This invention relates to fluid drain connectors for use in photographic developing vats. As is generally known, a photographic developing vat is of a construction as to provide three separate tanks comprising a central water receiving tank, a side developer receiving tank and an opposite side hypo solution receiving tank. These tanks while being individual in use have stopper controlled drains or outlets which extend to a single sewer conduit.

It has of course been known for a long time that acids and alkalies have a disintegrating action on iron of which such developing vats have been constructed. This disintegrating action has been heretofore overcome to some degree in that the vat or tank body has been more recently constructed of stainless steel which in itself is not subject to such disintegrating action of the developer and hypo solution. However, with the stainless steel vat it has heretofore been the practice to utilize iron or steel fittings or connectors directly engaged with the developer and hypo solution tanks which are highly subject to the disintegrating action of acids and alkalies.

Furthermore, it has been found that when such iron or steel connectors contact the stainless steel vat, the latter is caused to rust and when such rusting action sets in on the stainless steel it cannot be stopped.

It is accordingly an object of this invention to provide drain connectors for direct engagement with the developer and hypo solution tanks of a photographic developing vat which are not subject to any disintegrating action by the acid and alkali solutions in the tanks. A further object of the invention is to provide connectors of the above general character which are formed of resilient plastic material thereby avoiding otherwise exact centering of coupling parts.

While the central water receiving tank and its outlet connections are not subjected to any disintegrating action, it is nevertheless a further object of the invention to provide water outlet connections in a manner to facilitate assembly of the resilient plastic connectors with their respective tanks. Other objects and advantages of the invention will become apparent in the course of the following detailed description, taken in connection with the accompanying drawings, wherein.

Fig. 1 is a front elevational view of a typical vat or tank assembly, with the novel features of the present invention being in section.

Fig. 2 is a perspective view of the improved connector in accordance with a preferred structural embodiment thereof, and wherein the connector is approximately of full scale dimensions.

Fig. 3 is a vertical longitudinal sectional view with certain portions of the drain fittings being shown in elevation.

Fig. 4 is a view partly in vertical section and partly in elevation as observed at right angles to the view in Fig. 3.

Fig. 5 is a top plan view.

Referring now in detail to the drawings, V designates a usual form of photographic developing vat which as shown comprises a bottom wall b, opposite side walls s, opposite end walls e and a pair of partition walls p which provide three tanks of substantially equal volume, the central one C of which is adapted to contain water and the opposite side ones S of which are adapted to contain developer and hypo solutions respectively.

The said walls and partitions are all constructed of stainless steel in accordance with the present prevailing practice and the bottom wall b is provided with a drain opening for each tank C, S, S.

While the fittings from the drain opening in the central water tank C are not subject to the disintegrating action of acids or alkalies as are those from the drain openings of tanks S, the present invention does however comprise a novel conduit connection between tank C and a four-way drain connection 10 for facilitating assembly of the novel drain connections from the side tanks S.

As is more clearly indicated in Fig. 3, the bottom wall b beneath the water tank C has a portion thereof centrally depressed as at 11 and which is provided with an opening 12.

In the assembly of the drain connections for all three tanks, first, a drain socket or thimble 13 is downwardly extended through the water tank opening 12, the thimble including a flange 14 which conforms with and seats in the depressed portion 11 with the upper face thereof flush with the inner surface of the bottom wall b. After positioning the thimble as above described, it is cemented in place.

A block 15 which may be of wood or any other suitable material is positioned against the lower face of the bottom wall b with the body of the thimble projecting therethrough, the block being suitably recessed to accommodate the depressed portion 11 in the bottom wall b.

With the block 15 thus positioned a nut 16 is threaded upwardly on the threaded outer wall of the thimble whereby the thimble is rigidly secured in position. A cylindrical internally threaded metal connector 17 is next threaded engaged with the lower portion of the thimble 13 with its upper end engaged with the lower face of the nut 16. An externally threaded nipple 18 is then turned up into the connector 17 with its upper end in engagement with the lower end of the thimble 13 and with its lower end projecting below the corresponding end of the connector 17.

The lower projecting externally threaded end of the nipple is threaded engaged with one internally threaded opening of the referred to four-way drain connection 10 whose opposed openings at right angles to said one opening have the inner threaded ends of horizontally disposed nipples 19 engaged therein. The opposed or outer threaded ends of nipples 19 are engaged within corresponding ends of elbows 20 whose opposite ends are internally threaded and whose axes are vertically disposed substantially coincident with drain openings 21 in the lower walls of downwardly depressed portions 22 in the bottom walls b of the developer and hypo solution tanks S.

The fourth opening in the four-way drain connection 10 is subsequently suitably connected with a drain including a pipe connection 22.

The various connections so far described are of metal such as cast iron. The invention however embodies novel conduit connectors between the depressed portions 22 in the bottom walls b of the tanks S and the elbows 20 which are non-metallic and are not subject to any
deteriorating action by the developer or hypo solutions. These connectors 24 are constructed from resilient plastic material and each thereof includes a generally cylindrical body having a true cylindrical outer threaded wall portion 25 at its lower end and an upwardly diverging outer wall portion 26 from said lower wall portion to the upper end thereof.

Each such connector 24 is provided with an axial opening 27 whose upper end is enlarged as at 28 for receiving the respective downwardly depressed portion 22 in the bottom wall b.

When the connections have been made between the water tank opening 12 and the four-way drain connection 10 as above described, the plastic connectors 24 are preferably threaded to an abnormal extent into the upper ends of the elbows 20 as is indicated in Fig. 1.

With the connectors 24 in the position shown in Fig. 1, the upper ends thereof as well as the lower faces of the bottom vat wall b adjacent the depressed portions 22 are coated with suitable plastic cement after which the connectors are back threaded from the elbows and drawn into firm contact with the bottom wall b, the depressed portions 22 serving as pilots for proper location of the plastic conduit connectors 24.

The purpose of the resilient plastic drain connectors 24 is two fold—first, their resiliency provides for any slight irregularity in the adjustment and assembly of the different parts without undue strain thereon and second, such connectors are immune to any detrimental action of acids or alkalies thereon.

Since the plastic connectors 24 are not subject to any disintegrating action, the contacting stainless steel vat will be free of such action and while the elbows 20 may be of cast iron they can be readily flushed out by water when the vat is emptied.

Having disclosed my invention in accordance with a single specific structural embodiment thereof, what I claim and desire to secure by U. S. Letters Patent is:

1. In a multiple tank and drain connections therefor, a water tank, a developer tank and a hypo solution tank, all of the tanks being integral, a four-way drain connector having connections with each of said tanks and to a drain pipe, the bottom of each of the tanks having downwardly depressed drain openings therein, hollow resilient plastic connector elements having one end of each connector element engaging the bottom tank wall and the depression forming the drain opening in said hypo and developer tanks and the other end of the resilient plastic connector threaded into an elbow to discharge the liquid away from the hypo and developer tanks into a drain pipe.

2. The structure according to claim 1, wherein said connector means for the water tank comprises an externally threaded thimble having one end thereof secured within said opening in the bottom wall of the water tank, an apertured block disposed against the outer face of said bottom wall with the thimble projecting therethrough, a nut on said thimble and engaging said block, an internally threaded cylindrical connector having its upper end threadedly engaged with the lower end of said thimble, and an externally threaded nipple within said connector and having its lower end threadedly engaged within one opening of the four-way connector.

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