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(71) Applicant: **Main Power Electrical Factory Ltd.**
Kowloon,
Hong Kong (CN)

(72) Inventors:
• **Choi, Mei Chee June**
Kwun Tong, Kowloon (HK)
• **Zhao, Hang**
Kwun Tong, Kowloon (HK)

(74) Representative: **Ward, David Ian**
Marks & Clerk LLP
Alpha Tower
Suffolk Street
Queensway
Birmingham
B1 1TT (GB)

(54) **Meat mincing attachment**

(57) A meat mincing attachment (1) has a coupling flange (5) having a receiver part (7) for removably coupling the flange (5) to a driven source, a feed tube (2) connected with the coupling flange (5) and an auger tube (10) removably securable to the coupling flange (5) by a first rotationally releasable connection. The auger tube (10) has a mincing axis that is orthogonal to the feeding axis. An auger (20) is removably located within the auger tube (10) and has an auger blade (23) for transporting food pieces along the auger tube (10) towards a mincing end (12). A mincing disk (30) is removably disposed at the mincing end (12) of the auger tube (10) and supports a mincing end of the auger (20). The mincing (30) disk is secured by a retaining ring (27) connectable to the mincing end (12) of the auger tube (10) by a second rotationally releasable connection.

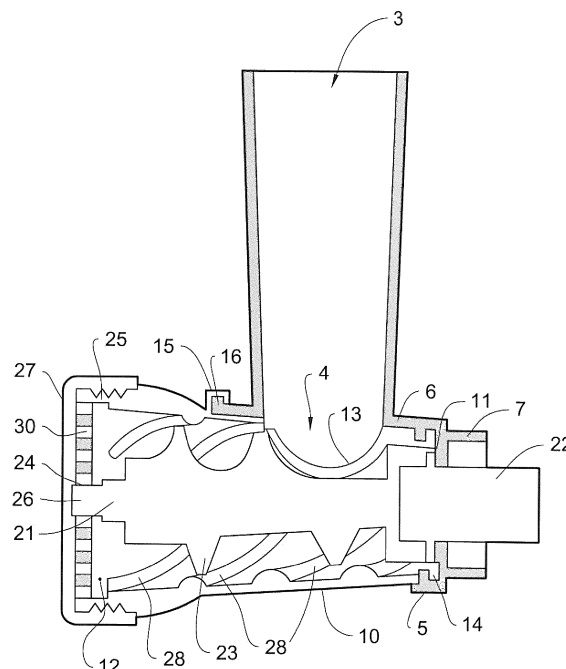


Figure 3

Description

Field of the Invention

[0001] The current invention relates food preparation apparatus and in particular to a meat mincing attachment for a kitchen appliance or other food preparation appliance.

Background to the Invention

[0002] A meat mincing attachment generally uses an auger to force pieces of meat through a mincing disk. Traces of meat are left in the auger and mincing disk that must be cleaned away at the end of the mincing operation before storage of the mincer. It is important that the mincer is thoroughly clean as any traces of meat remaining could rot causing a smell and potential health hazard. It is therefore desirable that a meat mincer is easy to clean.

Summary of the Invention

[0003] According to the invention there is provided a meat mincing attachment comprising:

a coupling flange having a receiver part for removably coupling the flange to a driven source,
a feed tube connected with the coupling flange, the feed tube having a feeding axis,
an auger tube removably securable to the coupling flange by a first rotationally releasable connection, the auger tube having a mincing axis that is orthogonal to the feeding axis,
an auger removably located within the auger tube and having an auger blade for transporting food pieces along the auger tube towards a mincing end, and
a mincing disk removably disposed at the mincing end of the auger tube and supporting a mincing end of the auger, the mincing disk secured by a retaining ring connectable to the mincing end of the auger tube by a second rotationally releasable connection.

[0004] Preferably, one of the first or second rotationally releasable connections is a threaded connection. Preferably, one of the first or second rotationally releasable connections is a bayonet type connection. More preferably, the first rotationally releasable connection is a bayonet-type connection, and the second rotationally releasable connection is a threaded connection.

[0005] Preferably, the first rotationally releasable connection comprises bayonet connectors.

[0006] Preferably, the coupling flange has a semi-cylindrical wall portion having an opening to which the feed tube is connected.

[0007] Preferably, the auger tube has an auger tube wall and an opening in the auger tube wall that communicates with the feed tube when the auger tube and coupling flange are connected.

[0008] Preferably, the feed tube is frusto-conical. More preferably, the auger tube is frusto-conical.

[0009] Preferably, one or both of the first and second rotationally releasable connections is releasably by hand without the use of tools.

Description of the Drawings

[0010] The invention will now be described by way of example only with reference to the appended drawings in which:

Figure 1 is a perspective illustration of the meat mincer attachment,

Figure 2 is a side exploded view of the meat mincer attachment,

Figure 3 is a side section view of the meat mincer attachment, , and

Figure 4 is a side section view of the auger tube and coupling flange

Detailed Description

[0011] The following description is given by way of example only to illustrate the invention and is not intended to limit the scope of use or functionality of the invention. In particular, the invention is not limited in its application to the details of construction and the arrangements of components set forth in the following description or illustrated in the accompanying drawings. The invention is capable of other embodiments and of being practiced or being carried out in various ways. Also, it is to be understood that the phraseology and terminology used is for the purpose of description and should not be regarded as limiting.

[0012] Referring to the drawings there is shown a meat mincer attachment 1 for a kitchen appliance or other food preparation appliance. The mincer attachment 1 has a coupling flange 5 for coupling the mincer attachment 1 to the kitchen appliance or other food preparation appliance. At a distal end of the coupling flange 5 is male type receiver part 7 having a pair of diametrically opposed radial bayonet-type coupling tabs 8. The receiver part 7 is received in a receptor part of a kitchen appliance or other food preparation appliance for coupling the mincer attachment 1 to the kitchen appliance or other food preparation appliance. The receiver part 7 is received within the receptor part rotationally off-set by say ¼ turn and then rotated to engage the radial bayonet-type coupling tabs 8 with corresponding coupling slots of the receptor for locking the mincer attachment 1 to the kitchen appliance or other food preparation appliance.

[0013] Extending from an upper circumference of the coupling flange ring 5 is an upper flange wall 6. There is a circular opening in the upper flange wall 6. Communi-

cating with the opening and extending upwardly from the flange wall 6 is a generally circular feed hopper tube 2. The feed hopper tube 2 has an inlet opening 3 at its upper end and an outlet opening 4 at its lower end with a generally circular wall extending between the inlet opening 3 at its upper end and an outlet opening 4 at its lower end. In a preferred embodiment the circular feed hopper tube 2 has a mildly frusto-conical shape with the inlet opening 3 being slightly larger in diameter than the outlet opening 4 at the lower end. The inlet opening 3 and outlet opening 4 are concentrically aligned. In alternative embodiments the circular feed hopper tube 2 may also be generally cylindrical with the inlet opening 3 and outlet opening 4 at the lower end having substantially the same diameters. Meat to be minced is introduced into the mincer attachment 1 through the feed hopper tube 2 via a pusher 9. The pusher 9 has an outer diameter generally the same as an inner diameter of the circular feed hopper tube 2 and a length generally corresponding to a distance between the inlet opening 3 and outlet opening 4. A handle part 29 at one end of the pusher 9 allows the pusher to be introduced into the inlet opening 3 of the feed tube 2 and moved down the tube to the outlet opening 4 for pushing meat to be minced through the feed tube 2.

[0014] A generally circular auger tube 10 removably couples with the coupling flange 5 along a mincing axis 31 that is orthogonal to a feed axis 32 of the feed tube 2. The auger tube 10 has an open drive end 11 that communicates with the receiver part 7 of the coupling flange 5 and an open mincing end 12 with a generally circular wall extending between the drive end 11 and mincing end 12. In a preferred embodiment the auger tube 10 has a mildly frusto-conical shape with drive end 11 having a slightly smaller diameter than the mincing end 12. The drive end 11 opening and mincing end 12 opening are concentrically aligned. The auger tube 10 has an inlet opening 13 in the tube wall adjacent the drive end 11. When the circular auger tube 10 is coupled with the coupling flange 5 the driver end 11 abuts the receiver part 7 of the coupling flange 5 and the auger tube wall abuts an underside of the flange wall 6 such that the outlet opening 4 of the feed tube 2 aligns with the inlet opening 13 of the auger tube 10 such that meat to be minced can be introduced into the auger tube 10 through the feed tube 2. At a drive end 11 of the auger tube 10 is a receiver part having a pair of diametrically opposed radial bayonet-type coupling tabs 14. The auger tube 10 is introduced to the coupling flange 5 rotationally off-set by say $\frac{1}{4}$ turn and then rotated to engage the radial bayonet-type coupling tabs 13 with corresponding coupling slots of the receiver part 7 of the flange 5 to removably couple the auger tube 10 to the coupling flange 5 and correspondingly to the feed tube 2. A bayonet-type receiver part 15 on the auger tube wall and corresponding bayonet-type receptor part 16 on the distal end of the wall 6 are similarly engaged when the auger tube 10 and flange 5 are coupled. The bayonet-type receiver part 15 and corresponding bayonet-type receiver part 16 removably

couple the auger tube 10 and flange wall 6 maintaining a fit between the auger tube 10 and flange wall 5. The inner surface of the auger tube 10 wall has a plurality of evenly spaced helical ribs 28 the spiral along the inner length of the auger tube 10.

[0015] An auger 20 is removably receivable within the auger tube 10. The auger 20 has an auger shaft 21 with a drive coupling 22 at its proximal end and a helical auger blade 23 that spirals around the shaft 21 from the coupling to the distal end of the auger 20. The auger 20 is removably received into the auger tube 10 from the mincing end 12. In situ the drive coupling 22 extends from the drive end 11 of the auger tube 10 within the receiver part 7 of the coupling flange 5. When the mincer attachment 1 is connected to a kitchen appliance or other food preparation appliance the drive coupling 22 communicates with a corresponding driven coupling of the kitchen appliance or other food preparation appliance for turning the auger 20. The mincing end 12 of the auger tube 2 has a threaded flange 25 having an inner diameter. A mincing disk 30 has an outer diameter corresponding to the inner diameter of the threaded flange 25 and locates within the threaded flange 25. There is an aperture 24 at the center of the mincing disk 30 into which an axial spigot 26 of the auger shaft locates to support the distal end of the auger 20. A retaining ring 27 threadably engages with the threaded flange 25 of the auger tube 10 to retain the mincing disk 30 and auger 20 within the auger tube 10.

[0016] In use the meat mincer attachment 1 is removably attached to a kitchen appliance or other food preparation appliance having a receptor part and driven coupling for receiving correspondingly the receiver part 7 and drive coupling 22 of the meat mincer attachment 1. The driven coupling drives the auger 20 of the meat mincer attachment 1. Pieces of meat to be minced are introduced into the feed tube 2 and the pusher 9 used to push the pieces of meat down the feed tube through the openings 4, 13 into the auger tube 10. The driven auger 20 transports the pieces of meat along the auger tube 10 towards the mincing end 12 where the pieces of meat and pushed up against the mincing disk 30. As more pieces of meat are introduced into the auger tube 10 the pieces of meat are forced through the mincing disk 30 exiting the mincer attachment 1 as minced meat. The meat mincer attachment of the invention has the advantage of being easy to clean. After the mincing operating some traces meat will remain in the auger tube 10. The retaining ring 27 is removed to separate the mincing disk 30 and threaded flange 25. The auger 20 can then be removed from the auger tube 10 and the auger tube 10 separated from the coupling flange 5. After cleaning the parts can be quickly re-assembled. Dismantling and re-assembly can be achieved by hand, without the use of tools.

Claims

one or both of the first and second rotationally releasable connections is releasably by hand without the use of tools.

1. A meat mincing attachment comprising:

a coupling flange having a receiver part for removably coupling the flange to a driven source, a feed tube connected with the coupling flange, the feed tube having a feeding axis, an auger tube removably securable to the coupling flange by a first rotationally releasable connection, the auger tube having a mincing axis that is orthogonal to the feeding axis, an auger removably located within the auger tube and having an auger blade for transporting food pieces along the auger tube towards a mincing end, and a mincing disk removably disposed at the mincing end of the auger tube and supporting a mincing end of the auger, the mincing disk secured by a retaining ring connectable to the mincing end of the auger tube by a second rotationally releasable connection.

2. The meat mincing attachment of claim 1 wherein one of the first or second rotationally releasable connections is a threaded connection.

2. The meat mincing attachment of claim 1 wherein one of the first or second rotationally releasable connections is a bayonet type connection.

4. The meat mincing attachment of claim 1 wherein the first rotationally releasable connection is a bayonet-type connection, and the second rotationally releasable connection is a threaded connection.

5. The meat mincing attachment of claim 1 or 4 wherein the first rotationally releasable connection comprises bayonet connectors.

6. The meat mincing attachment of claim 1 wherein the coupling flange has a semi-cylindrical wall portion having an opening to which the feed tube of connected.

7. The meat mincing attachment of claim 6 wherein the auger tube has an auger tube wall and an opening in the auger tube wall that communicates with the feed tube when the auger tube and coupling flange are connected.

8. The meat mincing attachment of claim 1 wherein the feed tube is frusto-conical.

9. The meat mincer of claims 1 or 8 wherein the auger tube is frusto-conical.

10. The meat mincer of any one of claims 1-4 wherein

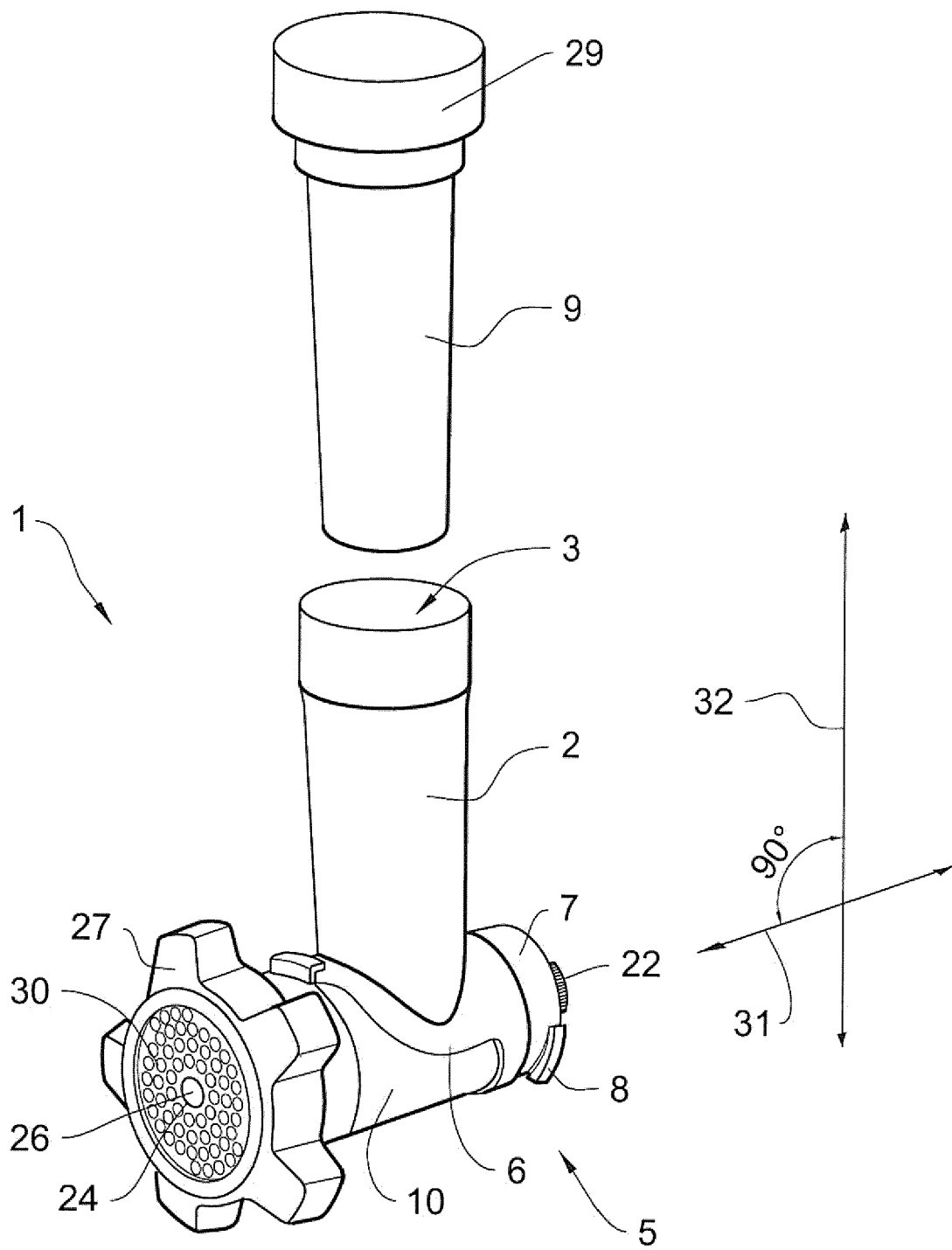


Figure 1

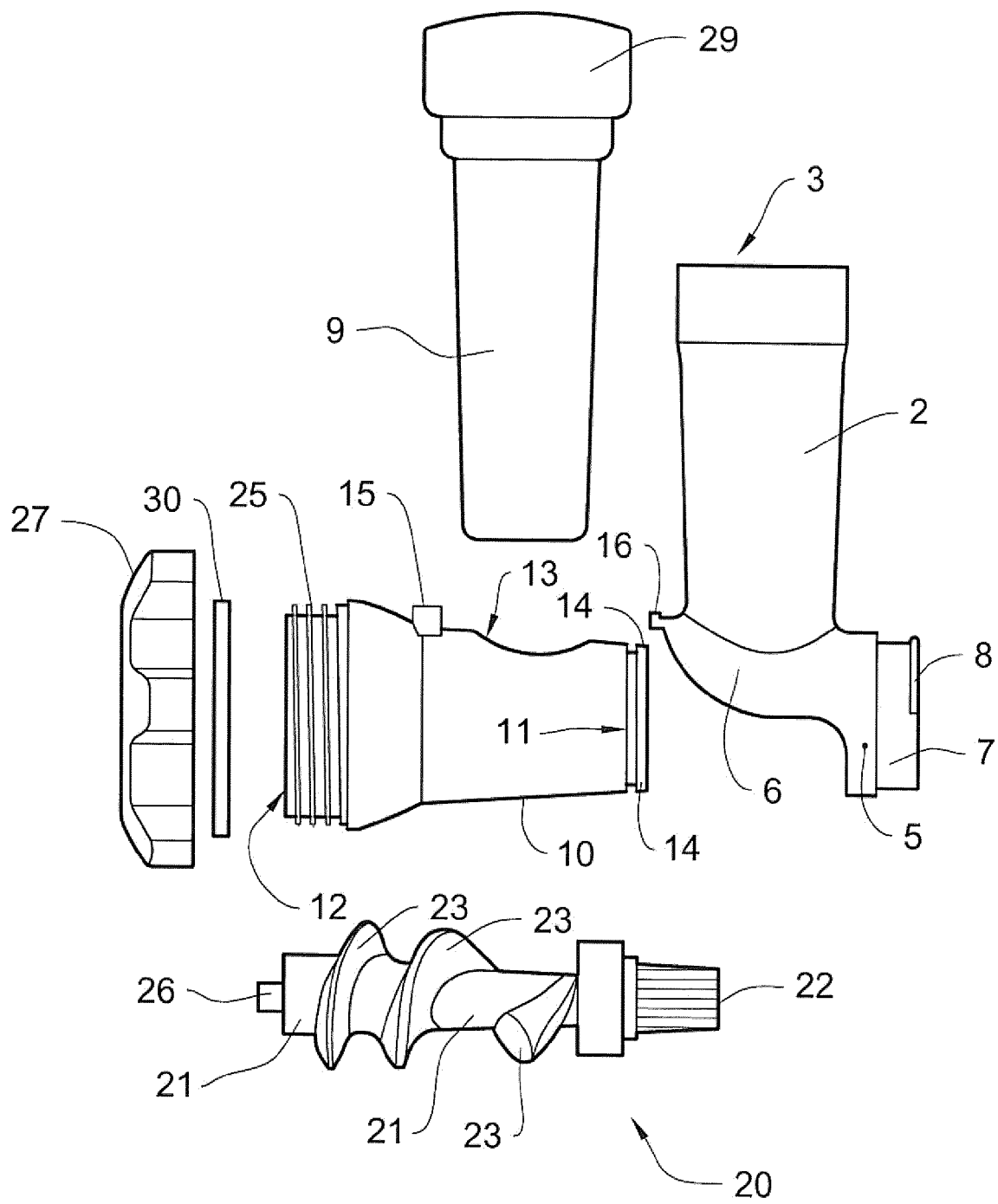


Figure 2

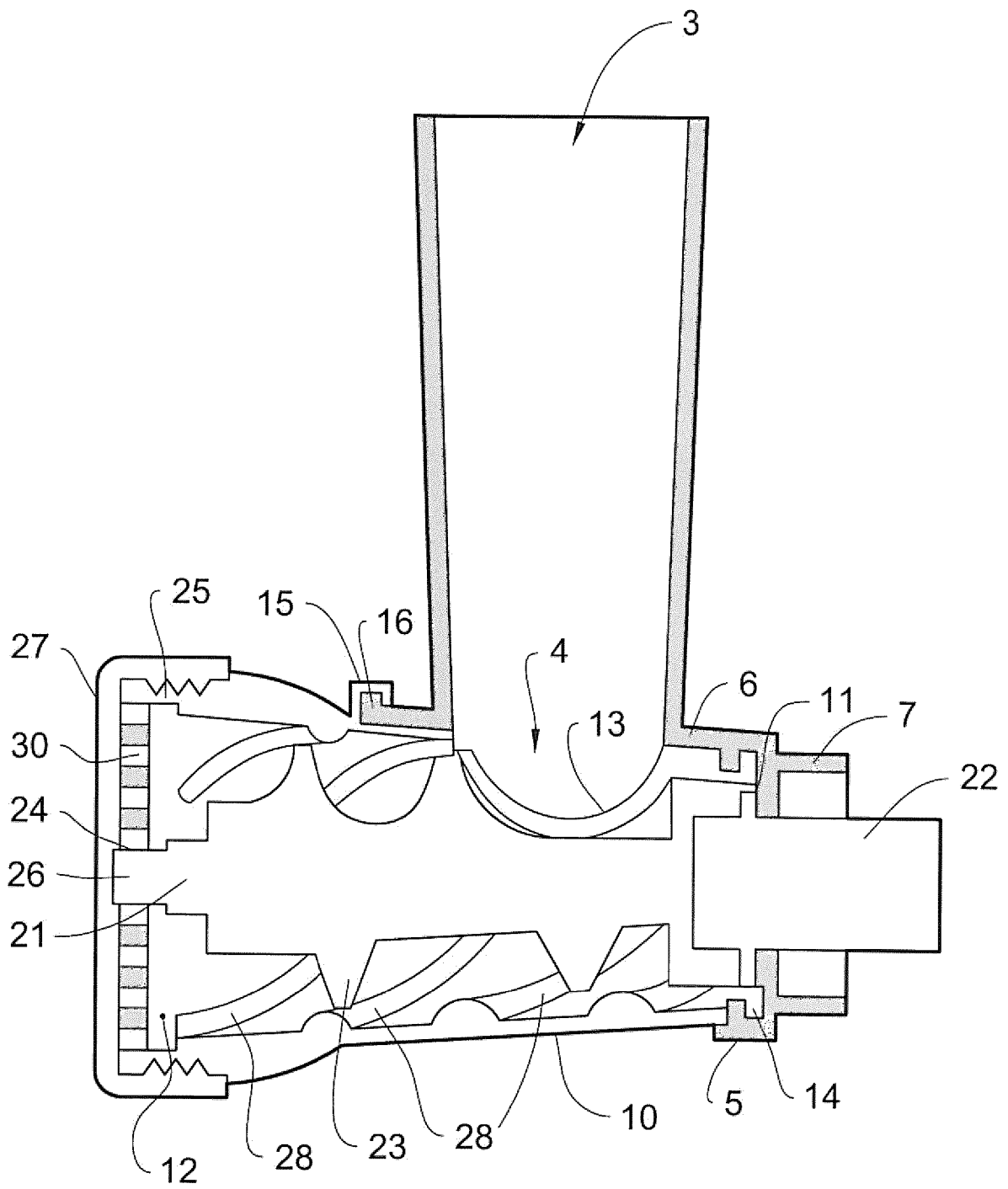


Figure 3

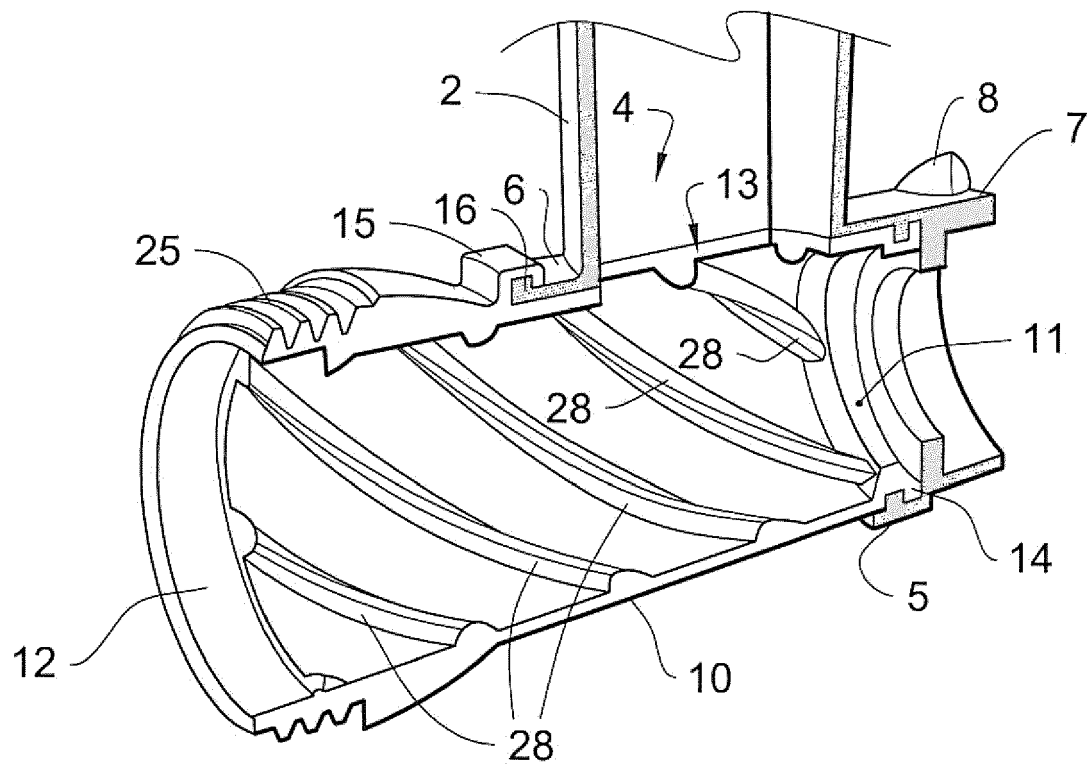


Figure 4