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HINGE CONSTRUCTION FOR RECEPTACLES
COMPOSED OF MOLDED PARTSNathan W. Roop, Columbus, Ohio, assignor to
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1

This invention relates to hinge construction, and more particularly to hinge constructions of the type composed of or containing molded parts.

In its more specific aspects, the present invention is concerned with an improved molded hinge construction adapted for incorporation in a receptacle composed of molded parts of synthetic resin composition, and wherein the receptacle comprises a body section provided with an access opening covered by a hinged lid, the receptacle being especially constructed for use in receiving and retaining bakery products, such as bread, rolls and the like.

It is an object of the present invention to provide a molded receptacle of the character set forth in which a hinge construction of improved formation is provided between body and lid sections of the receptacle, the construction being produced from elements constituting integral molded parts of said receptacle sections.

It is another object of the invention to provide a strong, mechanically simple and durable hinge construction for relatively movable receptacle parts of molded materials, and wherein the pintle-forming elements of the construction comprise integral extensions of the first of the molded parts, and wherein said pintle elements are adapted to be movably received in molded sockets formed in the second cooperative part.

Other objects of the invention are: to provide a freely acting, strong and substantial hinge construction for boxes or receptacles comprising molded lid and body sections; to provide receptacle sections wherein integral hinge pintles are formed on one of said sections for reception within integral socket-forming extensions provided on the other of said sections; to provide a molded hinge of this character wherein said pintles are retained in said sockets through the employment of separable locking members of plastic composition, the latter being united with the socket-forming extensions in definite relationship to the associated pintles.

Still a further object of the invention is to provide a hinge construction of the character set forth in which locking members of plastic composition are attached to pintle-receiving extensions of a movable lid or other section of a receptacle in a manner effecting a retained relationship of the lid section with base-carried pintles, and wherein said locking members include integral securing and positioning studs received in and united with the walls of sockets provided in connection with said extension.

With these and other objects in view, the in-

2

vention accordingly consists in the novel features of construction, combinations of elements and arrangements of parts, all of which are hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a top plan view of a molded receptacle formed in accordance with the present invention;

Fig. 2 is a vertical transverse sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged vertical longitudinal sectional view taken through the hinge construction of the box or receptacle on the plane indicated by the line 3—3 of Fig. 1;

Fig. 4 is a transverse sectional view taken through the hinge construction on the plane disclosed by the line 4—4 of Fig. 3;

Fig. 5 is a similar view taken on the plane indicated by the line 5—5 of Fig. 1;

Fig. 6 is a detail perspective view disclosing fragmentarily a portion of the hinged lid of the receptacle or box and disclosing the integral eye-forming and pintle-receiving extension members carried thereby;

Fig. 7 is a detail perspective view of one of the separable pintle-locking plates employed in connection with the eye-forming extensions of the box lid or cover;

Fig. 8 is a fragmentary perspective view disclosing the body section of the box or receptacle and the lid or cover-receiving opening formed therein. In this figure there is disclosed the hinge extensions of the body section and the hinge pintles carried by said extensions and the sides of the entrance opening of the body section.

Referring more particularly to the drawings, there has been illustrated therein a single preferred embodiment of the invention which sets forth quite fully the features of the present invention, but it is to be understood at this juncture that said embodiment is employed primarily because of its illustrative characteristics and not in a limiting sense.

The hinge construction forming the present invention is well illustrated in its application to a household receptacle employed for receiving bread and other bakery products, and wherein the receptacle is composed of parts or sections of molded materials, such as the thermosetting or thermoplastic synthetic resins. In the particular receptacle set forth there has been illustrated at 10 the body section of the receptacle. In this instance, the body section comprises a base 11 having upstanding sides 12 which at their upper

edges are recessed and shouldered as at 13 for the reception of the flange formation 14 provided on the lower portion of the hood region 15 of the body section. The flange formation 14 may be united with the recessed or shouldered portion 13 of the base 11 by the action of a solvent or cement, or any other suitable means, such as by the use of heat.

The hood includes a front wall 16, a back wall 17 and substantially vertical side walls 18, the said walls 16, 17 and 18 being joined by rounded corners 19. An entrance opening 20 is formed in the body section, being provided partly in the front wall 16 thereof and also its top wall 21. This entrance opening is adapted to be opened or closed by means of a hinged cover or lid member 22, which is also of plastic construction.

The lid or cover member possesses a formation causing the same when in a closed position to provide symmetrical continuations of the front and top walls 16 and 21 of the base section. The present invention is particularly directed to the provision of an improved connection for effecting a hinged union between the rear edge of the cover or lid member 22 and the rear edge of the entrance opening 20 provided in the top wall 21.

To provide such a hinge connection, it will be noted that the rear opening edge 23 is provided, as shown in Figs. 1 and 8, with integral, longitudinally spaced, and forwardly projecting pintle-carrying extensions or tongues 24. These extensions or tongues are provided at the opposite ends thereof with integral longitudinally disposed pintle-forming studs 25. Corresponding studs 26, arranged in longitudinal alignment with the studs 25, are formed on short downwardly extending flanges 27 provided at the opposite sides of the entrance opening 20, and in connection with the side walls 18. The lower portions of the flanges 27 in front of the studs 26 are formed with inwardly directed substantially horizontally disposed lips 28 which, as shown in Fig. 5, receive downwardly directed marginal flanges 29 formed on the cover or lid member 22 when the latter occupies its closed position.

Adapted to be received in the recesses of the opening 20 formed by the forwardly projecting tongues 24 are hinge extensions 30, which are molded integrally with the rear longitudinally extending edge portions of the cover or lid member 22, the spacing of the hinge extensions 30 being such that the same register with the tongues 24, as shown more particularly in Fig. 1. In this instance, the members or extensions 30 are provided with semi-circular sockets 31, shaped to receive the pintle studs 25 and 26, thereby providing hinge supports for the cover or lid member.

To prevent separation of the tongues 24 from the pintle studs 25 and 26, use is made of a plurality of molded separable fastening plates or members 32. These plates or members are preferably formed from the same material as the balance of the receptacle. Each plate or member has the end portions thereof formed with sockets 33 which register with the sockets 31, forming rounded eyes in the hinge extensions of the lid or cover member for the reception of the pintle studs. To hold the plates or members 32 in their fastening position, each of said members 32 is provided with a pair of conical extensions 34, which are received in openings 35 provided in bosses 36, integrally formed with the hinge extensions or members 30. To retain the bosses 36 and the extensions 34 in fastened relationship, use may be made of a solvent at the time the

extensions are inserted into the openings 35, or heat or cementing materials of any suitable kind may be employed, or reliance may be placed on a tight frictional engagement between the extensions 34 and the walls of the openings 35 in holding the plates 32 against displacement.

In view of the foregoing, it will be seen that the hinge construction provided by the present invention is composed entirely of molded composition materials, particularly one of the various synthetic resins now commonly being used in the manufacture of kitchen receptacles. The hinge construction eliminates the need for metallic parts and provides a strong sturdy design susceptible to long usage without damage or need for repair.

The invention is, of course, subject to certain variations from the form thereof above described and illustrated in the drawings and it will be understood that resort to such variation may be made without departing from the spirit and scope of the invention as the same have been expressed in the following claims.

I claim:

1. Hinge construction for molded plastic receptacles of the type having a body section formed with an entrance opening and a lid section for opening and closing said entrance opening, comprising: forwardly projecting longitudinally spaced tongues integrally formed with said body section and projecting forwardly from the rear longitudinal edge of said opening, pintle studs projecting longitudinally and integrally from said tongues, complementary pintle studs longitudinally aligned with and spaced from said tongue studs and projecting from the side walls of said opening, a plurality of relatively spaced hinge extensions integrally formed with and extending rearwardly from the rear edge of said lid section, said hinge extensions being formed with semicircular openings partially encircling said pintle studs, and separate plastic locking plates joined with each of said hinge extensions and formed with semicircular openings arranged in complementary relationship with the openings of said hinge extensions and encircling the remainder of said pintle studs, the semicircular openings of said hinge extensions permitting said hinge extensions to be initially engaged with said studs and the semicircular openings of said locking plates serving to close the openings of said hinge extensions around said studs when said locking plates are joined with said hinge extensions.

2. Hinge construction for molded plastic receptacles of the type having a body section formed with an entrance opening and a lid section arranged to occupy said opening, comprising: a plurality of relatively spaced, integral stationary tongues formed with the rear edge of said opening on said base section, longitudinally aligned relatively spaced pintle studs projecting from the ends of said tongues and the side edges of said opening, stud-receiving extensions integrally formed with said lid section and projecting outwardly therefrom for placement between the tongues on said body section, said extensions being formed with semicircular openings partially encircling said studs, molded locking plates formed with semicircular, relatively spaced and longitudinally aligned openings registering with and closing the semicircular openings of said extensions about said pintle studs, and integral means carried by said plates and engaged with the stud-receiving extensions of said lid section for joining said plates with said extensions.

5

3. Hinge construction for molded receptacles of synthetic resin composition, said receptacles being of the type employing a body section having an entrance opening and a movable lid section arranged to occupy said opening, comprising: an integral stationary tongue formed with and projecting outwardly from one of the longitudinal edges of said opening on said body section, longitudinally aligned pintle studs projecting from the ends of said tongues and integrally formed therewith, and a pair of longitudinally spaced stud-receiving extensions integrally formed with said lid section and projecting outwardly from one of its longitudinal edges to receive between the same the tongue of said body section, said extensions being formed with semi-circular bearing openings for the partial reception of said pintle studs, and a pair of separate locking plates of synthetic resin composition joined with said extensions and closing the semi-circular openings thereof about said studs.

4. Hinge construction for molded receptacles of synthetic resin composition, said receptacles being of the type embodying a body section having an entrance opening and a movable lid section arranged to occupy said opening, comprising: an integral stationary tongue formed with one of the longitudinal edges of said opening on said body section, longitudinally aligned pintle studs projecting from the ends of said tongue and integrally formed therewith, a pair of longitudinally spaced stud-receiving extensions integrally

6

formed with said lid section and projecting laterally from one of its longitudinal edges to receive between the same the tongue of said body section, said extensions being formed with bearing openings partially encircling said pintle studs, a separate molded fastening plate complementary to each of said extensions, each of said plates being formed with a bearing opening disposed in registry with and closing the bearing opening of an associated extension around a pintle stud, and means for securing each of said plates to its associated extension.

5. Hinge construction as set forth in claim 4, and wherein said stud-receiving extensions and said fastening plates are formed with interfitting conical projections and sockets to receive said projections in uniting said plates with said extensions.

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