July 14, 1931. A. P. STILLMAN 1,814,773

SEAL

Filed Oct. 29, 1927

Fig. 1.

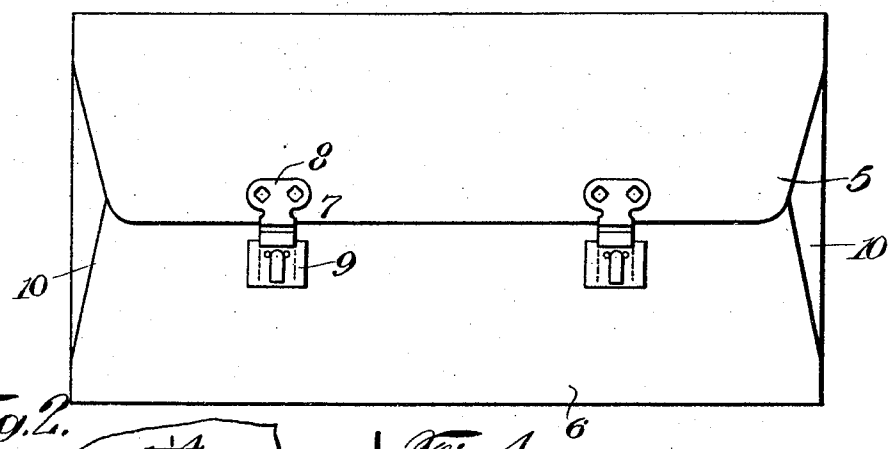


Fig. 2.

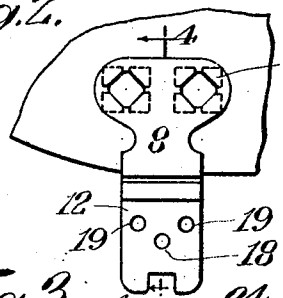


Fig. 4.



Fig. 6.

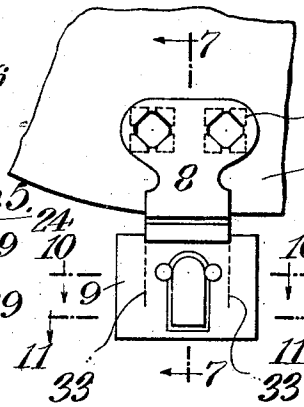


Fig. 7.

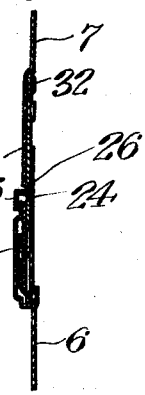


Fig. 3.

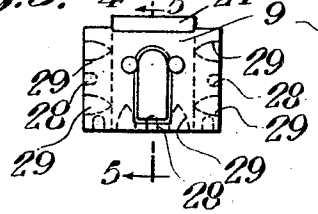


Fig. 5.

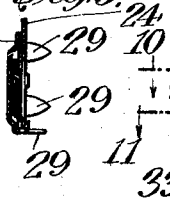


Fig. 10.

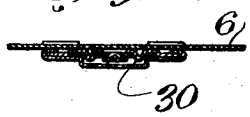


Fig. 8.

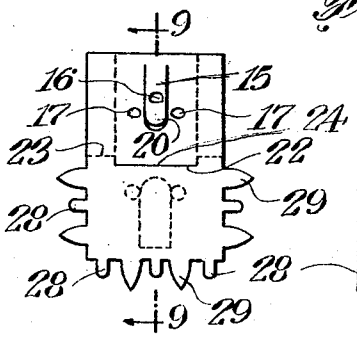


Fig. 9.

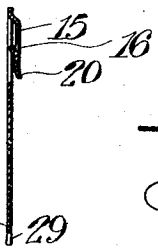
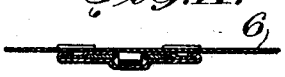


Fig. 11.



Allen P. Stillman Inventor

By his Attorneys

Emery, Booth, Janney & Varney

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UNITED STATES PATENT OFFICE

ALLEN P. STILLMAN, OF BROOKLYN, NEW YORK, ASSIGNOR TO ANCIRA LOCK & SEAL CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

SEAL

Application filed October 29, 1927. Serial No. 229,545.

The present invention relates to fastening devices or seals of the type more particularly used on containers to make it possible more readily to detect tampering with the contents thereof, and has for an object to provide an improved device of this character.

The invention has been developed in connection with the production of a seal for use on bank envelopes such as are used in the transmission of securities and, for convenience, this embodiment of the invention will be described as sufficiently illustrative of the principles involved. It will be understood however that the invention may be variously applied, changes in the mechanical embodiment being made to suit the requirements of use.

Mail thieves and the like who make a practice of removing from parcels entrusted to their care a part or all of the contents depend for success in concealing their thefts upon their ability quickly to open and reseal parcels and yet leave no evidence that the parcels have been tampered with. A postal employee would find it impossible, without detection, to remove securities from a registered bank envelope and substitute an equivalent weight of other papers unless he could so reseal the parcel that it would not arouse the suspicion of the inspector or other employee to whom he might deliver it. But with practice thieves become expert in opening and resealing envelopes and the problem of designing a seal that will prevent the opening of an envelope without conspicuous mutilation of the seal or of the envelope or which will make easy the detection of an envelope that has been opened and resealed presents many difficulties. The difficulty of the problem is increased by the fact that the seal must necessarily be relatively inexpensive and must be so constructed that it can be quickly and easily sealed by clerks having little mechanical skill.

The present invention provides a seal which in the preferred form is so constructed that after its parts have been connected it is practically impossible under the conditions of use to disconnect these parts without mutilating one or both of them to such an extent as to leave obvious traces of the separation. The seal is also so constructed that it is practically impossible to detach one of the cooperating parts from an envelope or the like to which it has been applied and again attach it without seriously mutilating the paper or the fastener.

The nature and objects of the invention will be better understood by reference to the description of a particular illustrative embodiment thereof for the purpose of which description reference should be had to the accompanying drawings forming a part hereof and in which—

Figure 1 is a view of the back of an envelope having applied thereto two seals constructed in accordance with and embodying the principles of the invention.

Figures 2 and 3 are views showing the two parts of a seal disconnected.

Figures 4 and 5 are central sectional views respectively of the male and female members of Figures 2 and 3.

Figure 6 is a view showing the two parts of the seal connected.

Figure 7 is a central sectional view of the connected parts shown in Figure 6.

Figure 8 is a view of the blank before folding but with the retaining members formed therein.

Figure 9 is a central sectional view of the blank shown in Figure 8, and

Figures 10 and 11 are sectional views taken respectively on the line 10—10 and the line 11—11 of Figure 6.

In the arrangement described for the purpose of illustrating the invention the closure flap 5 of an envelope 6 is secured in closed relation by two similar fastening devices or seals 7. The envelope is so formed and the fastening devices are so arranged that each possible opening of the envelope is controlled by one or more seals. As shown each seal consists of cooperating male and female members 8, 9 affixed respectively to the flap and body of the envelope and so constructed that when once they have been connected to each other the engagement becomes permanent to effectively resist any effort to separate them. The side wings 10 of the envelope are of such

a length and so positioned relative to the end flap that a wing and the flap are secured together by the female member of the fastening device as well as by the usual adhesive.

In the particular construction shown the female member 9 consists of a blank which may be stamped from sheet metal folded to form a casing to receive the tongue 12 of the male member. Preferably, in order that the casing may be as thin as possible the more readily to pass through addressograph machines, typewriters and the like, the blank is folded centrally to form a two-part casing, the outer part constituting an imperforate cover member and the inner part being divided to provide a central retaining portion or tongue 15 with a perforation-engaging projection or hook 16 and two lateral portions having perforation-engaging projections or hooks 17. The projections 16 and 17 are arranged to engage the perforations 18 and 19 of the tongue 12 but from opposite sides thereof. The perforations 18 and 19 are preferably substantially circular in form to provide an efficient edge against which the retaining projections 16 and 17 bear, the reason being that the inter-locking engagement is somewhat more effectively maintained when the perforations are so shaped. As best shown in Figures 5 and 9, the end of the retaining portion 15 is formed with a slightly bent lip 20 to engage the forward end of the tongue 12 as it is inserted into the casing to direct it to the far side of said retaining portion 15 and between it and the lateral retaining portions carrying the projections 17. The central retaining portion 15 and the two lateral retaining portions which in fact constitute a part of the body of the casing are, in effect, spring portions operating to yield as the tongue 12 is inserted between them and the projections 16 and 17 snap into the perforations 18 and 19 from opposite sides of the tongue 12. The female blank is formed with a slot or aperture 22 as best shown in Figure 8 so constructed that when the blank is folded on its center line indicated at 23 a lip 24 projects to provide a guide for the insertion of the tongue 12. The tongue is formed with a projection 25 on its outer face and a projection 26 on its inner face arranged to lie, when the parts are connected, closely adjacent the edge of the slot 22 at the outer face of the casing and closely against the edge of the lip 24 on the inner side of the casing to completely close the slot through which the tongue is inserted and thereby to prevent the insertion of a tool to disengage the retaining projections from the perforations 18 and 19. The tongue 12 is of the same width as the slot 22 so that the edges of the tongue lie close against the edges of the slot. Preferably the projection or rib 25 is formed with a hook portion overlying the body of the female member as indicated at 25 in Fig. 7 more effectively to prevent the insertion of a releasing tool beside the tongue 12.

The two parts of the casing, the imperforate cover member and the inner part, are secured together to complete the closure of the casing by means of projections 28, 29 of which there may be any desired number formed preferably along the edge of the imperforate cover member. These projections are of two kinds. The projections 28 are merely folded over the edge of the inner part of the casing whereas the projections 29 are in the form of fastening prongs and serve in securing the fastener to the envelope, but as these prongs are bent inwardly after passing through the paper of the envelope they serve also to close the casing and prevent access to the interior thereof.

In order that the tongue 12 may be more effectively guided when inserted in the female member a guideway is preferably formed in the female member to receive the said tongue 12. As shown the guideway is formed by shaping the inner part or back of the female member to form a tongue receiving guideway as indicated at 30 in Fig. 10.

The male member 8 is secured to the envelope flap by means of prongs 32 which are bent outwardly as indicated in Fig. 2. The male member is shown as provided with an enlarged slightly dished head as best indicated at 31 in Fig. 4 which head is provided with prongs 32, the points of which fold more or less into the dished portion to more securely retain the fastener in position on the envelope flap.

All lines of folding of the blank and especially the lines of folding of the prongs are so scored that in the event they are bent by one tampering with the fastener, the parts will be broken and completely severed. The female member preferably is also scored along lines adjacent the inserted tongue as indicated at 33 in Fig. 6 in order that if this portion of the fastener is distorted during tampering therewith the material will tear leaving clear evidence of such tampering.

The description of the particular embodiment is illustrative merely and is not intended as defining the limits of the invention.

I claim:

1. A seal of the character described comprising interengaging male and female members, the male member having a perforated flat tongue insertable in the female member, the female member comprising a sheet metal blank folded to provide a casing and within said casing a plurality of projections engageable with perforations in said tongue from both sides thereof.

2. A seal of the character described comprising interengaging male and female members, the male member having a tongue insertable in the female member, the female

member comprising a sheet metal blank folded to provide a casing and within said casing a plurality of projections apart from the front wall of the casing extending from opposite sides toward said tongue to engage therewith and retain said tongue against withdrawal.

3. A seal of the character described comprising interengaging male and female members, the male member having a perforated tongue insertable in the female member, the female member comprising a sheet metal blank folded to provide a casing and detents within said casing apart from its front wall arranged to engage opposite faces of said tongue and cooperate with perforations thereof to prevent withdrawal of said tongue.

4. A seal of the character described comprising interengaging male and female members, the male member having a tongue insertable in the female member, the female member comprising a sheet metal blank folded to provide a casing and having an aperture at the fold to receive said tongue, said tongue being provided with oppositely disposed projections arranged to close the aperture in said female member to prevent the insertion of a releasing tool beside the tongue.

5. A seal of the character described comprising interengaging male and female members, the male member having a perforated tongue insertable in the female member, the female member comprising a sheet metal blank folded to provide a casing with one end portion divided to provide a plurality of portions having projections engaging the perforations from opposite sides of the tongue.

6. A seal of the character described comprising interengaging male and female members, the male member having a perforated tongue insertable in the female member, the female member comprising a sheet metal blank having a body portion and an end portion folded over upon the body portion, said end portion being divided longitudinally to provide a plurality of portions so formed that the tongue when inserted will be engaged from opposite sides by said portions, said portions being provided also with retaining projections engageable with corresponding perforations of said tongue.

7. A seal of the character described comprising interengaging male and female members, the male member having a perforated tongue insertable in the female member, the female member comprising a sheet metal blank having a body portion and an end portion folded over upon the body portion, said end portion being divided longitudinally to provide a plurality of portions so formed that the tongue when inserted will be engaged from opposite sides by said portions, said portions being provided also with retaining projections engageable with corresponding perforations of said tongue, one of said portions being resilient and formed with a forward lip to direct the inserted tongue to the far side thereof.

8. A seal of the character described comprising interengaging male and female members, the male member having a perforated tongue insertable in the female member, the female member comprising a sheet metal blank folded centrally to form a two-part casing, the outer part constituting an imperforate cover member and the inner part being divided to provide retaining portions arranged to engage opposite sides of the tongue and having means engageable with the perforations of the tongue to retain said tongue in position in the casing.

9. A seal of the character described comprising interengaging male and female members, the male member having a perforated tongue insertable in the female member, the female member comprising a sheet metal blank folded centrally to form a two-part casing, the outer part constituting an imperforate cover member and the inner part being divided to provide retaining portions arranged to engage opposite sides of the tongue and having means engageable with the perforations of the tongue to retain said tongue in position in the casing, said outer part having projecting prongs at its free edges folded inwardly and around the free edge of said inner part to complete enclosure of the casing.

10. A seal of the character described comprising interengaging male and female members, the male member having a tongue insertable in the female member, the female member comprising a sheet metal blank folded to provide a casing and having an aperture at the fold to receive said tongue, said tongue being provided with oppositely disposed projections arranged to close the aperture in said female member to prevent the insertion of a releasing tool beside the tongue, one of said projections being formed to overlie the body of the female member.

11. A seal of the character described comprising inter-engaging male and female members, the male member having a perforated tongue, the female member comprising a complete casing provided with an imperforate front wall, an opening in its upper edge to receive the tongue of the male member and an upwardly branching portion overlying and confining the end of the tongue at its lower end, and a projection on said branching portion engageable with the perforations of said tongue.

12. A seal of the character described comprising interengaging male and female members secured to the flap and body respectively of an envelope, the male member including a tongue, and the female member including a plate slitted and bent into para-planar spaced

relationship to form portions lying on opposite sides of said tongue when inserted in the female member, and means on said tongue and on said oppositely disposed portions of the female member providing retentive hook and catch interengagement therebetween on both sides of the tongue.

In testimony whereof, I have signed my name to this specification this 27th day of October, 1927.

ALLEN P. STILLMAN.