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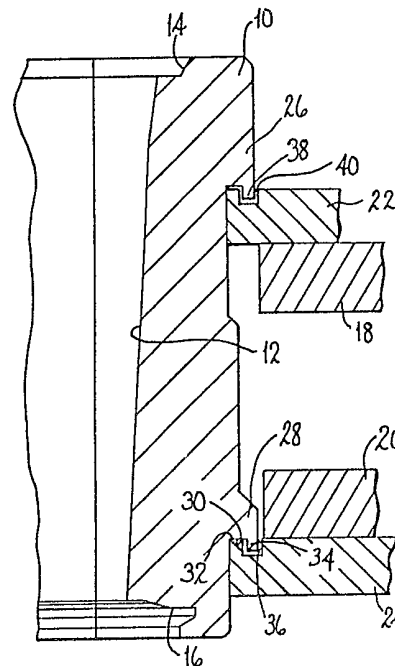
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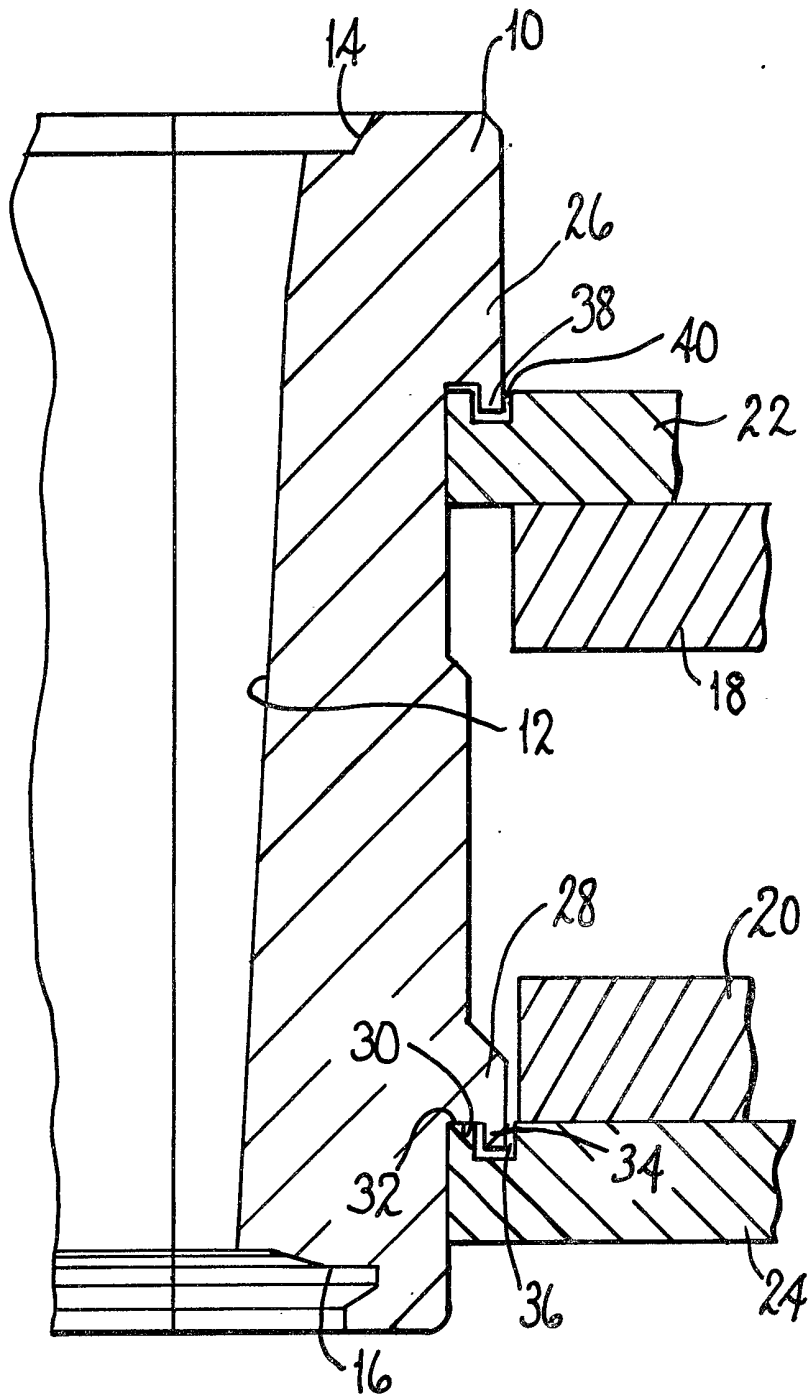
(54) **Method of supporting the side portions of a parison-forming mould**

(57) Side portions (10) of a parison-forming mould of a glassware forming machine are supported by upper (22) and lower (20) supports. Each side portion is mounted on the supports so that a downwardly-facing surface (30) of the side portion engages the lower support (20) to define the height of the portion (10). A downward projection (38) of the side portion enters an upwardly-facing recess (40) in the upper support (22).



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SPECIFICATION

Method of supporting the side portions of a parison-forming mould

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This invention is concerned with a method of supporting the side portions of a parison-forming mould of a glassware forming machine, each side portion being supported by an upper support and a lower support, the supports being movable, in the operation of the machine, to move the side portions between a mould-open condition in which the side portions are separated from one another and a mould-closed condition in which the side portions engage one another and co-operate in defining a mould cavity in which a parison can be moulded.

In the operation of a glassware forming machine of the individual section type, gobs of molten glass are delivered in turn to the various sections of the machine. When a gob is delivered to a section it is guided into a parison-forming or blank mould in which it is moulded into a parison. The parison is then transferred to a finish mould of the section where it is blown into an article of glassware. The most common type of parison-forming mould comprises two side portions which are movable into a mould-open condition in which the side portions are separated to allow removal of parisons from the mould and into a mould-closed condition in which the side portions engage one another and a neck-ring and co-operate in defining a mould cavity in which the parison can be moulded. The bottom of the mould cavity is defined by the neck-ring and a plunger which projects therethrough and the top of the cavity is open to allow the gob to enter before being closed by a baffle. Once a gob has been introduced into a mould cavity, it is moulded by either a blowing operation or a pressing operation, in which the plunger moves into the cavity, to the shape of the mould cavity. The side portions are then moved into their mould open condition leaving the parison supported by the neck ring. The neck ring is then moved to transfer the parison to the finish mould.

In a conventional machine of the individual section type, each side portion of each parison-forming mould is supported by an upper support and a lower support. Two hook-like projections extend outwardly and downwardly from the side portion. The upper projection has a downwardly-facing horizontal surface which engages an upwardly-facing horizontal surface of the upper support which defines the height at which the side portion is supported. The upper projection also has a downward projection which enters a recess in the horizontal surface of the upper support so that the upper projection is prevented from sliding off the upper support. The lower projection has a downward projection which enters a recess in the lower support so that the side portion is prevented from tilting about the upper support. Thus, the side portion is supported on the upper support and prevented from tilting by the lower support.

The conventional method of supporting the side

portions of the parison-forming mould described above has the disadvantage that thermal expansion of the side portions occurs, due to heat absorbed from the glass, and this causes the neck ring to be pushed downwardly. Although some clearance is present between the neck ring and the neck ring supporting arms, this is often exceeded by the thermal expansion which becomes more significant for taller moulds. If the neck ring is pushed down, it is released when the side portions are moved to their open condition and springs upwardly. This movement of the neck ring can cause damage to the parison supported thereby by causing "checks" in the neck ring region thereof.

It is an object of the present invention to provide a method of supporting side portions of a parison-forming mould in which thermal expansion of the side portions does not push down the neck ring.

The invention provides a method of supporting the side portions of a parison-forming mould of a glassware forming machine, each side portion being supported by an upper support and a lower support, the supports being movable, in the operation of the machine, to move the side portions between a mould-open condition in which the side portions are separated from one another and a mould-closed condition in which the side portions engage one another and co-operate in defining a mould cavity in which a parison can be moulded, wherein each side portion is mounted on the supports so that a downwardly-facing horizontal surface of the side portion engages an upwardly-facing horizontal surface of the lower support which defines the height at which the side portion enters an upwardly-facing recess in the upper support.

In a method in accordance with the last preceding paragraph, each side portion is supported by the lower support and prevented from tilting by the upper support. Thus, the side portion is supported only a short distance above the neck ring so that most of the thermal expansion will act upwardly and will press the baffle upwardly. Pressing the baffle upwardly does not cause damage to the parison as the baffle is removed before the side portions are moved to their mould-open condition. The small amount of thermal expansion caused by the portion of the side portion between the lower support and the neck ring can readily be accommodated by the clearance available. Thus, the neck ring is not pushed downwardly and damage to the parison from this cause is prevented.

In order to prevent relative sliding movement between the lower support and the side portion, it is advantageous if a downward projection of the side portion enters a recess in the lower support.

There now follows a detailed description, to be read with reference to the accompanying drawing, of a method of supporting the side portions of a parison-forming mould which is illustrative of the invention. It is to be understood that the illustrative method has been selected for description by way of example and not of limitation of the invention.

The drawing is a vertical cross-sectional view taken through a side portion of a parison-forming

mould supported by the illustrative method.

The drawing shows a side portion 10 of a parison-forming mould of a glassware forming machine of the individual section type. The side
5 portion 10 is arranged to co-operate with a further side portion (not shown) in defining a mould cavity, the further side portion being a mirror-image of the side portion 10 and being supported in similar
10 manner. The side portion 10 has a side surface 12 which defines a portion of the mould cavity, a upper surface 14 arranged to co-operate with a funnel (not shown) by which gobs are guided into the mould cavity and subsequently with a baffle (not
15 shown) which closes the top of the mould cavity after removal of the funnel, and a lower surface 16 which is arranged to fit around a neck ring of the machine (not shown).

The side portion 10 is mounted on an arm which has an upper portion 18 and a lower portion 20. In
20 the operation of the machine, both the arm 18,20 and the arm (not shown) on which the further side portion aforementioned is supported are movable, in conventional manner, so that the side portions are moved between a mould-open condition in
25 which the side portions are separated from one another and a mould-closed condition in which the side portions engage one another and co-operate in defining the mould cavity in which a parison can be moulded.

The illustrative method of supporting the side
30 portion 10 on the arm 18,20 will now be described. The upper portion 18 of the arm supports on its upper surface an upper support member 22 and the lower portion 20 of the arm supports on its
35 lower surface a lower support member 24. The side portion 10 has, on its side away from the surface 12, an upper projection 26 and a lower projection 28 which co-operate with the upper and lower support members 22 and 24 to support the side
40 portion 10.

The lower projection 28 has a downwardly-facing horizontal surface 30 which engages an upwardly-facing horizontal surface 32 of the lower support
45 member 24 which defines the height at which the side portion 10 is supported. A downward projection 34 of the projection 28 enters a recess 36 in the lower support member 24 to prevent relative sliding movement between the surfaces 30 and 32 causing the side portion 10 to fall off its support.

The upper projection 26 has a downward projection 38 which enters an upwardly-facing recess 40
50 in the upper support member 22. The projection 38 serves to prevent tilting of the side portion 10.

To mount the side portion 10 on the support
55 members 22 and 24, the side portion is moved horizontally towards the members 22 and 24 until the projections 34 and 38 are above their respective recesses 36 and 40. Then the side portion 10 is moved downwardly until the surfaces 30 and 32
60 come into engagement.

As the side portion 10 is supported by the lower support member 24 which is only a short distance above the neck ring of the machine, the surface 16 is only moved downwards by a short distance due
65 to thermal expansion of the side portion and this

short distance can be accommodated by clearance between the neck ring and its supporting arms. Most of the thermal expansion of the side portion 10 occurs above the surface 30 and has no effect
70 on the height of the surface 16.

CLAIMS

1. A method of supporting the side portions of
75 a parison-forming mould of a glassware forming machine, each side portion being supported by an upper support and a lower support, the supports being movable, in the operation of the machine, to move the side portions between a mould-open
80 condition in which the side portions are separated from one another and a mould-closed condition in which the side portions engage one another and co-operate in defining a mould cavity in which a parison can be moulded, wherein each side portion
85 is mounted on the supports so that a downwardly-facing horizontal surface of the side portion engages an upwardly-facing horizontal surface of the lower support which defines the height at which the side portion is supported and a downward pro-
90 jection of the side portion enters an upwardly-facing recess in the upper support.

2. A method according to claim 1, wherein a downward projection of the side portion enters a recess in the lower support.

3. A method of supporting the side portions of
95 a parison-forming mould substantially as hereinbefore described with reference to the accompanying drawing.