How to Make Good Butter in Winter.

We find in the *Prairie Farmer* the following directions for making good butter in winter, an operation which is seldom performed in the country.

The month of June, says that journal, all things considered, is regarded as the best month in the year for manufacturing butter. This is due to a combination of circumstances. Drought seldom commences that early in the season; accordingly, both feed and water are abundant. The grasses, which are the natural food of cattle, are then in a state to furnish, not only the most food, but that of the best quality for producing rich milk. The insects which are so troublesome later in the season have not made their appearance in large numbers. The air is not tainted with bad odors, as it is later in the season. The temperature is very favorable to the rising of cream; neither so warm as to cause the milk to sour quickly, nor so cold as to prevent the separation of the oil globules.

Another season very favorable to the production of good butter is the early fall. At this season we ordinarily have rains that bring up the grasses to something like the plenteousness they gave us in the spring. Many of the insects so plenty in mid-summer have disappeared, and the temperature throughout the day is more uniform. When winter arrives, however, the quantity of the butter is greatly lessened, and in quality much inferior. In truth the chemical composition of the butter is considerably changed. The ingredients are different, not in kind, but in quantity. Olein, which is the softer fat in butter, is much more plentiful in summer butter than in that made in winter. The color of winter butter is also different from that made in summer. The former is almost white, while the latter is golden.

The unfavorable condition and appearance of winter butter are partly owing to causes that we cannot control and partly to causes that we can, in a measure, obviate. Dry food will produce less olein than fresh green food. We, however, can prevent a very great diminution of this fat, by cutting our grasses earlier and curing them so that they will retain all their natural juices and their aromatic qualities. We can prevent the lessening of the quantity of milk to the extent that usually happens by keeping our cows as well supplied with food and drink as they are in summer when they can feed at will, and can procure water whenever they wish. Giving cows food and drink only after long intervals of fasting have a most injurious effect on the secretion of milk.

The cause of butter being light colored in winter is, doubtless, due to two causes. The olein is of darker color than the other ingredients of the butter, and the more scanty it is, the paler will be the color. The chief cause, however, of winter butter being so light colored is due to the cream becoming bleached before the butter is churned. Cream has its richest color when it first rises to the surface, and if it is churned in that condition the butter will be yellow. If it remains, however, exposed to the light, particularly if the temperature changes, the rich yellow color disappears, until it will be found to be impossible to produce golden butter from white cream. Let any one try the experiment of taking some yellow cream with a little milk below, and let this remain for two days more in a glass vessel, and mark the changes that take place in the color. At first the line between the cream and milk is very distinctly marked; but after a little the cream has become bleached to such an extent that it cannot be distinguished from the milk in color. Winter butter is white, then, because the cream is ordinarily kept too long before it is churned. It is very hard to obviate this difficulty in small dairies, particularly when the cows are so poorly provided for that their milk becomes very scanty. It is, doubtless, better even if the supply of cream be small, to churn as often as we do in summer, using a churn proportionately smaller.

Winter butter has a poorer flavor than grass butter from a variety of causes. The food the cows eat is devoid of the agreeable taste common to the grasses while growing or in blossom. Besides this, the milk is too often kept in a room the atmosphere of which is foul from the odors arising from cooking. The milk, at such times, acts the parts of a disinfectant, and carries the stench of the kitchen into the cream pot, and from thence to the butter jar.

Good butter can be, and often is, made in winter; but it is only done by having all the circumstances surrounding the cows—the milk-room and churning—as nearly as possible like those in summer. The cows must be fed on food rich in sugar, and never be stinted in amount. The milk must be set in a room, the air of which is pure, and the temperature of which does not greatly vary. And lastly, the cream should be churned when it is not above twenty-four hours old.

THE TUPPER GRATE BAR—A CORRECTION.—The grate bar favorably noticed on page 265, current volume, was exhibited at the Fair of the American Institute, not by *Wm. W. Tupper*, as therein stated, but by *L. B. Tupper*, of 120 West street, New York. This bar has been used at the Cincinnati Industrial Exposition, which before its introduction could not get steam to properly drive the machinery on exhibition, but afterwards had more than was required. The exhibitor was, in virtue of this successful trial, awarded a silver medal.

Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per Line will be charged.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address correspondents by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at $1·00 a line, under the head of "Business and Personal.

All reference to back numbers should be by volume and page.

J. S. K., of Ala.—The horse power of boilers, all other things being properly proportioned, depends upon the area of fire surface. The horse power of engines is determined by multiplying the mean effective pressure, per square inch, in the cylinder in pounds, by the area of the piston in square inches, multiplying the product by the speed of the piston per minute in feet, and dividing the last product by 33,000. You will now see that your question in its present form cannot be answered.

W. H. B., of Mass.—Everything else being equal, the power of a screw driver will not be increased by making the bit forked, and separating the two prongs to as wide a distance as the heads of the screws to be inserted will permit. No advantage of any kind will be gained by such a construction, while the positive disadvantages of lessened strength of bit, and smaller bearing on the head of the screws, will be sustained.

F. M. W., of Ala.—We have discussed the subject of kerosene lamp explosions over and over in these columns, and no regular reader of this journal for the last two years need have any justification for ignorance on this subject. We have also given time and time again tests for adulterated and dangerous oils, and do not think it necessary to repeat what we have said at present.

A. M. T., of Mass.—Your reasoning is correct, the pressure of the atmosphere upon the surface of the earth is not equal to its entire weight, but is equal to the weight of a column of air, having one square inch of base, and extending to the outside limit of the atmosphere, multiplied into the entire area of the earth's surface in square inches.

B. K., of Pa.—The fly-wheel gives no increase of mechanical power to any machine, on the contrary it subtracts power by the friction of its bearings. It is simply a reservoir storing up power where there is a surplus over that needed to perform the useful work, and imparting the power again when needed, thus giving adaptibility but not mechanical power to machines.

J. B., Jr., of Ohio.—Carrier pigeons are not trained to carry messages. Their instinct guides them unerringly to the place where they were reared. They are taken from their wonted abodes to the places from which they are desired to carry messages, and the message being tied to their bodies in such a way as not to obstruct their flight they are released. As soon as released they rise high in the air, fly around in a circle, and at last strike off in the direction of their former homes which they generally reach.

F. S. H., of Mass.—You can make cloth waterproof by varnishing it with linseed oil, or coating with solution of rubber in naphtha. You can keep steel and iron from rusting on exposure to salt air, by coating them with mercurial ointment.

N. P. A., of N. Y.—We do not think your invention would prove valuable. Sulphurous acid is used for many other bleaching operations besides bleaching woolens, and is of special value in bleaching straw goods.

F. T., of La.—You will find the information you seek in regard to screw-cutting lathe gear, in "Campin's Practical Treatise on Mechanical Engineering," published by Henry Carey Baird, 406 Walnut Street, Philadelphia, Pa., 1870.

J. G. T., of Texas, has a shot gun which scatters too much, for which he seeks a remedy. He also wants to know whether large shot scatter more than fine, and what is the most approved length for a shot gun.

J. E. D., of N. Y.—We think the improvement in stove-pipes, suggested by you, would be useful and patentable. It would be well, however, to test it by practical experiment before expending much money upon it.

F. S. P., of Ga.—"Bourne's Catechism of the Steam Engine," published by D. Appleton & Co., of New York, is a good work for a beginner.

J. H. M., of N. Y., wishes counsel from practical forgers, which will enable him to temper articles of thin sheet steel without their warping.

W. A. M., of Pa., wishes to know how eyelets, etc., for shoes, are colored black, in large quantity, and cheaply.

APPLICATIONS FOR THE EXTENSION OF PATENTS.

SEWING MACHINE.—William R. Landfear, Hartford, Conn., has petitioned for the extension of the above patent. Day of hearing Dec. 7, 1870.

ARRANGEMENT OF RAILROAD PLATFORM SCALES.—Samuel G. Lewis, Philadelphia, Pa., executor of Lea Pusey, deceased, has petitioned for an extension of the above patent. Day of hearing Dec. 7, 1870.

CULTIVATOR TEETH.—James P. Cramer, Schuylerville, has applied for an extension of the above patent. Day of hearing Dec. 21, 1870.

MILKING SHIELDS.—Orwell H. Needham, New York city, has petitioned for an extension of the above patent. Day of hearing Dec. 21, 1870.

OPERATING SLIDE VALVES OF STEAM ENGINES.—Robert H. Fletcher, Brooklyn, N. Y., has petitioned for the extension of the above patent. Day of hearing Dec. 21, 1870.

CRIBS FOR HORSES.—Henry Eddy, North Bridgewater, Mass., has petitioned for an extension of the above patent. Day of hearing Dec. 21, 1870.

MODE OF LATHING AND PLASTERING.—John G. Vaughan, Middleborough, Mass., has applied for an extension of the above patent. Day of hearing Dec. 28, 1870.

MACHINE FOR PARING AND SLICING APPLES.—D. H. Whittemore, Worcester, Mass., has petitioned for an extension of the above patent. Day of hearing Dec. 28, 1870.

SEWING MACHINES.—Albert F. Johnson, Parkville, N. Y., has applied for an extension of the above patent. Day of hearing Dec. 28, 1870.