instances, wool has taken the place of beef as a farm product, and in others the latter article has given way to butter and cheese.

Beef is not an article which can be produced in a season. Pork can be brought into market in abundance in a year or so from the birth of the pig. Mutton of good quality can be obtained in two years, and is sometimes had in a year and a half. But good beef requires three or four years, although with breeds which early attain maturity, many animals are killed at two and a half years old. Such young beef, however, has not the fine flavor, or so great an amount of nutriment, as that from more mature animals.

The high range of prices for beef will tend to impress upon farmers the importance of obtaining animals which will fatten to the best advantage. This is a point which has not generally received the attention it deserves, but it is to be hoped that the force of circumstances will compel farmers to study the natural characteristics of cattle, and make them better acquainted than they have been with the principles to be observed in the successful management of live stock.

The manner of rearing calves will, properly, vary in different districts. Where milk is of little value, it is common to allow cows to suckle their offspring for the first four or six months. Sometimes one cow is the foster mother of two calves. This is, perhaps, the best course under the circumstances, but it would not be economical in other situations. We prefer rearing them *by hand*, as it is called, where it is an object to use milk for other purposes, for the following reasons: 1. Food can be given with more exactness as to quantity. 2. In many instances it economises food. 3. It is generally less trouble. 4. It saves injury to cows' teats and bags by the biting and butting of the calves. 5. The calves more readily learn to eat various kinds of food. 6. They are more tame and gentle as they grow up—if cows, they are less likely to be troublesome in milking; if oxen, more tractable and obedient. 7. From being early and thoroughly weaned from the cows, the calves can run with them, if necessary, through the season, and rarely occasion trouble by sucking.

The calf should be taken from the mother the day it is born, unless it is advisable to have it suck for the purpose of relieving the udder from inflammation. It should have new milk the first three weeks—six to eight quarts a day, according to size. It may then be fed for three weeks on a mixture of new milk and skimmed milk, three quarts each, daily. The skimmed milk must not be sour. To the milk may be added gruel made by boiling a pound of oilcake in a gallon of water. The gruel should be given in small quantities at first, till the calves get accustomed to the taste. They will soon become fond of it, and will eat a pound of cake each, daily, prepared in gruel well mixed with the milk. Give the food in equal parts, at six o'clock in the morning and six in the evening. In cool weather it should be warmed to the temperature of milk just from the cow. After the calf is six weeks old, the new milk may be discontinued, substituting that which has been skimmed. The skimmed milk and gruel should be continued till the calf is about three months old, when it can live well on other food. For the last two or three weeds of the time, the gruel can be gradually increased, and the milk diminished. If oilcake cannot readily be procured, oat-meal, or meal from oats and peas ground together, may be used for the gruel. This is better than meal from Indian corn, contains more of the elements of muscle, is easier of digestion, and less likely to produce *scours.—Boston Cultivator.*

HALLADAY'S WIND-MILL.

This machine, of which the accompanying engraving will be found to give a very good representation, attracted general attention at the New York State Fair, held last fall. "The nature of the invention," in the words of the *Scientific American*, "consists in having the wings or sails attached to movable or rotating spindles having levers or equivalent devices connected to them, said levers being also connected to a head with wings rotating on the same shaft. The head has a lever connected to it, which is operated by a governor that slides the head upon the shaft, and causes the lever or their equivalents to turn the wings or sails, so as to present a proper resisting surface to the wind, and thereby produce a uniform velocity of the sails, which are made to have a greater or less obliquity, according to the velocity of the wind."

In the engraving given, fig. 1 represenrs the perspective view, and fig. 2 is a face view of the wing or sail ring, and parts of the governor. The same letters refer to like parts in both. The upward pressure of the water upon the piston P, is regulated by the amount which is allowed to pass the cock at U. As this quantity is lessened, the action on the lever at P is of course increased, and by the raising of this arm the sails are brought to present less obliquity to the wind, and thus to accommodate themselves to the amount of water wished. Hence, when the cock U is guaged to a given stream of water, any gust of wind accelerating the motion of the sails, will also increase the pressure at P, as it cannot enlarge the stream, and this increase of pressure will as before lessen the power of the wind upon the sails, by diminishing their obliquity, and thus every change in the wind will find the sails exactly adjusted to its force. A sudden gust may, it is true, make them revolve once or twice with great rapidity, but it must partake more of the nature of a hurricane than of an ordinary storm, to damage the mill, before the governor, which we have described, can accommodate the inclination of the sails to its force. We were told by the inventor that it would stand any gust which the support was able to resist.

With these few words of explanation, we think our readers will find no difficulty in understanding the workings of the machine. It is certainly very ingenious and promises well.—*Country Gentleman.*

Feeding Milch Cows with Sainfoin.—The quantity of milk produced by cows fed with sainfoin is nearly double to that of any other food. The milk is also much richer, and will yield a larger quantity of cream. The butter will also be better colored and flavored than any other.