phenolphthalein which is colorless in acids and pink in alkalis, as an indicator. By measuring the quantity of alkaline solution of known strength used to neutralize the acid in a given volume of milk, and by knowing the proportions in which caustic soda and lactic acid neutralize each other (which is 40 grams of caustic soda to 90 grams of lactic acid) the per cent of acid in the milk may be calculated. In order to avoid the necessity of calculating the per cent of acid in each sample tested, the alkaline solution is made of such a strength that each cubic centimetre of solution used will neutralize $\frac{1}{10}$% or ·1% of lactic acid in a 10 c.c. sample of milk. This strength of solution is known as a one-tenth normal $\left(\frac{n}{9}\right)$ solution, and consists of four and four-ninths (4 ⅘) grams of chemically pure caustic soda in 1,000 c.c. of solution.

The standard alkaline and the indicator solutions may be obtained from the dairy schools and agricultural colleges throughout the country.

The test for determining the per cent of acid in milk is termed the acidimeter and the apparatus (Fig. 3) employed in making such a test consists of:

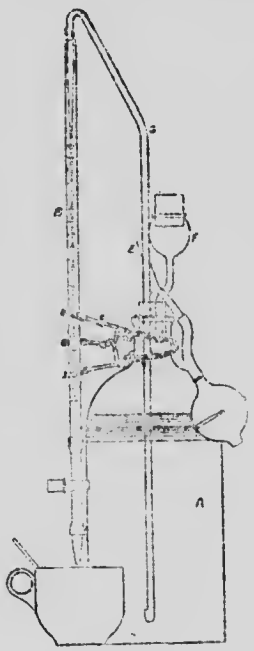

Fig. 3.

1. A 10 c.c. burette, preferably one with a blue line down the back to ensure accuracy of reading, and a glass stop-cock. The burette should be graduated to 0·1 c.c.
2. A clamp for holding the burette.
3. A 10 c.c. pipette known to be correct. Since many of the c.c. pipettes sold are not accurate, the pipette should be tested for accuracy by comparison with the 10 c.c. burette.
4. A delf cup or glass beaker.
5. A glass stirring rod.
6. A dropper bottle for the indicator solution.
7. A bottle for the standard alkaline solution.