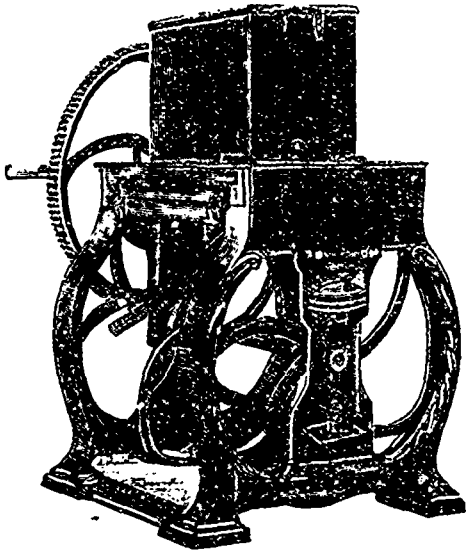
and partly by friction wheels for the highest speed. The cylinder, a pressed steel tube, open at both ends, is fastened to the revolving axis by an ingenious screw arrangement and placed horizontally in the cast iron frame. This machine separates about 150 pounds more per hour than the vertical hand machine, but is dearer to make, and will probably cost about $200 in America. Both machines are provided with automatic feed regulators and vats, the latter fitted to the machine on special stands. They both exhibit the same finished elegance and careful compactness usually evinced by the De Laval implements.

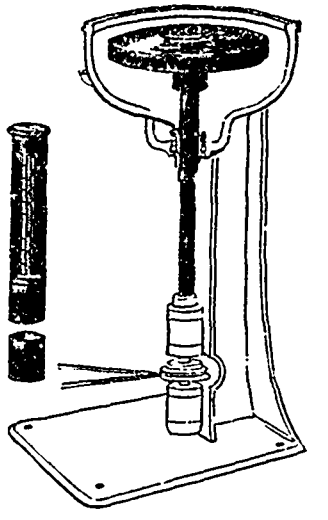
The importance of and future for hand machines in this country, as elsewhere, is so evident that very little need be said on this subject. Every observant mind must have noticed that another reform in the dairy is again sorely needed after the extraordinary impetus given a few years ago by the introduction of the system of Cream Separators. The development in the trade has been almost phenomenal, and the in-



crease of skimmed milk produced almost limitless. Consequently a great difficulty has arisen, namely, how to find a profitable use for the flood of skim milk, and in most cases it has had to be gotten rid of for little or nothing, many times at a loss, whilst in some other parts milk has become quite a scarcity. The desire for hard cash by the farmer has induced him to deliver to the factory as much milk as possible, letting his own household, in many instances, go without this most indispensable article of food. But the hand machine will considerably help to equalize matters. The farmer can separate his milk as it comes from the cow and have his skim milk fresh on his farm, as food for both man and beast. That calf breeding or hog raising, for both of which sweet skim milk is the best of food, is more within the province of the individual farmer than for the otherwise more than busy butter factory, cannot be doubted. Having only the cream to transport will also cause all parties concerned a saving in carriage of no little consequence. The boon which this little machine will prove to the housewife of the wealthier communities during the hot and sultry weather of the American summer, when thunder and heat prevent cream being produced at all, will also add greatly to its demand. In larger dairies where at present the evening's milk is mixed with the mornings, so as to require only one skimming a day and save the labor and expense of heating the boiler and starting the engine going twice a day, these hand-separators ought to be very welcome, and taking all matters into consideration, I think I am safe when I say that this De Laval success will be hailed with gladness on both sides of the water.

De Laval's Lactocrite.

Another reform also sorely needed and which has for a long time been the standing topic for the leading scientists in milk trade, namely, how to alter the existing ruinous system of buying and selling milk exclusively per measure or weight, without reference to the greater or smaller percentage of fat which it contains. The need of a method, practical and at the same time reliable, by which to ascertain the actual percentage of butter fat contained in milk has indeed, I may say, become almost fatal to the milk dealer. It has been proved that a defective method in this respect alone, has in many instances been the cause of losing a whole year's income on a farm. Many methods, more or less expensive, more or less complicated, have from time to time been introduced, but



they have all been too slow and too unreliable for practical use, and therefore never so generally adopted by the trade as to cause the reform needed. The Danish Professor Fjord took the matter up and introduced his so called control centrifuge in connection with the Danish Weston Separator, which was at least time saving. However, the quantity of cream in milk cannot be taken as a standard for butter, as one sample of milk, will often give a layer of cream twice the thickness of another and still yield considerably less butter. The problem yet remained unsolved, until Dr. De Laval succeeded in constructing his *Lactocrite*. (1) The noted European authority on dairy matters, Professor Fleischman, of Raden, (Germany), has carried out a series of experiments with this apparatus and gives it the following recommendation as the result of said experiments, viz:—That it is simple, accurate, quick and cheap, all requisites which are necessary to secure success to any and all agricultural implements. It is easily managed by boys, as was done at the milk testings of the Swedish exhibition referred to above, and is as accurate as a chemical analysis, the highest difference ever reached at comparative trials being two hundredths of one per cent; it is very time saving, a boy being able after some little practice to test up to 60 samples an hour, and it is very cheap in comparison with other milk testing methods, only about one cent per test.

(1) A charming hybrid! Why not call it a "*Galactocrite?*"