Dec. 5, 1950 G. JAEGER 2,533,191

WATER DISTRIBUTING DEVICE FOR MIXERS

Filed Aug. 26, 1946 3 Sheets-Sheet 1

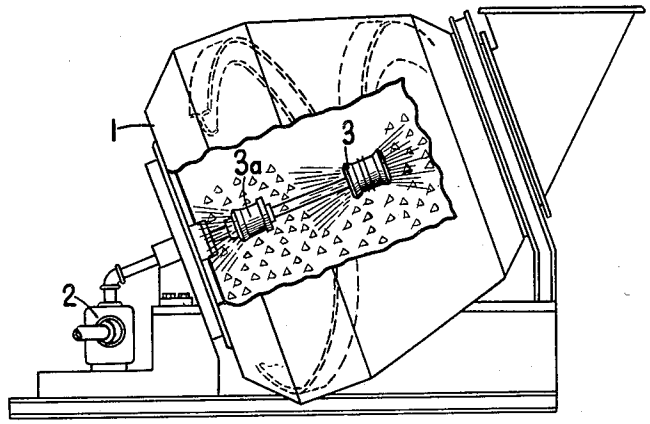



Fig. 1

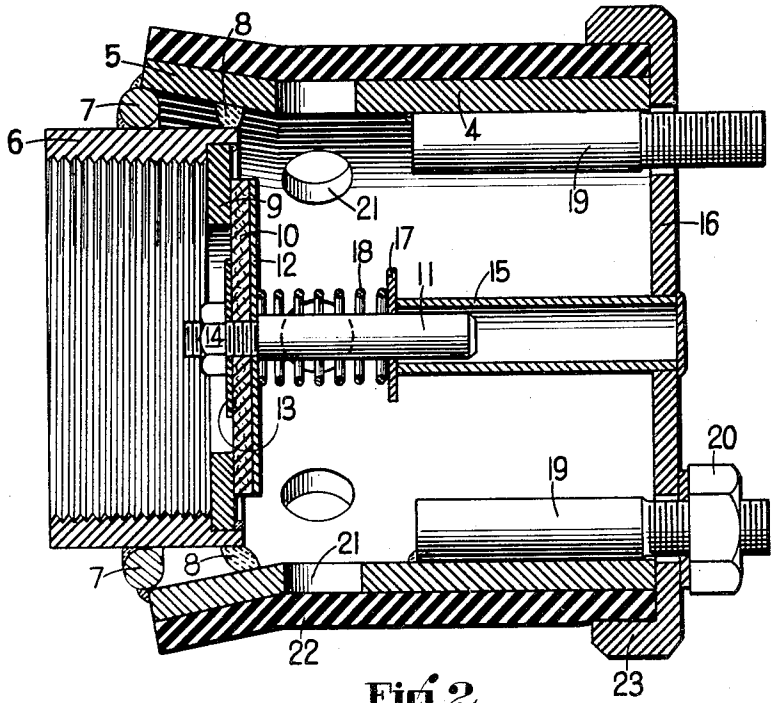



Fig. 2

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WATER DISTRIBUTING DEVICE FOR MIXERS

Filed Aug. 26, 1946 3 Sheets-Sheet 2

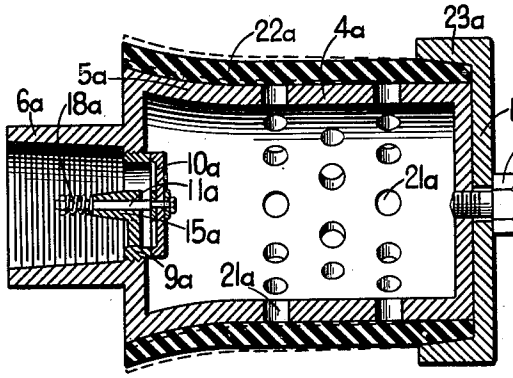



Fig. 3

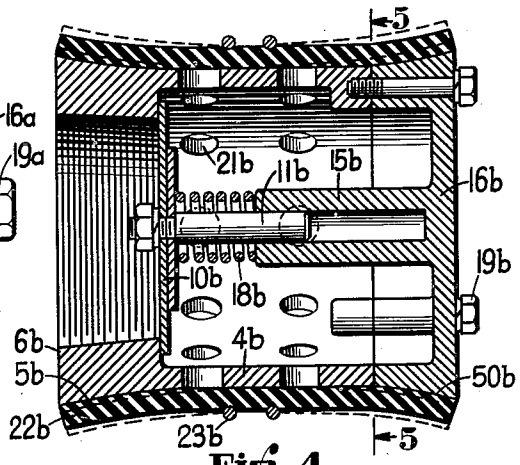



Fig. 4

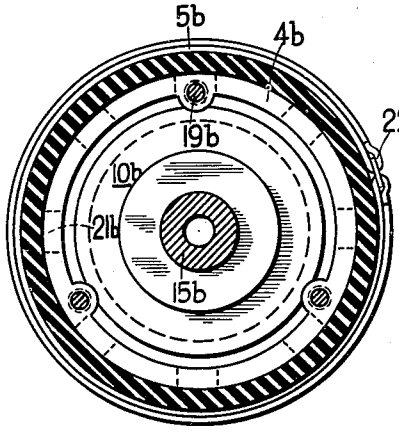



Fig. 5

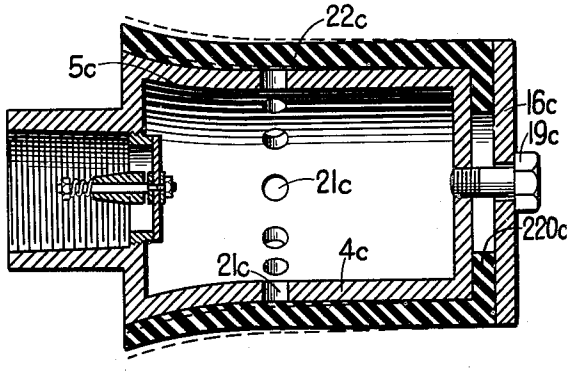



Fig. 6

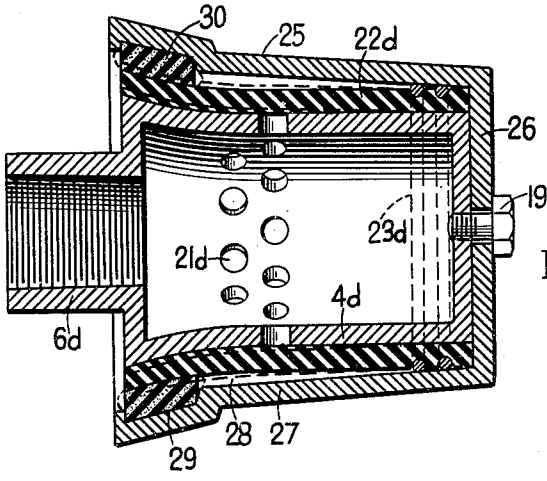



Fig. 7




Fig. 8

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WATER DISTRIBUTING DEVICE FOR MIXERS

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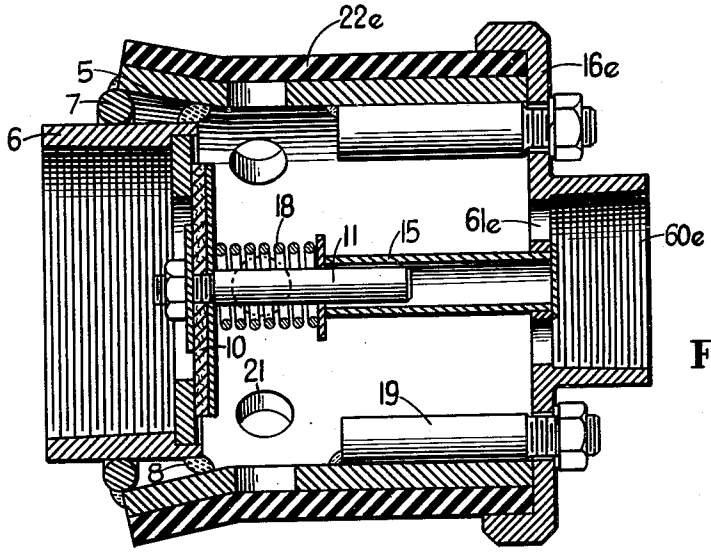



Fig. 9

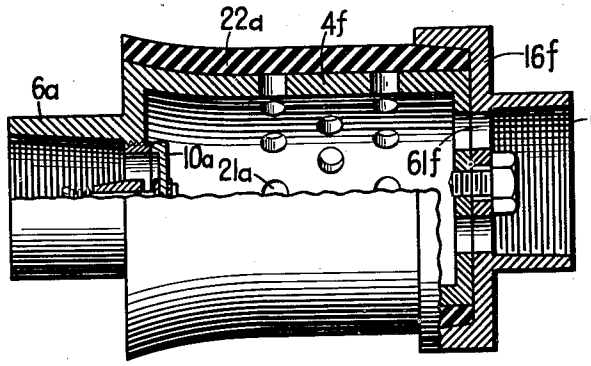



Fig. 10

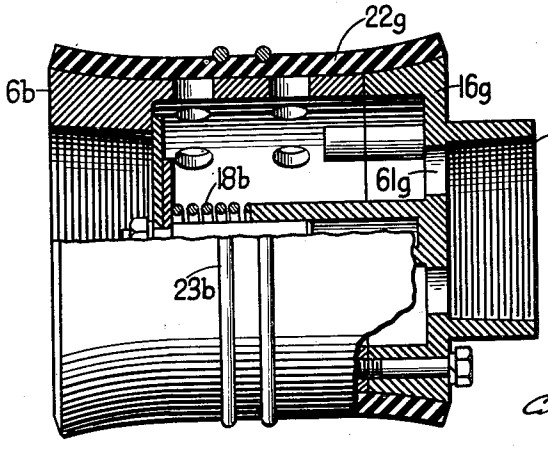



Fig. 11

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# UNITED STATES PATENT OFFICE

2,533,191

## WATER DISTRIBUTING DEVICE FOR MIXERS

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Application August 26, 1946, Serial No. 692,949

6 Claims. (Cl. 299—133)

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My invention relates to a water distributing device for mixers. It has to do, more particularly, with a water distributing device or bell adapted to be mounted within the mixing drum of a concrete mixer, for example, the drum of a truck mixer.

This application is a continuation in part of my copending application, Serial No. 623,562, filed October 20, 1945, now abandoned.

In mixing concrete, the mixing period cannot start until the water has been introduced into the batch. In high discharge truck mixers, where water bells must be placed at the lower end of the drum, if the water therefrom is to reach the large mass of material, water distribution has been seriously hampered and delayed by back pressure from the material and clogging of the bells with grout. The back pressure from the material has been overcome to a considerable extent by the use of high pressure pumps to deliver the water to the bells. However, up to the time of the development of my water bell there has been a need in the art for a water bell which will cooperate with the pump in such a manner as to deliver a powerful, penetrating jet into the batch materials. This bell should provide a positive, fast, and uniform distribution of the water through the mass of materials, insuring better mixed concrete even on the shortest hauls. Also, there has been a need in the art for a water bell which would not become clogged or rendered inoperative by grout or other material working back into it after the mixing operation is started, and especially during the periods when water is not being forced through the bell. Furthermore, the bell must be of such a nature that it will resist the abrasive action of the batch materials and, consequently, will not have to be repaired or replaced after a short period of use.

One of the objects of my invention is to provide a water distributing device which is particularly applicable to concrete mixers and which will cooperate with the water supplying system of the mixer to provide a positive, fast, and uniform distribution of the water throughout the mass of materials in the mixer.

A further object of my invention is to provide a water distributing device for concrete mixers which is particularly applicable for use with a water supplying system of the pressure type and will cooperate therewith to deliver a powerful and penetrating jet into the batch materials, so that the water will be uniformly diffused throughout the batch materials even though the

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water distributing device is completely embedded in the batch materials.

Another object of my invention is to provide a water distributing device which will not open until a predetermined pressure is applied thereto, which is of such a structure that there will be no tendency for batch materials to enter thereinto during the periods when water is forced therefrom and which will readily and efficiently close and seal itself when the supply of water thereto is interrupted.

Still another object of my invention is to provide a water distributing device which is of such a structure that the sealing means thereof will effectively resist the abrasive action of the batch materials, but, if necessary after extended use, can be quickly and easily removed and replaced with the removal and replacement of a minimum number of parts.

According to my invention, I provide a water bell which is particularly useful in truck mixers of the high discharge type where the rotatable mixing drum is in inclined position. The drum is provided with an axially disposed water-supplying pipe connected to a pressure pump and my water bell is adapted to be carried by this pipe. My water bell may be mounted on the lower end of the pipe, in that part of the drum where the materials tend to collect, and will function efficiently even though it is completely embedded in the batch materials before and during mixing. However, a second bell may be carried on the upper end of the pipe, if desired, and will function properly even though it is subjected to large quantities of the batch material which are thrown over it by the mixing blades in the drum during the mixing operation.

My water bell preferably comprises a hollow body portion of circular cross-section formed of suitable metal. The body portion is provided with means for attaching or mounting the bell upon the water supply pipe of the mixer in axial alignment therewith. The circular side wall of the body portion is provided at a point spaced from the end thereof with a plurality of radially directed circumferentially spaced holes. I provide a flexible sleeve-like valve member which encircles and embraces the body portion. This sleeve-like valve member is preferably formed from some suitable elastic material, such as natural or synthetic rubber or the like. The sleeve-like valve is clamped by a removable clamping means which engages the sleeve around its periphery. However, this clamping means is such that at least one end of the sleeve

is free to bulge or flex away from the outer surface of the body portion, when water under sufficient pressure is supplied to the bell, so that water forced from said openings in the body portion will pass between the sleeve-like valve and the body portion and will be forced from the discharge end of the valve.

In accordance with my invention, the outer surface of the hollow body portion of the bell is outwardly flared at that end which will be adjacent the discharge end of the sleeve-like valve. The flaring of the end of the body portion in this manner serves two purposes. In the first place, since the flared end will be of larger diameter than the sleeve-like valve, the valve must be stretched to position it on such flared end. Thus, the elastic material of the valve will be under tension and will tightly hug the flared end of the body portion which will be remote from the point where the valve is held against the body portion by the clamping means. Consequently, as long as water under sufficient pressure is not supplied to the bell, the free end of the sleeve will tightly embrace the flared end of the body portion and there will be no danger of batch materials entering into the bell between the sleeve and body portion. When water under sufficient pressure is supplied to the valve and causes bulging or spreading of the discharge end of the valve, the flared end of the body portion serves to direct the water away from the axis of the bell and pipe in the form of a frusto-conical jet. This jet of water will be under considerable pressure and will be directed in such a manner that it will penetrate the batch materials and will be diffused therein quickly and uniformly. This is true even when the water bell is completely embedded in the batch material. If it is necessary to replace the flexible valve sleeve after extended use, it is merely necessary to remove the clamping means and replace the sleeve with a new one.

The foregoing and other objects and advantages of the present invention will appear from the following description and appended claims when considered in connection with the accompanying drawings forming a part of the specification wherein like reference characters designate corresponding parts in the several views and wherein:

Figure 1 is a side elevational view, partly broken away, of a mixer drum showing two of my water bells mounted therein.

Figure 2 is a longitudinal sectional view through a preferred form of my water bell.

Figure 3 is a similar view, but showing a modified form of my water bell.

Figure 4 is a view similar to Figure 3, but showing a water bell wherein water is discharged from both ends.

Figure 5 is a transverse sectional view taken substantially along 5—5 of Figure 4.

Figure 6 is a view similar to Figure 3, but showing a different arrangement of clamping means and the associated flexible sleeve-like valve.

Figure 7 is a view similar to Figure 3, but showing the flexible sleeve-like valve surrounded by a protecting metal casing.

Figure 8 is a vertical sectional view through one end portion of the flexible sleeve.

Figure 9 is a view similar to Figure 2 showing a water bell similar to Figure 2, but having not only a threaded inlet but also a threaded outlet so that it can be connected at its other end to a water pipe.



Figure 10 is a view similar to Figure 9, but being partly in section and partly in elevation, showing a bell that has both a threaded inlet and outlet, but the bell being similar to that shown in Figure 3.

Figure 11 is a view similar to Figure 10 showing a bell that has both a threaded inlet and outlet, but the bell being similar to that shown in Figure 4.

Before explaining in detail the present invention, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. It is to be understood also that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

With reference to Figure 1, I have illustrated one example of an installation of my water distributing bell. The mixing drum 1 is the type commonly used on truck mixers of the high discharge type. This drum is driven for rotation about its axis in a suitable manner and a pump 2 for supplying the water under pressure is associated therewith. The axis of the drum is inclined and, consequently, the greater proportion of the batch materials will collect in the forward part of the drum. Therefore, it is necessary to have one of my water bells 3*a* disposed at the forward end of the drum. This water bell will normally be covered by the batch materials in the drum. A second similar water bell 3 may be provided adjacent the rear or upper end of the drum. This bell will be subjected to large amounts of material thrown over it by the mixing blades. It is to be understood that only one or any desired number of my water bells may be disposed within the drum. The water bell, in each instance, is disposed on an axially positioned pipe extending within the drum 1. The pump 2 may be suitably connected to this pipe.

In the preferred form of my invention, shown in Figure 2, the water bell comprises a hollow body portion 4 which is of circular cross-section and is generally bell-shaped. The body 4 is provided with an outwardly flared end 5. Within this flared end 5 a threaded sleeve 6 is secured. This sleeve is adapted to receive the threaded end of the water supply pipe. Consequently, it serves as a means for mounting the bell on the pipe. The sleeve 6 is centered within the flared end 5 of the body 4 by means of a ring 7 which is welded to the sleeve and to the flared end 5. A further weld 8 is provided between the inner end of the sleeve 6 and the flared end 5 of the body.

If desired, my water bell may include a check valve assembly associated with the inner end of the sleeve 6. This check valve assembly includes an annular seat 9 which is disposed within the inner end of threaded sleeve 6 and is welded in position. A disc valve 10 is provided for cooperation with the seat 9. The disc 10 is of compressible material and is mounted on valve stem 11 by means of a large metal disc 12 and a small metal disc 13, between which the disc 10 is disposed. A nut 14, threaded on the outer end of stem 11, retains the discs in position. The stem 11 slides within a sleeve 15. This sleeve is supported at the axis of the body 4 by means of a metal cap member 16 which is mounted on the end of the body 4 opposite to the end that supports the sleeve 6. The inner end of sleeve 15 carries a washer 17 which fits around the stem

11 snugly. The stem is provided with a compression spring 18 in surrounding relationship thereto which engages the disc 12 and the washer 17. The cap 16 is retained in position by means of studs 19 which project through openings formed therein. These studs 19 are welded or otherwise secured to the interior of the body 4. Nuts 20 are threaded on the end of the studs and engage the outer surface of the cap 16.

Normally the one-way check valve is maintained closed by the spring 18. However, when water under sufficient pressure passes through the water supplying pipe and engages the valve, it forces the valve open against the pressure of the spring 18.

Directly beyond the flared end 5 of the body 4 and the inner end of sleeve 6, the body 4 is provided with a plurality of discharge openings 21. These openings are disposed at circumferentially spaced points around the body 4 and are directed radially outwardly. When water forces the valve disc 10 off the seat 9, it will pass from the interior of the body 4 outwardly through the openings 21.

On the outer surface of the body 4, I mount a sleeve-like flexible valve 22 which closely embraces the outer surface of the body. This sleeve 22 is of the same length as the body 4 and its internal diameter corresponds substantially to the outside diameter of the main part of the body 4. As shown in Figure 8, the member 22 is formed from a straight section of suitable elastic tubing. For example, the member 22 may be made of natural or synthetic rubber. The member 22 is slipped over the smaller end of the body 4 and along the body until its end slides over the flared end 5. It will be understood that in order to position the member 22 on the flared end 5, it must be stretched. Consequently, it will very firmly embrace the outer surface of the flared end 5 of the body. Furthermore, this tight gripping action is at a location outwardly beyond the openings 21. Thus, there will be no danger of batch material entering between the flared end 5 of the body 4 and the cooperating end of the sleeve 22 which is in firm embracing relationship thereto. To prevent axial displacement of the sleeve 22 from the body 4, the cap 16 is provided with a peripheral inwardly extending flange 23 which snugly fits around the adjacent end of the flexible member 22 and compresses it inwardly, causing it to tightly embrace the adjacent end of the sleeve 22. Thus, there is no danger of batch material entering between this end of the body 4 and the cooperating end of the sleeve 22.

When water under sufficient pressure is supplied to my water bell, it unseats the disc 10, fills the body 4, and is forced outwardly through openings 21. Water forced from openings 21 will expand or bulge the free or discharge end of the sleeve 22 outwardly. This will permit the water to be forced between the sleeve 22 and body 4, to reverse its course, and travel beyond the flared end 5. This end 5 will direct the water outwardly away from the axis of the water bell and will bring about a better distribution of the water in the batch material. The water will issue from the water bell in the form of an annular jet and will travel in a frusto-conical path. As soon as the supply of water under pressure to the bell is interrupted, the end of the sleeve 22 will again contract and tightly grip the flared end 5 of the body 4.

Thus, it will be understood that the sleeve-like member 22 performs the function of an elastic substantially tubular valve, which is capable of



flexing or outward expanding movement under the action of water under pressure passing through the ports or openings 21, to permit the discharge of an annular water stream or jet between the flared portion 5 of the body 4 and the adjacent unsupported end portion of the sleeve or valve 22. Moreover, it will be understood that this valve member 22, due to its elasticity, will tend to seal the ports or openings 21 at all times when the supply of water under pressure is interrupted, thus preventing the entry of granular material from the mixer drum 1 into the hollow body portion 4 of this device. This sealing action is enhanced by the flared end 5 which places the material of the end of the sleeve 22 under tension.

While the form of the present invention, as shown in Figure 1, includes the disc check valve assembly, it will be understood that the device will function with or without said check valve assembly.

The spring returned or seated check valve has the advantage of providing means to positively prevent portions of the granular material within the mixer drum from entering the water supply pipe and water system, including the pressure pump, in the event that the elastic sleeve-like valve member 22 should break or be damaged otherwise during use without the operator being aware of it.

In Figure 3, I have illustrated a water bell which is similar to that shown in Figure 2. However, in this instance, the sleeve 6*a* for attaching the bell to the water pipe is formed as an integral boss on the body 4*a*. The disc check valve includes a disc 10*a* which seats on an annular seat 9*a* that is threaded into the inner end of the boss 6*a*. The stem 11*a* of the valve is carried by a sleeve 15*a* supported by member 9*a*. A spring 18*a* normally maintains the valve closed.

The flared end 5*a* of the body 4*a* is more gradually flared, in this instance. The body 4*a* is provided with three sets of openings 21*a* arranged at axially spaced intervals. The end of the body is closed by an integral end wall and the cap 16*a* is attached to this end wall by means of a bolt 19*a*. The elastic sleeve 22*a* is exactly the same as before. The flange 23*a* of the cap 16*a* is internally flared so that it can be easily passed over the adjacent end of the sleeve 22*a*. This water bell will function practically identically with that shown in Figure 2.

In Figures 4 and 5 of the drawings there is shown a further modified form of water distributing bell embodying my invention. In this form, substantially annular jets or streams of water are emitted or discharged in opposite directions from opposite ends of the water distributing bell. As shown, the water distributing device of Figures 4 and 5 comprises a hollow body portion, shown as a whole at 4*b*, having an end or outer wall 6*b* provided with an internally threaded water intake opening, the threads surrounding the opening providing means for attaching the device to the water supply pipe The outer end of the body 4*b* is preferably flared outwardly at 5*b*. The opposite end of the body 4*b* is preferably closed by a removable head or end wall 16*b* which is secured in place upon the body by bolts or the like 19*b*. The outer peripheral surface of the head 16*b* is outwardly flared at 50*b* to correspond to the flared portion 5*b* of the hollow body. The side wall of the body 4*b* is provided with a plurality of ports or openings 21*b*. If desired, and as shown, the removable

head 16b may be provided with an inwardly projecting valve stem guide 15b to receive the valve stem 11b of a disc-like valve 10b. The valve 10b is provided for the purpose of closing and sealing the water intake opening 6b when the water distributing device is not in use, the valve 10b being urged normally toward its seat by a valve spring 18b.

The device, as shown, is provided with a sleeve or valve member 22b which is formed from a straight length of elastic tubing, like valve 22, and slipped over the body portion 4b and removable head 16b to surround and tightly grip or hug the side wall of the hollow body 4b, including flared end 5b, and the outwardly flared peripheral portion 50b of the head. The sleeve thus covers and seals the discharge ports or openings 21b. The sleeve or valve member 22b is preferably removably secured or clamped to the hollow body portion 4b by means of a suitable wire clamp or the like 23b which grips the sleeve 22b intermediate its length and leaves the ends free. It will be noted that a row of openings 21b is at each side of clamp 23b.

The operation of the device of Figures 4 and 5 is substantially the same as those of the preceding forms, except that in this form of the invention, separate streams or jets of water of generally annular form are emitted or discharged in opposite directions at opposite ends of the device. As water under pressure enters through the intake boss 6b, the valve 10b is unseated and the body 4b is completely filled with water under pressure, which escapes through the ports or openings 21b and causes the elastic sleeve or valve member 22b to flex or bulge outwardly in opposite directions on opposite sides of the clamping device 23b. This provides a gradually increasing space between the flared portions 5b and 50b and the adjacent surfaces of the sleeve valve member 22b, allowing the discharge of two separate and oppositely directed substantially annular streams or jets of water under pressure which are directed in frusto-conical paths. As in the preceding forms of the invention, the sleeve valve member 22b prevents particles of the mix from entering the interior of the body 4b. If, however, damage should occur to the valve 22b, which damage was unknown to the operator, and some material did enter through the ports or openings 21b it would be prevented from entering the water system and pressure-producing pump by virtue of the provision of the spring-seated disc check valve 10b, thus effectively preventing any possible damage to said system and pump.

In Figure 6 of the drawings, I illustrate a form of my invention which is very much like that shown in Figure 3. However, the arrangement for clamping the flexible sleeve 22c to the body 4c is different. In this instance, the end of the member 22c is provided with an inwardly extending flange 220c which overlaps the closed end of the body 4c. The clamping cap 16c is in the form of a flat disc which is attached to the closed end of the body 4c by means of the bolt 19c. Thus, the flange 220c is gripped between disc 16c and the closed end of the body 4c. A single series of circumferentially spaced openings 21c is provided in this form. The member 22c will preferably be molded from rubber and will have a uniform diameter throughout its length, the flange 220c being formed on the one end thereof. In this form also, the member 22c will have to be stretched to fit over the flared end 5c of the body 4c.

Referring now to Figure 7 of the drawings, there is shown in this figure a somewhat modified form of water distributing bell embodying my invention. In this form, the hollow body portion, shown as a whole at 4d, is substantially the same as the body portion 4a shown in Figure 3 but, it will be noted, that the disc check valve assembly has been omitted and the ports 21d are arranged slightly differently. The elastic sleeve or valve member 22d also corresponds to that of Figure 3. The means for clamping or securing the sleeve member or elastic valve 22d to the hollow body portion 4d comprises, preferably, a wire clamp or member 23d which, as shown, is provided adjacent the closed end wall of the body to hold the corresponding portion of the valve 22d tightly against the side wall of said body. It will be understood that the sleeve member or valve 22d has a snug fit with the side wall of the body 4d and that it encircles and firmly grips or hugs said said walls, especially at flared end 5d, to seal the water escape ports or openings 21d.

It may be desirable, in some instances, and because of the use of certain materials from which the valve 22d is formed and also where the device is installed in a mixer for mixing particles of large size which might damage the sleeve valve, to provide a protecting casing or housing over said valve. One such casing or housing is shown as a whole at 25 and comprises an end wall 26, outwardly flared side walls 27 which, as shown at 28 are normally spaced from the sleeve or valve member 22d and which terminate at their outer ends in an internal annular groove or recess 29. As shown, the housing or casing 25 encloses the valve 22d and is secured to the hollow body portion 4d by a bolt or cap screw 19d.

It is, of course, desirable, where the casing or housing 25 is employed, to prevent the entry into said casing of granular material from the mixer drum, which material might tend to cause deterioration of the elastic valve member 22d. Therefore, an annulus or ring 30 of some suitable elastic and compressible material, such as sponge rubber, is preferably mounted in the groove or channel 29 and thus interposed between the open end of the casing 25 and the adjacent end portion of the elastic valve 22d. By virtue of the space 28 and the fact that the casing 25 is flared outwardly toward its open end, water under pressure which enters the device through the hollow boss 6d and escapes through the outlet ports or openings 21d, tends to flex or bulge the elastic valve 22d, as shown by the broken lines in Figure 7. Such water under pressure will be discharged or emitted in the form of an annular stream or jet over the flared portion of the body 4d from the space provided by the outward movement or expansion of the valve 22d, in substantially the same manner as in the preceding forms.

Any of the bells so far described may be used alone in the drum 1. If used alone, the bell will be disposed in the position of the bell 3a, shown in Figure 1, that is, adjacent the closed lower and forward end of the drum. The water enters through the front of the drum, into the bell and then its path is reversed so that the water is directed towards the closed front of the drum where the batch material tends to collect.

If two or more of the bells are used, as shown in Figure 1, it will be necessary to provide a bell that has both a threaded inlet and threaded out-

let for mounting in the position indicated by reference character 3a on the water pipe which is axially disposed in drum 1. This bell will be similar to those shown in Figures 9, 10 and 11. The other bell, indicated by numeral 3 in Figure 1, will be like any of those shown in Figures 2 to 7 and will reverse the flow of water and direct it towards the closed front end of the mixer. If like Figures 4 and 5, it will also direct water upwardly.

Figure 9 shows a water bell which is exactly like that shown in Figure 2 with the exception that it is provided with an axially disposed outlet 60e. This outlet is threaded so that this bell can be mounted on the forward end of the water pipe section (Figure 1) leading from the forward bell position 3a to the rearward bell position 3. The threaded outlet 60e is formed integral with the cap 16e. To permit the water to flow into the threaded outlet 60e, the cap 16e is provided with outlet openings 61e. Thus, part of the water which enters this bell will open the flexible sleeve valve 22e and will be directed towards the closed end of the mixer drum 1. Some of the water will pass through the bell, out through openings 61e and then through outlet 60e. This water will pass through the axially disposed water pipe section to the second bell. This second bell, as previously indicated, will be like one of those shown in Figures 2 to 7.

In Figure 10, I have shown another bell with threaded inlet and outlet. This bell is otherwise similar to that shown in Figure 3. Thus, the cap 16f carries an integral threaded outlet 60f. The cap is provided with outlet openings 61f which align with similar openings in the end wall of the body 4f. Thus, the water can pass through the bell and out through the outlet 60f.

Figure 11 shows a threaded outlet on a bell which discharges in both directions and is similar to that shown in Figure 4. Thus, cap 16g is provided with an integral threaded outlet 60g and with communicating outlet openings 61g. Water will enter this bell, which will be in the first position 3a of Figure 1, and will open flexible sleeve valve 22g so that the water will be directed upwardly and downwardly in the mixer drum 1. Some of the water will flow through the outlet to the second bell in the position 3. If desired, the second bell may be like that of Figure 4 so as to direct the bell both upwardly and downwardly in the drum.

Any combination of the bells described may be employed or the bells of Figures 2 to 7 may be used singly. A bell like that of Figure 7 may also be provided with a threaded outlet like Figure 10. When an arrangement like that shown in Figure 1 is employed in the drum, it is preferred that the upper or second bell, in the position 3, be of the type shown in Figures 4 and 5, so that water will be forced from both ends thereof. Thus, flow of a part of the water will be reversed and directed downwardly into the lower and forward part of the mixer drum 1 and part will be directed upwardly and rearwardly into the upper end of the drum. This arrangement will more effectively distribute the water throughout the drum.

It will be apparent from the above description that I have provided a water distributing device or bell for concrete mixers or the like which has a number of advantages over prior art structures. My water bell will cooperate with the pressure-operated water supplying system of a mixer to provide a positive, fast, and uniform distribution of the water throughout the mass of materials in the mixer drum. Even though the water bell is embedded in the batch materials or has large quantities of batch materials thrown thereon during the mixing operation, a powerful penetrating jet will be delivered by the bell and will be diffused throughout such batch materials. Due to the provision of the flared end on the body of the bell, this jet will be spread from the axis of the bell in the form of a frustum of a cone and will, therefore, be more widely distributed in the materials. The sleeve-like valve is of such a nature that it will not open until sufficient water pressure is supplied to the bell. Thus, there will be no tendency for batch material to enter into the bell when the supply of water to the valve is interrupted. This sealing action is enhanced by the flared end of the body of the bell since this will cause the free end of the valve sleeve to be under tension and to tightly embrace the body of the bell. The sleeve valve is of such a nature that it will effectively resist the abrasive action of the batch materials but, if necessary after extended use, can be quickly and easily removed and replaced with the removal and replacement of a minimum number of parts.

Various other advantages will be apparent from the preceding description, the drawings and the following claims.

Having thus described my invention, what I claim is:

1. A liquid distributing device for mixers or the like comprising a hollow body of circular cross-section, means for connecting the body to a source of supply of liquid under pressure, said means comprising an inlet fitting disposed within one end of said hollow body, said body having outlets in its side wall at a location spaced from the inlet end of said body, said body having an enlarged outwardly diverging portion extending from said outlets to the inlet end of said body to provide a continuous smooth surface between said outlets and said end, a flexible elastic sleeve of a diameter to snugly fit around said body portion over which it is disposed and extending over said diverging portion around which it is stretched so that it will tightly grip said portion, said sleeve extending over the outlets and to the said end of said body so as to normally cover said outlets and the diverging portion of the body, said sleeve being adapted to flex under pressure of liquid escaping through said outlets to emit an annular outwardly diverging liquid spray under pressure at said end of said body, a removable plate carried by said body for covering the end of said body opposite said inlet fitting, said plate having a peripheral flange adapted to extend over the adjacent end of said body and to clamp the adjacent end of said sleeve, and check valve mechanism carried by said plate and extending into association with said inlet fitting for closing said fitting as long as liquid under pressure is not supplied to said device.

2. A liquid distributing device for mixers or the like comprising a hollow body of circular cross-section, means for connecting the body to a source of supply of liquid under pressure, said means comprising an inlet fitting disposed within one end of said hollow body, said body having outlets in its side wall at a location spaced from the inlet end of said body, said body having an enlarged outwardly diverging portion extending from said outlets to the inlet end of said body to provide a continuous smooth surface between said outlets and said end, a flexible elastic sleeve

of a diameter to snugly fit around said body over which it is disposed and extending over said diverging portion around which it is stretched so that it will tightly grip said portion, said sleeve extending over the outlets and to the said end of said body so as to normally cover said outlets and the diverging portion of the body, said sleeve being adapted to flex under pressure of liquid escaping through said outlets to emit an annular outwardly diverging liquid spray under pressure at said end of said body, and a removable plate carried by said body for covering the end of said body opposite said inlet fitting, said plate having a peripheral flange adapted to extend over the adjacent end of said body and to clamp the adjacent end of said sleeve.

3. A liquid distributing device for mixers or the like comprising a hollow body of circular cross-section, means for connecting the body to a source of supply of liquid under pressure, said body having outlets in its side wall spaced from one end of said body, said body having an enlarged outwardly diverging portion extending from said outlets to said end of said body to provide a continuous smooth surface between said outlets and said end, a flexible elastic sleeve of a diameter to snugly fit around said body over which it is disposed and extending over said diverging portion around which it is stretched so that it will tightly grip said portion, said sleeve extending over the outlets and to the said end of said body so as to normally cover said outlets and the diverging portion of the body, said sleeve being adapted to flex under pressure of liquid escaping through said outlets to emit an annular outwardly diverging liquid spray under pressure at said end of said body.

4. A liquid distributing device for mixers or the like comprising a hollow body, means for connecting the body to a source of supply of liquid under pressure, said body having outlets in its side wall spaced from an end of said body, said body having an enlarged outwardly diverging portion extending from said outlets to said end of said body to provide a continuous smooth surface between said outlets and said end, a flexible elastic hollow member snugly fitting around said body on which it is disposed and extending over said diverging portion around which it is stretched so that it will tightly grip said portion, said member extending over the outlets and to the said end of said body so as to normally cover said outlets and the diverging portion of the body, said member being adapted to flex under pressure of liquid escaping through said outlets to emit an outwardly diverging liquid spray under pressure at said end of said body.

5. A liquid distributing member according to claim 4 wherein said hollow elastic member is of rubber and normally has an inside dimension corresponding substantially to the outside dimension of said body and less than that of said outwardly diverging portion.

6. A water distributing device for concrete mixers or the like adapted to be subjected to the material being mixed in the mixer comprising a hollow body, means for connecting the body to a source of supply of water under pressure, said body having outlets in its side wall spaced from an end of said body and having a smooth continuous surface between said outlets and said end, and a flexible elastic hollow member snugly fitting around said body on which it is disposed and extending over the outlets to the said end of said body so as to normally cover said outlets, said member being adapted to flex under pressure of water escaping through said outlets to emit a water spray under pressure at said end of said body, said flexible member being formed of rubber and serving as an exposed cover for said body so that it will resist the abrasive action of the concrete material when it contacts therewith and substantially completely enclosing said body to completely protect it from said abrasive concrete material.

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