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H. AUSLANDER ET AL

2,402,939

CLOSURE FASTENER DEVICE

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Fig. 1.

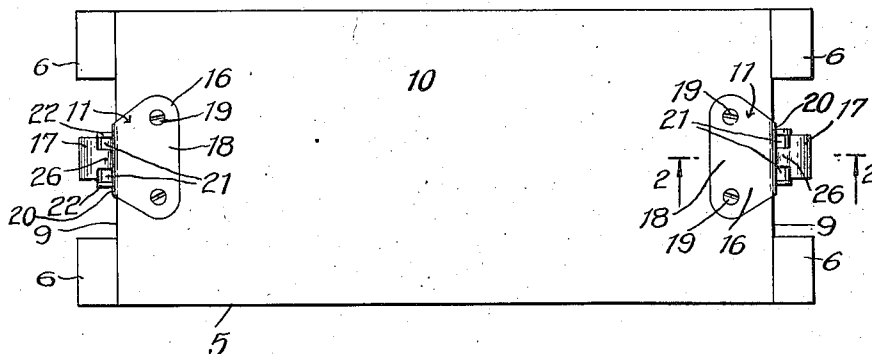


Fig. 2.

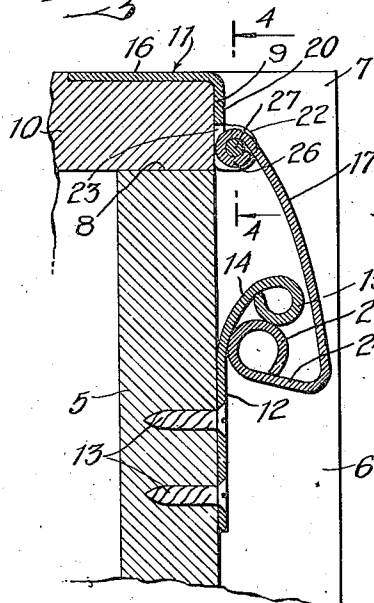


Fig. 3.

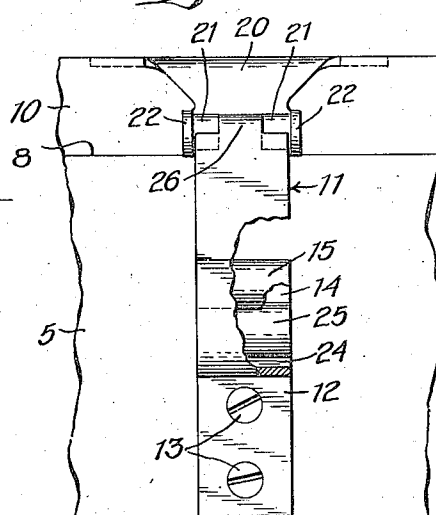
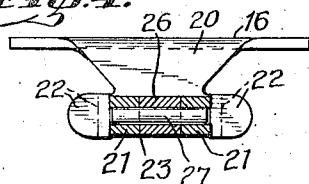


Fig. 4.



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CLOSURE FASTENER DEVICE

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2 Claims. (Cl. 292—194)

1

This invention relates to closure fastener devices, or what might also be termed clamp fasteners. More particularly, the invention relates to devices of this kind whereby a cover, lid and the like may be quickly mounted in position and quickly released for removal, while at the same time providing a fastener which will tensionally retain the cover or lid in closed position and against accidental removal. Still further, the invention relates to a fastening device wherein one of the members of the device comprises a part on or secured to the cover or lid, and shaped to form a portion of a hinge coupling wherein the other part has a corresponding hinge portion with means for mounting and retaining a hinge pin or pintle in a simple and efficient manner, while maintaining the pintle against displacement from said parts.

The novel features of the invention will be best understood from the following descriptions when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed, and in which the separate parts are designated by suitable reference characters in each of the views; and in which:

Fig. 1 is a plan view diagrammatically illustrating a container with two fastening devices arranged thereon.

Fig. 2 is a partial section on the line 2—2 of Fig. 1 on an enlarged scale.

Fig. 3 is a view looking in the direction of the arrow 3 of Fig. 2, showing part of the construction broken away and in section; and

Fig. 4 is a section on the line 4—4 of Fig. 2, but illustrating the parts in a partially assembled position, and detached.

In various types of containers, it is desirable to provide means for quickly removing a cover or lid of the container, and for such purposes, we have devised a closure or clamping device, which, in addition to fulfilling the requirement of quick attachment and detachment of the cover or lid, also has the property of maintaining the cover or lid in tensional engagement with the container so as to provide at all times, a tight closure for the container. Further, we provide a device of the kind described wherein the separate parts of the device are retained against displacement from the container and cover.

The invention is particularly adaptable for use in retaining covers on wooden containers used for the transportation of various types and kinds of war equipment, and particularly such things as ammunition, where it is desirable to have a means for quickly removing the cover to gain access to

2

the ammunition stored in the container. In such uses, it is also essential that the fastener or clamping device will maintain the cover in tight engagement with the container and against accidental displacement regardless of the rough handling to which the container may be subjected.

In illustrating one adaptation of the invention, a container of the kind last referred to is illustrated diagrammatically at 5, in Fig. 1 of the drawing, and comprises an elongated wooden box reinforced at the end corners by strips 6, which, as will appear from a consideration of Fig. 2 of the drawing, have ends 7 which protrude above the upper edge 8 of the box 5, so as to engage end walls 9 of a cover or lid 10. These reinforcing strips 6 thus retain the cover 10 against endwise or longitudinal movement with respect to the box, whereas the fastener or clamping devices 11 retain the cover 10 against transverse movement with respect to the box.

Each device comprises two members, one secured to the container or box, and the other to the cover. As both devices 11 are of the same construction, the brief description of one will be applied to both. In the construction shown, one member comprises a catch part 12, which is secured to the end wall of the box 5, by suitable fastenings 13. This part has an outwardly curved arm portion 14, which has spring properties, and this arm terminates in a cylindrical catch end 15. The part 12 is made from a strip of material of the same width throughout its length, as will clearly appear from a consideration of Fig. 3 of the drawing.

The other member of the device, in the construction shown, is composed of two parts 16 and 17. The part 16 has a dove tailed plate 18, preferably countersunk in the upper surface of the cover 10, as seen in Fig. 2, and secured to the cover by screws or other fasteners 19. The part 16 includes an angularly extending portion 20, which extends over the end wall of the cover 10, and this end terminates in spaced cylindrical pintle bearings 21 and laterally extending rounded ears 22, note Fig. 4 of the drawing. This particular description of the part 16 is in the initial blanking and shaping position thereof, and before assemblage with the part 17. After assemblage, as will later be described, the ears 22 extend outwardly and in parallel relation to each other, as will appear in Figs. 1 to 3 inclusive. The central portion of the angular end 20 is cut out, as seen at 23, and this serves to space the bearings 21.

The member 16 comprises an elongated strip of material for the most part preferably of the

same width as the strip from which the member 12 is formed. The part 17 is preferably bowed outwardly to a slight extent to give spring properties thereto, as will clearly appear in Fig. 2 of the drawing. One end of the part 17 has an inwardly directed angular plate portion 24, which terminates in a cylindrical projection 25 exposed on the inner surface of the plate portion 24, and in such position with respect to the pivot mounting of the part 17, later described, as to frictionally and tensionally pass over the cylindrical end 15 of the catch 12. The plate portion 24 extends at an acute angle with respect to the body portion of the part 17, to form a finger piece portion facilitating disengagement of the part 17 from the catch part 12.

The other end of the part 17 is reduced and shaped to form a cylindrical bearing 26 centrally thereof and corresponding generally in diameter to the bearings 21, and adapted to fit snugly between said bearings. Mounted in the bearings 26 and 21 is a hinge pin or pintle 27, thus providing a hinge mounting of the part 17 in connection with the part 16. The pintle 27 is equal to or slightly less than the combined length of the bearings 21, 26, and is retained in position and against displacement by the ears 22, which overlie the outer ends of the bearings 21.

In constructing and assembling the parts 16 and 17, the part 16 is produced with the ears 22 left in what might be termed the blanked form, that is to say, extending laterally and in the manner illustrated in Fig. 4 of the drawing, thus it becomes a very simple matter to hingedly couple the parts 16 and 17 by simply aligning the bearings 21, 26, placing the pintle 27 in said bearings and then folding the ears 22 from the full line position of Fig. 4, into the dotted line position of said figure, which latter position is the full line position of the ears, as appearing in Figs. 1 to 3 inclusive.

In this present application the uniting of the parts 16 and 17 is materially simplified from a production standpoint over the teachings in prior application 493,001, filed July 1, 1943, and furthermore, a strong and durable pivot or hinge mounting of the part 17 in connection with the part 16 is provided, and one in which a freer swinging movement of the part 17 is provided. Still further, a definite pivot point of swinging movement of the part 17 is maintained so as to govern and control positioning of the cylindrical projection 25 with respect to the cylindrical catch end 15 of the catch device. In this way, a more positive control can be had of the degree of tensional engagement of the cover with the container.

It will be understood that the invention is not limited to the specific arrangement of the parts as herein illustrated, nor on containers of the kind described in defining one use of the invention. Furthermore, the particular material em-

ployed in the several parts of the device may be modified to suit the particular uses. Generally speaking, there are different types of metals that could be employed, particularly in the heavier or sturdier type of containers. However, in other instances, plastic parts can be employed, particularly when such parts possess the resilient properties necessary to produce the tensional engagement between the parts as herein referred to.

It will be apparent that the coupling between the parts 16 and 17 through the bearings 21, 26, and pintle 27 with the end closures 22 on the bearings 21 produces what we would term a floating pintle mounting, particularly in using a pintle pin slightly shorter than the over all dimensions of the bearing collectively. The term "floating," as here used, is in the sense that the pintle is free to rotate, as well as to have endwise movement. This will provide free shifting of the pintle in the bearings and a better distribution of wear on the bearings and pin.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In fastener devices of the class described, a member comprising two parts having a permanent hinge connection, the permanent connection of said parts comprising interfitted cylindrical bearings, a pintle pin shorter than the over-all length of the interfitted bearings of said parts to provide free endwise and rotary movement of the pin in said bearings, means integral with one of said parts closing the ends of said bearings and limiting endwise movement of the pin therein, one part comprising a mounting plate, the other part comprising an outwardly bowed arm, and the free end portion of said arm having an integral wall disposed at an acute angle with respect to the inner surface of said arm, said wall terminating in a cylindrical end spaced from said inner surface of the arm and adapted for engagement with a yieldable catch.

2. In fastener devices of the class described, a member comprising two parts, one part of said member having spaced cylindrical pintle bearings, the other part comprising an elongated outwardly bowed arm, one end of said arm having a pintle bearing arranged between and registering with the bearings of the first part, a pintle coupling said bearings to provide free swinging movement of the arm on the first part, the other end of said arm having a short returned wall portion forming a substantially V-shaped fingerpiece protruding at said end of the arm, and said short wall portion terminating in a cylindrical member arranged in spaced relation to said arm and adapted to engage a yieldable catch.

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