No. 618,146. Patented Jan. 24, 1899.

E. TYDEN.

SEAL.

(Application filed Apr. 4, 1898.

(No Model.)

Fig. 1

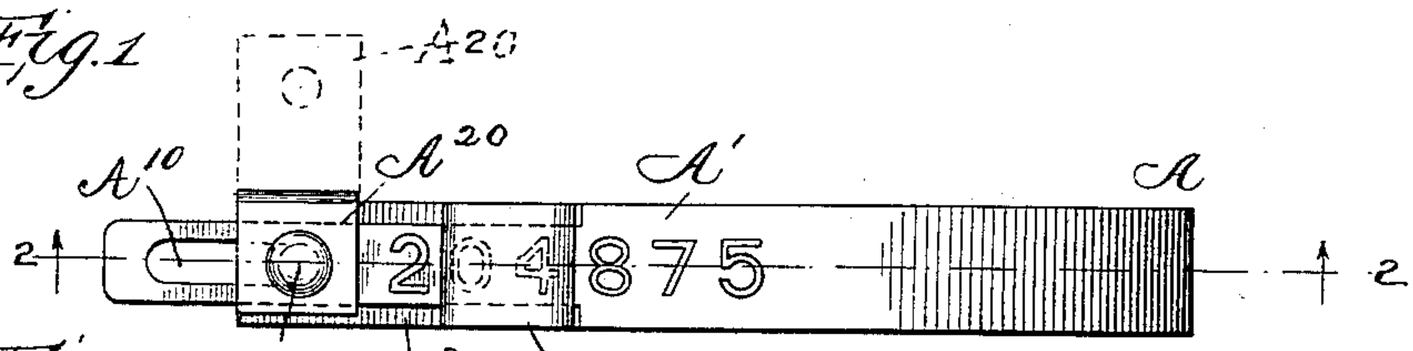


Fig. 2.

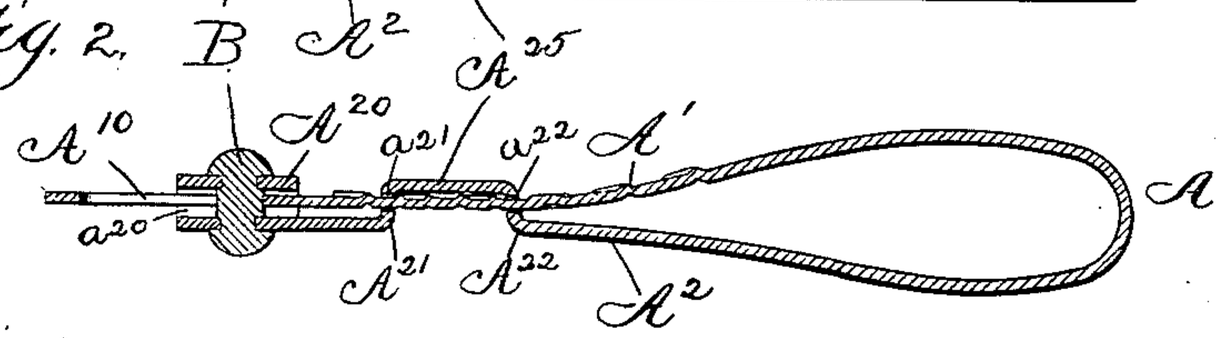


Fig 3.

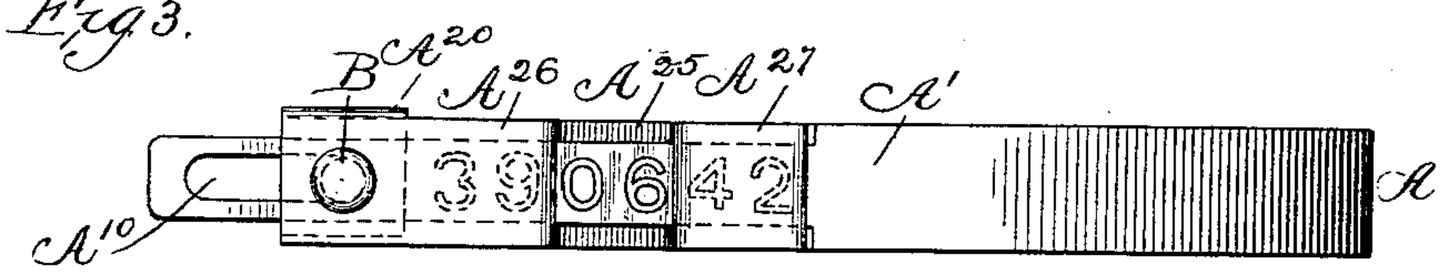


Fig 4.

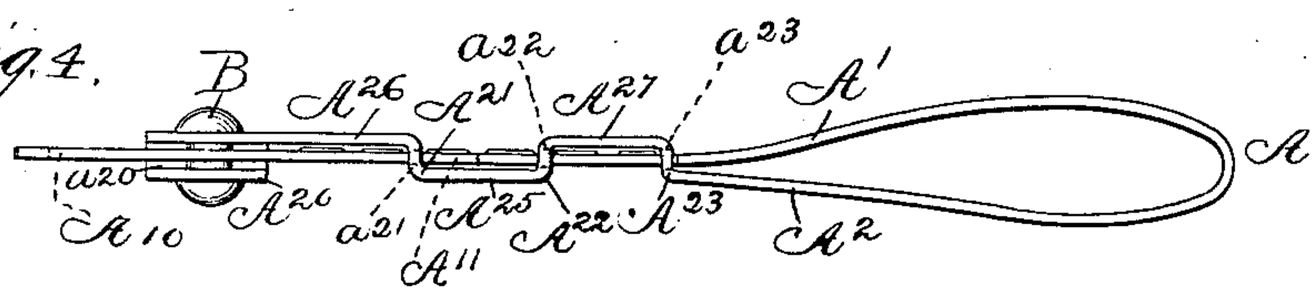


Fig. 5.

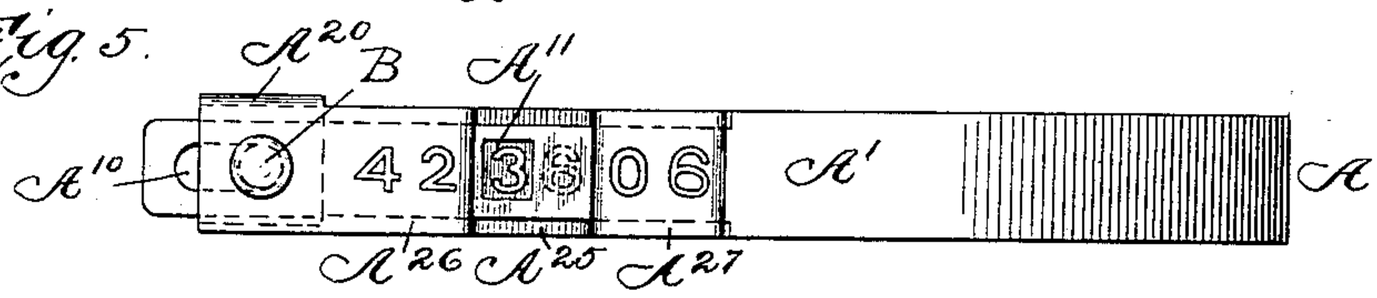


Fig. 6.

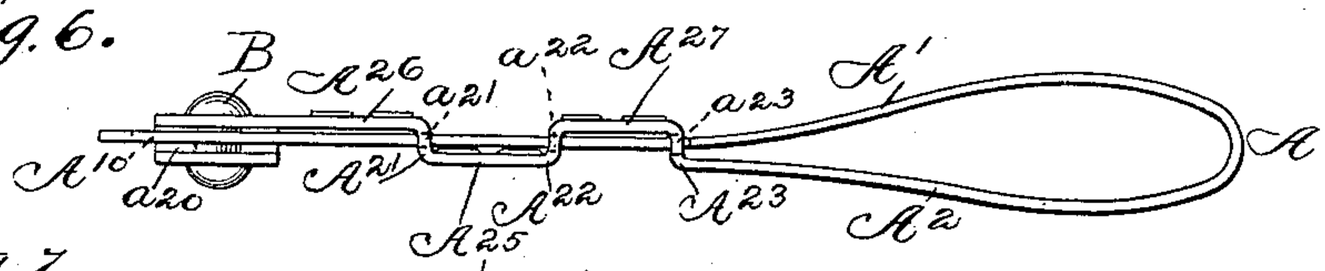


Fig. 7.

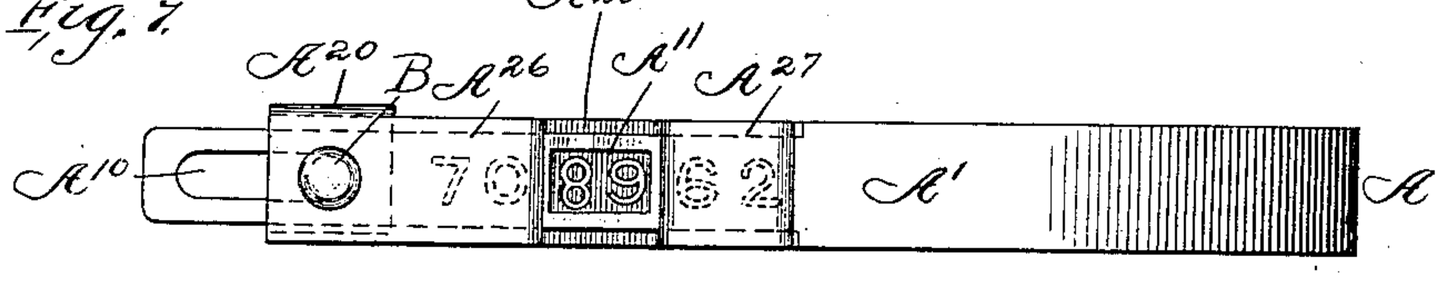
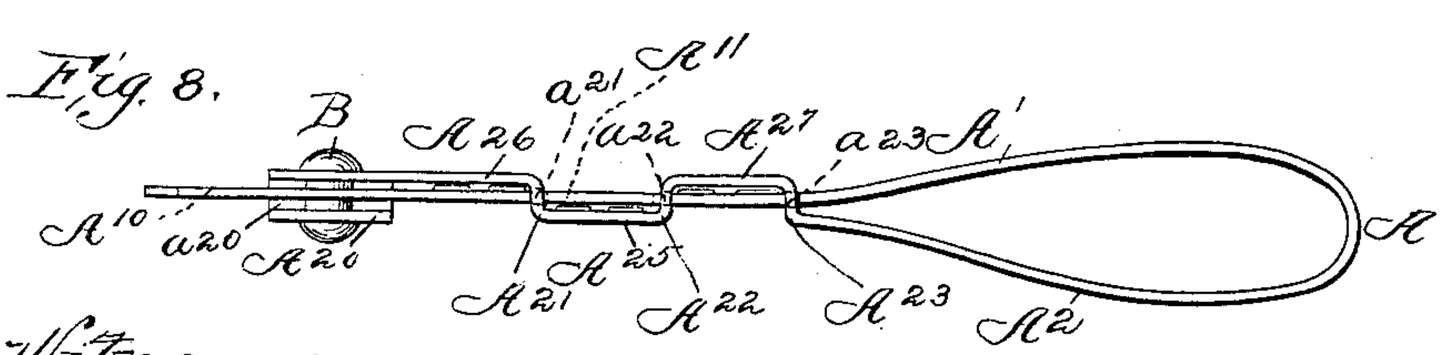


Fig. 8.



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by Burton & Burton
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UNITED STATES PATENT OFFICE.

EMIL TYDEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE INTERNATIONAL SEAL AND LOCK COMPANY, OF HASTINGS, MICHIGAN.

SEAL.

SPECIFICATION forming part of Letters Patent No. 618,146, dated January 24, 1899.

Application filed April 4, 1898. Serial No. 676,438. (No model.)

To all whom it may concern:

Be it known that I, EMIL TYDEN, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Seals, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

This invention is an improvement in seals designed for sealing bags, pouches, freight-cars, and the like, and it is particularly designed to compel the handling of the seal by the person intrusted with the inspection of the same from time to time in order that any tampering with the seal may be detected; and it consists in such an arrangement of the characters of the identifying-number with which the seal is marked that the entire number cannot be seen without a certain amount of manipulation of the device, which cannot be performed without disclosing the fact that the seal has been tampered with, if such is the case.

This invention, broadly considered, is shown and claimed in my application, Serial No. 658,158, filed November 11, 1897; but one of the several specific forms of the invention which are shown in that application and not therein claimed is the specific subject of this application.

In the drawings, Figure 1 is an elevation of my improved seal. Fig. 2 is a longitudinal section at the line 2 2 on Fig. 1. Fig. 3 is a plan of a modified form of the same invention. Fig. 4 is an edge elevation of the structure shown in Fig. 3. Fig. 5 is a plan of a further modification, and Fig. 6 is an edge elevation of the same. Fig. 7 is a plan of a fourth modification, and Fig. 8 is an edge elevation of the same.

In all the forms of seal to which this invention is shown applied in the different figures the general character of the structure is that a strap of flexible material, such as commercial tin, adapted to be inserted through a staple or other fastening of the package or door carries at one end the sealing device or seal proper, and is designed to have the other end inserted through the staple and brought back to connection with the seal-carrying end, where the two ends are to be retained in connection by the seal, the loop thus formed through the staple being the means of securing the seal in position and preventing the unlocking of the package or door, which can be effected only after rupture of the strap at some point. Although made in one piece, this strap has at its two end portions, it will be seen, two distinguishable functions which might be performed by two separate pieces. The end which is inserted through the staple and afterward joined by the seal to the other part I term the "securing strap or bar," since it is adapted to perform this function whenever it is at one end prevented from coming through the staple, whether that prevention is due to its integrality and continuity with the other piece which makes it form a loop when folded for junction with the seal-bearing end or whether it is effected by any other contrivance at the end corresponding to the loop in the drawings. The other end of the strap I distinguish as the "seal-body-carrying strap or bar," since it is adapted to perform this function regardless of its integrality or continuity with the other portion of the strap, and I shall refer to these two portions by these terms, notwithstanding they are portions of one piece.

A is the strap, of which the portion A′ is the securing strap or bar and the portion A^2 is the seal-body-carrying strap or bar. The latter is made with a lateral offset-lug A^{20}, which is folded upon itself—that is, so as to overhang the end portion of said bar, as seen in all the views—forming a cleft or guideway a^{20}, through which the end of the securing strap or bar may be passed when the device is sealed. Both sides of this cleft are apertured, the apertures being in line through the middle of the cleft to receive the seal B, which may be of soft metal, such as lead, adapted after being inserted through the apertures to be clenched down with a suitable tool at both ends, thus forming a soft rivet, securing the parts together, so that they cannot be separated without destroying at least the head of the rivet, which may receive an identifying-imprint in the process of clenching, by virtue of which it receives the name the "seal." The end of the securing strap

or bar has an elongated aperture or slot A^{10}, through which also the seal B passes when it is inserted in position for being clenched or impressed, and the seal thereby prevents the separation of the seal-carrying strap at the seal end of the device; but the elongation of the aperture A^{10} in the securing-strap permits a certain range of longitudinal movement of the latter with respect to the seal-carrying strap or bar without permitting the separation of the two parts. Near the position at which the seal is mounted on the seal-carrying bar said bar is offset into the plane of the overhanging lug A^{20}, which bounds the cleft a^{20}, forming a shoulder A^{21}, and at a short distance from that point it is again offset in the opposite direction into the original line, forming a second shoulder A^{22}. Apertures a^{21} a^{22} are formed through the shoulders A^{21} A^{22}, respectively, in line with the cleft a^{20}, and the securing-strap A′ is inserted through these apertures on its way into the cleft. The third offset forming the shoulder A^{23} and having an aperture a^{23} may be made as shown in the forms illustrated in Figs. 3, 4, 5, 6, 7, and 8, and the securing-strap will in such case be secured in all three apertures of all three shoulders on its way into the cleft. It will be seen that with this structure when the seal is clenched through the slot A^{10} in the securing-strap a certain portion of one surface of said strap is concealed from view where it lies facing the portion A^{25} of the seal-carrying strap, and that a portion of the offset surface is similarly concealed by the portion A^{27} of the seal-carrying strap between the shoulders A^{22} and A^{23}. The same fact might be expressed by stating that the securing-strap conceals certain portions of one surface or the other of the seal-carrying straps at the several points indicated—that is, the facing surfaces of the two parts are concealed from view at these points. In each instance also the opposite surface is exposed to view at the same point. Each surface of both parts throughout the extent of these offsets and engagements of the two parts with each other at the apertures in the shoulders is made up of alternately concealed and exposed portions, and by making the length of the slot A^{10} in the securing device equal to the length of one of such portions the securing device may be shifted without breaking the engagement at the sealed end sufficiently to interchange the relations of these portions of its surfaces—that is, to conceal at one limit of its movement portions which were exposed at the other limit and to expose those which were concealed.

In the form shown in Figs. 1 and 2 I have represented as produced and readable on one surface of the securing-strap a succession of characters constituting a serial number, two of which are concealed under the portion A^{25} of the seal-carrying strap between the shoulders A^{21} A^{22}, one character being exposed between the lug A^{20} and portion A^{25} and the other being exposed beyond the portion A^{25}. The length of the slot A^{10} is sufficient to permit the withdrawal of the two characters which are concealed under A^{25}, so that they may be exposed at the right; but such movement will conceal the character which before such withdrawal—that is, while the two first-mentioned characters were concealed—was exposed at the left. At no position, therefore, can the entire seal number be read, and whatever be the position in which the inspector happens to find the parts he must hold the seal-carrying end of the seal and move the securing device longitudinally through it in one direction or the other in order to discover and record all the characters of the number.

In the form shown in Figs. 3 and 4 the third shoulder A^{23} is added, and the characters are formed on the opposite side of the securing device from that on which they are shown in Figs. 1 and 2—that is, so that said characters face the surface of the seal-holding or seal-carrying strap as it runs from the left or seal-carrying end, whereas in Figs. 1 and 2 they are on the surface facing away from the other strap at that point. In this form (shown in Figs. 3 and 4) certain characters are concealed by the portion A^{26} of the seal-carrying strap between the shoulder A^{21} and the seal, and certain other character are concealed by the portion A^{27} between the shoulders A^{22} and A^{23}, the only characters, therefore, which are visible being those which may be seen between the shoulders A^{21} and A^{22} on the surface of the securing-strap which is facing away from the portion A^{25}. The length of the slot A^{10} being, as before, equal to the distance between the shoulders A^{21} and A^{22} and that being the same as the distance between the shoulders A^{22} and A^{23}, the longitudinal movement of the strap A′ being equal to the length of the slot, will cause the characters "3 9" which are concealed at A^{26} to become visible opposite A^{25}, the characters which were first visible at the last-mentioned point being concealed at A^{27}, while the characters which were first concealed at A^{27} are disclosed beyond the shoulder A^{23}. The same result is produced here as in the preceding figures—viz., that the movement of the strap in one direction or the other is necessary in order to enable the inspector to discover and record the entire number.

In the form shown in Figs. 1 and 2 it will be noticed that only the characters "2 0 4" are practically involved in the process, because the remaining characters "8 7 5" are never concealed, whereas in Figs. 3 and 4 all the characters "3 9 0 6 4 2" are involved, because none of them are at all times disclosed, but every character is concealed at one position or another. In the form shown in Figs. 5 and 6 three characters only are involved, two of these being placed not on the securing-strap, but on the seal-carrying strap on the inner surface of the portion A^{25}, facing, therefore,

and adapted to be concealed by the securing-strap running through the shoulders A^{21} A^{22}, while the character beyond the body is concealed and disclosed as in the preceding forms. Other characters, as "4 2" and "0 6," may be added for the purpose of a conveniently large serial number on the other surface of the seal-holding strap where they are never concealed, and an aperture A^{11} is made in the securing-strap large enough to disclose one character only, said aperture being located so that in the range of movement permitted by the slot A^{10}, which in this case is made equal only to the extent of one figure, said aperture is shifted from one side to the other within the space between the shoulders A^{21} and A^{22}, so that it at one limit conceals one and discloses the other of the two characters borne by the inner surface of the portion A^{25} between said shoulders, and at the other limit discloses the second and conceals the first of said characters. The same generic result, it will be seen, is obtained in this as in other forms—to wit, that whatever be the position at which the inspector finds the parts he must shift the securing-strap in order to ascertain and record the figure which will be concealed at the first position.

In the form shown in Figs. 7 and 8 a characteristic of the forms illustrated in Figs. 3 and 4 is combined with that illustrated in Figs. 5 and 6—that is to say, all the characters are involved in the process, the characters at the right of the seal-body being divided into three groups, one extreme group being in position to be concealed at A^{26}, while the other extreme group is in position to be concealed at A^{27}, where the intermediate group is disclosed at A^{25}, but the disclosure at A^{25} is effected after the manner of the disclosure in Figs. 5 and 6—viz., by an aperture A^{11} in the securing-strap. Although the figures thus disclosed through the strap are on the inner face of the portion A^{25} instead of upon the outer face of the strap, as in Figs. 3 and 4, it will be observed that the result here attained is precisely the same as that attained in Figs. 3 and 4.

Other modifications of the same general expedient may be devised; but the four forms illustrated will sufficiently indicate the principle involved. It will be observed that the mechanical characteristic of all the forms illustrated is that the two straps or bars which are held in connection by the seal are interlaced with each other, so that alternate portions of each are opposed to opposite surfaces of the other, the interlacing being in such form as to leave one of the parts practically straight, so that the two parts may have relative movement longitudinally with respect to each other through their interlacing points, and considered in this light it will be seen that the point to which the part A′ passes through the clamp at the end of the part A^2 when the seal is fixed is in effect an interlacing point, since between that point and the point A^{21} one surface of the part A′ is exposed and the other surface is concealed by the part A^2, precisely as between the other two intersecting points A^{21} A^{22} or A^{22} and A^{23} in the forms in which an additional bend is given and an additional intersecting point afforded.

I claim—

1. In combination with the sealing or locking device, the two straps or bars which it retains connected together, such straps or bars being interlaced, so that successive portions of each are opposed alternately to opposite surfaces of the other, one of said parts having a character on the surface which is adapted to be thus concealed between the interlacing points, the attachment of the seal being adapted to permit relative longitudinal movement of the straps sufficient to expose such character.

2. In combination with the sealing or locking device, two straps or bars which it retains connected together, such straps or bars being interlaced, so that successive portions of each are opposed alternately to opposite surfaces of the other, one surface of one of the parts having a character adjacent to one of the interlacing points, the attachment of the sealing device being such as to permit relatively longitudinal movement of the straps sufficient to shift said character from one side to the other of such interlacing point, whereby it may be exposed at one position and concealed at the other position within the range of such movement.

3. In combination with the seal, the two straps or bars which it retains connected together, such straps or bars being interlaced so that successive portions of each are opposed alternately to opposite surfaces of the other, the attachment of the seal being adapted to permit relative longitudinal movement of the straps, one of them bearing on one surface a serial number or other arbitrary succession of characters extending past one interlacing point and over a distance greater than the distance between two consecutive interlacing points, the range of movement permitted by the seal being less than the longitudinal extent of the serial number; whereby, at all positions in the range of movement, there are two portions of such serial number, of which one is concealed and the other is exposed at opposite sides of one of the interlacing points.

4. In combination with the seal, the two straps or bars which it retains connected together, such straps or bars being interlaced so that successive portions of each are opposed alternately to opposite surfaces of the other, the attachment of the seal being adapted to permit relative movement of the straps, one of them having upon one surface a serial number, which extends past two of the interlacing points, and over a greater distance than the sum of two consecutive intervals between the interlacing points, the range of movement

permitted by the seal being equal to the length of one of said intervals, whereby, at one limit of the range of movement, the two extreme portions of the surface embraced between the limits of the serial number are exposed on opposite sides of the interval between consecutive interlacing points and at the other limit the intervening portion of said surface is exposed.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, this 26th day of March, 1898, at Chicago, Illinois.

EMIL TYDEN.

Witnesses:
CHAS. S. BURTON,
JEAN ELLIOTT.