

No. 777,708.

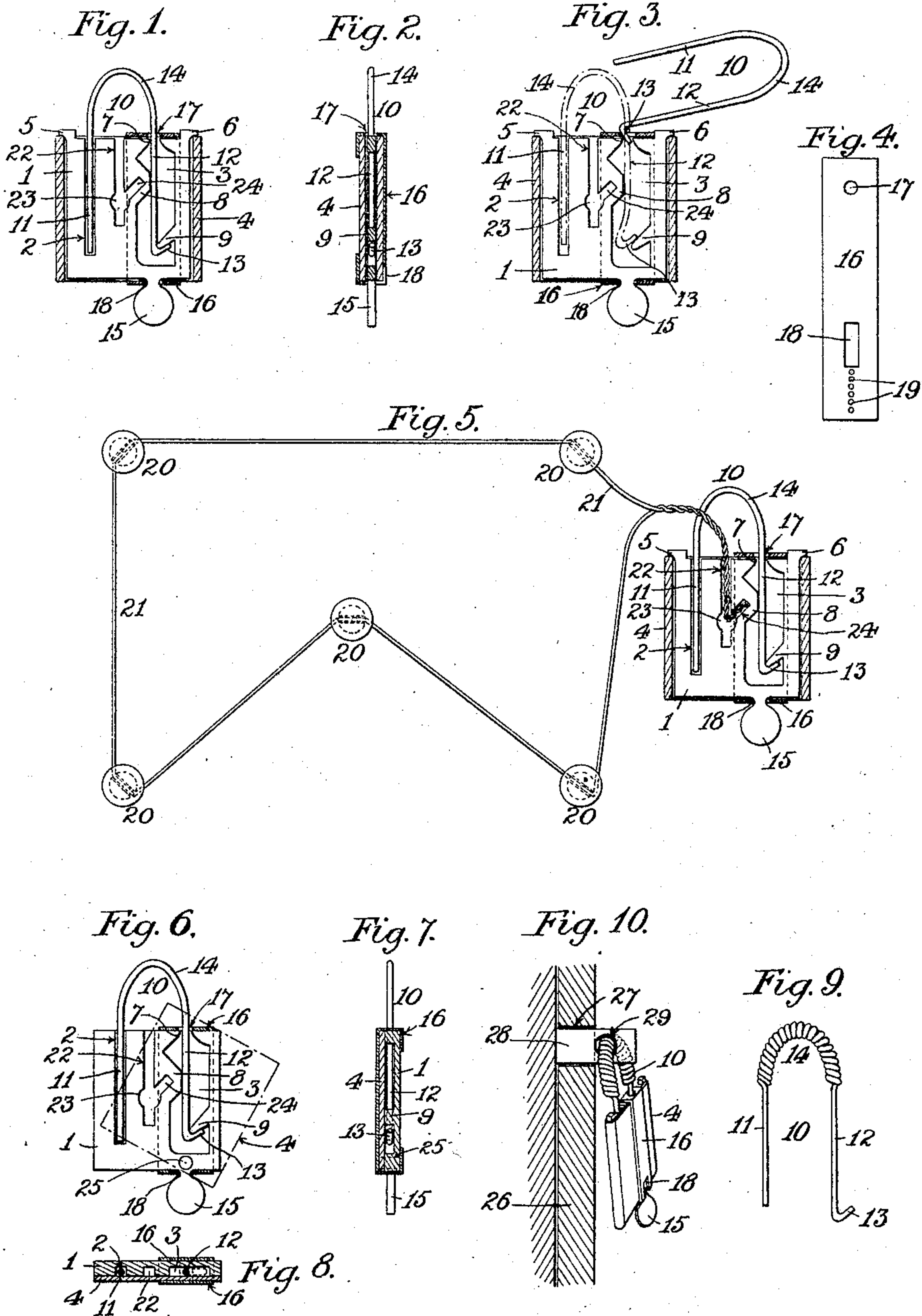
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A. E. WILSON.

LOCK SEAL.

APPLICATION FILED JUNE 16, 1904.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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LOCK-SEAL.

SPECIFICATION forming part of Letters Patent No. 777,708, dated December 20, 1904.

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To all whom it may concern:

Be it known that I, ALFRED EDGAR WILSON, electrical engineer, a subject of the King of Great Britain, residing at Electricity Works, Waterloo Road, Uxbridge, in the county of Middlesex, England, have invented new and useful Improvements in and Relating to Lock-Seals, of which the following is a specification.

The present invention relates to an improved lock-seal to be applied to all parts which it is desired to secure, so that the same cannot be released or tampered with by unauthorized persons without the fact of this having been done being apparent; and it is applicable to meters, automatic cut-outs, fuse-boxes, barrels, bags, parcels, drawers and boxes, and, in fact, to all machines, articles, or parts to be temporarily fastened so as to prevent access thereto or use thereof.

The lock-seal consists of two main parts or members capable of being moved in relation to each other, one provided with slots to receive the limbs of a staple, while the other serves as a cover for such slots, together with a strip or band of easily torn or severed material—such as paper, metal foil, &c.—which constitutes the seal and through which one of the limbs of the staple passes, so as to prevent the removal of the latter from the article, machine, or part to which the seal is applied without breaking same.

A suitable method of carrying my invention into effect is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the lock-seal with the staple inserted and locked therein; Fig. 2, a transverse section thereof; Fig. 3, a second vertical section showing the method of inserting the staple into the slots formed in one of the parts or members, and Fig. 4 a plan view of one of the strips or bands constituting the actual seal. Fig. 5 is an elevation showing how a single seal may be applied to a number of articles or parts which it is desired to protect from being tampered with. Fig. 6 is a vertical section of a slightly-modified form of seal; Fig. 7, a transverse section thereof, and Fig. 8 a horizontal section of same. Fig. 9 is a front elevation of a sta-

ple having an enlarged part to fit a given-sized hole or opening, while the limbs to enter the lock or seal remain always the same; and Fig. 10 shows an arrangement of parts to be locked to which such modified staple is applicable.

Referring to Figs. 1, 2, and 3, 1 is one of the parts or members, which is formed with a slot 2 and a second slot, 3, to receive the two limbs of a staple to be hereinafter described. 4 is the other part or member, which is to act as a cover to the slots 2 and 3, formed in part 1, and which cover is in this case in the form of a sheath within which part 1 slides, the movement of insertion therein being preferably limited by the projections or shoulders 5 and 6 formed on the upper end of part 1 and which come in contact with the upper end of the sheath or cover 4 when same is inserted therein.

It will be seen that the slot 3 in part 1 is made narrow at its upper end, as shown at 7, then opens out and is again reduced by a projecting surface 8 on one side and after again opening out is a second time narrowed by means of a projection or catch 9 on the opposite side of the slot, and finally opens out a third time beneath such projection or catch.

The limb or arm 11 of the staple 10 is straight, and the slot 2 in part 1, into which same is to be inserted, is correspondingly formed, while the arm 12 of such staple (which is of spring form) is made with a barb or hook 13 at its lower end, the two limbs or arms 11 and 12 being connected by the bow of the staple 14. This staple is preferably marked or stamped with a distinctive number to prevent its being cut and replaced by another.

In order to introduce the arms 11 and 12 of the staple into the slots 2 and 3, made in part 1 to receive same, such staple is turned into the position shown in Fig. 3, so that the hook or barb 13 on limb 12 may be passed through the narrow opening 7 of slot 3 and by a turning motion brought to the necessary position to enable the other limb, 11, of staple 10 to enter slot 2 of part 1, when the staple can be forced downward until the barb or hook 13 of limb 12 by coming into contact with the

projection 9 in slot 3 is forced inward until it clears the nose of same and by passing to the under side of such projection locks the staple in the position to which it has been forced.

5 In this position the limb 12 is held or maintained in the narrow upper opening and against the projecting surface 8 on one side of slot 3, while, as above stated, the hook or barb 13 on such limb is held firmly in engagement
10 with projection or catch 9 on the opposite side of said slot, so that the said limb has three points of support or bearings in the slot 3.

The lower edge of part 1 is formed with a projection 15 for the purpose to be hereinafter described.
15

The seal proper, 16, to be used with the lock described is shown separately in Fig. 4, and same may be made in a single detached form, as shown; but it is preferred to make it in the
20 form of a continuous web or tape of paper, metal foil, or other suitable material, which is provided with cross-perforations at suitable distances apart, so that the length to constitute a seal can be readily severed when re-
25 quired for use. Each of such seals 16 is formed with a perforation 17 near one end and a slot 18 toward the other end, the length between the end of the slot and the extremity of the
30 strip having a longitudinal set of perforations 19, the material between which can be readily severed, so as to open out the slot 18 to the extremity of the strip.

The method of application of the seal to the part to be locked or sealed is as follows: The
35 staple having been removed from the lock by withdrawing the part 1 from the sheath 4, such part 1 is again inserted into the sheath, and the seal or strip 16 is then taken and applied over the projection 15 by passing the
40 latter through the slot 18. The strip or seal is then turned to a position at right angles to that at which it is applied and such strip then bent upward over the outside of the sheath 4 and the top of same to the rear side there-
45 of. This application of the strip 16 to the lock will bring the perforation 17 over the open top of the slot 3 in the slotted plate or member 1 contained within the outer sheath or case 4. The strip 16 is held firmly in this
50 position by the fingers of one hand, and the staple 10 after having been passed through the part to be locked or sealed is taken in the other hand and applied in the position shown in Fig. 3, the barb or hook 13 on the lower
55 end of the spring-limb 12 being inserted through the perforation 17 of strip 16 and introduced through the narrow opening 7 of slot 3 in member or part 1. A turning movement will then permit the hook 13 of limb 12 to pass
60 within the slot and bring the other limb, 11, of such staple opposite the other slot, 2, of member 1. The staple is then forced downward until its hook 13 by coming in contact with the lower projection 9 of slot 3 is caused to

spring over and under same and the staple 65 thus held firmly in position without being capable of removal, except by again withdrawing the member 1 from the outer sheath 4, and the action of doing this must of necessity break the strip or seal 16, seeing that same is
70 firmly secured at one end by the projection 15 at the lower end of such member or part 1 and the limb 12 of staple 10 at the opposite end. The action of withdrawing member 1, therefore, must of necessity break the seal, 75 and thus indicate that the article or part to which the lock or seal is applied has been tampered with.

It will be readily understood that the strip or seal 16 may be marked in any suitable 80 way, either with the name of the firm, suitable numbers, or the signature of the sealer or other means of identification, and, if desired, two seals may be folded together and placed on the lock at the same time, the sig- 85 nature or other means of identification being placed on the undermost seal and the other placed on top of it in such a manner that it covers such identification-marks, so that a per-
90 son would not be able to examine same in order to prepare forged labels of the same character and replace the one he had been obliged to destroy or break by opening the lock or seal in order to disguise the fact that same
95 had been tampered with.

The arrangement shown in Fig. 5 is for the purpose of enabling a number or series of ar-
100 ticles or parts 20 to be secured by means of a single seal instead of having to use a separate seal for each one. For this purpose a suitable wire or cord 21 is passed through or secured to each of the articles or parts in the series in any suitable manner and the two ends
105 then twisted or fastened together and introduced into the lock-seal. For this purpose the member or part 1 of such lock-seal is provided with a third slot 22, into which the fastened ends of the cord or wire can be in-
110 troduced, such slot having an enlargement 23 toward its lower end for the purpose of enabling the knot of the cord (if cord is used) to lie well within the groove, or such slot at
115 its lower end may be formed with a notch or recess 24 to receive the end of the wire, which is bent into the form of a hook, when a wire is employed. In practice the slot 22 is formed
120 with both the enlargement 23 and notch or recess 24, so as to enable either a cord or a wire to be employed with the seal. After the end of the cord or wire 21 has been inserted in the
125 slot 22 in member 1 when same is removed from its outer sheath 4 such member may be again introduced into the latter and the seal made in the same manner as hitherto described, thus preventing the removal of the fastening
125 wire or cord 21 without breaking or rupturing the strip 16 constituting the seal.

In the slightly-modified form of lock shown

in Figs. 6, 7, and 8 the member 1 is formed with the slots 2, 3, and 22 in one face only instead of right through same and the member 4 is simply in the form of a plain flat plate applied to the open side of the member or part 1 with capability of turning on a pivot 25, securing the two, but which in the position for use are superposed, when the strip or seal 16 can be applied in the same way as in the previous arrangement and the staple 10 introduced, so as to effect the locking, and thus prevent the removal of the staple, except by turning the cover-plate 4, and consequently rupturing the strip or seal 16, which has been applied to the lock. The slotted plate, however, might, as in the arrangement previously described, and shown in Figs. 1, 2, and 3, have the slots cut or stamped right through same, in which case a cover-plate would have to be mounted on the pivot on each side of the slotted plate and all three be made to open fanwise by turning on such pivot. The strip or seal 16 would after being passed over the projection 15 then have to be wound right round the lock over both the back and front plate and the staple 10 then introduced into the lock, as in the manner described.

The slots 2, 3, and 22 in the member or part 1 can be made either by hand, by filing, or by stamping same either right through or on one face only thereof or even by casting.

The slight modification shown in Figs. 9 and 10 relates to the shape of the staple 10 only and consists in enlarging the thickness or diameter of the bow 14 of such staple, so that it is of greater thickness or diameter than the diameter of the two limbs 11 and 12 of such staple, which always remain constant, so that the staple can be used with any seal, while the thickness of the bow of such staple will be made such as to cause it to fit approximately tightly the opening through which it passes. The application of this is shown in Fig. 10, where the part to be secured is 26, through an opening 27 in which a pin 28 of a fixed part passes and is provided with a hole 29 for the passage of the staple 10. As the hole 29 in pin 28 may be of smaller or greater diameter, in order to prevent any movement of the locked part 26 to an extent which might permit of access to the article or part to be secured a staple the enlarged bow 14 of which practically fills same entirely is substituted for the staple to be used under ordinary circumstances, and such staple can be used with any lock of the construction above described.

In place of the two members or parts 1 and 4 being capable of sliding or turning in relation to each other one might be made to fit into the other and the strip or seal 16 be wound round same and secured by the passage of the staple through the strip or seal and the locking of such staple, as described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A lock-seal, consisting of a slotted member for receiving a lock-staple, a cover member to cover the slots, a staple having two limbs for entry into said slots, one of which is hooked, and a flexible strip of fragile material to be wrapped over said members, apertured to admit a limb of the staple through the same, the slot into which the hooked limb of the staple enters being provided with an inward projection with which said hooked limb engages on insertion.

2. In a lock-seal, a slotted member, a cover member, a spring-staple having two limbs for entry into said slots respectively, one of which limbs is hooked, one slot of the slotted member being provided with an inward projection to engage the hook of the hooked limb, a point of support for said limb near the entrance-aperture, and an intermediate point of support on the side of the slot opposite said projection; in combination with a seal-strip of flexible material adapted to be wrapped over the said members, and apertured to permit a limb of the staple to pass through the same.

3. In a lock-seal, a member having two slots to receive the respective limbs of a staple, a removable sheath to inclose said slotted member, a staple having two limbs for entry into said slots respectively, one of which limbs is hooked, one of said slots being provided with an inward projection for engagement with the hooked extremity of said staple-limb, said slotted member being also provided with an external projection beneath said inward projection; in combination with a flexible seal-strip of fragile material to be wrapped around said members, being provided with an aperture to admit the hooked limb of the staple and a slot to receive the external projection on the slotted member.

4. In a lock-seal, a member having three slots, a cover member to cover the slots, a flexible staple having two limbs for entry respectively into the outermost of said slots, one of which limbs is hooked, one outer slot of said slotted member having an inward projection for engagement with said hooked limb of the staple, the middle slot of said slotted member being formed with an enlargement and a hook-shaped branch adapted to receive a knot and bend of an attaching-wire which secures the lock-seal to multiple objects, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

A. E. WILSON.

Witnesses:

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H. J. FERRY.