RECEPTACLE WITH INTEGRAL HINGED COVER AND SUPPORT

Donald S. Davidson, Mount Taylor, N.J., assignor to Antonio J. de Bernardi, doing business as Plastics Engineering Sales Company, Jackson Heights, N.Y.
Filed Dec. 13, 1962, Ser. No. 244,453

4 Claims. (Cl. 217—60)

The present invention relates generally to improvements in receptacles and it relates more particularly to an improved receptacle provided with a hinged cover or lid which is releasably locked in selected positions relative to the receptacle.

In many types of receptacles which are employed for various purposes, it is frequently desirable to provide the receptacle with a hinged cover or lid which may be releasably locked in selected positions relative to the base of the receptacle, such as in a fully closed position and in an upright position out of registry with the opening to the receptacle. The mechanism and devices herebefore employed and proposed for this purpose possess numerous drawbacks and disadvantages. They are generally unattractive and awkward arrangements of limited application and versatility. The locking devices usually are separate from the receptacle and must be attached thereto increasing the cost and inconvenience of these arrangements. Furthermore, they are not easily applied to or adapted for use with plastic containers and otherwise leave much to be desired.

Another object of the present invention is to provide an improved receptacle which is inexpensive, simple, rugged, reliable, versatile and of attractive appearance.

The above and other objects of the present invention will become apparent from a reading of the following description taken in conjunction with the accompanying drawing:

FIGURE 1 is a front perspective view of a receptacle embodying the present invention illustrated in closed position, the cover being illustrated by broken line in its locked open position;

FIGURE 2 is an enlarged detailed fragmentary perspective view of the cover locking mechanism shown in its open fully released condition;

FIGURE 3 is an enlarged sectional view taken along line 6—6 in FIGURE 2;

FIGURE 4 is a view similar to FIGURE 3 with the cover shown in its upright releasably locked position;

FIGURE 5 is a view similar to FIGURE 3 with the cover shown in its open fully released position;

FIGURE 6 is a sectional view taken along line 4—4 in FIGURE 3 and

FIGURE 7 is a sectional view taken along the line 7—7 in FIGURE 4.

In a sense the present invention contemplates the provision of a receptacle comprising a receptacle base member, a receptacle cover member hinged to said base member and swingable about a hinge line relative thereto between an open and closed position, and cooperating releasable latching members located on said receptacle members adjacent said hinge line and moveable with said receptacle members, said latching members having mating locking elements in releasable engagement when said cover member is in a substantially upright open position relative to said base member.

The present receptacle is formed as an integral unit of a synthetic organic thermoplastic material, the base and cover members being provided with first and second rearwardly directed flanges which are in superimposed relationship when the cover member is in closed position. A self hinge defining integrally formed flexible web joins the rear edges of the flanges. The first flange has a transverse opening formed therein provided with a side shoulder, and a resilient latch member depends from the second flange and extends through said opening and includes a depending first arm terminating a rearwardly directed second arm. A pair of transversely spaced first and second detent elements are located on a face of the first arm and delineate a recess which engages the opening shoulder when the cover member is in its upright open position and a second detent is located on the face of the first arm slightly below the first flange to delineate therewith another recess which engages the opening shoulder when the cover member is in closed position.

Referring now to the drawing which illustrates a preferred embodiment of the present invention, the reference numeral 10 generally designates the improved receptacle which is integrally formed as a unit by injection molding or the like of any suitable synthetic organic thermoplastic flexible material such as polyethylene, polypropylene or the like. The receptacle 10 includes a base member 11 and a preferably complementary cover member 12. It being noted that although the members 11 and 12 are illustrated as of rectangular configuration may be of other shapes and the cover may be flat rather than dished, as shown. The base member 11 comprises a rectangular bottom wall surrounded by an upstanding peripheral wall 13 including a rear wall 14, the peripheral wall 13 terminating in outwardly directed flanges including front and rear flanges 16 and 17 respectively.

The cover member 12 comprises a rectangular top wall 18 and a depending peripheral wall 19 including a rear wall 20, the peripheral wall 19 terminating in outwardly directed flanges including front and rear flanges 21 and 22, the cover flanges being superimposed on the corresponding base member flanges when the cover member 12 is in its closed position as illustrated in FIGURE 1. Joining the rear edges of the rear flanges 17 and 22 is a self hinge defining a relatively thin web 23 formed of the same material and integral with the rear flanges 17 and 22.

The mechanism for selectively releasably locking the cover member 12 in an upright open position and in a closed position includes a pair of laterally spaced openings 24, formed in the base rear flange 17. Each opening 24 includes a transversely extending slot 25 terminating in an enlarged aperture 27 extending to the rear edge of the flange 17, the slot 26 being delineated along one border by a transversely extending side 28.

Depending from the underface of the cover rear flange 21 and projecting through the respective openings 24 when the cover 12 is in closed position are a pair of laterally spaced latch members 29 each including a vertical plate or arm 30 terminating in a rearwardly directed...
arm 32. The front and bottom edge 33 of the arm 32 is arcuate with the flange rear edge as its center and it extends to a point short of the front edge of the corresponding slot 26 and the rear edge thereof is vertical and in alignment with the flange rear edge. The arm 32 is substantially square with its bottom edge horizontal and tangent to the edge 33.

Formed on the face of each latch member 29 confronting a corresponding slot side 26 are three detent members 33, 34 and 36 respectively. The detent member 33 is a ridge located at the free end of the arm 32, extending for the full height thereof and having a cam defining a laterally inclined end face 37 which provides the arm 32 with a relatively sharp leading edge. The trailing face 38 of the detent 33 projects laterally from the face of the arm 32 and is perpendicular thereto. The detent 34 is in the form of a curved face relatively low rib spaced from and parallel to the detent face 36 to delineate there-with a recess or groove 39 of a width substantially equal to the thickness of the flange 17. The third detent 36 is of relatively low substantially prismatic configuration and is located along the front upper part of the latch member 29. The detent 36 includes an upwardly directed inclined face 40 intersecting the face of the arm 30 at a relatively sharp angle, the base line of the face 40 being spaced from the underface of the flange 22 a distance slightly greater than the thickness of the flange 17. Slipping downwardly from the upper edge of the detent face 40 is a detent cam face 41 which is gently inclined to the vertical. It is important to note that when the receptacle 10 is in its fully open position with the flanges 17 and 22 coplanar, as illustrated in FIGURES 2 and 5 of the drawing, the arm 32 is in vertical alignment with the aperture 27, the aperture 27 being of greater cross-section than the arm 32 to thereby greatly facilitate the molding of the receptacle 10 as an integral unit.

The base and cover member front flanges 16 and 21 are advantageously provided with mating releasably interlocking inclined tongues 42 and 43 respectively which register with corresponding recesses formed in the confronting flanges to provide the receptacle with further latching means to assure the tight closing thereof.

As the receptacle 10 is originally fabricated it is in fully open position as illustrated in FIGURES 2 and 5. To close the receptacle 10, the cover member is swung to carry the latch member arms 32 into registry with the slots 26 and upon further swinging of the cover member, the detent cam surfaces 37 engage the slot side walls 28 resiliently urging the latch members laterally to permit the detents 33 to pass below the flange 17 at which point the slot sides 28 register with the latching grooves 39 to releasably support the cover in its upright open position, as illustrated in FIGURES 4 and 7 and by broken line in FIGURE 1. By continued swinging of the cover member 12 the detents 34 pass downwardly by the slot sides 28 as does the detent face 41 until the grooves 44, between the detent faces 40 and the underflange 22 engage the slot sides 28 to releasably lock the cover 12 in its closed position. The cover may be returned to its upright open position by merely lifting the free end thereof, the latch member 19 and opening 24 cooperating in a manner described above. The opening of the receptacle 10 to the position illustrated in FIGURES 2 and 5 may be effected by pressing on the latch members 19 to urge the detents 35 out of engagement with the slot sides 28 and into registry with the slots 26 and swinging the cover to its fully extended position.

While there has been described and illustrated a preferred embodiment of the present invention it is apparent that numerous alternations, omissions and additions may be made without departing from the spirit thereof.

What is claimed is:

1. A receptacle formed of a synthetic organic thermoplastic material and comprising a base member provided with a rearwardly directed first flange along the upper edge thereof, a cover member overlying said base member and including a rearwardly directed second flange superimposed on said first flange, a self hinge defining flexible web formed integrally with said flanges and connecting the rear edges thereof, said second flange having a transversely extending opening formed therein provided with a side shoulder, and a latch member formed integrally with said first flange and including a depending first arm projecting through said opening and terminating in a rearwardly directed second arm extending rearwardly of said flange rear edges and a first detent element formed on a face of said second arm and adapted to releasably engage the upper edge of said shoulder when said cover is in an open upright position.

2. The receptacle of claim 1 including a second detent element formed along the free end of said second arm and disposed below said shoulder when said first detent element engages the upper edge of said shoulder.

3. The receptacle of claim 1 wherein said opening adjacent to the rear edge of said second flange is of greater cross section than the vertically aligned portion of said second arm when said receptacle members are in fully open positions and said flanges are substantially coplanar.

4. The receptacle of claim 1 including a third detent disposed on a face of said first arm and located immediately below said first flange when said cover member is in its closed position.

References Cited by the Examiner

UNITED STATES PATENTS

1,263,319 4/18 Heinzelman .......... 16—142
1,378,273 5/21 Erle .................. 16—142
1,650,598 11/27 Brooks ............... 16—142
2,573,096 10/51 Ender ................. 16—140
3,025,950 3/62 Nathan ................ 220—31
3,043,354 7/62 Fitzgerald ............... 220—31

THERON E. CONDON, Primary Examiner.

EARLE J. DRUMMOND, GEORGE O. RALSTON, Examiners.