Jan. 18, 1927. 1,615,057

E. TYDEN

CAR SEAL

Filed Dec. 24, 1924

Fig. 1

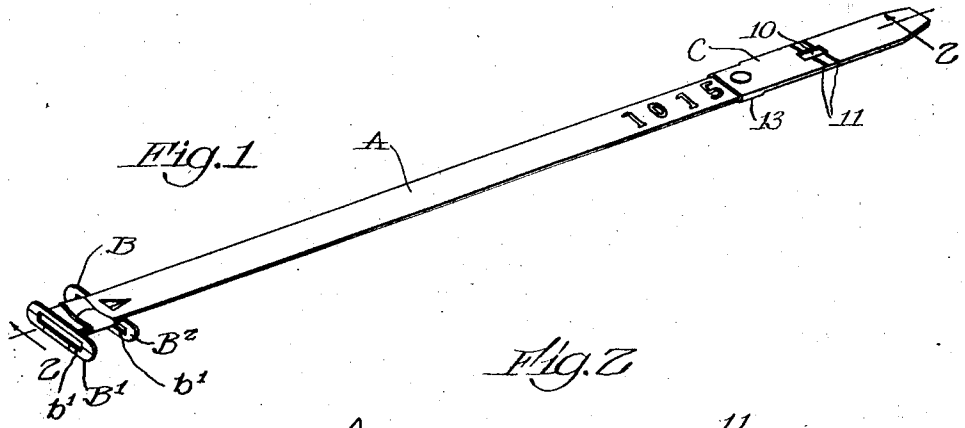


Fig. 2

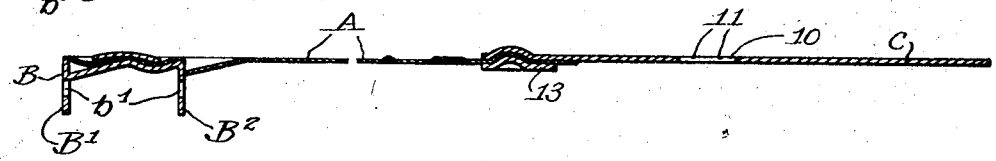


Fig. 3

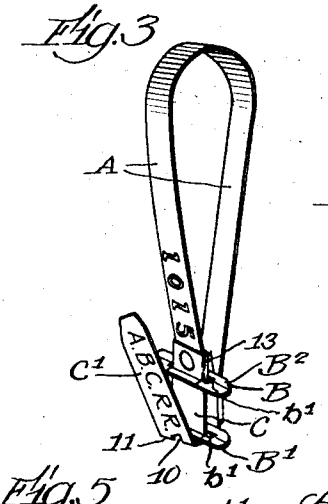


Fig. 4

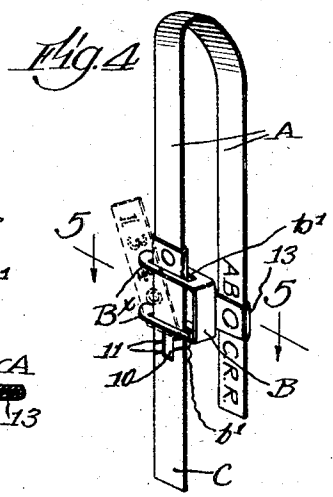


Fig. 5

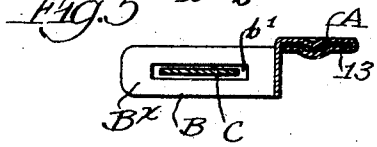


Fig. 6

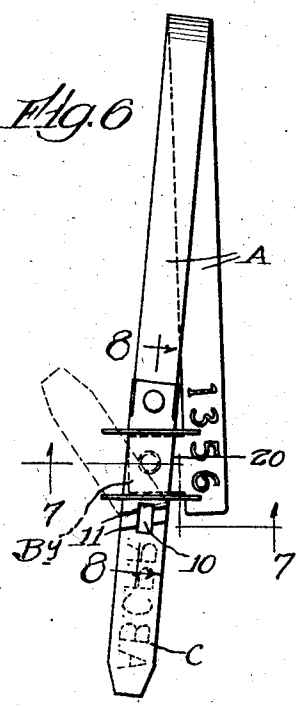


Fig. 7

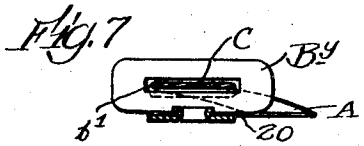
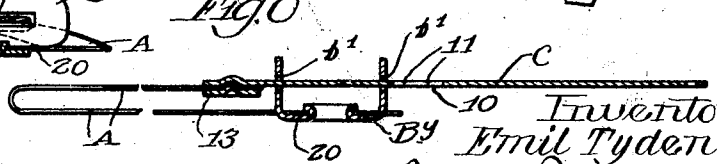


Fig. 8



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UNITED STATES PATENT OFFICE.

EMIL TYDEN, OF EVANSTON, ILLINOIS.

CAR SEAL.

Application filed December 24, 1924. Serial No. 757,898.

The purpose of this invention it to provide an improved construction of a seal of metal strip type adapted to be engaged with the parts to be sealed by looping the metal strip through the sealed members. It consists in the elements and features of construction shown and described as indicated in the claims.

In the drawings:

Figure 1 is a perspective of a seal embodying this invention in original straight form previous to flexure and looping for engagement with the members to be sealed.

Figure 2 is a detail section at the line 2—2 on Figure 1 through the terminals of the seal, the intermediate portion being broken away.

Figure 3 is a perspective view of the seal loop for engagement with the seal members and showing the hook to prevent disengagement.

Figure 4 is a perspective view of a modified form, the same being in sealing engagement with the staples of a box and cover to be sealed.

Figure 5 is a section at the line 5—5 on Figure 4.

Figure 6 is an elevation of a slightly modified form shown in unsealed condition.

Figure 7 is a section at the line, 7—7, on Figure 6.

Figure 8 is a section at the line, 8—8, on Figure 6.

The sealing device constituting this invention as shown in Figures 1, 2 and 3 comprises a strip, A, of flexible metal, as commercial tin, having one end clinched to a clip, B, which is formed with two parallel lugs, B^1, B^2, projecting at the same side of the strip and having the form of staples by having apertures, b^1, b^1, for insertion of the opposite terminal, C, of the strip through both lugs to protrude therebeyond a sufficient distance to form by folding back over the lugs or staples a hook indicated at C^1. The terminal, C, is not made of flexible material like the body of the strip, A, but on the contrary is relatively inflexible and liable to be broken by bending or attempting to bend the same any substantial extent out of its normal flat form and back again into said form; that is, it will not permit straightening after being flexed or to any considerable extent. The clip, B, is of material sufficiently flexible to be adapted to be clinched as shown onto the end of the strip, A, and to form the lugs, B^1, B^2, as shown. The clip, C, is also of sufficiently flexible material to be clinched onto the opposite end of the strip, A, as shown; but neither clip can be unclinched for disengaging it from the strip and re-clinched thereon without breaking the clinching lugs, 13. For clinching the terminal, C, onto the strip, A, there is formed beside the clinching lugs, 13, projecting at the outer side which constitutes a stop for arresting the inserting movement of the terminal, C, through the apertured lugs, B^1, B^1, and limiting the protrusion of said terminal beyond said lugs; and said terminal is weakened at an area which is beyond the lugs when the terminal is inserted therethrough to the stop boss, C, by an aperture, 10, and is further weakened by transverse scorings, 11, 11, toward the opposite ends of said aperture, 10, said scorings being on the side at which the lugs, B^1, B^1, project from the clip, B; so that when the terminal, C, is folded back over the lugs to form a hook which will engage them and prevent the withdrawal of the terminal, C, from the terminal clip, B, the said terminal, C, will tend to fold at the two points at which these cross scorings are located so as to make a U-shaped hook whose neck is substantially the width of the distance between these scorings, which is somewhat more than the dimension of the lugs outward from the eyes through which the strip is inserted; so that the end portion of the terminal, C, which forms the return bend of the hook is normally spaced from the base portion of said terminal a distance for embracing the lugs outside of their eyes.

It will be understood that when the seal is looped through the staples or the like which are to be sealed together by it, and the end portion of the terminal, C, is folded at the scorings, 11, 11, to extend back over the lugs and form a hook which engages the terminal clip, B, said terminal, C, cannot be disengaged from the clip, B, without reversing the end of the terminal, C, for opening the hook and straightening said terminal, and that such straightening is impossible without breaking the end portion at one or the other of the scorings, 11, 11, or if by great caution it might be thus straightened so as to be withdrawn from

the staples, it could not be replaced and reflexed in hook form.

It will be understood that the seals of this character are largely used for sealing railway cars and that the inspection of trains of such cars as they pass the prescribed inspection points is relied upon to disclose whether any seals have been tampered with, and at what point in the route of the cars such tampering has occurred. The usual requirement in respect to reports of inspection is that the inspector at each inspection point shall make a record of the seals examined, such record comprising the number of the seal and the name of the road or transportation company which it bears, being that by which it was issued. To insure that the fact that the seal has been tampered with shall not be overlooked by the inspector these two parts of the identifying marking of the seal are separated on the seal, one part of said marking being embraced so as to be readable on the exposed side of the reflexed end, 11, of the terminal, C, which forms a hook engaging the clip terminal, B, so that it cannot be seen if the hook has been straightened for withdrawing it from the staples, such straightening causing the other side to be exposed. The inspector will thus be compelled in order to make his record to notice if a seal has been tampered with even to the extent of straightening the hook even though the tampering may have gone no farther than straightening the terminal without withdrawing it for removing the seal and without therefore actually affording access to the car. Preferably the part of the marking selected for embracing on the hook end as described is the part indicating,—usually by the initials,—the road or transportation company from which the seal issued, the number which identifies the particular seal being applied on any exposed part which will not be removed or disturbed in position by tampering with the seal. The inspector's report of a seal which has been tampered with by breaking the hook will thus serve fully to identify the seal so that it may be traced to its source from the records of the seal notwithstanding the removal of the marking identifying the road which issued it.

In the forms shown in Figure 4, the clip having the staple lugs is formed so that these lugs may have the slots for insertion of the seal terminal, C, extending as to their length substantially in the plane of the other end of the strip secured in said clip, B; that is to say, extending from one edge of the clasp of the clip which engages the said end of the strip as seen at B^x, B^x, in said Figure 4. This makes it convenient to apply the portion of the marking which is not affected as to exposure by straightening of the hook terminal in a line parallel with the marking which is exposed on the reflexed hook end as may be clearly understood from Figure 4. This formation and arrangement has the advantage that the reflexing of the hook end is not liable to overlap and hide the part of the marking which is on the strip, as might occur in the first form shown in Figure 1. In said first form, however, this liability may be avoided by making the scoring, 11, 11, extend obliquely across the aperture, 10, so that in flexing the terminal back to form the hook, the fold normally occurring at the scorings, will cause the reflexed end normally to trend obliquely down across the clip, B, so as not to overlie and hide any portion of the marking on the strip, A, when that marking is adjacent to the clip, B. The oblique scoring, however, has a more important function arising from the fact that obviously one method of tampering with the seal for disengaging it to obtain access to the sealed package or car, may be to clip out the outer bars of the staples so that the hook terminal may be withdrawn laterally instead of longitudinally and therefore without straightening the hook. If the hook is reflexed directly so as to overlie the staples and the part thereof which would be cut out as described for disengaging the hook without straightening it, it would be an easy matter for the thief to replace the hook in position and causing the two overlying plies of the strip to adhere by wax or the like so that the hook would remain in position lying in the staples but not engaged therewith, because they would no longer be capable of engaging it, but the mutilation of the staples would be concealed by the overlying hook end. This is prevented by the oblique scoring causing the hook end to trend obliquely across the staples so that it will not conceal any mutilation to which they may have been subjected. This consideration, that is, the importance of avoiding concealment by the hook of the portion of the staples which might be mutilated for releasing the hook is an important reason for the provision of two staples as shown; for while a single staple would operate effectively for sealing in the matter described a single staple would be liable to be concealed as to the part which might be mutilated by the reflexed hook even though reflexed obliquely as described but with two staples positioned at a distance apart such as shown,—more than the width of the strip,—the oblique flexure of the hook end insures that at least one of them will be completely exposed so that its mutilation can be observed.

Approximately the same convenience and advantage afforded by the forms shown in Figures 4 and 5, may be obtained from the form shown in Figures 6, 7 and 8, in which

the secured end of the flexible strip is made with an edgewise projecting lug, 20, by means of which the clip, B^{v}, is attached.

I claim:

1. A sealing device consisting of a flat flexible strip adapted to be reflexed upon itself to form a loop for engagement with the article to be sealed, said strip having a base terminal provided with staple lugs whose apertures are positioned and dimensioned for insertion of the reflexed end of the strip in a plane substantially parallel to and in the general longitudinal direction of the other end portion which has said base terminal, said reflexed end portion being obliquely transversely scored for determining a point in the length at which, upon being folded back over the staple lug for engaging the latter, it will break upon straightening to disengage from the staple lug the hook formed by such folding; whereby the end portion so folded to form a hook will extend divergently from the direction of its insertion through the staple lug and be prevented from concealing any substantial portion of the strip immediately back of the base terminal, the strip having identifying marking partly contained readably on the surface of the strip at a part thereof adjacent the base terminal antecedent to the fold-determining score, and partly contained readably on the surface of the hook-forming portion beyond said score which is exposed forwardly when the strip is flexed for forming the hook.

2. A sealing device consisting of a flat flexible strip adapted to be reflexed upon itself to form a loop for engagement with the article to be sealed, said strip having a base terminal provided with staple lugs whose apertures are positioned and dimensioned for insertion of the reflexed end of the strip in a plane substantially parallel to and in the general longitudinal direction of the other end portion which has said base terminal, said reflexed end portion being transversely scored for determining the point in the length at which upon being folded back over the staple lug for engaging the latter, it will break upon straightening to disengage from the staple lug the hook formed by such folding, said staple lug being offset edgewise with respect to the initial end portion of the flat strip from the zone of longitudinal extent of said strip from the base terminal; whereby said initial end portion of the strip is exposed to view in the same direction as the hook-forming portion of the strip, the strip having identifying marking partly contained readably on the surface of some portion of the strip adjacent the base terminal antecedent to the fold-determining score, and partly contained readably on the surface of the hook-forming portion beyond said score which is exposed forwardly when the strip is flexed for forming the hook.

3. A sealing device consisting of a flat flexible strip adapted to be reflexed upon itself to form a loop for engagement with the article to be sealed, said strip having a base terminal provided with staple lugs whose apertures are positioned and dimensioned for insertion of the reflexed end of the strip in a plane substantially parallel to and in the general longitudinal direction of the other end portion of the strip which has said base terminal, said reflexed end portion being transversely scored for adapting it to be folded back, over the staple lug for engaging the latter, at a predetermined point, and breaking upon being straightened for disengagement from the staple lug, said scoring being obliquely crosswise of the strip for causing the folded back terminal portion of the strip in said folding to be deflected edgewise from directly in front of the staple lugs and the intervening extent of the strip engaged therewith, the staple lugs being offset edgewise with respect to the initial end portion of the flat strip from the zone of longitudinal extent of said strip from the base terminal, the strip having identifying marking partly contained readably on the surface of the initial portion of the strip adjacent the base terminal and partly contained readably on the surface of the hook-forming portion beyond the score which is exposed forwardly by flexing the strip for forming the hook.

4. A sealing device consisting of a flat flexible metal strip adapted to be reflexed upon itself to form a loop for engagement with the article to be sealed; a sheet metal stamping base terminal for said strip, clinched around the end portion of the strip and extending offset laterally edgewise of the clinched portion of the strip, and having at said offset part lugs projecting transversely of the direction of the length and of the plane of the flat surface of the clinched portion of the strip, said lugs having slots dimensioned correspondingly to the cross section of the strip for admission of the other end of the latter, said slots having their length corresponding to the width of the flat strip, extending transversely of the first mentioned end portion of the strip, whereby said flat end of the strip thrust through the slots in the general direction of the longitudinal extent of the clinched portion of the strip, is positioned offset from the longitudinal zone of said portion.

5. A sealing device consisting of a flat flexible metal strip adapted to be reflexed upon itself to form a loop for engagement with the article to be sealed; a sheet metal stamping base terminal for said strip, clinched around the end portion of the strip and extending offset laterally edgewise of

the clinched portion of the strip, and having at said offset part lugs projecting transversely of the direction of the length and of the plane of the flat surface of the clinched portion of the strip, said lugs having slots dimensioned correspondingly to the cross section of the strip for admission of the other end of the latter, said slots having their length corresponding to the width of the flat strip, extending transversely of the first mentioned end portion of the strip, whereby said flat end of the strip thrust through the slots in the general direction of the longitudinal extent of the clinched portion of the strip, is positioned offset from the longitudinal zone of said portion, and means for rendering said end unretractable through the slots without rupture.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 22nd day of December, 1924.

EMIL TYDEN.