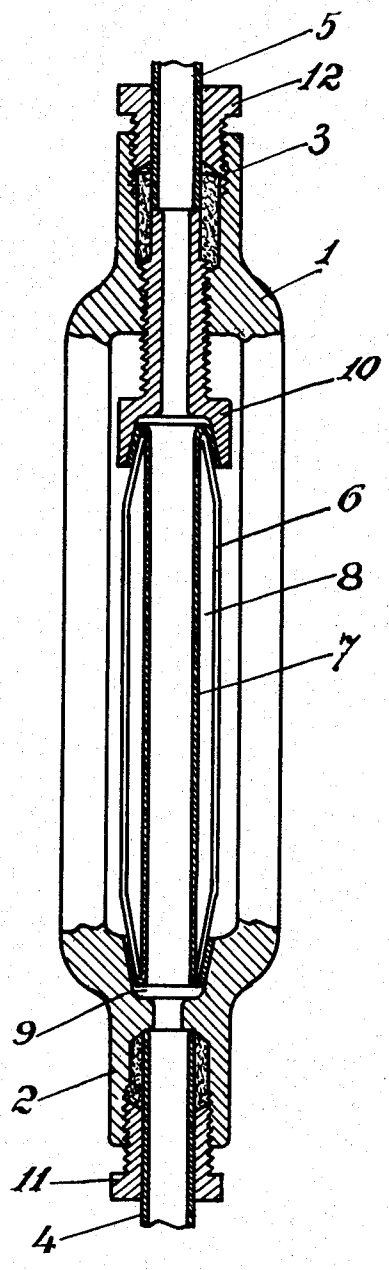
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EXPANSION VESSEL FOR USE IN ROTARY PUMPS FOR VISCOUS LIQUIDS

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EXPANSION VESSEL FOR USE IN ROTARY PUMPS FOR VISCOUS LIQUIDS.

Application filed December 27, 1924. Serial No. 758,318.

To all whom it may concern:

Be it known that I, CHARLES SANDOZ, subject of the Kingdom of Italy, residing at Milan, Italy, Via Monte Rosa 11, have invented certain new and useful Improvements in Expansion Vessels for Use in Rotary Pumps for Viscous Liquids, of which the following is a specification.

It is know that multiple piston rotary pumps for viscous liquids, used for example in the manufacture of artificial silk to force the viscose in the nozzle are provided with an air chamber communicating with the pumps and with the nozzles.

It is also known that this chamber generally consists of a glass receiver of which the lower part is suitably arranged to contain the liquid which enters it from the pump and from the apparatus to which the pump is connected.

These air chambers possess however the disadvantage that the liquid accumulated in them hardens rapidly when the pump is at rest, giving rise to incrustations which form on the walls of the chamber and obstruct the passage by which they communicate with the pump. This makes it necessary to clean out the air chamber each time the pump is put in operation.

These disadvantages are completely overcome by the present invention which relates to an expansion vessel applicable to pumps for viscous liquids in the place of the glass vessels above mentioned. The vessel according to the invention consists of a tube of elastic material enclosed in an air chamber. This tube expands under the pressure of the pump and contracts gradually under the influence of the external air pressure when the pressure of the pump diminishes.

It follows that when the elastic tube contracts, the liquid contained in the expansion vessel is forced out and falls back into the pump; and the incrustations on the walls of the vessel are thus completely prevented.

One practical form of construction of the invention, in the case of a viscose pump, is shown by way of example in the accompanying drawing which shows a vertical section on the central plane of the expansion vessel.

In the drawing:

—1— is a metal body provided with lateral windows and two terminal necks —2— and —3— in which are inserted the tubes —4— and —5— communicating respectively with the pump and with the nozzle. —6— is a glass tube of suitable shape inside which is arranged the elastic tube —7—, made of rubber for example, the ends of which are turned down over the edges of the glass tube which thus supports the elastic tube. The space between the two tubes is occupied by the air chamber —8—. In the bottom of the cylindrical body —1— is provided a socket —9— which holds the lower end of the glass tube —6— while the upper end of this tube is held in position by a socket —10— screwed into the upper opening of the cylinder —1—. The stuffing boxes —11— and —12— prevent the liquid from passing out of the glass tube —6—.

The operation of the arrangement described is as follows:

When the pump operates, the rubber tube —7— expands and forms a sort of vessel into which the liquid coming from the pump and from the nozzle enters and remains as in an ordinary vessel. When the pump stops and the pressure is lacking in the tube —7—, this tube contracts under the pressure of the air in the chamber —8—; the liquid contained in the tube —7— falls therefore into the pump without leaving any incrustation on its walls.

Naturally details of construction and of form of the expansion vessel according to the invention may differ from those which have been described above and illustrated in the drawing without going outside the scope of the invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a device of the character described, applicable for use with pumps for pumping viscous liquids, a body having inlet and discharge ends, a transparent tube supported within said body, and an expansible element extending through said tube in spaced relation to the wall thereof to provide an annular air chamber between the tube and element, said element having open ends which communicate with the inlet and discharge ends of said body, whereby a fluid passing through said element may expand the same against the inner wall of said tube.

2. In a device of the character described, applicable for use with pumps for pumping viscous liquids, a body having inlet and discharge ends and also having a seat at one end, a socket adjustably mounted in the other

end of said body, a tube having its ends mounted in said seat and socket, and an expansible member extending through said tube in spaced relation to the wall thereof to form an air chamber, the ends of said expansible element overlapping the ends of said tube and being interposed between the same and the walls of said seat and socket to retain said expansible element in position, said element being in direct communication with the inlet and outlet ends of said body and capable of having a liquid passed therethrough.

In witness whereof I affix my signature.

CHARLES SANDOZ.