

Title (en)

Increased strenght for metal closures through reversing curved segments.

Title (de)

Erlangung erhöhter Steifigkeit für Metalldeckel durch Umstülpen gekrümmter Abschnitte.

Title (fr)

Obtention d'une rigidité élevée de couvercles métalliques par retournement de segments courbés.

Publication

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Application

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Priority

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Abstract (en)

The present invention relates to improvements in the strength of ends used on metal beverage containers. Such ends generally comprise a center panel of a substantially planar character, a surrounding annular grooved portion or countersink made up of an inner panel wall, a chuckwall and a first upwardly bowed arcuate segment integrally joining the inner wall and the chuckwall, and a second downwardly bowed arcuate segment integrally joining the inner wall and the center panel. In accordance with the present invention the second arcuate segment is reversed by herein disclosed tooling to provide the closure with three reversing arcuate segments between the inner wall and the center panel and a reduced center panel diameter. The closure so formed exhibits an increase in buckle resistance between 8 and 10 percent which allows a thinner gauge material to be used in forming the closures. Other than the three reversing arcuate segments the closure formed in accordance with the present invention conforms very closely to standard dimensional characteristics allowing its use on existing customers' fill-and-seal equipment without modification. An additional advantage of the present invention is that it can be easily instituted on many of the existing closure production lines with minor modifications and extremely low additional press tonnage requirements.

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Cited by

US5527143A; AU2002347836B2; CN1326752C; US6024239A; US5590807A; US5598734A; EP0497346A1; US5149238A; WO2014062873A1; WO03035494A1; US9566634B2; US10486852B2; US6748789B2; US7748563B2; US8490825B2; US9821928B2; US10967412B2; US11174069B2

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