No. 853,240. PATENTED MAY 14, 1907.

W. F. HARRIS.

SELF LOCKING SEAL.

APPLICATION FILED NOV. 9, 1906.

Fig. 1.

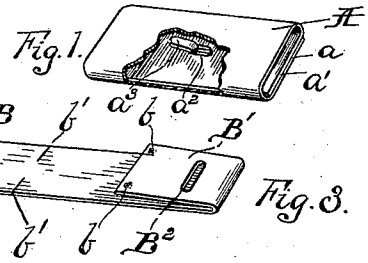


Fig. 2.

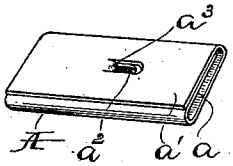


Fig. 3.

Fig. 4.

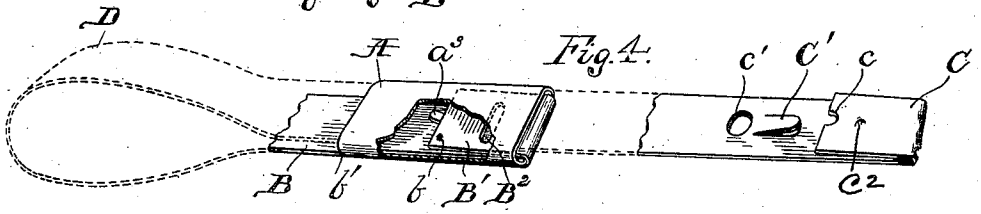


Fig. 5.

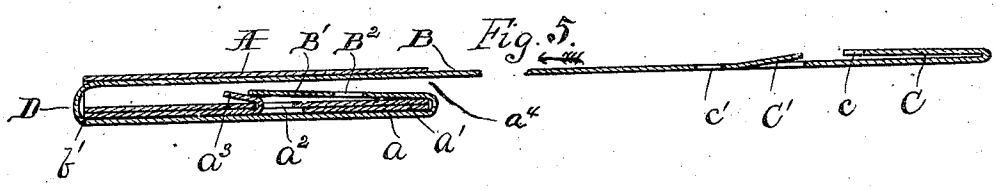


Fig. 6.

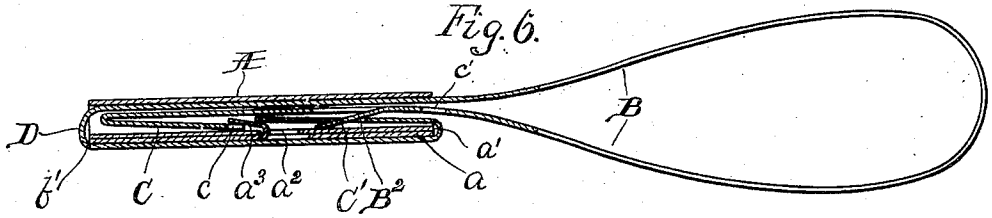
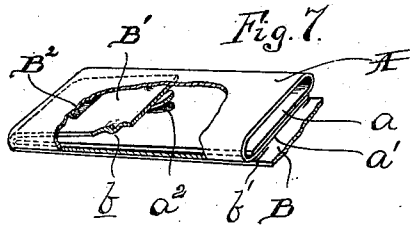


Fig. 7.



WITNESSES:

Henry E. Villerot

Lewis E. Flanders

INVENTOR

Wm F. Harris

BY C. S. Thomas

Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM F. HARRIS, OF DETROIT, MICHIGAN.

SELF-LOCKING SEAL.

No. 853,240. Specification of Letters Patent. Patented May 14, 1907.

Application filed November 9, 1906. Serial No. 342,643.

To all whom it may concern:

Be it known that I, WILLIAM F. HARRIS, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, 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 invention, 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.

My invention relates to an improvement in self-locking seals for use on freight-car doors or other purposes where it is desired to provide means to indicate whether the contents under seal have been tampered with after being locked.

In the drawings:—Figure 1 is a perspective view of a sleeve forming a part of the invention, with parts broken away to indicate more clearly its construction. Fig. 2 is a perspective view of the same, looking at it from the underside. Fig. 3 is a perspective view of one end of the flexible strap. Fig. 4 is a perspective view showing the end of the strap shown in Fig. 3 hooked in the sleeve, the other end having been passed through the sleeve in the act of securing it to the sleeve. Fig. 5 is a longitudinal central section through the strap and sleeve, showing one end of the strap hooked to the sleeve, the other end having been drawn through to complete the engagement of the strap with the sleeve. Fig. 6 is a longitudinal section through the strap and sleeve, showing the strap looped and engaged with the sleeve as it appears when in the locked position. Fig. 7 is a modification of the sleeve or housing showing the engaging hook projecting inwardly on an angle to the side walls in contra-distinction of the return bend shown in Fig. 1.

The object of this invention is to put upon the market a cheap and effectual interlocking device formed of a strip of sheet metal, the construction being such that when engaged it cannot be disengaged without destroying the seal or defacing it to such an extent that the fact that it has been tampered with is apparent.

Referring to the letters of reference shown in the drawings, A is a sleeve formed of sheet metal, its ends overlapping on one side, as shown at a, a'.

a^2 is a slot formed in the portion a, and a^3 is a tongue struck up out of the overlapping portion a', the tongue projecting through the slot a^2 and bent back to form a hook, as clearly indicated in Figs. 1 and 2.

B is a flexible sheet metal strap, having at one end a hooked portion B′, in which is formed a transverse slot B^2. b are studded indentations projecting downward in the hooked portion B′, serving to keep the hooked portion from coming in close contact with the strap, in order that it may freely engage with the part with which it is hooked and to prevent the tongue a^3 from being pressed downward.

b', b' indicate notches or cuts extending inward from the edges of the strap to weaken the latter, whereby it will readily break at this point if an attempt is made to tamper with the seal. A further description of this feature, however, will hereafter be set forth.

The opposite end of the strap B is also provided with a hook, as indicated at C, its edge being notched, as shown at c.

C′ is a hook formed integral with the strap at a point adjacent to the inwardly projecting end of the hooked portion C.

c' is an opening directly back of the hook C′, the opening serving the double purpose of a guide to indicate when the parts are locked,—as it is so placed as to project slightly beyond the sleeve portion A when in position,—and also to serve as a means whereby the strap may be readily broken when it is desired to unlock the car door.

c^2 is an indentation formed in the bill of the hook C to hold it out of contact with the body of the strap.

I will now proceed to describe how the parts are assembled, which will also disclose the interlocking or sealing of the device.

The hooked end B′ of the strap is first inserted in the sleeve A at the end a^4 and is then drawn through the sleeve a sufficient distance back to permit it to overlap the overlapping sides of the sleeve and engage the end a^4 of the sleeve as shown in Fig. 4;—the free end of the strip being drawn back until the return bend D shown in dotted lines in Fig. 4 is brought snugly against the end of the sleeve, as clearly indicated in Fig. 5.

The free end of the strap with its hook C is then reversed, (having first been passed through the staple of the car-doors or other

engaging means), as shown in Fig. 6;—the hooked portion C being pushed between the main body of the strap and the hook B′ until the hooked portion C reaches a point near the return bend D of the strap.

When the hook C is forced into the sleeve, as indicated in Fig. 6, the tongue a^3 of the sleeve will project through the notched portion c of the hook C, as shown in the figure referred to. In thrusting the end of the strap into the sleeve the hook C′ will enter the transverse slot B^2 formed in the opposite end of the strap, and any attempt to withdraw the end of the strap will result in the hooked portion C engaging with the tongue a^3 of the sleeve;—nor can it be freed by forcing back the looped portion D of the strap and then crowding forward the end C of the strap B, as the hook C′, having entered the transverse slot B^2 of the opposite end of the strap, any further movement in this direction is thereby prevented.

It will be further seen that by reference to Fig. 6 that the opening c' has been so placed in the strap that it will slightly project beyond the end of the sleeve, it thereby serving as a guide to indicate when the hooked portions are interlocked, while at the same time it serves as a means whereby the strap may be readily broken when it is desired to get at the contents of the car.

It will also be noted that the notches or cuts b' are so located on the strap that they will be on a line with the edge of the sleeve, when the strap is in condition for sealing, as indicated in Figs. 5 and 6. The object of thus weakening the strap at this point is that if an attempt is made to push back the looped portion in an endeavor to disengage the interlocking hooks, that it will result in breaking the strap along the line of the cut portion, thereby indicating an attempt to tamper with the seal.

By forming the body of the strip around the overlapping walls of the housing or sleeve, it protects the latter against any attempt to separate the walls in order to release the interlocking hooks.

It is apparent that the flat metal strap and sleeve provides a suitable surface whereby the car-number, name of the railroad, or other required matter may be readily stamped, embossed or printed thereon.

The modification shown in Fig. 7 shows a construction in which the tongue in the sleeve is struck up at an angle and projects through the opening in the underlying wall at an angle instead of the return bend shown in Fig. 1. In this construction the hook B′ at the end of the flexible strip engages the sleeve from the opposite end to that shown in Fig. 4. One of the advantages claimed by this modified form is that it is easier to construct, and there is no tendency to break the hook in construction, which may result when it is bent back as in Fig. 1.

Having thus described my invention, what I claim is:—

1. In a seal, the combination with a housing, its interior provided with a hook, a strip of metal of uniform width having each of its ends bent back upon itself to form hooks, one of said hooks provided with a slot, said latter hook adapted to engage the end of the housing, the strip of metal extending around the outside on one side of the housing and bent back upon itself whereby it may project through the housing, a hook struck up in the body of the strip near its end adapted to enter the slot formed in the hooked end of the strip engaging the sleeve, and the hook at the free end of the strip to engage the hook formed in the housing, substantially as described.

2. In a seal, the combination with a housing having overlapping walls, one of said walls provided with a hook struck up from the metal and projecting through an opening provided in the underlying wall, a strip of uniform width provided at one end with a slotted hook adapted to enter the wall of the housing, the body of the strip extending along the outside on one side of the housing and bent back upon itself whereby it may project through the housing, the projecting end of the strip provided with a hooked portion formed by bending it back upon itself, the bill of the hook having a notch c to accommodate the upstanding hook formed in the housing when the parts are being interlocked, a hook C′ struck up from the body of the strip adjacent to its end designed to enter the slot formed in the hook in the opposite end of the strip, the hook at the end of the strip adapted for engagement with the hook formed in the housing, substantially as described.

3. In a seal, the combination with a tubular housing having an inwardly projecting hook, a strip of metal provided at one end with a slotted hook adapted to engage the wall of the housing at one end, the body of the strip passing around outside of the housing and bent back upon itself in order that it may project through the housing, nicks or cuts in the edge of the strip to weaken it, the projecting end of the strip provided with hooks, one of which is adapted to enter the slotted hook at the opposite end of the strip while the other hook is designed to engage the hook formed in the housing, substantially as described.

4. In a seal, the combination with a housing provided with an inwardly projecting hook, a strip of metal of uniform width provided at one end with a hook formed with a slot, said hooked portion adapted to enter the end of the housing, the body of the strip

lying adjacent to the wall of the housing and bent back upon itself to adapt it to project through the housing, the projecting end of the strip provided with hooks one of which is designed to enter the slot in the bill of the hook at the opposite end of the strip while the other is adapted to engage the inwardly projecting hook formed in the housing, said strip being also provided with an aperture so located that it will serve as a guide to indicate when the ends of the strip are interlocked and to provide means whereby the strip may be readily broken when desired, substantially as described.

5. In a seal, the combination with a tubular housing formed of sheet material, its ends overlapping, the overlapping portion provided with an inwardly projecting hook extending through an opening provided in the underlying wall of the housing, a strip of uniform width having a hook formed by bending one of its ends back upon itself, the bill of the hook being slotted, said hook designed to engage the wall of the housing, the body of the strip lying adjacent to the outer wall on one side and having a return bend to adapt it to project through the housing, said strip having nicks along its edge to form a breaking point, its projecting end provided with hooks, one of which is adapted to enter the slotted hook at the opposite end of the strip, while the other hook engages the inwardly projecting hook of the housing, substantially as described.

6. In a seal, a tubular housing A having overlapping edges a, a', an inwardly projecting hook a^3 struck up from one of the overlapping walls, a strip of uniform width provided with a slotted hook B′ and nicks b' cut in the edge to form a breaking point, the strip being engaged to the housing by means of the slotted bill entering it at one end, the body of the strip lying adjacent to the outer wall of the housing and having a return bend to adapt it to project through the housing, the projecting end of the strip bent back upon itself to form a hook C, the end of the bill having a notch c, a hook C′ struck up out of the body of the strip adjacent to its end designed to enter the slot in the bill B′, an aperture c' serving as a guide to indicate when the parts are interlocked and as a means to weaken the strip whereby it may be readily broken when desired, substantially as described.

7. In a seal, the combination with a housing having overlapping walls, one of said walls provided with a hook struck up to project through an opening in the underlying wall, a strip of uniform width provided with a slotted hook adapted to engage the overlapping wall of the housing, the body of the strip extending around the outside of the overlapping wall of the housing and bent back upon itself whereby it may project through the same, the projecting end of the strip having hooks, one of which is designed to enter the slotted hook at the opposite end of the strip, while the other engages the hook formed in the housing, substantially as described.

8. In a seal, the combination with a housing, its interior provided with a hook, a strip of uniform width having each of its ends bent back upon itself to form hooks, one of said hooks adapted to engage the housing by projecting into the same the body of the strip extending around the outside of one side of the housing and bent back upon itself whereby it may project through the housing, the hook at the free end adapted for engagement with the hook of the housing, substantially as described.

9. In a seal, the combination with a tubular housing having an inwardly projecting hook, a strip provided at one end with a hook adapted to engage the wall of the housing at one end, the body of the strip passing around one side of the housing and bent back upon itself to adapt it to project through the housing, the projecting end of the strip provided with a notched hook to accommodate the upstanding hook formed in the housing whereby the walls of the hook on either side of the notch may spring by the upstanding hook of the sleeve without forcing the hook beyond the hook of the sleeve, substantially as described.

10. In a seal, a housing formed with overlapping walls, a hook struck up from the outer wall projecting through an aperture provided in the underlying wall whereby the overlapping walls are locked together in combination with a locking strip having its ends interlocked within said walls.

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

WILLIAM F. HARRIS.

Witnesses:
S. E. THOMAS,
HENRY E. VILLEROT.