Nov. 16, 1943. E. H. CORSON, JR 2,334,478

COMBINED HANDLE AND FASTENER FOR RECEPTACLES

Filed Jan. 6, 1943

FIG. 1

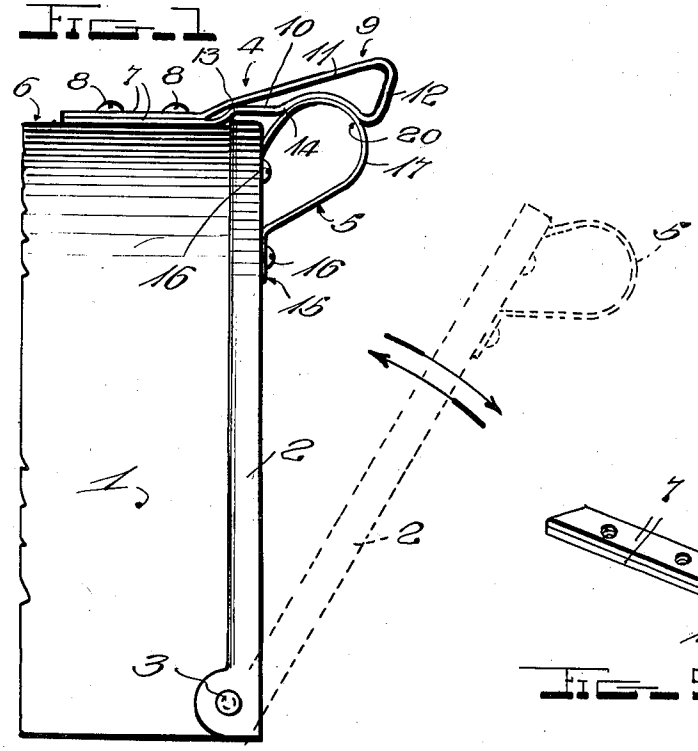
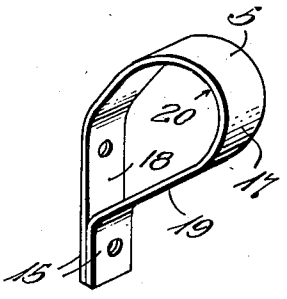


FIG. 4



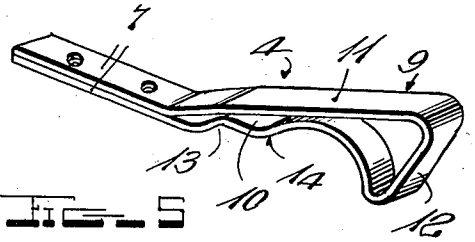


FIG. 5

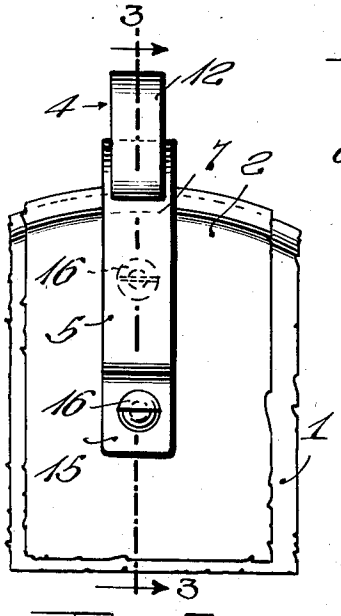
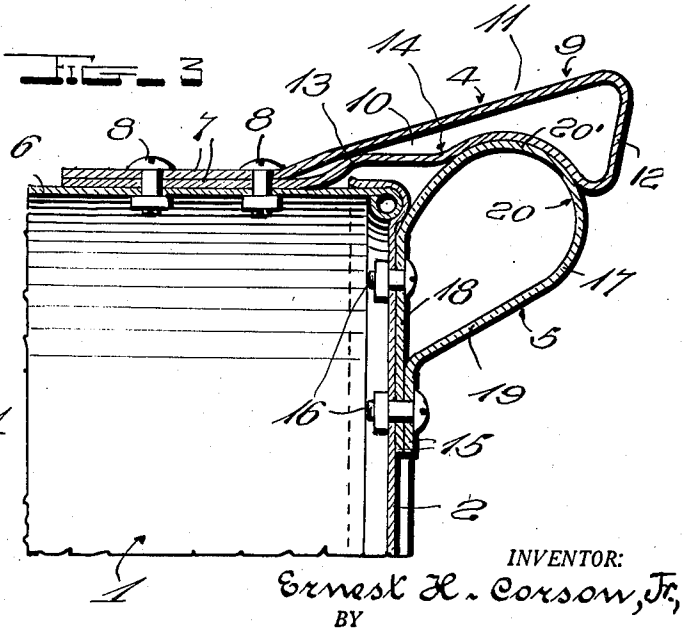


FIG. 2

FIG. 3



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COMBINED HANDLE AND FASTENER FOR RECEPTACLES

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5 Claims. (Cl. 292—76)

This invention relates to a combined manipulating handle and fastener for the covers or closures of receptacles, and particularly covers or closures pivoted to the receptacle body for swinging movements to open and closed positions. More particularly the invention relates to a combined manipulating handle and fastener for the pivoted covers or closures of receptacles of that kind, such as rural free delivery mail boxes, wherein the cover or closure is opened and closed at more or less frequent intervals for the insertion and removal of mail or other matter or materials, and is designed when closed to be held securely in such position to protect the contents of the receptacle from displacement or the action of the elements.

In an approved and commonly used type of rural free delivery mail box having a pivoted cover, a fastener is provided for holding the cover closed which comprises a keeper member fastened to the receptacle body and a latch member fastened to the swinging end of the cover. These members are formed of single ply strips of metal which are somewhat resilient and the keeper member is offset to form a keeper recess and the latch member off-set to form a latch projection to engage said recess, when the cover is closed and the members are brought into parallel relation, to fasten the cover in closed position. At their extremities the free ends of these strips are bent at right angles to form short flanges extending in opposite directions, the flange on the latch member serving as an abutment or finger piece under which a finger of the operator's hand may bear to exert force to pull the door open and the flange on the keeper member serving as an abutment against which the thumb of the operator's hand may bear as a steady rest and to force the keeper back to facilitate the unlatching action.

There are many objections to this commonly used type of fastener. As the fastener members are formed of single plies or strips of metal they are comparatively weak and liable to be easily bent or otherwise get out of shape so that they will not securely interlock. Frequent pulls on the latch member and pressures on the keeper member will cause them to be bent away from each other or out of their locking positions, and if they are rebent in an attempt to overcome this difficulty they are liable to lock too tightly so that they cannot be easily released, or they are liable to be so bent that a secure locking action cannot be obtained. In course of time, also, the bending operations of the latch member cause it to crystallize and break, thus rendering the fastener useless. Another great objection is that the latch member cannot be easily gripped and operated if covered with snow or ice, or if the operator's hand is chilled in cold weather or gloved, or if the cover has a tendency to bind and resist an opening movement.

One object of my invention is to provide a combined manipulating handle and fastener which is free from these objections, and in which the parts are of sturdy construction and cannot be easily bent or otherwise get out of order and which is adapted to give effective service for a long period.

Another object of the invention is to provide a construction which at all times insures a secure fastening action to hold the cover closed, while permitting of the ready and convenient release of the latch member and the opening of the cover even in the event that the cover tends to bind in its closed position.

Still another object of the invention is to provide a construction whereby the fastener members are braced so that they cannot be easily broken, either accidentally or from frequent service manipulations.

With these and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and as shown in the accompanying drawing, in which:

Fig. 1 is a view in side elevation of a portion of a mail box embodying my invention, and showing in full lines the cover in closed position and in dotted lines the cover thrown open.

Fig. 2 is a front elevation looking toward the box with the cover in closed position.

Fig. 3 is a section through the box and fastener taken on line 3—3 of Fig. 2.

Fig. 4 is a perspective view of the latch member of the fastener.

Fig. 5 is a similar view of the keeper member of the fastener.

Referring now more particularly to the drawing, 1 represents a mail box of the character described, or any other suitable receptacle, the box or receptacle shown in the present instance being adapted to be disposed in a horizontal position and being open at one end for the insertion and removal of mail or other matter or materials, and 2 is a cover for closing the open end of the box, said cover being pivoted at its lower end, as shown at 3, for upward and downward swinging movements to closed and open positions.

My improved manipulating handle and fastener

comprises a keeper member 4 and a manipulating handle and fastening member 5. The member 4, as shown, is fixed to the top wall 6 of the box and is formed of a single strip or piece of resilient strap metal or other suitable material doubled upon itself and bent to form a pair of overlapping end portions 7, which are secured to the wall 6 by bolts or rivets 8 or in any other suitable manner, and to form a substantially triangular upper looped portion 9, the latter being disposed mainly above the plane of the wall at an upward and forward angle thereto and projecting beyond the open end of the box. This looped portion 9 comprises an inner limb 10 and an outer limb 11, which diverge generally toward the free end of the member and are united at their divergent ends by a cross piece or bridge 12.

The limb 11 is preferably straight between its attaching end 7 and the cross piece 12, while the limb 10 is longitudinally curved and formed with two offsets 13 and 14. The offset 13 is arranged adjacent the inner end of the limb 10 and forms a reinforcing abutment bearing against the limb 11. The offset 14 is disposed between the offset 13 and cross piece 12 and is spaced from the limb 11 by the angular arrangement of the limbs, and said offset 14 is shaped to form a curved keeper seat or recess. The construction of the part of the limb 10 formed with the offset is such as to allow it to have a certain degree of resiliency, supplementary to that of the looped portion as a whole, which has sufficient resiliency to adapt it to move back and forth to a certain extent relative to its normal position. This movement is limited by the limb 11 which acts as a reinforcing stay to limit the bending movements of the limb 10 under pressure of the member 5 or other pressures and to guard the limb 10 and prevent the seat 14 from being bent out of shape or backwardly out of its true normal locking position. This resistance of the member 10 to deflection from its normal position and to distortion is promoted by the form of the portion 9 and by the bridge piece 12 which acts as a supplemental stay, so that a strong and rugged construction of keeper member is provided which will maintain its shape and normal working position until the parts are worn out.

The latch member 5 also comprises a single strip and piece of strap metal or other suitable material which is doubled upon itself to form lapping attaching ends 15, which are fixed to the cover 2 by bolts or rivets 16 or in any other suitable manner, and a looped portion 17 which is substantially pear-shaped or of ovoidal form and disposed so that its longitudinal axis lies at an angle to the plane of the cover. The looped portion 17 comprises an inner limb 18, an outer limb 19, and a curved intermediate bight or return portion 20. The limb 18 is substantially straight and lies flatly, substantially throughout its length against and parallel with the body of the cover, while the portion 20 projects outwardly beyond the body of the cover and partially beyond the swinging end thereof and its outer extremity is joined to the limb 19 which extends at an oblique angle to the plane of the body of the cover. A part of the portion 20 at least is convexly curved to conform to the shape of the seat 14 of the member 4 and form a latch portion 20' to interlock therewith in rear of the bridge 12 and to be overhung thereby when the cover is in closed position. The loop 17 adapts the portion 20 to have a certain degree of resiliency to prevent strain on the member 5 in a fastening action and the arrangement is such that when the members 4 and 5 are engaged the member 4 will be forced back sufficiently from its normal position to be tensioned so that the members will be held united by their physical connection as well as by an established spring force. As the portions of the members 4 and 5 which are in engagement are overhung by the bridge 12, which establishes a resistance to their separation until a positive outward pull is exerted on the member 5, a firm and secure fastening connection between the members is obtained to hold the cover closed.

The limb 19 forms a hand grip whereby the member 5 may be grasped to serve as a handle to swing the cover open and closed and move said member 5 into and out of engagement with the member 4. In a cover closing action the limb 19 may be gripped by inserting one or more fingers of the hand into the loop 17 and bringing said finger or fingers to bear on the inner face of the limb while the thumb of the hand is brought to bear on the outer face of the limb, so that a firm grip may be obtained on the latch member to swing the door closed. In a cover opening action the limb 19 may be gripped in the manner described between one or more fingers and the palm of the hand at the base of the thumb, so that an outward pull may be exerted on the latch member, while at the same time the thumb is brought to bear on the bridge piece 12 to exert pressure to force the keeper member backward, thus enabling the latch to be readily released and the door swung open with facility even in the event that it tends to bind in its closed position. The inclined arrangement of the bridge piece 12 allows use of the thumb for this purpose with ease and convenience, while the construction of the latch member adapts it to be easily and firmly grasped for latching, unlatching and swinging the cover even in the presence of snow or ice thereon and even in the event that the hand of the operator is chilled or gloved, as will be readily understood. The limb 19, in addition to serving as a hand grip, further serves as a stay to prevent undue strain from falling on the portion 20 and to prevent the same from being bent out of shape. As a result the locking form of the portion 20 will always be preserved and no localized bending effects can be set up to cause crystallization and breaking of the portion 20. Thus a strong and durable latch member is also provided which will last until the parts are worn out.

My invention accordingly provides an efficient fastener for either indoor or outdoor receptacles, and in the case of outdoor receptacles allows ready and convenient manipulation of the fastener and cover under all weather conditions, while acting to hold the cover when closed securely closed to protect the contents of the receptacle. Furthermore, my improved construction adapts the fastener to be manipulated and the door swung by the use of one hand only of the operator, thus, in the use of the invention, for example, on a rural free delivery mail box, affording greater convenience to the carrier in the collection and delivery of mail matter. It will also be evident that my invention provides a fastener which is strong and rugged, and not liable to be bent or broken, and which is free from the objections to fasteners of the kind mentioned in common use.

My invention may be readily applied for use on the conventional rural free delivery mail box in place of the conventional fastener, as the same bolt holes may be used and it allows the carrier,

while sitting in an automobile or other vehicle to open and close the box and insert and remove mail by the use of one hand extended from the vehicle, the advantages of which will be obvious.

It is to be understood that while a metallic structure is specified, the fastener members may be cast, molded or otherwise suitably formed and made wholly or in part of other materials, and, therefore, I do not limit the invention in this respect or to making either fastener member of a single piece or kind of material.

It is also to be understood, of course, that the latch recess in the keeper member and latch portion of the latch member may be curved on suitable arcs, and that various changes in the form, construction and arrangement of the parts, falling within the scope of the appended claims, may be made without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, I claim:

1. In a combined manipulating handle and fastener for a closure of a receptacle, said receptacle having an opening therein and a swinging closure for the opening, a latch member on the closure having a convex latch portion projecting beyond the swinging edge of the closure, and a keeper member fixed at one end to the receptacle body and projecting at its opposite end beyond the body, said member being formed of a strip of resilient material doubled upon itself and having its ends extending in the same direction and parallel with each other and arranged to overlap and forming the inner end of the member and having its intermediate portion bent to form the outwardly projecting portion of said member, said intermediate portion comprising a triangular loop formed of outwardly diverging inner and outer limbs and a bridge piece connecting the same at their divergent ends, said inner limb being provided with a concaved keeper recess to receive the convex latch portion of the latch member.

2. In a combined manipulating handle and fastener for a closure of a receptacle, said receptacle having an opening therein and a swinging closure for the opening, a latch member on the closure having a convex latch portion projecting beyond the swinging edge of the closure, and a keeper member fixed at one end to the receptacle body and projecting at its opposite end beyond the body, said member being formed of a strip of resilient material doubled upon itself and having its end portions overlapping and forming the fixed portion of the member and having its projecting portion bent to form a triangular loop comprising outwardly divergent inner and outer limbs and a bridge piece connecting the outer diverging ends of said limbs, said bridge piece being inclined at an angle to the plane of the loop, and said limbs and said inner limb being provided with a concaved keeper recess for engagement with the latch portion of the latch member.

3. In a combined manipulating handle and fastener for a closure of a receptacle, said receptacle having an opening and a swinging closure therefor, a latch member comprising a single strip of material having its ends arranged in lapping relation and secured to the closure and having its intermediate portion bent to form a closed loop of substantially ovoidal form and having its major axis inclined at substantially an oblique angle to the plane of the closure, said loop including a bowed part forming a latch portion and a limb forming a stay reinforcing said curved portion and a grip handle, and a keeper member formed of a single strip of material doubled upon itself and having its end portions overlapping each other and fixed to the receptacle body and having its intermediate portion bent into the form of a triangular loop portion embodying inner and outer limbs diverging from each other in an outward direction, the outer limb being of less length than the inner limb, and an inclined bridge piece connecting said limbs at their divergent ends, said inner limb being provided with a concaved keeper recess to receive the latch portion of the latch member.

4. In a combined handle and fastener for a closure of a receptacle, said receptacle having an opening therein, opposed walls arranged substantially parallel with each other and at right angles to the opening and a swinging closure hinged at one edge adjacent to one of said walls for movements inwardly and outwardly with relation to the opening, a keeper member comprising a resilient strip doubled upon itself and having its end portions disposed in parallel and overlapping relation and forming one end of said member and having its intermediate portion bent into the shape of a triangular loop forming the other end of said member and including diverging outer and inner limbs and a bridge piece connecting the same, the inner limb being formed with a concaved keeper recess, the first named end of the keeper member being secured to the other wall of the receptacle and the second named end of said keeper member being arranged to project from the wall beyond the plane of the door opening, and a looped handle and latch member secured to the closure adjacent to its free edge and including a bowed latch portion projecting beyond the said closure edge for engagement with the keeper recess of the keeper member.

5. In a combined handle and fastener for a closure of a receptacle, said receptacle having an opening therein, opposed walls arranged substantially parallel with each other and at right angles to the opening and a swinging closure hinged at one edge adjacent to one of said walls for movements inwardly and outwardly with relation to the opening, a keeper member comprising a resilient strip doubled upon itself and having its end portions disposed in parallel and overlapping relation and forming one end of said member and having its intermediate portion bent into the shape of a triangular loop forming the other end of said member and including diverging outer and inner limbs, the latter of less length than the former and an inclined bridge piece connecting said limbs, and a handle and latch member secured to the closure adjacent to its free edge and including a looped body of substantially ovoidal form inclined at an oblique angle to the plane of the closure so as to have a portion of its body projecting beyond said edge of the closure to form a latch for engagement with the keeper recess of the keeper member.

ERNEST HAINES CORSON, JR.