

(21) Application No. 30293/77 (22) Filed 19 July 1977 (19)

(44) Complete Specification published 24 Sept. 1980

(51) INT. CL.³ B29C 17/07

(52) Index at acceptance

B5A 1R314C1X 1R420 8M T15K
B8D 1A1 1F1 4B 7PY CW4

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(54) METHOD OF MOULDING A PLASTICS BARREL

(71) We, MAUSER KOMMANDIT-GESELLSCHAFT, of Shildgesstrasse 71—163, 5040 Bruhl, Germany (Fed.Rep.) a German Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and be the following statement:—

This invention relates to a blow-moulded thermoplastics barrel having chimes around the barrel shell at the top and base.

It is known to lay previously prepared chimes into a blow mould and, on blowing an extruded tube, to weld the chimes to the tube expanded into a barrel shape. The welding of a shaped piece completely surrounding the hollow body causes problems. The blow mould must for this purpose be fitted with complicated devices which form an intermediate mould with separate locking members for receiving the shaped pieces. The intermediate mould becomes incorporated with the main mould as this is closed, to form a single unit therewith when closed.

In manufacturing for example wide neck barrels, it is known to clamp previously prepared thermoplastics head rings for reinforcing the barrel opening in an intermediate mould disposed centrally under the outlet nozzle of a blow machine while the main mould is open, so that the falling tube passes through the centre of the top ring. On closing the two halves of the mould, the intermediate mould slides into corresponding recesses so that the main and intermediate mould form a single unit.

In the case of wide neck barrels without top rings, it is also known to join a previously prepared base ring to the barrel being formed during the blowing operation, the ring being laid and centered on a separate lower one-piece mould part in the lowered state.

However in this case it is necessary for the end of the falling tube to be closed with a special tool and the tube residue forming

behind the closed position to be removed as waste. The closing of the tube and removal of the waste is a complicated and time-consuming operation. At the end of the intermediate process, the main halves of the mould are brought together and the lower mould piece is raised together with the base ring so that the total mould is closed.

It is technically complicated to manufacture a hollow body, for example a bung barrel, by blow moulding using specially prepared top and base chimes. Top and base chimes however are desirable for barrels because of the improved facility for handling, rolling and hoisting. This is especially so in the case of plastics barrels. A full plastics barrel can scarcely be lifted off the ground and rolled because of its shape deformation. Rolling the barrel on its base edge with the barrel inclined upwards is very difficult to do because of the flat shell-base transition. Furthermore, at the shell-top transition there is not suitable gripping means for shifting the barrel when rolling it on its base edge or for applying a crane hook for loading purposes.

For this reason metal top and base rings have also been fitted subsequently to the blow-moulded hollow body. In this case costly assembly work and ultimately permanent deformation of the shell rings must be considered. Moreover, as the expansion of plastics and metal at different temperature can differ by up to seven times, the rings held mechanically on the plastics can spring off.

An object of the invention is to form a barrel with chimes in such a manner that special previously-prepared chimes do not need to be incorporated in the blow mould or be subsequently fixed to the barrel shell.

The invention provides a method of forming a thermoplastics barrel in a mould having peripheral annular recesses and being formed from separate parts at the recesses, the method comprising blow moulding a

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barrel shell in the mould and moving the mould parts towards each other in the axial direction of the barrel shell so as to force material from the barrel shell into the recesses and form outwardly-extending chimes integral with the shell, each recess being shaped so that each chime has a substantially L-shaped cross-section with an annular web extending outwardly of the shell and a rolling surface extending at right angles to the web in the axial direction of the barrel shell.

The invention further provides a thermoplastics barrel formed by the above-described method.

An embodiment of the invention will now be described with reference to the accompanying drawing showing in section a bung barrel formed in accordance with the invention.

In the drawing, a bung barrel blow moulded from thermoplastics material has a barrel shell 3 with a top 4 and a bottom 5. Top and bottom chimes 1 and 2, which extend radially-outwardly of the barrel shell 3, are formed by moving mould parts (not shown) towards each other in an axial direction of the barrel after blow moulding of the shell. The mould has annular recesses where the mould parts meet so that as the parts are moved towards each other material of the shell is forced into the recesses. The recesses are shaped so that the resulting hoops 1 and 2 each comprise an annular web extending horizontally outwards from the shell 3 and a rolling surface extending at right-angles to the web and parallel to the longitudinal axis of the shell towards the top 4 and bottom 5 respectively. Thus, the chimes are substantially "L"-shaped and

point away from each other as shown in the left-hand side of the drawing.

The top 4 and bottom 5 project upwardly and downwardly, respectively, beyond the chimes 1 and 2, so that the chimes are protected if several barrels are stacked on each other. Bungs 6 and 7 are fitted into recesses 8 in the barrel top 4.

WHAT WE CLAIM IS:—

1. A method of forming a thermoplastics barrel in a mould having peripheral annular recesses and being formed from separate parts at the recesses, the method comprising blow moulding a barrel shell in the mould and moving the mould parts towards each other in the axial direction of the barrel shell so as to force material from the barrel shell into the recesses and form outwardly-extending chimes integral with the shell, each recess being shaped so that each chime has a substantially L-shaped cross-section with an annular web extending outwardly of the shell and a rolling surface extending at right angles to the web in the axial direction of the barrel shell.

2. A method as claimed in claim 1, wherein two recesses are provided to form a chime adjacent each end of the shell, each rolling surface extending from the web towards the respective end of the shell.

3. A method of forming a thermoplastics barrel substantially as herein described with reference to the accompanying drawing.

4. A thermoplastics barrel formed by the method as claimed in any one of the preceding claims.

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Chartered Patent Agents,
Agents for the Applicants.

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of
the Original on a reduced scale*

