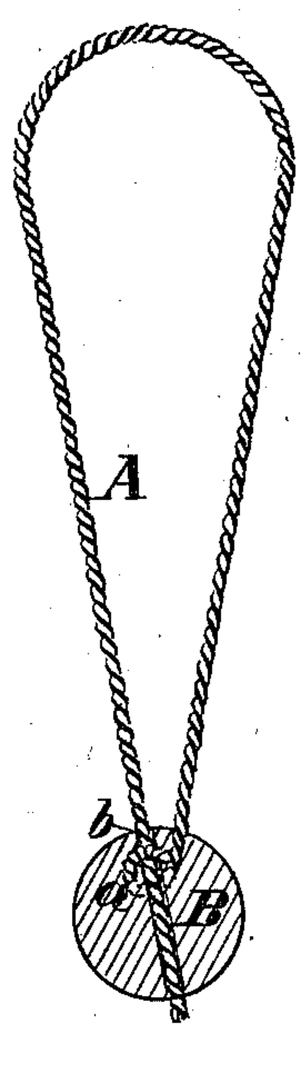


FIG. 5.

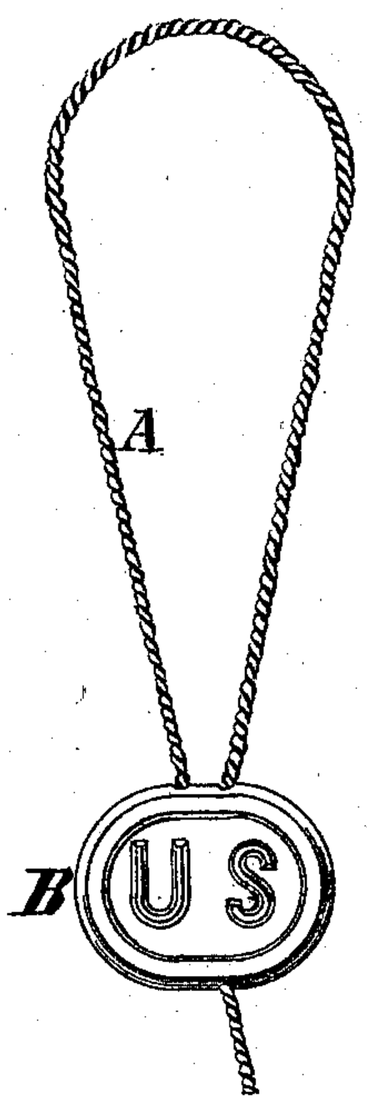


FIG. 6.

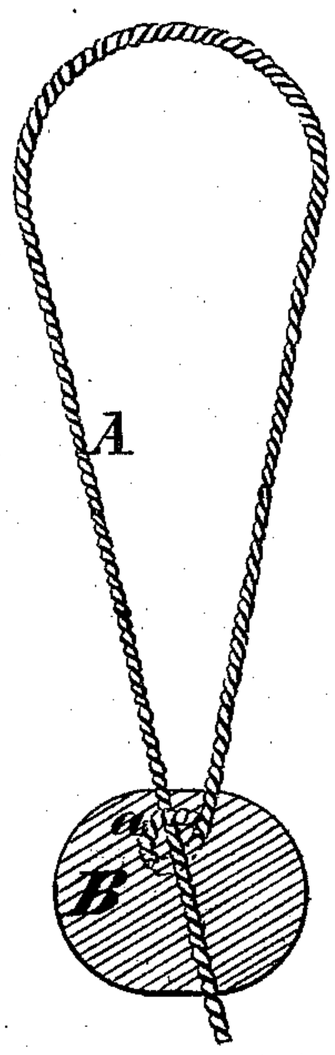


FIG. 7.

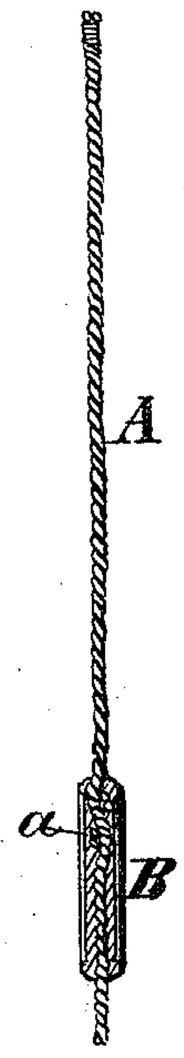
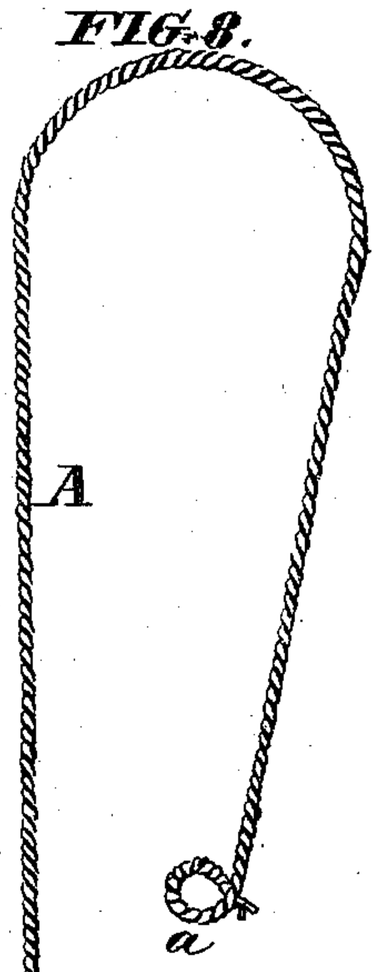


FIG. 8.



WITNESSES

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2 Sheets--Sheet 2.

E. J. BROOKS.

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FIG. 9.

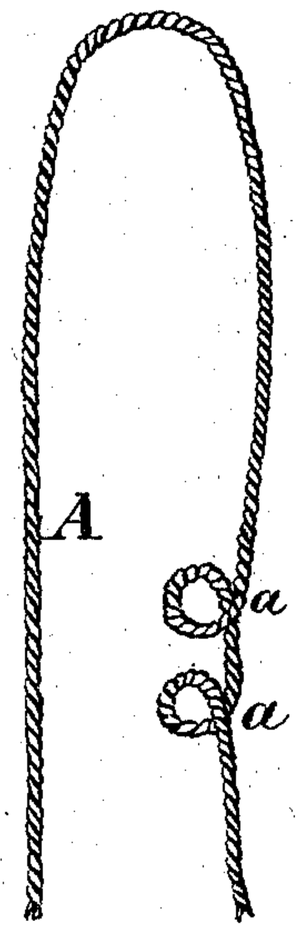


FIG. 10.

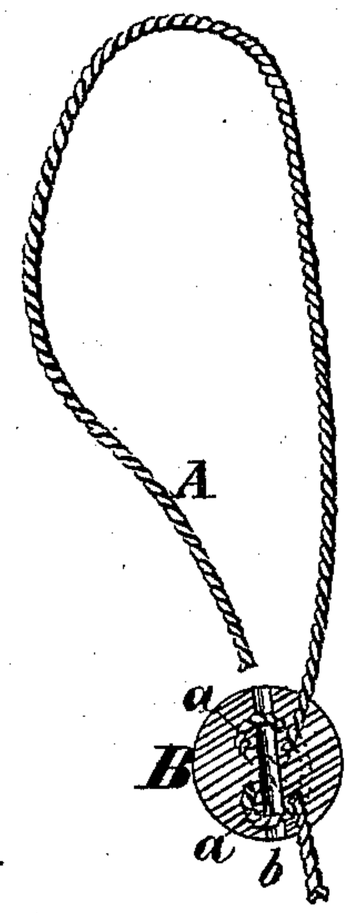


FIG. 11.

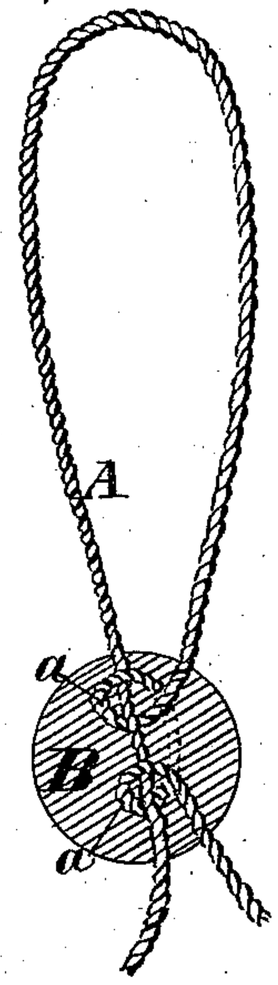


FIG. 12.

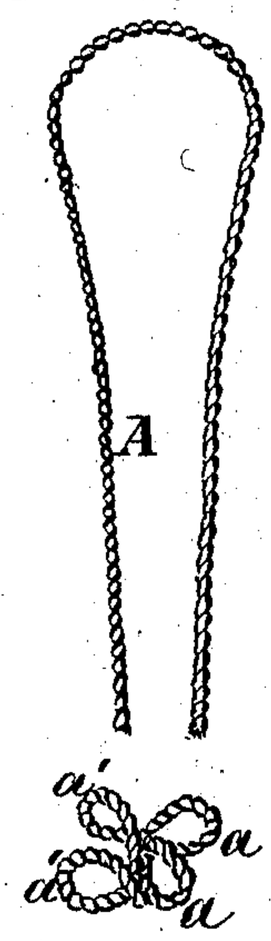


FIG. 13.

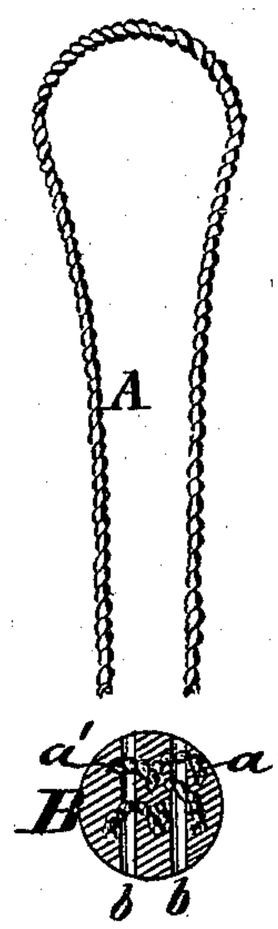
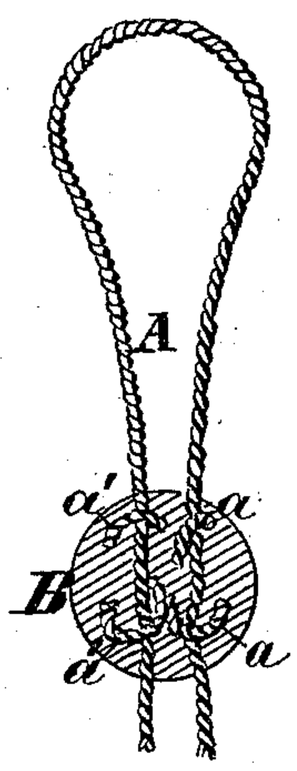


FIG. 14.



WITNESSES

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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. **154,639**, dated September 1, 1874; application filed July 21, 1874.

To all whom it may concern:

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

My invention relates to that class of metallic seals which consist essentially of a wire bow adapted to be passed through the object to be secured, and a disk or ball of soft metal intended to unite the ends of the wire and to receive, in the act of its compression upon the wire, any distinguishing mark.

My improvements consist, first, in casting the soft-metal ball or disk permanently upon one end of the wire bow, which end is formed with a loop or otherwise adapted to be firmly held within the lead, and passing the other end of the bow through the loop or bend thus formed in the fixed end of the bow, so that when the lead is compressed both ends may be firmly held. My improvements consist, secondly, in combining, with a bow of wire and a ball or disk of soft metal, one or more loops of hard metal in the form of wire or any other form adapted to produce the desired effect, said loops being cast within the soft-metal ball or disk in such a manner that the ends of the bow, in passing through the perforations in the ball or disk, will pass through said wire loops, and the latter will thus be made, when the soft metal is compressed, to bear firmly upon the parts of the wire bow, and effectually prevent the separation of the latter from the lead.

In the accompanying drawings, Figure 1 is a perspective view of the combined wire and lead seal with the lead ball or disk cast upon one end of the wire. Fig. 2 is a section of the same, representing the perforation which passes through the lead ball or disk and the contained loop of the wire for the purpose of receiving the free end of the bow. Fig. 3 is a section of the same in plane at right angles to that shown at Fig. 2. Fig. 4 is a section thereof, showing the free end of the wire bow inserted. Fig. 5 is an elevation of the finished seal. Fig. 6 is a section of the same. Fig. 7 is a section thereof in a plane at right angles to that shown at Fig. 6. Fig. 8 is an elevation of the wire before the application of the lead. Fig. 9 is an elevation of the wire bow formed with two loops. Fig. 10 is a section of a seal formed with a double-loop bow in readiness for application. Fig. 11 is a section of a finished seal with a double-loop bow, the end of the bow being introduced and the soft metal compressed thereon. Fig. 12 is an elevation of the wire in two parts, showing the holding-loop separate from the bow. Fig. 13 is a section of the same with the lead cast upon the loops in readiness for the reception of the bow. Fig. 14 is a section of this form of seal in its finished state.

A represents a loop of twisted wire, which, in Figs. 1 to 8, inclusive, is represented as formed with a loop, *a*, at one end, the shape of which is more particularly shown in Fig. 3. Upon this loop end of the bow the lead ball or disk B is cast, the perforation *b*, which is to receive the free end of the bow, passing through the loop. In Figs. 9 to 11, inclusive, the bow is shown with a double loop, *a a*, to which the lead ball B is applied in a similar manner. In Figs. 12 to 14, inclusive, the loops *a a'* are shown as formed of a separate piece of wire, upon which the lead ball or disk B is cast with two perforations, each passing through one pair of loops. This form of the invention enables the wire bow to be made without permanent connection with the lead ball or disk.

In applying the invention under either of its modifications, the free end or ends of the wire bow are passed through the perforations of the ball or disk B, and through the bows therein contained, so that when the lead ball or disk is compressed upon the seal by any device customarily employed for such purpose the wire of which the parts *a a'* are formed, and which is anchored firmly within the lead, will be caused to grasp securely the parts of the bow A, while the soft metal locks the whole together.

This device will thus be seen to preclude the possibility of the end or ends of the wire bow, enlarging the apertures in the lead seal after the latter has been compressed upon them, so as to work themselves loose. My plan of surrounding the perforations of the

lead ball or disk with a bushing of hard metal affords a degree of permanency and security not heretofore provided in this class of seals.

The lead ball or disk may be faced or covered with a plate of sheet metal suitably engraved or marked.

The following is claimed as new:

1. The combination of a shackle wire, A, having a looped end, and a soft-metal ball or disk, B, cast upon the looped end of the wire A, and pierced with an aperture extending through the loop of the wire, substantially as and for the purpose set forth.

2. The combination of a ball or disk of soft metal, a loop or loops of hard metal encircling or bushing an orifice in the soft metal, and a wire to pass through the bushed orifice, substantially as set forth.

E. J. BROOKS.

Witnesses:
F. W. BROOKS,
OCTAVIUS KNIGHT.