No. 848,462. PATENTED MAR. 26, 1907.

W. F. HARRIS.

SELF LOCKING SEAL.

APPLICATION FILED OCT. 28, 1905.

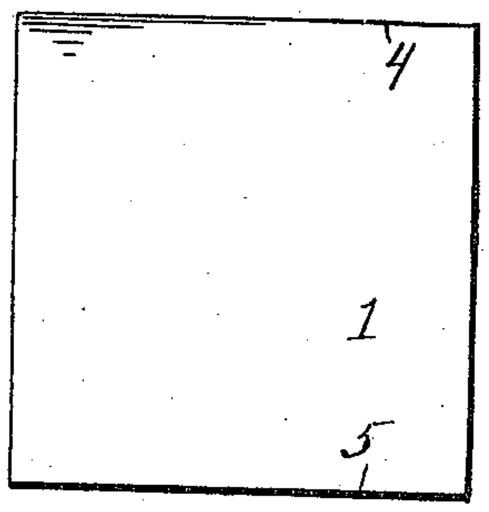

Fig. 1.

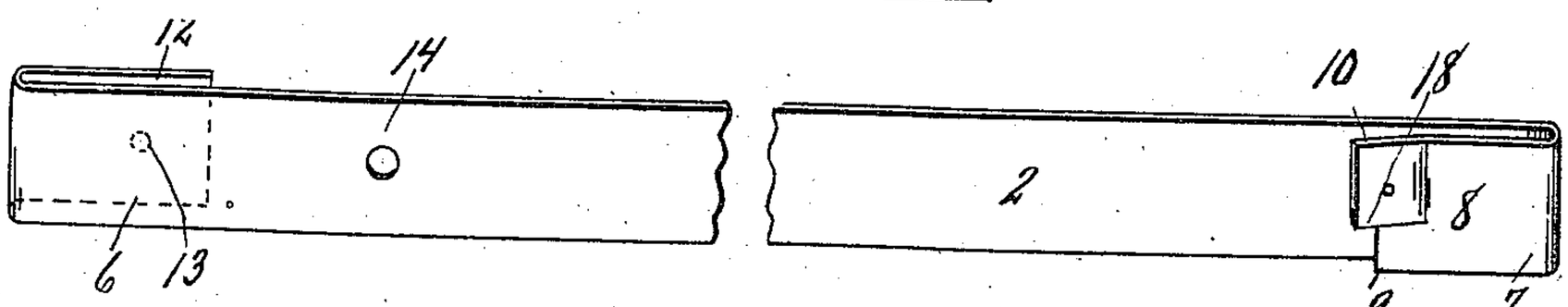

Fig. 2.

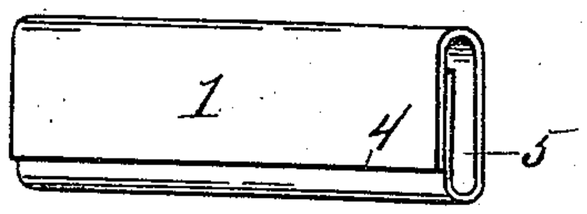

Fig. 3.

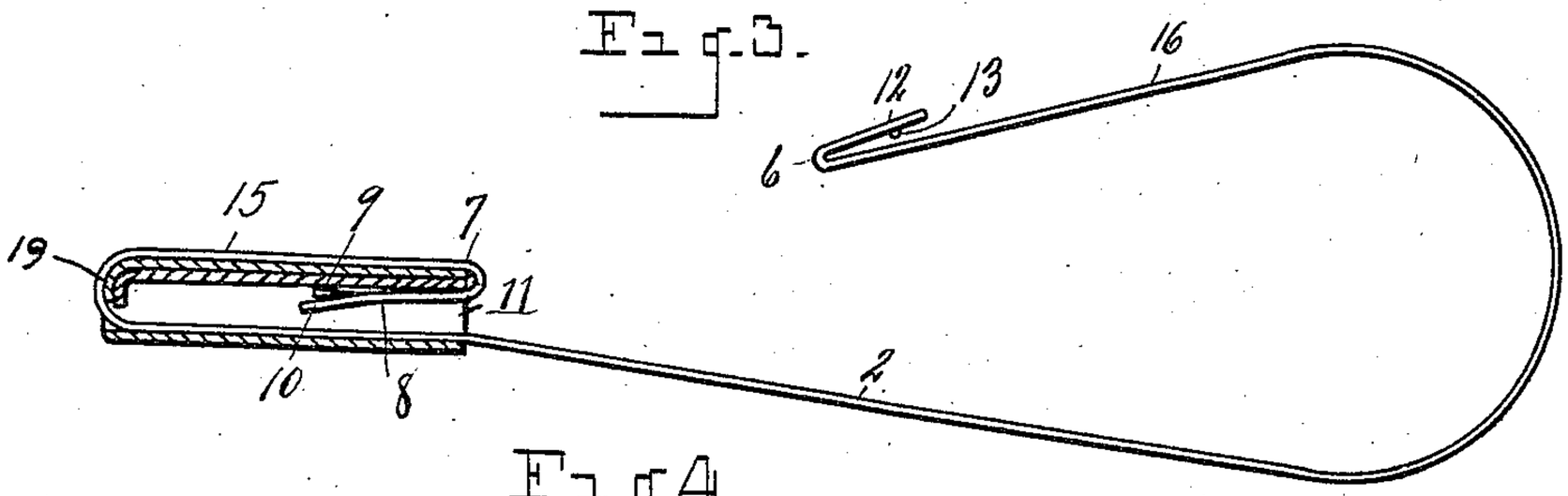

Fig. 4.

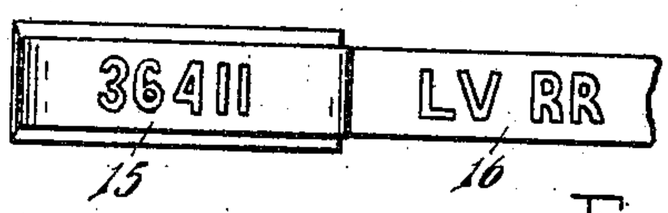

Fig. 6.

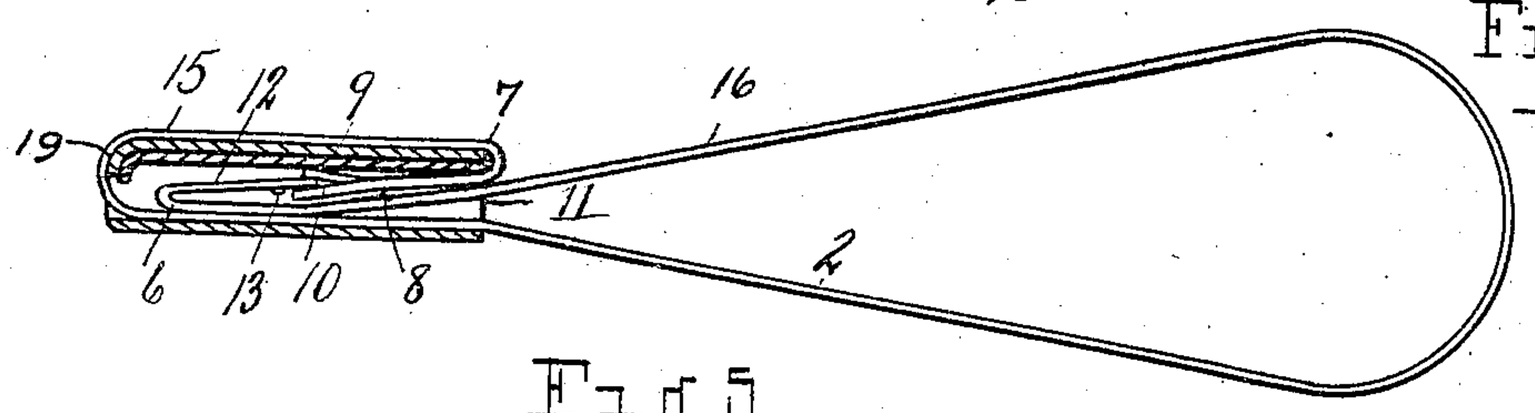

Fig. 5.

WITNESSES

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SELF-LOCKING SEAL.

No. 848,462. Specification of Letters Patent. Patented March 26, 1907.

Application filed October 28, 1905. Serial No. 284,800.

To all whom it may concern:

Be it known that I, WILLIAM F. HARRIS, a citizen of the United States, residing at South Bend, county of St. Joseph, State of Indiana, have invented a certain new and useful Improvement in Self-Locking Seals; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to seals.

It has for its object an improved interlocking connection by which the ends of a strip of any suitable material may be quickly and readily fastened together and cannot be unlocked or unfastened without defacing and destroying the strip to such an extent as to make the fact readily apparent that the seal has been tampered with.

Seals of this character are intended to be used only on a single occasion and are broken or destroyed when the unsealing is accomplished and are not thereafter used; and it is therefore an essential that the article shall be cheaply made of inexpensive material and with minimum expenditures of labor.

The seal which forms the subject of this invention is made from a long strip of any suitable material and from a small square or nearly square plate of material of the same character. Both the pieces are readily cut to shape by shears and without dies and both utilize all the metal without waste, and the labor of forming the two plates into the seal is slight.

In the drawings, Figure 1 shows the outline of the rectangular plate. Fig. 2 is a perspective of the strip after the ends are bent. Fig. 3 shows the first fold or bending of the plate. Fig. 4 is a section showing the engagement of the plate and the strip. Fig. 5 is a section showing the interlocking of the seal. Fig. 6 shows the means employed to identify the individual seal.

The plate 1 is a small rectangular plate. The strip 2 is as long as it may be desired and about one-quarter or somewhat less than one-quarter of the width of the plate 1. The plate 1 is first bent into tubular form, as shown in Fig. 3, with the edge 4 overlapping the edge 5. The opening through the tube is oblong in cross-section and is of a size to receive about four of the strips 2 laid face to face.

At one end the strip 2 is bent back upon itself to form a hook 6, and at a little distance from the end a bur or knob 13 is formed with the projecting mass on that face of the hook 6 which faces the body of the strip 2. This bur or knob is formed by driving the metal with a punch, forming a dent on one side and a bur on the opposite side. The end 7 of the strip is turned back against the face of the strip on the opposite face to that against which the end 6 is turned and the extreme end 7 is split for a short distance at 8, one fork 9 at the side of the split turned down against the face of the strip 2, and the fork 10, provided with a bur 18, is allowed to extend in a continuation of the main part of the end 7. The fork 9 is slightly shorter than the fork 10.

The combined length of the hook parts 6 and 7 should be very slightly less than the length of the tube formed from the piece 1. After the two pieces have been this far formed the end 7 is inserted in the end of the tube 11, with the two lapping parts 4 and 5 engaged between the face of hook 7 and the adjacent face of the strip, and with the strip extending along the outside of the tube and covering the part 4 except at its extreme edges, which must of necessity remain uncovered by the strip 2, inasmuch as the inclosing piece 1, of which the fold 4 is a part, must be of a size to encircle the strip 2, which extends through it. The strip is next bent and the end 6 inserted in the opposite end of the tube from that in which the hook 7 is inserted and passed through it, and the strip is drawn through with considerable force, sufficient to bend or curl the ends 19 of the folded parts 4 and 5 slightly. There is thus formed a receptacle into one end of which projects the split end 7 of the strip 2 and whose other end is closed by the bend of that part of the strip 2 next adjacent to the split end 7 across the end, (the extreme left in Figs. 4 and 5,) so as to bring the body of the strip closely against the opposite inner face of the receptacle from that constituted by the edge folds 4 and 5. The distance from the end of the fork 10 to the end of this receptacle closed by the curve of the strip 2 should be as nearly as it is practicable to make it equal to the length of the backwardly-bent part 6 at the end of the strip 2. It is manifestly impossible to pull the entire strip 2 out of the receptacle by pulling on the curved end-closure portion without destroying the seal, be-

cause of the engagement of the hook 7 over the opposite ends of the lapping parts 4 and 5. The extreme end 12 of the part 6 is prevented from engaging the face of the part 2 by the spur 13, and there is a slight resiliency of the material. The fold of the tube should be so proportioned that when the parts are assembled in the way described the space between the end of the fork 10 and the adjacent face of the strip 2 should be just sufficient to allow the hooked end to be inserted and forced into the receptacle with the hook 6 pressing strongly against the fork 10 until the end of the hook slips by the fork 10, after which the hook springs out and engages under the fork and the parts cannot now be loosened without using a force sufficient to tear the seal apart. Preferably there should be a hole 14 punched through the strip 2 at a location to be concealed when the seal is closed. The hole serves two purposes. It is an indicator of the lock of the seal and it weakens the strip at this point, so that if force is used to destroy the seal it breaks at this point or is liable to break at this point rather than elsewhere. An identifying-number 15 is placed on that part of the strip which extends along outside the housing, where it will not be destroyed or mutilated when the seal is broken. Other identifying or proprietary characters 16 are preferably along the body of the strip.

The construction of the housing obviates the necessity of all soldering, as by wrapping the strip to include and embrace the split side of the tubular part and drawing the strip tight, especially after the ends 19 have been bent as described, the housing cannot be opened without so disfiguring it as to make the effort to tamper with it easily seen.

What I claim is—

1. In a seal, in combination with a tubular housing having overlapping lateral edges, a strip of metal having a forked end extending therethrough and about said lateral edge portions, the forked end of the strip being inserted in the same end of said housing as that entered by the body portion of the strip closely adjacent to the inner one of the lateral edges and in a position of substantial parallelism with the adjacent engaging portions of the strip, said strip terminating at its other end in a hooked portion adapted to be forced within said housing at the same end as that entered by the forked portion and into locking engagement with said forked end, substantially as described.

2. In a seal, in combination with a housing, a strip of metal of uniform width adapted to be passed therethrough, having one of its ends split and bent upon itself to engage entirely around one longitudinal wall of said casing and to extend into said housing, the other end of said strip being bent to form a hook and being forced into said housing at the same end thereof as that entered by said split end and into interlocking engagement therewith, substantially as described.

3. In a seal, the combination of a housing formed from a plate folded to tubular form with the edges overlapping, and with the overlapping edges at one end bent slightly inward, and a strip passing through the housing and extending over said overlapping edges, one end being split and bent upon itself and extending within said housing and the other end being bent to form a hook and inserted in the opposite end of the housing from the inwardly-bent edge portions, and interlocking with the split end already therewithin, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM F. HARRIS.

Witnesses:
C. E. PATTEE,
M. E. PARKE.