In a patent issued May 2, 1933, No. 1,906,457, there are set forth a stationary feed tube adapted to discharge feeding liquid into the receiving chamber of a rapidly revolving centrifugal bowl together with stationary means to impart to the discharging liquid a high speed of rotation in a direction corresponding to the direction of rotation of the centrifuge, thereby reducing emulsification by impact of rapidly moving bowl parts upon slow moving liquids.

The present invention is a modification of the invention of said application, the object being to secure results which, in some cases, particularly in centrifugal bowls having receiving chambers of small diameters, are better than those obtainable in the specific construction disclosed in said application.

We have found that such improved results, particularly with bowls of the character specified, may be secured if the streams of liquid have a cross section relatively great vertically and relatively small horizontally and have also a considerable downward component in their movement. Our invention consists of means for producing such streams.

In the accompanying drawing, which illustrates a preferred embodiment of our invention:

Fig. 1 is a side view, partly in section, of our improved feed tube.

Fig. 2 is a cross section thereof on the line 2—2 of Fig. 1.

Fig. 3 is a side view approximately at right angles with Fig. 1.

Within the stationary feed tube 9 a is inserted from the bottom a stationary conical spreader 2. In the tube are two longitudinal cuts providing tongues c that are turned inward, making tangential outlets d. The lower ends of the tongues may contact with the spreader, as shown. From the outlets d the liquid is discharged into a receiving chamber e, which constitutes an communicating with, the separating or purifying space of the centrifugal bowl.

Liquid flowing down the tube a strikes the cone b which causes it to turn outward and escape through the openings in a tangential stream with a downward component as indicated by lines f, Figure 3.

The proper functioning of the device does not require that the outlet shall be strictly vertical as shown, since the outlet may have other operative contours.

While in the claims I have set forth means for discharging a single stream of liquid from the feed tube to the receiving chamber, it will be understood that I do not mean to exclude thereby provision for discharging any number of separate streams; for example, two streams, as shown and described.

What I claim and desire to protect by Letters Patent is:

1. In a centrifugal machine, the combination with a rotatable receiving chamber, of an upright feed tube extending within and located centrally of said receiving chamber and having therein an outlet to the receiving chamber, and means, respectively within the tube and carried by the tube wall, adapted to cooperate to effect the discharge of liquid through said outlet in thin tangential streams having greater vertical than horizontal dimensions.

2. In a centrifugal machine, the combination with a rotatable receiving chamber, of a relatively stationary feed tube extending within and located centrally of said receiving chamber and provided with a tangential discharge opening having a substantially greater height than width, and within the tube a spreader adapted to impart to the feed liquid throughout a substantial height an outward movement toward said outlet, thereby effecting the discharge of a tangential stream of substantial height and with a downward component.

3. In a centrifugal machine, the combination with a rotatable receiving chamber, of a relatively stationary upright feed tube extending within and located centrally of said receiving chamber and having a side outlet whose vertical dimension is greater than its horizontal dimension, and a spreader within the tube adapted to direct the downwardly flowing feed liquid outward toward said outlet.

4. In a centrifugal machine, the combination with a rotatable receiving chamber, of a relatively stationary upright feed tube having a side outlet, a tongue extending obliquely inward from one upright edge of the outlet and a spreader within the tube.

5. In a centrifugal machine, the combination with a rotatable receiving chamber, of a relatively stationary upright feed tube having a side outlet, a tongue extending obliquely inward from one upright edge of the outlet, and within the tube a spreader having a smooth conical face adapted to direct the liquid toward said outlet.

6. In a centrifugal machine, the combination with a rotatable receiving chamber, of a relatively stationary upright feed tube having a side outlet, a tongue extending obliquely inward from one upright edge of the outlet, and within the
tube a spreader having a conical face with which the lower part of said tongue contacts.

7. In a centrifugal machine, the combination with a rotatable receiving chamber, of a feed tube extending downward toward said chamber and the wall of which is cut along a long line vertically and along short lines laterally to provide a tongue, said tongue being bent obliquely inward, and a spreader within the tube adapted to direct feed liquid downward and outward toward the narrow elongated space between the free end of the tongue and the tube wall.

8. In a centrifugal machine, the combination with a rotatable receiving chamber adapted to discharge feeding liquid into a bowl of relatively large diameter, of a relatively stationary upright feed tube extending within and located centrally of said receiving chamber, said tube having a side outlet, opening into said receiving chamber, whose vertical dimension is substantially greater than its horizontal dimension, and means acting upon downflowing feed liquid to cause the jet of liquid through said outlet to be approximately tangential to the tube.

9. In a centrifugal machine, the combination with a rotatable receiving chamber adapted to discharge feeding liquid into a bowl of relatively large diameter, of an upright feed tube extending within and located centrally of said receiving chamber, and means acting upon feed liquid downflowing through the tube to cause liquid to discharge from the tube into the receiving chamber in thin streams tangential to the tube and having substantially greater vertical than horizontal dimensions.

10. In a centrifugal machine, the combination with a rotatable receiving chamber adapted to discharge feeding liquid into a bowl of relatively large diameter, of an upright feed tube extending within and located centrally of said receiving chamber, and means acting upon feed liquid downflowing through the tube to cause liquid to discharge from the tube into the receiving chamber in a thin tangential stream having a substantially greater vertical than horizontal dimension and having also a downward component.

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