

NEW PRINCIPLE IN SEPARATORS

Recent Patent of New Suction Feed
Machine of Raisable Capacity
Skims Milk at Any Speed

INDICATORS ARE UNNECESSARY

In view of the recent tests made by experiment stations throughout the country, in which it was shown that more than 90 per cent of all cream separator users were turning their cream separators below proper speed and losing, collectively, more than \$100,000,000 a year in cream profits, which might be saved if the separator were operated correctly, it is interesting to note that a new-principle cream separator has been patented, which will skim clean no matter whether the speed of the crank be fast or slow—an invaluable feature absolutely new to cream separators.

Cream Always Uniform

In addition to this valuable feature, another advantage of the new machine consists in its ability to produce cream that is uniform and even in density at varying speeds of the handle.

The capacity of this new machine, which is being manufactured by one of the oldest cream separator companies in the United States, is termed "raisable", in that it may be increased at will simply by turning the crank handle faster than normal speed.

The new suction-feed principle, upon which the success of the machine depends, operates as follows: The speed of the machine creates a suction in the bowl which sucks milk into it through a hole in the bottom. Hence, the higher the speed, the more milk is sucked in, and vice versa.

Obviously, a very high centrifugal force is necessary to accomplish both functions, and this in turn is made possible by the singular construction of the separator bowl, which is in the form of a steel tube, ranging in diameter from 1 1/2 to 2 1/2 inches and in length from 12 to 18 inches. This bowl is suspended from a single ball bearing at top and is driven by gears which run in a spray of oil in a closed case, protected from dust and foreign matter of every kind. Because of the high gearing of the machine, the bowl achieves a normal speed of 16,000 revolutions per minute, which is very high, considering that no other separator manufactured makes more than 8,000 revolutions. The smaller the diameter of the bowl, being driven at this high speed, creates an intensely high centrifugal force, which separates the cream and skim milk quicker and cleaner than any other type bowl ever made.

Cannot Be Overfed

An advantage of the suction-feed principle lies in the fact that the same force which does the skimming also draws the milk into the bowl. When the speed is high and a large amount of skimming force is present, the suction is intensified and an equally large quantity of milk passes through the bowl. As the machine slows down and the centrifugal force diminishes, the suction is also lessened and a smaller quantity of milk is drawn into the bowl. It will be seen, therefore, that the skimming force and milk feed rise and fall together. No more milk can ever enter the bowl than will be skimmed perfectly clean by the skimming force present therein.

The capacity of the new machine, by which is meant the amount of milk which can be separated in a given time, usually one hour, is regulated by the suction-feed principle. A cream separator of the new type, in one of the average dairy sizes, which skims 400 pounds per hour at 45 turns, will skim 500 pounds per hour by simply increasing the crank speed.

It will be readily seen, therefore, that the invention of this new machine marks an important advance in cream separator construction. Heretofore, it has been absolutely necessary that all separators be turned at a given speed, ranging from 45 turns to 60 turns per minute in the respective machines. If this speed was not maintained regularly, the separator did not skim clean and a large percentage of the cream was lost in the skim milk. At exactly normal speed, that is, the speed indicated on the crank handle of the respective machines, all cream separators skim fairly clean, much cleaner than any gravity or deep setting system previously in use. But in practice separator users cannot keep the speed exactly right and thus lose quantities of cream. The new suction-feed separator has the advantage of skimming clean at any speed, high or low, thus preventing this loss.

Purdue Tests Show Losses

Recent tests made at the Experiment Station of Purdue University, Lafayette, Indiana, and published in Bulletin No. 150, Vol. XV, issued by that institution in August, 1914, are in part as follows:

The proper speed of a cream separator "is indicated on the crank handle of the machine. It varies from about 40 to 60 turns of the crank per minute, according to the make of the separator. If the separator is to yield cream of uniform richness, it must be given the same speed at each skimming. This is possible only if the operator times himself frequently, counting the revolutions of the crank with watch in hand or by the use of a patent speed indicator. The absence of this precaution renders the work unreliable. The general tendency on the part of the operator is to overestimate the amount of work he puts into the machine; the machine is run at too low a speed. Even the same operator, unless he times himself, may vary the speed very considerably at different times, depending on his frame of mind and physical condition. Again, where different persons operate the machine, there can be but little uniformity of speed unless each person makes an effort to count the crank revolutions by the watch."

One-half Fat Lost at Low Speed

Continuing, this same bulletin says regarding the effect of high and low speed relatively, their experiments showed "that the low speed produced very thin cream, while the high speed yielded cream of a very high per cent of fat. The richness of the cream varied from 10.8 to 62.7 per cent fat, according to the speed applied. The low per cent of fat from the low speed separation was particularly due to the great loss of fat. At low speed, over one-half of the fat was lost in the skim milk. This last factor, the excessive loss of fat in the skim milk, is in itself sufficient to condemn the use of any speed lower than that indicated on the crank of the machine.

"The speed of the separator also affects the amount of cream produced. The lower the speed, the more cream. This increase in the amount of cream, however, is more than offset by its reduction in richness and fails to fully compensate for the low test. The total amount of butter fat contained in cream, therefore, is much less in the case of a low speed separation than where the separator is run at the proper speed."

Speed Indicators Cannot Stop Losses

Following the announcement of the Purdue tests a certain large manufacturer of speed indicators conducted extensive tests to see what percentage of cream separator users were able to turn separators at the speed demanded by the manufacturers of the machines. At the state and county fairs, in the booths of this company, separators of different makes were set up and visitors were asked to operate the machines according to the directions on the crank handles. In many thousands of tests, made in all parts of the country at different fairs under widely varying conditions, it was found that 90 per cent of the individuals who participated in the test found it impossible to maintain the requisite speed, even during the short time required to make the test.

These facts obviously throw a new light upon the practicability of the cream separator and should serve as a warning to the users of these machines, who permit careless hired men to operate their separators as their fancy dictates, without having some assurance that they are getting the full percentage of cream and that it is being delivered with some degree of uniformity.

Milk Test No Cure-All

It might be said in closing that too much confidence cannot be placed in the skim milk test as a cure-all for butter fat losses. When a test of this kind is made, the stage is usually set for it and the operator keyed up to a pitch which enables him to make a good job of it. When the machine reaches maximum speed and the cream and skim milk are running freely, the tester is applied and the result usually shows a very small percentage of loss. But tests are not made every minute and it has been shown by experiments that a drop in speed of two of three revolutions per minute is sufficient to cause a cream change from 35 to 17 per cent.

In view of these facts, the invention of a cream separator, which purports to skim equally clean at any speed and deliver cream that is uniform in density at any number of turns per minute, would seem to solve a very serious problem for dairymen and, by preventing huge collective losses, add much to the profits of dairymen in general.

The Sire or the Dam

There is a saying among stockmen all over the world that "the bull is half the herd," and in judging animals in live stock competitions a great deal of attention is given to the sire. Dr. Mary Elizabeth Bates of Denver, who has charge of the annual baby health competition at the

National Western Stock Show at Denver, and who has been making a specialty of baby health contests from a eugenic standpoint, has taken issue with the old saying as far as human breeding is concerned. She insists that the dam is really more responsible for her offspring than the sire when it comes to babies, and at the annual Denver show, where the babies are judged by comparison, she insists that the mothers be present and that the judges when in doubt take a good look at the mother.

In live stock breeding the sire is of importance only when he is prepotent; that is, when he is able to reproduce himself in his offspring. This is also important because of the fact that one sire mates with a number of females and the uniformity of his breeding depends entirely upon his prepotency. In human breeding the child may as often resemble the mother as the father, and there seems to be no statistics along the subject of prepotency in the male human. The old proverb, "like father, like son," does not always apply. More often it is like mother, like son. Dr. Bates is making some investigations in connection with the annual baby show at Denver and hopes within a few years to have some interesting data that should be valuable from a eugenic standpoint.

The baby show at Denver is run upon a strictly scientific basis, and it is expected that the event in January will be of more than usual interest.

OUT OF THE GINGER JAR

Boost Your Own Town

Some sing the praise of Portland, Me. and some of Portland, Ore., while others cannot talk enough about old Baltimore; You can spot the gay New Yorker and the breezy man from "Chi" and we've met with those who told us: "See Los Angeles, then die." But do YOU sing the glories of your own home town at all? Remember, you can talk about it, even if it's small.

We hear a lot of Frisco's charms from people of the West; We've been assured that of all cities Denver was the best; We knew a man who talked about Seattle by the hour, and one who talked of naught but Minneapolis—and flour: Do we ever hear YOU boasting, tho', about YOUR port of call? Remember, you can talk about it, even if it's small.

About Dixie's lovely cities we have heard ad nauseam; There are those who even Baraboo with no faint praise would damn We'll remember all our lives a man who from St. Louis hailed, and another who to talk of Philadelphia never failed; We hear a lot of Buffalo, of Pittsburgh, or St. Paul, So why not try to boost YOUR town, no matter if it's small?

"Aunt, did you marry an Indian?" said Freddy.

"Why do you ask such silly questions, Freddy?"

"Well, I saw some scalps on your dressing table."

"Little boy, is that your mamma over there with the beautiful set of furs?"

"Yes, sir."

"Well, do you know what poor animal it is that had to suffer in order that your mamma might have the furs with which she adorns herself so proudly?"

"Yes, sir—my papa."

Picked Her Out

Two very nice little girls had a quarrel one day.

"Anyhow," said one to the other, who was an adopted child, "your parents are not real."

Whereupon the other little girl retorted, "I don't care, my papa and mamma picked me out. Yours had to take you just as you came."

"What are you crying for, my poor little girl?" said a man to a crying child.

"Pa fell downstairs."

"Well, don't cry, my dear. He'll get better soon."

"That isn't it. Sister saw him fall—all the way. I never saw nuffin."

She Was Wanted

A few days ago a "business personal" appeared in a newspaper, inserted by a sweet-faced little woman, made helpless by rheumatism, who asked simply "if anyone wanted a grandmother." Then she spent a troubled, sleepless night, wondering if anyone would see her ad, or, seeing, give it heed. The world was due to jeer and sneer—but it didn't. The next day, from all over the state, came offers to the little grandmother. Several hurried to the address given, to find themselves too late, for at sunrise a widow with a little daughter had "adopted" a

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mother for herself and a grandmother for her little one. And more: Offers of financial assistance poured in, and physicians offered free medical service for her rheumatism. So, at eventide, the sun which had risen on a sad and hopeless woman shed its rays upon a countenance wreathed in smiles and eyes that shone again with hope.

That's the Question

In one of the N. Y. public schools the teacher was explaining the word "recuperate" to the class.

"Nellie," she asked, "suppose your papa worked very hard all day, he would be tired and worn out, wouldn't he?"

"Yes."

"Then when night comes and his work is over for the day, what does he do?"

"Ah," replied Nellie, "that's what mother wants to know."

"Just see," said Farmer Hayseed, as he read the rules and regulations tacked on the door of his room at the Hotel de Luxury, "how these hotel people try to bleed a fellow." "What is it, pa?" asked his wife. "Why one of these rules says, 'Don't blow out the gas,' and another says, 'Gas burned all night will be charged extra.' Now what's a fellow to do?"

Bishop Earl put this question rather suddenly to a little boy who

stood trembling at the head of his Sunday school class, "Who made the world?" The little fellow with quivering voice replied, "I didn't." The bishop astonished at the answer demanded, "What do you mean?" Still more frightened, the lad replied, "If I did I won't do it again."

A FAIR WARNING

One That Should Be Heeded by Alliance Residents

Frequently the first sign of kidney trouble is a slight ache or pain in the loins. Neglect of this warning makes the way easy for more serious troubles—dropsy, gravel, Bright's disease. 'Tis well to pay attention to the first sign. Weak kidneys generally grow weaker and delay is often dangerous. Residents of this locality place reliance in Doan's Kidney Pills. This tested remedy has been used in kidney trouble over 50 years—is recommended all over the civilized world. Read the following:

James A. Kersey, Chadron, Nebr., says: "I had slight symptoms of disordered kidneys. There had been Bright's disease in my family for several generations and I decided to try Doan's Kidney Pills. This medicine soon cured me."

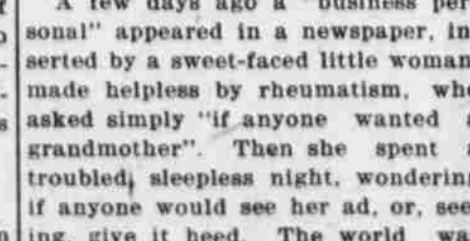
Price 50c, at all dealers. Don't simply ask for a kidney remedy—get Doan's Kidney Pills—the same that cured Mr. Kersey. Foster-Milburn Co., Props., Buffalo, N. Y.

The success of an amateur gardener often depends upon the number and the appetites of his neighbor's

chickens. Speaking of names—A. Nutt, of Minneapolis, Minn., wants a divorce.

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