P. J. MITTEN.

SEAL.

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1,139,556. Patented May 18, 1915.

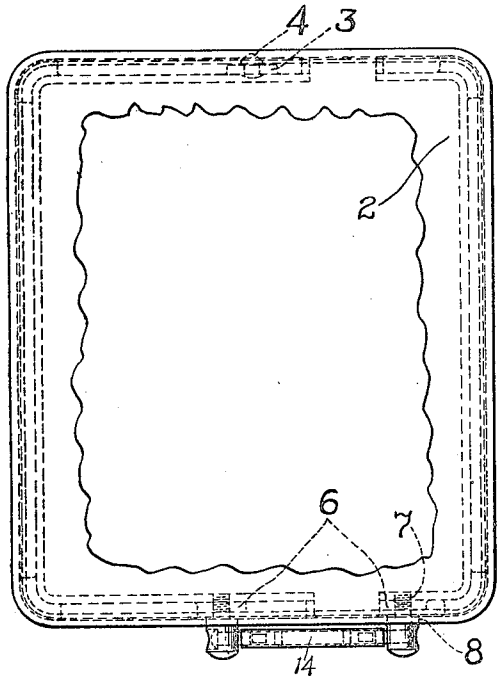


Fig. 1.

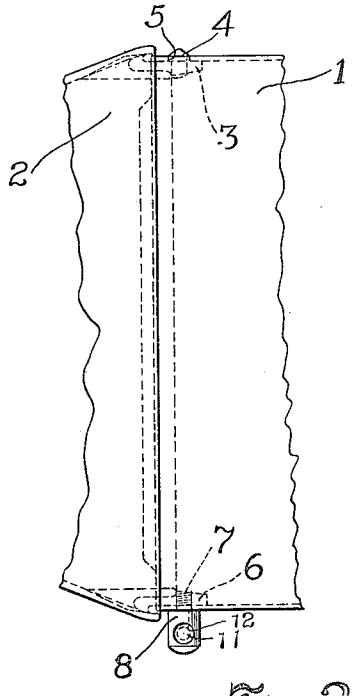
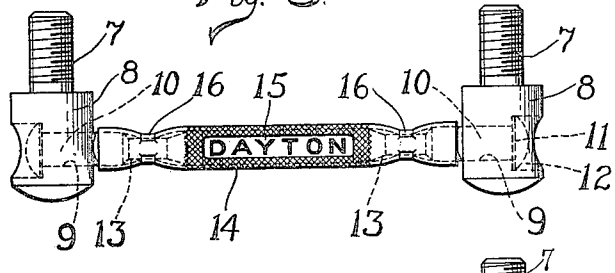


Fig. 2.

Fig. 3.



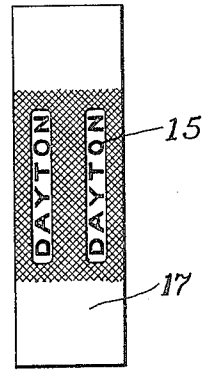


Fig. 4.

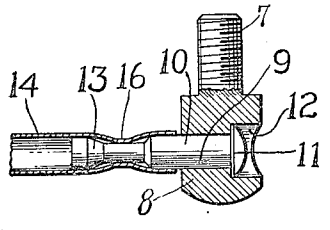


Fig. 5.

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SEAL.

1,139,556. Specification of Letters Patent. Patented May 18, 1915.

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To all whom it may concern:

Be it known that I, PHILIP J. MITTEN, a citizen of the United States, residing at Oakwood Village, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Seals, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to seals such as are employed for preventing the removal of fastening devices by means of which two parts are fastened or locked together and is more particularly designed for use in connection with fare boxes to prevent the removal of the top of the case, which would permit of access being had to the interior of the box. The seal commonly in use for such purposes consists of a wire having its ends brought through an opening in a lead disk which is then compressed on the ends of the wires to retain them in position and prevent the withdrawal of the wire from the fastening device through which is has been passed. In practice, however, some unscrupulous persons have been able to loosen the wire in the disk and remove the same, thus releasing the fastening device, and to subsequently return the ends of the wire to the lead disk and restore the seal to its normal appearance.

The object of the present invention is to provide a seal of this character which cannot be removed or separated to permit the fastening device or devices to be removed without destroying the seal or a part thereof; and further, to so construct the seal that the broken or destroyed part thereof cannot be readily duplicated and the duplicate part substituted for that which has been destroyed.

To this end it is a further object of the invention to provide a seal in the form of an elongated bar made up of two or more parts, the adjacent ends of the parts being connected one to the other by pressing a portion of one part into a recess in the other part, and so arranging the parts that a lengthwise movement sufficient to separate them cannot be imparted thereto without destroying one of the parts, thereby preventing the parts being separated by a lengthwise pull.

In the accompanying drawings Figure 1 is a plan view, partially broken away, of the top of a fare box. Fig. 2 is a side elevation of the upper portion of a casing forming a part of the fare box and the top for that casing. Fig. 3 is a plan view of the seal and fastening devices. Fig. 4 is a detail sectional view of one end of the seal and one of the fastening devices. Fig. 5 is a detail view of the blank from which one part of the seal is formed.

In these drawings I have illustrated one embodiment of my invention and have shown the same as applied to the casing and top of a fare box, but it will be understood that the invention is capable of being applied not only to different parts of a fare box where it may be desired to use a fastening device, but also to any other device in which it is desired to seal the fastening devices against removal.

In the accompanying drawings a portion of the casing forming a part of the fare box is shown at 1 and secured to the end of this casing is a top piece 2. These structural parts of the fare box form no part of the invention and are shown here merely to illustrate the fastening devices and the seal. The top may be secured to the casing 1 by the use of any suitable fastening device. In the present instance the top is provided on one side with a depending lug 3 having a projection 4 adapted to enter a hole 5 in the upper portion of the adjacent wall of the casing. In the present instance the projection 4 is in the form of a stud mounted in a hole in the lug 3, having its end upset after the manner of a rivet and having an enlarged head forming the projection and tapered to facilitate its entrance into the hole 5. As here shown I have provided this side of the top with a single lug and fastening device, but obviously any suitable number of these devices may be employed. The opposite side of the top is provided with one or more lugs 6. In the present instance I have shown two. These lugs are adapted to extend inside of the adjacent wall of the casing and after the projection 4 has been placed in the hole 5 and the lugs 6 moved into their positions within the adjacent wall of the casing, it will be impossible to remove the projection 4 from its opening without first removing the lugs 6 from their positions within the casing. Suitable fastening devices are provided to retain the lugs 6 in their positions within the casing. Prefer-

ably, but not necessarily, these fastening devices are of such a character that rotatory movement is necessary to their removal and to the releasing of the lugs 6.

The particular form of fastening device here shown comprises a screw-threaded pin 7 having an enlarged head 8 and adapted to extend through an opening in the wall of the casing 1 and to be screw-threaded into a screw-threaded opening in the lug 6 until the head 8 is brought into contact with the wall of the casing. So long as the parts remain in this position it is impossible to separate the top from the casing without destroying one or the other of these parts.

To prevent the removal of the fastening devices a locking device or seal is provided which will prevent the rotation of the screw-threaded pins. Preferably this seal is in the form of a bar or rod extending between the two fastening devices, where two such devices are employed, and so connected with both as to hold them against rotation. The rod or bar is preferably made up of two or more parts, the parts being adapted to be connected one with the other, after they have been attached to the respective fastening devices, by overlapping or telescoping the adjacent ends of the parts and compressing a portion of the metal of one part into a recess in the other part.

In the particular embodiment of the invention here illustrated the enlarged head 8 of each fastening device is provided with a transverse aperture 9 through which extends a pin 10 forming a part of the seal. This pin has a head 11 to limit its lengthwise movement in one direction and the aperture 9 is enlarged at its outer end, as shown at 12, to receive this head. Preferably the head is rounded as shown in the drawings to prevent it being grasped by a pair of pliers or other implement. The inner end of each pin 10 projects some distance beyond that side of the fastening device opposite the enlarged portion 12 of the aperture, and these portions of the pins are provided with recesses 13 which, in the present instance, are in the form of annular grooves having a relatively great width. Arranged between the two fastening devices and connected with the inwardly projecting parts of the pins 10 to form the intermediate portion of the seal is a rod 14 having its ends hollow to receive the adjacent ends of the pins 10. Preferably this rod is in the form of a tube, of brass or other ductile material, and is of a length but slightly less than the distance between the two fastening devices. In placing the seal in position it is necessary that the intermediate portion or ductile body 14 should be first placed in position and then the pins inserted in the apertures 9 in the fastening devices and thrust in to the adjacent ends of the tubular body. After the parts have been assembled in this position those portions of the tube or body which extend about the recesses 13 are compressed by means of a suitable implement to force the metal thereof into the recesses, thus firmly connecting the pins with the body of the seal. It will be obvious that after this connection is made it will be impossible to rotate either of the fastening devices without destroying the seal. The ends of the body being arranged close to the respective fastening devices prevents the heads of the pins being moved outward into a position in which they could be gripped and a lengthwise pull exerted thereon. Likewise this arrangement of the body 14 prevents longitudinal thrusts being exerted upon this body in such a manner as to gradually loosen the grip of the compressed portions thereof on the pins. By making the recesses or annular grooves 13 of a width greater than the compressed portion of the tube or body it is not only easier to locate the recess and press the metal into the same, but the tube may have a slight longitudinal movement on the pins without bringing the compressed portions thereof into engagement with the shoulders at the ends of the recesses, which engagement would, if repeatedly made in a forceful manner, gradually force out the compressed portions of the tube. To prevent a duplicate of the ductile body or tube 14 being provided by unauthorized persons and substituted for the tube of the seal after the latter has been broken, I prefer to provide the tube with a distinctive marking which is engraved, punched, or otherwise formed therein as shown at 15 and which it would be difficult to duplicate. Moreover, the implement employed to compress or crimp the material of the tube into the recess may be of such a character as to form a distinctive mark, as shown at 16, which mark it would be difficult to duplicate without the use of this particular tool.

The operation and manner of use of the device will be readily understood from the foregoing description and it will be apparent that the device will effectually prevent the removal of one or both fastening devices without the destruction of some part of the seal. Further, that the device is of a simple, inexpensive character which can be readily applied to the fastening devices. It will also be apparent that while I have shown the seal as applied to two fastening devices it will operate equally well with a single fastening device by providing a suitable support for that end of the seal opposite the end connected with the fastening device, to take the place of the support formed by the other fastening device. Further, it will be apparent that the ductile tube or body may be formed in any suitable manner, as by using a section of drawn tubing or

by die casting, but in the present instance I have formed the same from a blank of metal, which blank is shown at 17 in Fig. 5, and is adapted to be bent into the form of a tube.

While I have shown and described one embodiment of my invention, it will be understood that this has been chosen for the purpose of illustration only and that I do not wish to be limited to the details of construction shown and described, for obvious modifications will occur to one skilled in the art.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent, is:

1. A seal comprising an intermediate member having hollow end portions, and separate end members adapted to be secured respectively to the parts to be fastened and to enter the respective end portions of said intermediate member and having recesses, said intermediate member being adapted to be compressed to cause portions thereof to enter the said recesses.

2. A seal comprising a tube of ductile material, and pins secured, respectively, to parts to be fastened and having recessed end portions extending into the respective ends of said tube, said tube being adapted to be compressed to force portions thereof into said recesses.

3. The combination, with two parts to be fastened, of a ductile member connected with one of said parts and having its end hollow, and a pin connected with the other of said parts and having one end recessed, one of said members being capable of longitudinal movement to cause the recessed end of said pin to enter the hollow end of said ductile member, said ductile member being adapted to be compressed to force a portion thereof into said recess.

4. The combination, with a fastening device capable of rotary movement to release the part fastened thereby, of a seal comprising two telescoping parts, the inner part having a recess and the outer part having a portion adapted to be compressed into said recess, one part of said seal being secured to a fixed support and the other part of said seal being secured to said fastening device to hold the latter against rotation, and one of said parts being movably mounted to permit it to be moved lengthwise into engagement with the other of said parts.

5. The combination, with a device to be fastened having a part provided with a transverse aperture, said aperture having an enlarged portion at one end thereof, of a pin extending through the aperture in said part of said fastening device and having an enlarged portion seated in the enlarged portion of said aperture, said pin having a recess, a body portion mounted on a fixed support and having a hollow end to receive the recessed portion of said pin and adapted to be compressed to force a portion thereof into said recess.

6. The combination, with two fastening devices, each capable of rotatory movement, of a seal comprising two end parts secured to the respective fastening devices to hold the latter against rotation independently thereof, and an intermediate part having hollow end portions into which the respective end parts extend, said end parts having recesses into which portions of the hollow ends of said intermediate part may be pressed.

7. The combination, with a rotatory fastening device having an aperture therein, of a seal comprising a part extending through said aperture and having a recess in that portion thereof which extends beyond the end of the aperture, and the second part having a hollow end portion to receive the projecting end of the first mentioned part and adapted to be compressed to force a portion of the same into the recess in said first mentioned part and means to hold the opposite end of said last mentioned member against movement about the axis of said fastening device.

8. The combination, with a rotatory fastening device having a transverse aperture with an enlarged portion at one end thereof, of a seal comprising a pin extending through the aperture in said fastening device, and having a head seated in the enlarged portion of said aperture, that portion opposite said head extending beyond said aperture and being provided with a recess, a body portion having a hollow end to receive the recessed end of said pin and adapted to be compressed to force a portion of the material into said recess, and means to hold said body portion against movement about the axis of said fastening device.

9. The combination, with two rotatory fastening devices, each having a transverse opening, of a sealing device comprising pins extending through said openings and projecting beyond the ends thereof, the projecting portions of each of said pins having a recess, a hollow tube arranged between said fastening devices, adapted to receive the recessed ends of said pins and to be compressed to force portions of the material of said tube into said recesses.

10. The combination, with two fastening devices, each comprising a screw-threaded shank having an enlarged head and each head having a transverse aperture provided at one end with an enlarged portion, of a seal comprising pins extending through the respective apertures, each pin having a head seated in the enlarged portion of its aperture and also having a part projecting beyond said aperture and provided with a recess and a tube of ductile material of a

length slightly less than the distance between the enlarged heads of said fastening devices, arranged between said heads, and adapted to receive the recessed ends of said pins and to be compressed to force portions of the material thereof into said recesses.

11. The combination with two rotatory fastening devices, each having a transverse aperture, of a sealing device comprising pins extending through the respective openings and projecting beyond the ends thereof, the projecting portions of each of said pins having a recess, a hollow tube arranged between said fastening devices, adapted to receive the recessed ends of said pins and to be compressed to force portions of the material of said tube into said recess, said tnbe being of a length slightly less than the distance between said fastening devices, being adapted to receive the recessed ends of said pins and to be compressed to force portions of the material of said tube into said recesses, and the recess in each pin being of a width greater than the width of that portion of the tube which is pressed into the same.

In testimony whereof, I affix my signature in presence of two witnesses.

PHILIP J. MITTEN.

Witnesses:
D. B. WHISTLER,
F. W. SCHAEFER.