United States Patent [19]

Wolf

[11] **3,775,899**

[45] **Dec. 4, 1973**

[54] **ANIMATED BUBBLE TOY**

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[52] **U.S. Cl.** **46/7**
[51] **Int. Cl.** **A63h 33/28**
[58] **Field of Search** 46/1, 7, 8

[56] **References Cited**

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[57] **ABSTRACT**

A bubble forming toy having a spill-proof container of inverted frusto-conical form for a bubble forming solution and having a cover provided with a slot through which a wall with an opening therethrough moves. The wall is moved out of the solution by an air powered device, the air then being blown through the opening to form bubbles.

18 Claims, 7 Drawing Figures

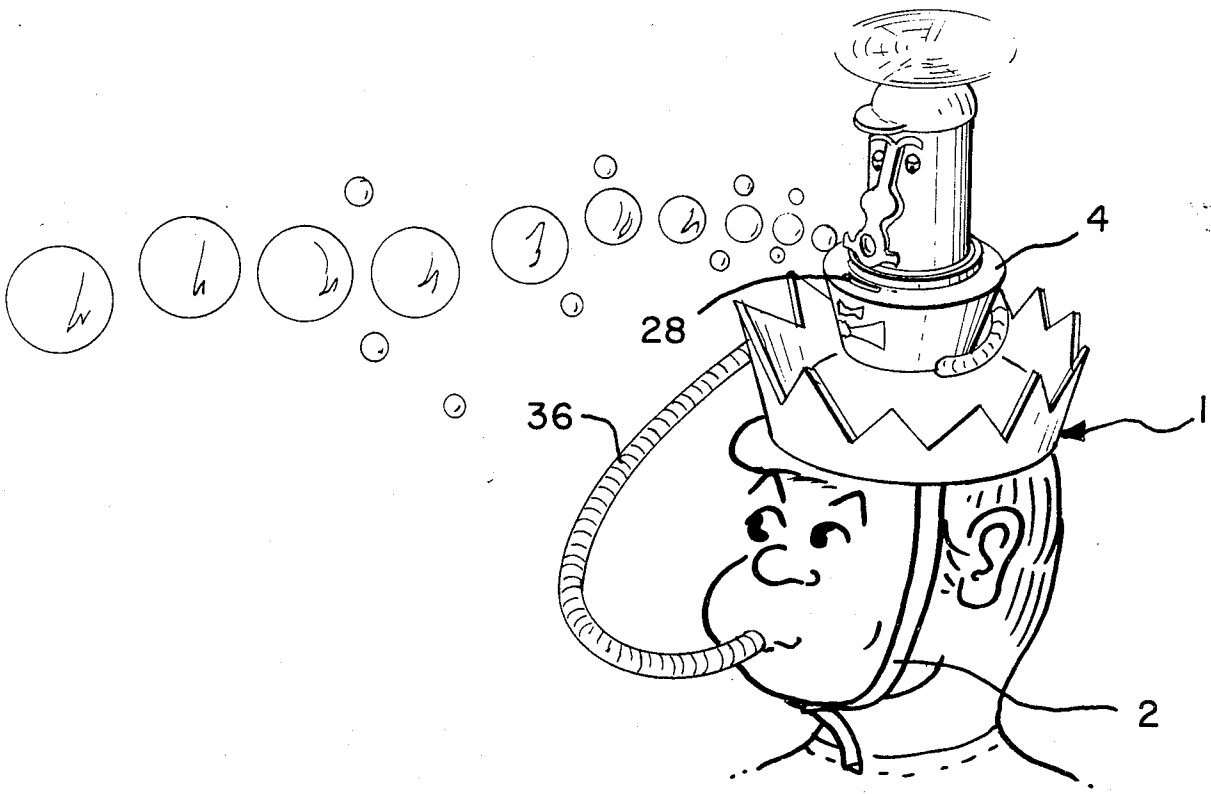


Fig. 1

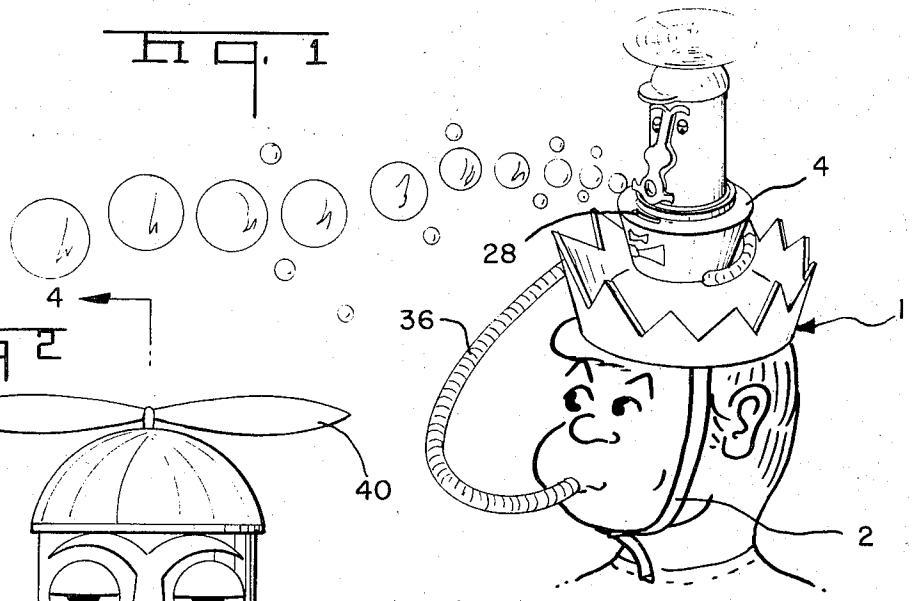
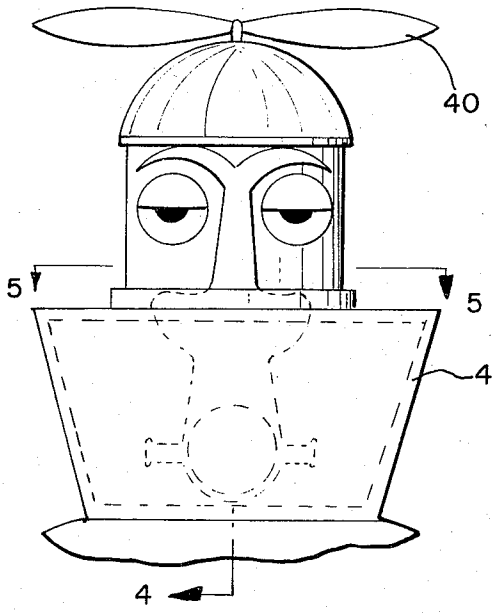


Fig 2



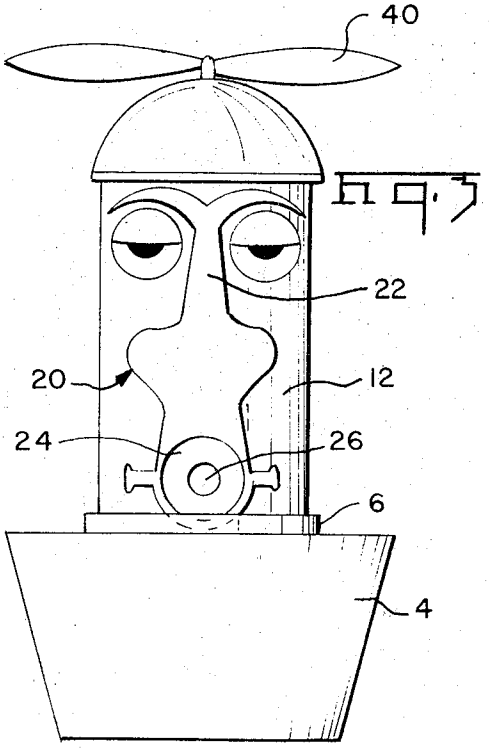


Fig. 3

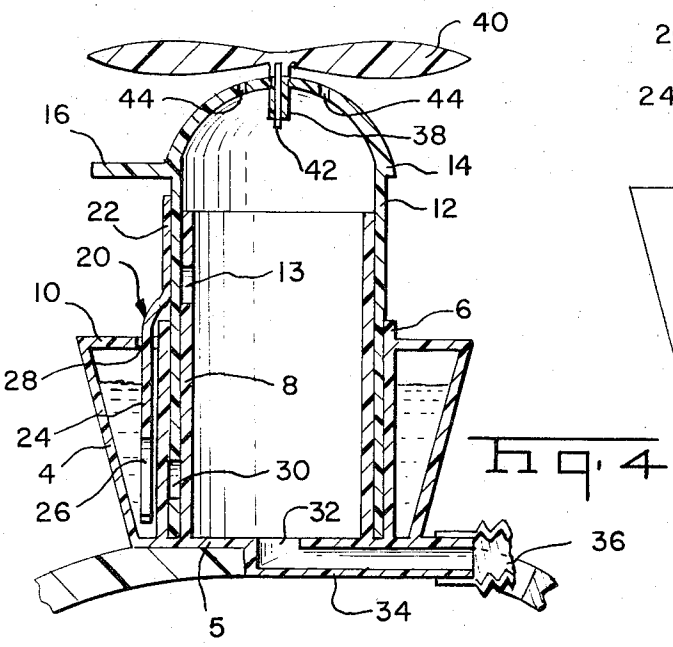


Fig. 4

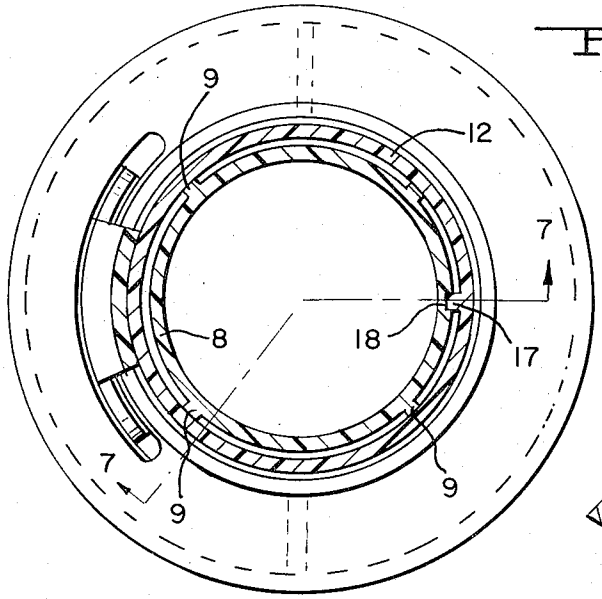


Fig. 5

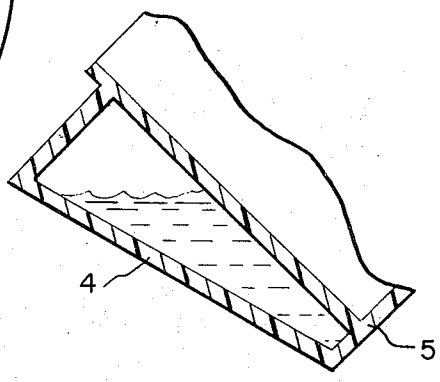


Fig. 6

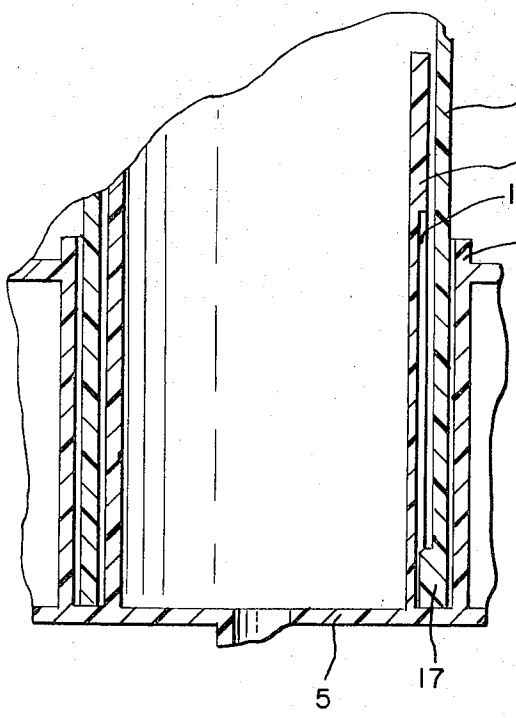


Fig. 7

ANIMATED BUBBLE TOY

BACKGROUND OF THE INVENTION

In the prior art devices such as the patent to Kratt et al., U.S. Pat. No. 2,700,245, there is disclosed an animated bubble toy in the form of a pipe or horn carrying at its forward end an open receptacle for the bubble forming solution. A film forming member having a plurality of openings therein is moved out of the solution through the open receptacle when air is blown into the other end of the horn, and a bubble is formed and ejected through each opening in the member. The latter returns to the solution by gravity when the air input is discontinued. The above device must be carefully hand held when in use to avoid spillage of the solution from the open receptacle.

SUMMARY OF THE INVENTION

The animated bubble forming device of this invention is mounted on a cap which is worn on the head and is provided with a flexible hose reaching to the mouth and having a mouthpiece so that bubbles may be formed by blowing into the mouthpiece while the hands are free. As in the above mentioned prior art device, a pair of telescoping tubular members are provided, one of which may be integrally formed with and extends from the bottom of the receptacle and being open at both ends. Air blown into the lower end will raise the other tubular member which is provided with a cover. The other tubular member carries the film forming device which moves into and out of the film forming solution. Another distinguishing feature over the prior art is that the solution container or receptacle is of truncated conical shape with the end of smaller diameter forming the base. The container is provided with a cover having an opening spaced from the rim thereof and of a size and shape to just allow passage of the film forming member, which together with the shape of the container minimizes spillage of the solution. Further, the telescoping members are provided with longitudinal spacing means between them to maintain them in concentric relation with a minimum of frictional surface contact. The upper end of the movable tubular member is provided with a freely rotatable propeller which is rotated by air passing through small openings in the cover of the tubular member when air is blown into the flexible conduit. The above and other improvements over the prior art will be pointed out in detail with specific reference to the drawings.

OBJECTS OF THE INVENTION

It is therefore an object of the invention to provide an animated bubble forming toy which can be carried on the head.

It is another object of the invention to provide the above toy with a container for the bubble forming solution which is not easily spillable.

It is a further object of the invention to provide the above toy with movable telescoping tubular members which are maintained concentric and have a minimum of surface contact to avoid sticking.

It is still a further object of the invention to provide a more animated toy by the addition of a freely movable blade or propeller which is rotated by air blown into the same inlet as used for forming the bubble.

These and other objects will become apparent as the description of the invention proceeds by reference to the drawings in which:

FIG. 1 is an isometric view of the device worn on a user's head with the film forming device producing bubbles while air is blown in by the user.

FIG. 2 is a front view of the device with the film forming member in its lower position within the container for the bubble forming solution.

FIG. 3 is a front view of the bubble forming device with the tubular member carrying the film forming device in its raised position to form bubbles.

FIG. 4 is a vertical section of the device along 4—4 of FIG. 2.

FIG. 5 is a cross-section of the device taken on line 5—5 of FIG. 2.

FIG. 6 is a fragmental view in cross-section, of the container at an angle to the horizontal and containing a liquid.

FIG. 7 is a cross-sectional view along line 7—7 of FIG. 5.

DESCRIPTION OF THE INVENTION

With particular attention to the drawing, a base 1 for the bubble forming device is in the form of a hat which may be fastened to a child's head by means of a chin strap 2. The hat may be of any preferred material including a rigid plastic. Attached to the hat is the receptacle or container 4 for the bubble forming solution. As shown, the container is of frusto-conical shape with the smaller diameter end forming the base of the container. Rising centrally upward from the base 5 of the container and formed integral therewith, are a pair of spaced outer and inner concentric tubular members 6 and 8. The larger diameter end of the container is provided with a top wall 10 extending between rim of the container and the outer wall of the outer tubular member 6. The top wall may of course, be formed integrally with the container and member 6. The latter terminates at or just above the top wall 10 of the liquid resevoir 4, while the fixed tubular member 8 extends further upwardly and is provided with an opening 13 through its peripheral wall.

In telescoping relation with the tubular members 6 and 8 and extending between them with a sliding fit, is a movable intermediate cylinder or tubular member 12 provided with a cover 14 which may be of any shape, preferrably domed to have the appearance of a cap and provided with a projecting piece 14 simulating the visor. The intermediate tubular member is provided with a key 17 slidable in a longitudinally extending keyway 18 in the inner tubular member 8. The keyway terminates intermediate the ends of member 8 to prevent the member 12 from escaping when forced upwardly, as later explained. The outer wall of the inner tubular member is is provided with longitudinally extending, circumferentially spaced ribs bearing against the inner wall of the movable member 12. It was found that splash from bursting bubbles could wet the surfaces between the tubular members 6 and 12 and the resulting viscous drag, between them would be so great that the movable tubular member 12 would stick in its upper position and not slide down to its lower position. The ribs serve to maintain the concentricity of the cylindrical or tubular members with a minimum of surface contact between them to minimize viscous resistance.

Obviously, the ribs may be formed on the movable member instead. In the same way, ribs may be provided between the inner and outer walls of fixed tubular member **6** and movable tubular member **12** respectively, if so desired.

Fixed to the outer wall of the movable member **12,** centrally of and below the visor **16,** is the film forming device **20** similar to that disclosed in the aforementioned patent. The device is of flat material having an attaching portion **22** which is fixed to the outer wall of member **12** and a dipring portion **24** offset by an amount equal to the thickness of member **6** and extending parallel to the outer wall. The dip-ring is provided with a bubble forming opening **26** centrally below the visor. The device **20** is curved to conform to the curvature of the tubular member **6** which it overlies when in lowered position. The top wall **10** of the container, is provided with a slot **28** through which the offset film-forming device **24** can move into or out of the container. The slot **28** is spaced radially inward of the outer periphery of the container and close to the tubular member **6** so that spillage of the contents will not take place even when tipped as much as **45** degrees in any direction, as shown in FIG. **6.** The peripheral wall of the movable tubular member **12** is provided with an opening **30** therethrough which is in alinement with opening **26** in the film-forming device **20,** the axes of openings **13, 26** and **30** being in a common vertical plane. The bottom wall **5** of the container has an inlet opening **32** registering with the outlet of a rigid conduit **34,** to the inlet of which a flexible conduit **36** is attached. The flexible conduit is of a length to reach the mouth of the wearer of the bubble making toy and may be provided with a mouthpiece, if so desired. The domed cap **14** is provided centrally thereof with an elongated bearing **38** extending inwardly from the outer periphery of the cap. A propeller blade **40** is fixed on a shaft **42** wich is journaled in the bearing **38** for free rotation therein, the shaft extending through the bearing at its inner end and being retained therein by any desired manner such as by a washer **44** clamped on the inner end of the shaft. The domed cap is provided with one or more openings **44** through its upper wall to form a passageway for a stream of air from within the dome to impinge upon the blade to cause rotation thereof.

Air exiting from the opening **44** may also be utilized to create whistles, sirens or other sounds, as is known in the art. As can be seen from the drawing, the film forming member **20** may be shaped to have face-like features and the dip-ring **24** may have the appearance of a mouth.

By blowing air into the flexible conduit, the pressure created within the tubular member **12** will force it upwardly, raising the dip-ring out of the bubble forming solution with a film of such solution adhering thereto. When the tubular member **12** is raised to such a height that the key **17** is at the upper end of slot **18,** openings **26** and **30** in the dip-ring and movable member **12** respectively, are in alinement with opening **13** in fixed member **8,** the air passes through such openings to direct air from within against bubble forming opening **26.** The openings **44** in the cap **14** are of such small size that the slow leakage of air therethrough does not prevent the lifting of the movable member **12** and forming and ejecting of the bubbles from opening **26.** When the air pressure is lowered or discontinued, the movable tubular member will descend to lower the film forming member into the solution.

The toy thus described is attractive, is animated and performs the function of blowing bubbles while leaving the hands free for other activities and is practically spillproof, permitting the wearer to move about in unrestricted fashion. The receptacle **14** may be formed integral with the cap **1** or secured directly thereto making provision for accommodating the conduit **34.** The receptacle may also be formed with or have a clamp attached thereto for mounting on the handle bars of a bicycle, or to a rod or wand for holding it in the hand.

Having thus described the preferred form of the invention with the particularity required by the statutes, it should be understood that obvious changes by those skilled in the art may be made without departing from the spirit and scope of this invention.

What is claimed is:

1. An animated bubble toy comprising a receptable for a buble forming solution having a top wall with an opening therethrough, a pair of telescopically arranged tubular members extending upwardly from the receptacle, one of the members being fixed to the receptacle and provided with a bottom wall having an air inlet, the other member being movable and provided with a top cover against which air impinges when blown into the inlet to raise the other member, a first opening through the wall of the movable member below its top cover, a film forming member fixed to and extending in spaced relation to the wall of the movable member and provided with a second opening for forming bubbles in alinement with the first opening, a third opening through the wall of the fixed tubular member, the film forming member being immersed in the solution when the movable member is in its lower position and the said first, second and third openings being in alinement when the movable member is in raised position by air pressure applied at the inlet opening, circumferentially spaced, radially projecting spacing elements between the tubular members fixed to at least one of them for maintaining the members in spaced concentric relation with a minimum contact area.

2. An animated bubble toy comprising a spillproof receptacle for a bubble forming solution having top and bottom walls and downwardly converging side walls,

a tubular member having a closed bottom fixed to and extending upwardly from the receptacle,

a second tubular member in telescoping engagement therewith for movement relative thereto and having a top wall,

said fixed tubular member being provided with an air inlet opening whereby air under pressure will raise the movable tubular member,

an opening in the side wall of the movable member,

a film forming member having an opening for forming bubbles closely spaced from and in alinement with the opening in the side wall of the movable member,

said top wall of the receptacle having an opening for receiving the film forming member when the tubular member is in the lowered position.

3. An animated bubble toy as defined in claim **2** in which the tubular members are provided with cooperating means for preventing relative rotation but permitting longitudinal sliding movements.

4. An animated bubble toy according to claim 3 wherein the movable member is the outer one of the tubular members.

5. An animated bubble toy according to claim 4 including an outer fixed tubular member fixed to the receptacle bottom, extending upwardly therefrom and surrounding the movable tubular member.

6. An animated bubble toy as defined in claim 3 wherein the receptacle is mounted on a cap to be worn on a person's head.

7. An animated bubble toy as defined in claim 6 including a flexible conduit extending from the inlet opening and of a length to reach the mouth of the wearer.

8. An animated bubble toy as defined in claim 7 including means for fastening the cap to the wearer's head.

9. An animated bubble toy according to claim 8 wherein the receptacle is of truncated conical form with the end of smaller diameter forming the base.

10. An animated bubble toy according to claim 1 in which a propeller is mounted for free rotation on said other tubular member above its cover, the cover having at least one restricted opening therethrough for the passage of air to rotate the propeller when air is blown into the inlet opening.

11. An animated bubble toy including a receptacle which comprises an outer wall enclosing an area with a bottom wall thereacross having an inlet opening therethrough, a tubular member having its periphery spaced inwardly from the outer wall with one end fixed to the bottom wall and extending upwardly therefrom in registry with the opening, a top wall for the receptacle extending from the outer wall to the periphery of the fixed tubular member to completely enclose the volume of the receptacle, an opening through the top wall of the receptacle, a movable tubular member having a top cover in telescoping engagement with the fixed tubular member, said movable member having an outlet opening through its side wall adjacent its lower end and a film-forming member fixed thereto and spaced from the outer periphery of the fixed tubular member when lowered through the opening in the top wall and provided with a bubble forming opening at its lower end in alinement with the outlet opening, whereby air under pressure applied at the inlet opening will raise the movable member until the outlet opening clears the top of the fixed tubular member and be directed through the bubble forming opening.

12. An animated bubble toy according to claim 11, said receptacle being mounted on a cap to be worn on a person's head.

13. An animated bubble toy according to claim 11, wherein the opening in the top wall member is closely adjacent to the fixed tubular member.

14. An animated bubble toy according to claim 12, wherein the receptacle is of truncated conical form with the smaller diameter end at the bottom.

15. An animated bubble toy according to claim 14 wherein the fixed tubular member is coaxial with the receptacle.

16. An animated bubble toy according to claim 11 wherein the movable member is within the fixed member.

17. An animated bubble toy according to claim 12 including a further fixed tubular member spaced inwardly of the movable tubular member extending upwardly beyond the first mentioned fixed tubular member, said further tubular member having means engageable with the movable tubular member to prevent rotation thereof and having an opening through its wall located above the first mentioned fixed tubular member with its axis in the same vertical plane as the axis of the opening in the movable tubular member.

18. An animated bubble toy according to claim 17 including circumferentially spaced radially extending projections between the further fixed tubular member and the movable tubular member and fixed to at least one of them to maintain them in concentric relation with a minimum of surface contact area.

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