

The Combined Churn and Worker.

J. K. Bennett, Minnesota.

Next to the great revolution brought about in buttermaking by the invention of the centrifugal cream separator, the combined churn and worker stands paramount. However, not to be compared with cream separators, for with these several years elapsed before a practical efficient machine was manufactured, while with the combined churn and worker, the very first was a decided success and with the exception of improvements for easier manipulation and durability it does not differ materially from the first to appear on the market. Like all other good things it was hard to protect by patents, and there were several other combined machines soon on the market selling in competition with the original. The success of these latter productions have met with varying fortunes, as have the various makes of cream separators.

It was the beginning of a new era in buttermaking; anybody could make butter with one of these machines. Still there were those who were skeptical of its merits, and I may say there are those to-day who find little favor for these machines. The change from the old box churn and table worker to the new improved was a red letter day with buttermakers. All that the buttermaker would have to do was to start the thing and it would do the rest. But with its introduction different conditions presented themselves, heretofore unthought of. It called for a decided change in churning temperatures. This in turn presented new conditions and requirements for washing and working the butter. In short, the great invention, instead of saving the buttermaker troubles, brought with it a multitude more. Nevertheless, the combined churn and worker is a success, and in the few years it has been on the market, it has fast superceded the box churn, and to-day none, or very few, of the latter find their way either in new creameries or to replace worn-out predecessors.

In presenting this subject, "The practical management of the combined churn and worker," I must confine myself to the make of churn I am used to handling, with all respect for others with which I have had no experience. I refer to the Disbrow.

The churning temperature best adapted for the combined churn I can give only approximately. Different localities, feeds and conditions call for different temperatures. That temperature which will give exhaustive churning in a reasonable length of time, and at which butter will granulate sufficient to readily draw off the buttermilk, and to a condition which, when the wash water is run on and a few revolutions given the churn, will leave the butter in a clean cut, fine granular form. This time my experience has shown me to be an hour, and at a temperature varying all the way from 48 to 60 degrees, according to the season of the year and density of the cream.

Do not overload your churn. Nowadays, when thick skimming is considered the best, it is very easy to churn more butter than can be properly worked. The temperature of churning, and amount churned, according to capacity of churn, has very much to do with so much weak and short-bodied butter. The temperature of wash water, and not maintaining an even temperature during the process of working, is the principal cause of so much salvy, wavy, streaked and mottled butter. If you churn at a high temperature you will very likely get a weak bodied butter. Usually low temperature insures good body but my observation has led me to believe that much of this short bodied butter, so much a mystery, is often caused by that condition of cream churned at such a low temperature that it takes too long after the cream first begins to break until it is churned enough to allow of the drawing off of the buttermilk. We have all probably had this same experi-

ence when it has taken perhaps 15 minutes to gather the butter, so to speak. The continued pounding and pouring over the necessary internal parts of a combined churn and worker seems to wear out the grain and make a short, brittle-bodied butter. As to the temperature of wash water, it must be cold enough to so temper the butter that it will stand enough working to thoroughly incorporate the salt without overworking or destroying the grain and making it salvy.

Some contend that wash water should be tempered to the same degree that the buttermilk is, when it is drawn off. To this I do not agree, as seldom will butter be churned cold enough to give the butter a body firm enough to allow sufficient working. The objection raised is, that part of the butter will be chilled by running in this cold water so that it will not take salt, but if butter is properly granulated and after a few revolutions of the churn, how can there be anything but an even temperature? There may be a few granules, where the water runs in, that are colder than the rest, but how long will it be before these few granules will be tempered by the surrounding mass scattered as they are through the whole churning? Ordinary water just as it comes from the well I consider a good safe temperature.

Now as to the working. Aim during the whole process to keep the butter at an even temperature. Keep the churn door closed until wash water is drained off. Have your salt tempered to the same degree as that of the wash water as it runs off, and you will be on the right road to make a piece of butter of perfect color. You know the combined churn and worker gets a great deal of the credit for so much mottled butter. After salt has been evenly scattered over the butter, give the churn a few revolutions on slow motion before changing to a worker. This will mix and thoroughly distribute the salt through the whole granular mass. Then change to a worker, and work until the salt is pretty well incorporated and the brine begins to squeeze out. Keep churn closed tight and allow to stand about an hour to dissolve the salt. Then finish working, allowing the brine to drain off as desired. The absolute control over the drainage of brine from one of these combined machines is a commendable feature in regulating the moisture

Creamerymen and Buttermakers

CAN

Find much valuable and instructive information about their business in

New York Produce Review and American Creamery.

Subscription, \$1.00 per year. Published weekly by

Urner-Barry Co.

173 Chambers St., New York

Sample Copy Sent Free on Application.

TESTING MILK . .**. . AND ITS PRODUCTS**

Manual for Creamery and Cheese Factory Operators and Dairy Farmers.—Farrington & Wolf,

Complete directions for making tests of milk and other dairy products are given; the difficulties which the beginner may meet with are considered in detail and suggestions offered for avoiding them. It is expected that a factory operator or practical dairyman, by exercising ordinary common sense and care, will gain a sufficient knowledge of the subject through a study of the various chapters of this book to make tests of milk, cream, etc., even if he has had no previous experience in this line.

As the subject of milk testing is intimately connected with the payment for the milk delivered at butter and cheese factories, and with factory dividends, a chapter has been devoted to a discussion of the various systems of factory bookkeeping and tables greatly facilitating the work of the factory secretary or bookkeeper have been prepared and are included in the Appendix. Bound in cloth, sent to any address by mail for \$1.00. RANCH AND RANGE, Seattle, agents for Northwest States.

STILL IN THE LEAD.**A RECORD TO BE PROUD OF.**

The largest amount of butter made west of the Rocky Mountains. The STAR CREAMERY, Courtland, California made during the season 1899, 407,568 lbs. of choice butter. Every pound sold for immediate use. Not a pound went into storage. They received the Highest Market Price NET at the Creamery. They pay neither freight nor commission.

HOW ARE THEY ENABLED TO OBTAIN SUCH RESULTS?

Because they use SHARPLES Separators EXCLUSIVELY and prefer them to all other makes.

WHY?

Because they ensure the Highest Quality Cream and Butter.
Because they ensure the Most Uniform Quality throughout the year.
Because they ensure the Greatest Actual Returns at all times.

They are the Most Durable and Simplest. • They are the Most Economical to Operate and Repair.

THEY ARE ABSOLUTELY SAFE and THEY CANNOT POSSIBLY EXPLODE.

The STAR CREAMERY commenced business about six years ago, using two Sharples machines. Today they have SEVEN of the SHARPLES make in daily use. They are thorough, intelligent, go-ahead business men, and successful dairymen. They have demonstrated to their entire satisfaction that SHARPLES MACHINES are the ones to ensure the greatest success. They are in business to make it pay. Could anyone ask for a better recommendation? That old song that has been jingled in the ears of the creamery men of the United States, "If you do not use the disc separator, your failure is inevitable" is most emphatically disproved by the flattering success of the STAR CREAMERY, Courtland, Cal., which heads a long list of successful creameries on this coast using SHARPLES machines.

The finest product of the finest Cream Separator Manufactory in the world.

THE 1900 SHARPLES TUBULARS

The only Separator fitted with a perfect, positive, automatic throttle governor.

New this season: **SHARPLES TUBULAR HAND DAIRY SEPARATORS**

Send for Catalogue No. 24.

The Sharples Co.,

Canal and Washington Sts., CHICAGO, ILL.

P. M. SHARPLES

WEST CHESTER, PA., U. S. A.

Beggs-Bradner Co., Inc.

Sole Agents for Washington.

215 Jackson St., Seattle, Wash.

Good and Poor Separators.

A GOOD SEPARATOR is a lifetime pleasure and profit!

A POOR SEPARATOR is a few years' misery and expense! Good separators are sold! Poor separators are sold!

This goes on every day, and explains why some are satisfied with their separators and why some are not.

We realize how difficult it is for one who is not posted on separators to know what make to buy. In order to assist you in this matter we call your attention to some of the important points to be considered in purchasing, viz.:

Does it run up to claimed capacity and separate thoroughly?
Is it easily operated and quickly cleaned?
Is it simple and thoroughly and strongly made?



Although we have, during the 27 years we have been in business, obtained an enviable reputation for making goods that fulfill our claims, yet we do not ask you to accept our word for the excellence of the Improved U. S. Separator, but that you will investigate it thoroughly before purchasing any other make. We are sure, if you do so, you will be convinced we are justified in claiming that for

CLEAN SKIMMING, EASE OF OPERATION,
LARGER CAPACITY—CONSIDERING PRICE,
SIMPLICITY, DURABILITY, ETC.,

THE IMPROVED U. S. SEPARATORS HAVE NO EQUAL.

Write for our illustrated catalogues containing records of work done at Experiment Stations showing how close they skim when subjected to the severe tests received at these stations, also hundreds of testimonials from pleased users.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

For Sale on Any Reasonable Terms by

A. M. FERRELL, - Redmond, Wash.

AGENT FOR WASHINGTON, NORTH OF SEATTLE

GENUINE BUTTER PARCHMENT PAPER

Prices and samples furnished on PRINTED WRAPPERS.

Also for TUB AND BOX LININGS, CIRCLES, and all the paper required for Butter Packing.

Metropolitan Printing Co., 112 Yesler Way Seattle

ATTENTION CREAMERYMEN!

We furnish

Genuine Imported PARCHMENT BUTTER PAPER.

Quality absolutely guaranteed. Plain or printed to your order. Write us for samples and prices. Also do catalog printing for nurserymen, seedsmen, stockbreeders, etc.

Lowman & Hanford, Seattle

Creamery Outfit for Sale.

Complete Creamery outfit—capacity too limited for our use; will sell as a whole, or any piece desired, Ellensburg Creamery Co., Ellensburg, Wn



HOLSTEIN CATTLE! The Choicest Milk and Butter Breed in the World. Write to Wis. Live Stock Ass'n, Appleton, Wis., U. S. A.