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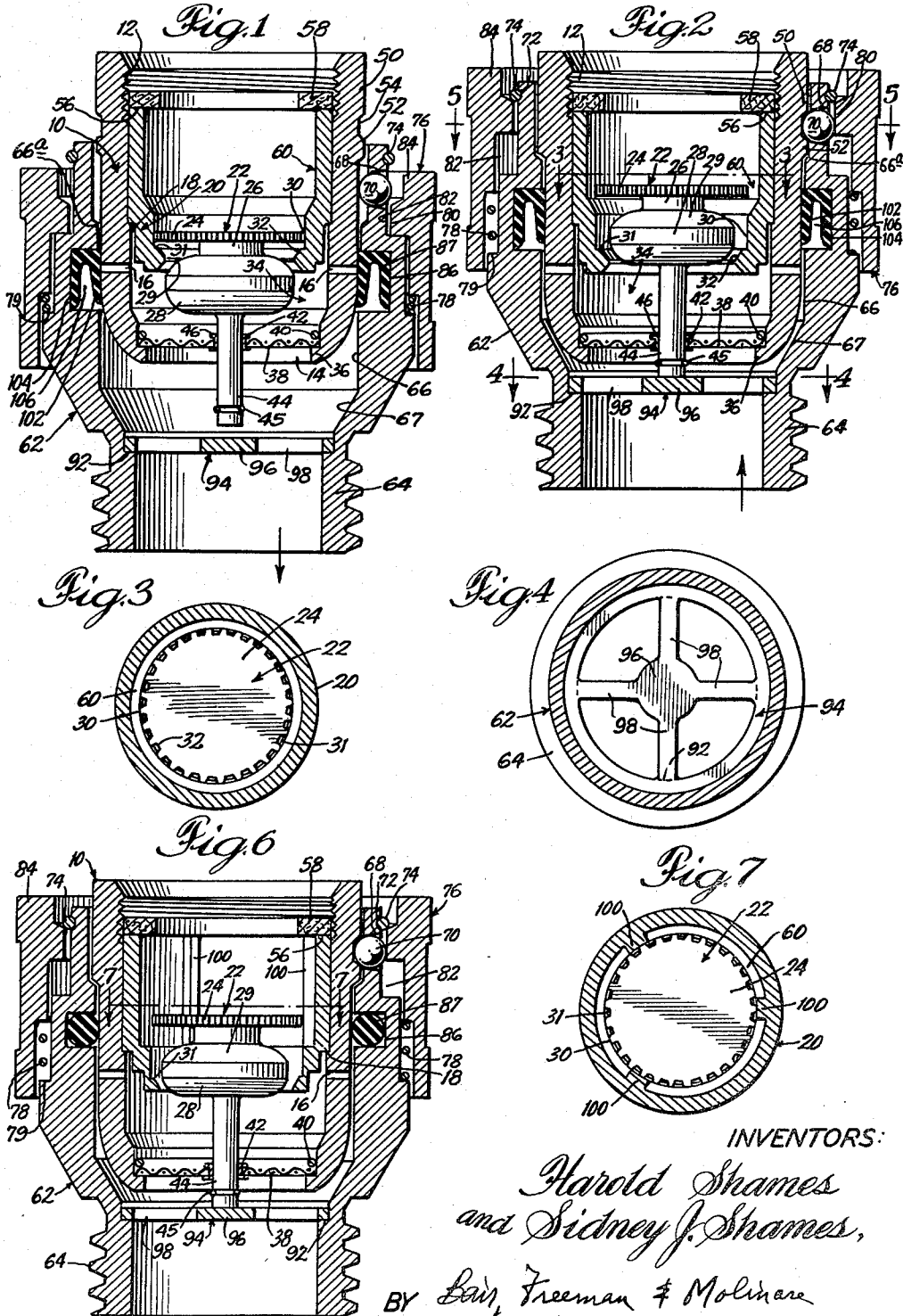
H. SHAMES ET AL

2,954,936

AERATOR AND SNAP CONNECTOR FOR USE THEREWITH

Filed April 29, 1957

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5

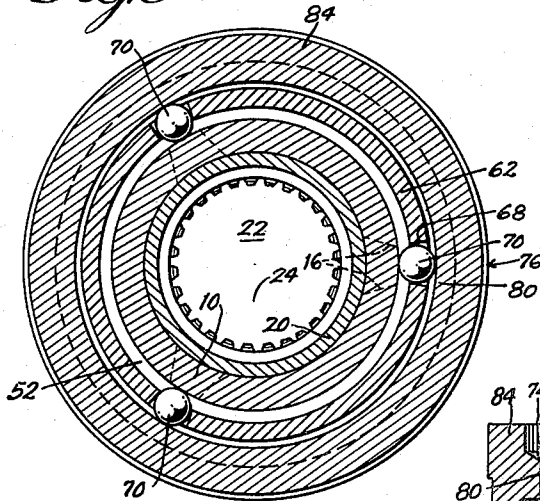
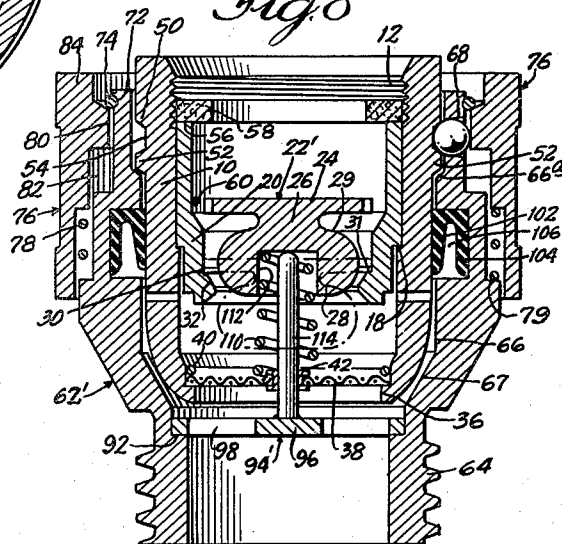


Fig. 8



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AERATOR AND SNAP CONNECTOR FOR USE THEREWITH

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6 Claims. (Cl. 239—431)

This invention relates to a combination faucet aerator and connector for connection thereto.

This application is a continuation-in-part of our co-pending application, Serial No. 427,925, filed May 6, 1954, which, in turn, was a continuation-in-part of our then co-pending application, Serial No. 279,984, filed April 2, 1952, and now issued as U.S. Patent 2,707,624. This application is also a continuation-in-part of our co-pending application, Serial No. 608,754, filed September 10, 1956, now Patent 2,896,863.

The anti-splash and increased soap-lathering qualities of aerators have made faucet aerators very popular in recent years. However, commercial faucet aerators have a universal limitation in that they restrict the amount of liquid that passes through the aerator to an amount much less than the normal water-delivery capacity of the source of liquid to which they are attached.

With the increased popularity of portable dishwashing machines and kitchen-located washing machines which are arranged to draw their liquid from the kitchen faucet, there exists the problem of providing for an increased rate of flow of liquid to such appliances from the source of liquid. The flow discharge rate from existing faucet aerators is relatively so slow that it becomes a great time-consuming chore to fill the dishwasher or washing machine with the requisite amount of liquid. Furthermore, the air entraining property of the aerator, while being beneficial when the aerator is used as such, is actually a hindrance to obtaining proper liquid filling of such appliances.

Of course, there appears to exist a solution to the foregoing problem in the removing of the aerator from the source of liquid, when it is desired that the source deliver unaerated water at an increased flow rate. However, it will be readily appreciated that such solution, itself, is time-consuming, and further is awkward and undesirable, and lends itself to loss or misplacement of the aerator or parts thereof, and to improper reconnection of the aerator to the source of liquid.

Thus, one object of this invention is to provide a novel aerator which may selectively either deliver an aerated liquid at one flow rate, or an unaerated liquid at an increased flow rate.

Another object of this invention is to provide a novel combination of faucet aerator and connector therefor which is operative selectively to either deliver an aerated liquid at one flow rate from the aerator or to deliver an unaerated liquid at an increased flow rate from the connector.

A further object of this invention is to provide a combination faucet aerator and connector therefor which selectively delivers either an aerated flow at one flow rate of liquid or an unaerated flow rate at an increased flow rate of liquid, and which provides for automatic flushing of liquid borne impurities from the jet forming elements of the aerator whenever the connector is attached to the aerator.

Still another object of this invention is to provide the

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combination of a novel liquid aerator and novel snap connector for connection thereto.

While there are existing snap connectors which provide a male coupling portion that may be semi-permanently connected to the discharge end of a faucet, these existing devices are undesirable in part because the male coupling portion, alone, delivers a high velocity, splashing jet, and accordingly it is another object of this invention to provide a non-splashing male coupling portion for a snap connector.

Further objects and advantages of this invention will become apparent as the following description proceeds and the features of novelty which characterize this invention will be pointed out with particularity in the claims annexed to and forming part of this specification.

A preferred embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is an axial cross-section view of an aerator and connector for connection thereto embodying certain features of this invention and showing the relationship of the male and female portions of the coupling in partially telescoped relation, but not in coupling position with respect to each other, as said parts would be just prior to effecting coupling together or just following disconnection of the coupling;

Figure 2 is similar to Figure 1, but shows the male and female portions of the coupling in operative condition, coupled to each other;

Figure 3 is a cross-section view taken substantially on line 3—3 of Figure 2;

Figure 4 is a cross-section view taken on line 4—4 of Figure 2;

Figure 5 is a cross-section view taken on line 5—5 of Figure 2;

Figure 6 is similar to Figure 2 and shows modifications of certain elements of the device of Figure 2;

Figure 7 is a cross-section view similar to Figure 3, but taken on line 7—7 of Figure 5; and

Figure 8 is similar to Figure 2 and shows modifications of certain other elements of the device of Figure 2.

In the following description of the aerator, it is understood that the aerator functions as an aerator when the connector is bodily separated from the aerator, and the aerator and connector are both shown in Figure 1 for only an intermediate condition between complete separation (not shown) and the coupling condition of Figure 2, it being understood that Figure 1 does not show a final position of parts.

Referring now to the drawings, there is shown in Figures 1 and 2 an aerator casing, or barrel, 10 which has a threaded inlet 12 at the upper end thereof, adapted for connection to a source of liquid under pressure, and a discharge end 14 at the lower end thereof. The wall of the casing 10 is provided with circumferential spaced apertures, or slots, 16 serving as air inlet ports. There is provided an internal shoulder 18 in the casing 10 above the air inlet ports 16. Mounted on the shoulder 18 is an annular ring member 20, and telescopically supported in ring member 20 is a plug member indicated at 22.

The plug member has an upper gear disc portion 24 which is disc-shaped and the peripheral edge of which is serrated to form gear teeth, as best seen in Figure 3. The plug member 22 also includes a neck portion 26 immediately below the gear disc portion 24, and a ball member 28 connected to the neck portion 26. The ball member 28 provides an upper contoured annular surface 29 against which the flow of liquid is directed to effect proper break-up of the liquid and mixing of the liquid with air that is aspirated into the casing 10 through the air ports 16, so as to effect a thorough mixing of the liquid and air. The ball member 28 is of smaller dimen-

sion than the minimum dimension of the ring member 20 so as to permit movement of the plug member 22 from the position shown in Figure 1 to the position shown in Figure 2. The ring 20 and plug 22 constitute means within the casing 10 for dividing up the incoming flow of liquid into a plurality of liquid jets, or streams, and for effecting breaking-up of the incoming liquid and mixing of the broken-up liquid with air so as to produce a flow of aerated liquid which is discharged from the discharge end 14 of the casing. Referring back to the ring member 20, said ring member defines a cylindrical wall portion 30, and a conical guide wall 32 downstream of the cylindrical wall portion 30. The cylindrical wall 30 cooperates with the teeth of the gear-disc 24, when the parts are in the position as shown in Figure 1, to define therebetween a plurality of liquid flow passageways. The conical, converging guide wall 32 of the ring member 20 cooperates with the gear disc portion 24 to define the limiting size of the flow passageways, and also operates to effect a turning of the streams of liquid issuing from the flow passageways, so as to direct the streams of liquid conically inwardly and onto the surface 29 of the ball member 28.

The lower portion of casing 10, downstream of the air ports 16, cooperates with the plug member 22 and with the ring member 20 to define a break-up and mixing chamber 34, wherein the mixing of liquid and air occurs. The lower terminal end of the casing 10 is formed to define an inwardly extending lip 36 upon which is mounted an annular screen member 38, which screen is held in position against lip 36 by means of a retaining ring 40 which is press-fit into casing 10 and so as to engage the upper side of screen 38 and which also frictionally engages the inner wall of casing 10.

The annular screen 38 has a central aperture 42 through which stem 44 slidably extends. In the form of the device shown in Figure 2 the stem 44 is shown to be formed integral with the plug member 22 and extends downwardly from the ball portion thereof. The edge of the screen 38 bounding the aperture 42 is edged by a channel-shaped trim 46 which is crimped, or otherwise appropriately secured, to the screen. The screen 38 is optional, as the aerator device, even without the screen 38, will produce a good coherent, aerated, non-splash stream. When used, the screen 38 is of a coarse mesh, in the range of 10 to 16 mesh per inch to facilitate passage thereof of debris that may be passing through the aerator. The lower end of stem 44 may carry a snap ring 45 for cooperating with screen 38 to prevent dislocation of the plug member 22 during shipment. As seen in the figures, the ring 45 does not interfere with the operation of the device when in use.

The retaining ring 40 and the lip 36 cooperate to define a constricted outlet for the aerator, and said members also cooperate with a portion of the stem 44 to define an annular passageway downstream of the ball portion 28 of the plug member 22, which annular passageway assists in providing improved flow from the discharge end of the aerator.

The upper portion of the aerator casing is axially elongated and defines a pair of annular spaced shoulders or bosses 50 and 52 in the outer periphery thereof which cooperate to define the axial limits of an annular recess 54. This upper portion of the aerator casing 10 serves as the male portion of a male-female coupling.

Within the casing 10 the ring member 20 is also axially elongated, as shown, to provide a support shoulder, or abutment, 56 at the upper end thereof adjacent the threads 12, and upon which support shoulder 56 a sealing gasket 58 is normally seated. The portion of the ring 20 extending above the cylindrical portion 30 thereof is annularly recessed at 60 to greatly enlarge the annular space defined between the gear disc 24 and the ring 20, when the plug member 22 is raised to the attitude, or position, shown in Figure 2, thereby providing a greater annular

opening through which liquid may flow, it being understood that when the plug member 22 is in its lowermost position, or aerating attitude, as shown in Figure 1, then there is defined a minimum flow area through which liquid may pass.

Thus, when the plug member 22 and ring 20 are in a first attitude, as shown in Figure 1, as they normally would be when liquid is flowing through the aerator, then they are operative to restrict the rate at which liquid is discharged from the casing 10, but when the plug member 22 is moved relative to ring 20 to a second attitude, as shown in Figure 2, then said plug 22 and ring 20 are operative to permit of discharge of liquid from casing 10 at a higher flow rate.

The female coupling portion of this combination aerator and coupling includes an annular female coupling member 62. Coupling member 62 has a tubular stud portion 64 which is axially aligned with the outlet end 14 of the aerator and which is provided with male hose threads thereon adapted to receive a female-threaded hose coupling member (not shown). The inner periphery of female coupling member 62 defines an upstream cylindrical portion 66, downstream frusto-conical wall portion 67 arranged to converge in a downstream direction, and an annular shoulder portion 66a adapted to engage the downstream side of annular boss 52 on casing 10 so as to limit movement of the coupling member 62 upwardly relative to the aerator casing 10.

The coupling member 62 is provided with a plurality of apertures 68 through which balls 70 may partially project, and said apertures 68 are arranged to be disposed in coplanar relation with the recess 54 formed on the aerator casing 10. The coupling member 62 also is provided with an outer annular recess 72 located above the apertures 68, and a snap ring 74 is disposed in said annular recess 72. The coupling member 62 further carries a movable sleeve 76 which is arranged to be reciprocated axially. A coil spring 78 surrounds a portion of member 62 and is disposed between the sleeve 76 and a shoulder 79 formed on member 62. Spring 78 normally biases the movable sleeve 76 toward its uppermost position shown in Figure 2, said upward movement of the movable sleeve 76 being limited by engagement thereof with the snap ring 74.

When the sleeve 76 is in its uppermost position, as shown in Figure 2, then an annular inwardly extending boss 80 on said sleeve engages the balls 70 and forces them inwardly into the annular recess 54, so as to effect coupling of the male and female portions of the coupling.

When sleeve member 76 is retracted to its lowermost position, shown in Figure 1, the boss 80 moves into an annular recess 82 provided for that purpose, and the balls 70 are free to retreat outwardly from the apertures 68 to permit of separating the male and female members of the coupling. The uppermost portion 84 of the sleeve member 76 is so designed relative to the snap ring 74 that the balls 70 cannot escape therebetween when the sleeve 76 is retracted to the position shown in Figure 1. It is necessary to remove the snap ring 74 to permit of disassembly of the movable portions of the female coupling member.

The female coupling member 62 is provided with an internal annular recess 86 in which is positioned gasket means 87 for sealing against the aerator casing 10 at a point located above, or upstream, the air inlet ports 16. The female coupling member 62 is also provided with a shoulder 92 therein, downstream of the frusto-conical portion 67, on which shoulder is seated a spider 94 having a centrally disposed land, or abutment portion, 96 supported by a plurality of radial arms 98, as may best be seen in Figure 4. This land 96 is arranged to engage the lower terminal end of the stem 44 and to effect raising of the plug member 22 to said second attitude, or position, shown in Figure 2, when the female coupling member 62 is properly connected to the aerator casing. When

the female coupling member is disconnected from the aerator casing, then the plug member 22 moves downwardly to the position shown in Figure 1 from whence aerated water may be discharged.

The stem 44 permits of manual manipulation of the plug member 22 away from its normal attitude, or position, to a second attitude which permits of flushing out of the jet-forming portions of the aerator, if such portions of the aerator may become clogged. Thus, the connecting of the female coupling member 62 to the aerator casing 10 automatically causes the necessary movement of the plug member 22 to a position in which the jet-forming members of the aerator may be flushed of any sediment which accumulates thereon.

As an additional feature, means are provided for maintaining alignment of the movable plug member 22 with the ring 20 and the casing 10 of the aerator, when the plug member 22 is moved away from its normal attitude in Figure 1. In Figures 1 and 2, said aligning means for maintaining alignment between the plug member 22 and the ring 20 includes the edge of the screen 38, which defines the central aperture 42 thereof, and the stem 44, which is connected to the plug member 22 and which extends through said central aperture 42 of the screen 38.

An alternate and even additional means for providing alignment between the plug member 22 and the ring member 20 is shown in Figure 6, wherein the axially elongated portion of ring 20 which extends above the cylindrical wall portion 30 of the ring, is provided with a plurality of symmetrically disposed flutes 100 which extend upwardly from the cylindrical wall portion 30 of the ring to adjacent the support shoulder 56 at the upper end of the ring. The width of each of the flutes 100 is selected relative to the size of the teeth of the gear-disc portion 24 of plug member 22, so that there is no interference therebetween. Preferably, the width of a flute 100 is slightly greater than the width between similar points of a pair of adjacent gear teeth. The foregoing arrangements provide means for maintaining substantial coaxial alignment between the plug member 22 and the ring member 20 when said parts are in a second attitude, as shown in Figures 2 and 6.

The particular gasket means 87 shown in Figures 1 and 2 includes a peripheral seal of generally U-shaped cross-section, wherein the U is inverted, so that one leg 102 of the U-shaped seal engages the periphery of casing 10 and the other leg 104 of the U-shaped seal engages the interior of annular recess 86 formed in the female coupling member 62. This arrangement is such that liquid under pressure, between the casing 10 and the female coupling member 62, enters the space 106 between the legs 102 and 104, and the pressure of the liquid forces leg 102 into better sealing relation with the outer periphery of casing 10.

An alternative construction for peripheral seal 87, between the casing 10 and the female coupling member 62, is shown in Figure 4 wherein the gasket there provided is a commercial type O ring, the details of which are well known.

In the modified form shown in Figure 8, there is shown an aerator of the automatically self-cleaning type in combination with a coupling of the general type hereinabove disclosed. Such automatic self-cleaning aerators are more fully disclosed and described in our co-pending applications Serial Nos. 427,925 and 608,754. In the instant construction, the plug member 22' differs from plug member 22, shown in Figures 1, 2, and 4, in that plug member 22' has no portion thereof extending outwardly of the casing 10. The automatic self-cleaning feature is effected by means of an elongated coil spring 110, the upper coil of which is press fit into a recess 112 formed in the under side of plug member 22', and the length of spring 110 being such that when there is no liquid flowing through the aerator, said spring 110 is operative to lift the plug member 22' to a second attitude

wherein the jet forming elements of the aerator may be flushed of liquid-borne sediment. The resiliency of the spring 110 is so selected that when liquid is normally flowing through the aerator, the plug member is moved downwardly, against the bias of spring 110, into its normal attitude during which the aerator operates to aerate the liquid passing therethrough. The lower end of coil spring 110 is arranged to be supported by the annular screen 38, as shown.

In order to provide means for insuring discharge of liquid from the aerator of Figure 8 at a higher rate when the coupling 62' is connected to the aerator casing, the coupling 62' shown in Figure 8 carries an abutment means or spider, 94' which in turn carries an elongated stem 114. This stem 114 is securely connected to spider 96 and is arranged to enter through the central aperture 42 of screen 38 and to pass axially through coil spring 110 into engagement with the uppermost wall of recess 112, so as to lift the plug member 22' to a second attitude and to keep said plug 22' in said elevated attitude while liquid is passing through the device.

It will be seen that when the coupling 62' in Figure 8 is removed from the aerator casing 10, there is then provided a normally appearing aerator wherein no portion of the plug member extends outwardly of the casing, but nevertheless the aerator of Figure 8 is an automatically self-cleaning one which is arranged to provide for the flushing of sediment from the jet-forming elements of the aerating means.

Because of the up and down movement of plug member 22 from the position in Figure 1 to the position in Figure 2, or as may occur in the spring-biased self-cleaning aerator shown in Figure 8, there is normally a tendency of wearing away of the seat portion of the ring member 20 which receives the disc-portion 24 of the plug member 22. Accordingly, the ring member 20 is provided with a horizontally disposed annular shoulder 31 which serves as the support against which the disc-portion 24 seats when the plug member 22 is in its lowermost, aerating position. The annular shoulder 31 is large enough to withstand the normal wear that may occur, but is small enough so as not to interfere with the flow of liquid through the aerator. If necessary, the recesses between the teeth on the gear-disc 24 may be enlarged to accommodate the desired liquid flow and to compensate for any obstruction to flow by shoulder 31.

While there has been shown and described a particular embodiment of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention, and, therefore, it is intended in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What we claim as new, and desire to secure by Letters Patent of the United States, is:

1. A combination aerator and connector for use therewith comprising, aerator casing means having upstream and downstream ends and defining air inlet means spaced downstream of said upstream end through which air is aspirated into said casing means; aerating means within the casing means for normally breaking up incoming liquid introduced through the upstream end of said casing means and for mixing same with air aspirated thereto to produce an aerated flow of liquid which discharges from the downstream end of said casing means, said aerating means comprising a pair of members at least one of which is movable with respect to the other, said members when at a first attitude being operative to restrict the rate at which liquid is discharged from said casing means, said pair of members being normally at said first attitude when liquid is flowing through said aerator and is being mixed with air being aspirated into said aerator, said members when at a second attitude being operative to afford discharge of liquid from said casing means at a higher rate; said casing means comprising the

male member of a male-female coupling and defining an imperforate casing portion extending downstream from said upstream end of the casing means and located upstream of said air inlet means, said imperforate casing portion having a first coupling means defined thereon and an exterior peripheral sealing-wall portion defined downstream of said first coupling means; a female coupling member for receiving therein substantially the entire aerator casing means and for connection to said casing means, said female coupling member including second coupling means carried by said female member for selective coupling engagement with said first coupling means on the male coupling member, peripheral sealing means interposed between said female coupling member and said sealing-wall portion of said imperforate casing portion; and stem means carried by said female coupling member for entrance into said aerator casing means through the downstream end of said casing means and for operative association with a movable one of said members of said aerating means to sustain said members of said aerating means at said second attitude when said coupling members are coupled together.

2. A combination aerator and connector for use therewith comprising, aerator casing means having upstream and downstream ends and defining air inlet means spaced downstream of said upstream end through which air is aspirated into said casing means; aerating means within the casing means for normally breaking up incoming liquid introduced through the upstream end of said casing means and for mixing same with air aspirated thereinto to produce an aerated flow of liquid which discharges from the downstream end of said casing means, said aerating means comprising a pair of members at least one of which is movable with respect to the other, said members when at a first attitude being operative to restrict the rate at which liquid is discharged from said casing means, said pair of members being normally at said first attitude when liquid is flowing through said aerator and is being mixed with air being aspirated into said aerator, said members when at a second attitude being operative to afford discharge of liquid from said casing means at a higher rate; said casing means comprising the male member of a male-female coupling and defining an imperforate casing portion extending downstream from said upstream end of the casing means and located upstream of said air inlet means, said imperforate casing portion having a first coupling means defined thereon and an exterior peripheral sealing-wall portion defined downstream of said first coupling means; a female coupling member for receiving therein substantially the entire aerator casing means and for connection to said casing means, said female coupling member including second coupling means carried by said female member for selective coupling engagement with said first coupling means on the male coupling member, peripheral sealing means interposed between said female coupling member and said sealing-wall portion of said imperforate casing portion; a stem carried by and being movable with said movable member of said aerating means, said stem extending downstream through the liquid discharge opening at the downstream end of said casing means, and said female coupling member carrying abutment means for engagement with said stem to move said movable member of said aerating means to said second attitude when said coupling members are coupled together.

3. A combination aerator and connector for use therewith comprising, aerator casing means having upstream and downstream ends and defining air inlet means spaced downstream of said upstream end through which air is aspirated into said casing means; aerating means within the casing means for normally breaking up incoming liquid introduced through the upstream end of said casing means and for mixing same with air aspirated thereinto to produce an aerated flow of liquid which discharges from the downstream end of said casing means, said aerat-

ing means comprising a pair of members at least one of which is movable with respect to the other, said members when at a first attitude being operative to restrict the rate at which liquid is discharged from said casing means, said pair of members being normally at said first attitude when liquid is flowing through said aerator and is being mixed with air being aspirated into said aerator, said members when at a second attitude being operative to afford discharge of liquid from said casing means at a higher rate; said casing means comprising the male member of a male-female coupling and defining an imperforate casing portion extending downstream from said upstream end of the casing means and located upstream of said air inlet means, said imperforate casing portion having a first coupling means defined thereon and an exterior peripheral sealing-wall portion defined downstream of said first coupling means; a female coupling member for receiving therein substantially the entire aerator casing means and for connection to said casing means, said female coupling member including second coupling means carried by said female member for selective coupling engagement with said first coupling means on the male coupling member, peripheral sealing means interposed between said female coupling member and said sealing-wall portion of said imperforate casing portion, an annular screen carried by said casing means adjacent the downstream end of said casing means, and stem means positioned between and engaged by both the female coupling member and said movable member of said aerating means and slidably extending through the central aperture of said annular screen for moving said movable member of said aerating means to said second attitude when said coupling members are coupled together.

4. A combination aerator and connector for use therewith comprising, aerator casing means having upstream and downstream ends and defining air inlet means spaced downstream of said upstream end through which air is aspirated into said casing means; aerating means within the casing means for normally breaking up incoming liquid introduced through the upstream end of said casing means and for mixing same with air aspirated thereinto to produce an aerated flow of liquid which discharges from the downstream end of said casing means, said aerating means comprising a pair of members at least one of which is movable with respect to the other, said members when at a first attitude being operative to restrict the rate at which liquid is discharged from said casing means, said pair of members being normally at said first attitude when liquid is flowing through said aerator and is being mixed with air being aspirated into said aerator, said members when at a second attitude being operative to afford discharge of liquid from said casing means at a higher rate; said casing means comprising the male member of a male-female coupling and defining an imperforate casing portion extending downstream from said upstream end of the casing means and located upstream of said air inlet means, said imperforate casing portion having a first coupling means defined thereon and an exterior peripheral sealing-wall portion defined downstream of said first coupling means; a female coupling member for receiving therein substantially the entire aerator casing means and for connection to said casing means, said female coupling member including second coupling means carried by said female member for selective coupling engagement with said first coupling means on the male coupling member, peripheral sealing means interposed between said female coupling member and said sealing-wall portion of said imperforate casing portion, annularly disposed aligning means in slidable engagement at circumferentially spaced points with the movable one of said pair of members of said aerating means when said movable member is moved between its position at said first attitude and its position at said second attitude, and stem means positioned between and

engaged by both the female coupling member and said movable member of said aerating means for moving said movable member of said aerating means to said second attitude when said coupling members are coupled together.

5. A combination aerator and connector for use therewith comprising, aerator casing means having upstream and downstream ends and defining air inlet means spaced downstream of said upstream end through which air is aspirated into said casing means; aerating means within the casing means for normally breaking up incoming liquid introduced through the upstream end of said casing means and for mixing same with air aspirated thereinto to produce an aerated flow of liquid which discharges from the downstream end of said casing means, said aerating means comprising a pair of members at least one of which is movable with respect to the other, said members when at a first attitude being operative to restrict the rate at which liquid is discharged from said casing means, said pair of members being normally at said first attitude when liquid is flowing through said aerator and is being mixed with air being aspirated into said aerator, said members when at a second attitude being operative to afford discharge of liquid from said casing means at a higher rate, annular longitudinal spring means supported at one end thereof by means including a portion of the aerator casing means downstream of said pair of members of said aerating means, the other end of said spring means engaging a movable one of said pair of members of said aerating means, said spring means being operative to automatically effect liquid flushing of liquid-borne debris from the said pair of members of said aerating means, said casing means comprising the male member of a male-female coupling and defining an imperforate casing portion extending downstream from said upstream end of the casing means and located upstream of said air inlet means, said imperforate casing portion having a first coupling means defined thereon and an exterior peripheral sealing-wall portion defined downstream of said first coupling means; a female coupling member for receiving therein substantially the entire aerator casing means and for connection to said casing means, said female coupling member including second coupling means carried by said female member for selective coupling engagement with said first coupling means on the male coupling member, peripheral sealing means interposed between said female coupling member and said sealing-wall portion of said imperforate casing portion; and stem means positioned between and engaged by both the female coupling member and said movable member of said aerating means and extending coaxially within said annular spring means for moving said movable member of said aerating means to said second attitude when said coupling members are coupled together.

6. A combination aerator and connector for use therewith comprising, aerator casing means having upstream and downstream ends and defining air inlet means spaced downstream of said upstream end through which air is aspirated into said casing means; aerating means within the casing means for normally breaking up incoming liquid introduced through the upstream end of said casing means and for mixing same with air aspirated thereinto to produce an aerated flow of liquid which discharges from the downstream end of said casing means, said aerating means comprising a pair of members at least one of which is movable with respect to the other, said members when at a first attitude being operative to restrict the rate at which liquid is discharged from said casing means, said pair of members being normally at said first attitude when liquid is flowing through said aerator and is being mixed with air being aspirated into said aerator, said members when at a second attitude being operative to afford discharge of liquid from said casing means at a higher rate; said casing means comprising the male member of a male-female coupling and defining an imperforate casing portion extending downstream from said upstream end of the casing means and located upstream of said air inlet means, said imperforate casing portion defining an exterior peripheral sealing-wall portion upstream of said air inlet means, and said casing means having a first coupling means formed on the exterior thereof; a female coupling member for receiving therein substantially the entire aerator casing means and for connection to said casing means, said female coupling member including second coupling means carried by said female member for selective coupling engagement with said first coupling means on the male coupling member, peripheral sealing means interposed between said female coupling member and said sealing-wall portion of said imperforate casing portion; and stem means carried by said female coupling member for entrance into said aerator casing means through the downstream end of said casing means and for operative association with a movable one of said members of said aerating means to sustain said members of said aerating means at said second attitude when said coupling members are coupled together.

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