

majority of farmers, who persevere in the use of the heavy horse for agricultural purposes, for which, solely, he is by no means fitted from the slowness of his gait unless very highly fed. As long however as the ponderous vehicles made use of in our large cities for the transmission of heavy goods are persevered in, this equally ponderous animal, which sometimes weighs from 15 cwt. to one ton, may be necessary, but it is certain that lighter horses would do the business better, that is more speedily and at a less cost. Notwithstanding the objections to him, the heavy cart horse pays well for rearing, for being always saleable at two years old, a certain profit is insured. As for the first year, the expense of feeding him is trifling. The chief desiderata in the cart horse are substance and action. If possessed of the latter, his shoulders and fore quarters can scarcely be too heavy and coarse, for drawing being an effort of the animal to preserve himself from the tendency which his weight gives him to the centre of gravity when he inclines forward, the more weighty he is before, and the nearer he approximates to this centre, the more advantageously will he apply his powers. Notwithstanding this, we are not advocates of heavy horses for farmers' work, much less on the road. The lighter horse gets over in eight hours what would take the heavy one ten, and the great improvement in the present mode of cultivation, and in the implements used in agriculture does not require more weight and strength than what the Suffolk, Clydesdale, Cleveland bay, and other light breeds, are masters of. Besides, there are periods of the year when despatch of business is of great moment to the farmer.

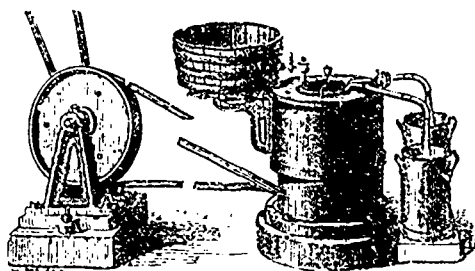
It has often struck us, and no doubt has struck other rational minds, as being strangely anomalous, that men who know nothing about the anatomy of the horse should as a rule be chosen as judges of the make and shape of the animal at the various public shows. (1) The absurdity of the thing appears at first glance so glaring that we might at first be tempted to compare the so-called practical horseman, who lays down the law as to conformation merely from his knowledge of the exterior of the animal, to a person who thought himself qualified to decide on the value of a watch although he knew nothing of its internal mechanism. There is, however, a great deal to be said on both sides; for a knowledge of equine anatomy is not sufficient to instruct the judge on the subject in question. While we must go somewhat beyond its domain and that of practical experience in order to permeate the laws of conformation, the points of the horse may be broadly divided into those coming under the following heads.

#### BEAUTY, STRENGTH, SPEED, AND WIND.

The subject of good looks may be soon dismissed, for its canons are well understood. However undesirable a Roman nose and a coffin shaped frontispiece may be, still, an unusually small and pretty head is not infrequently united to a judicious disposition. The neck should run into the head by means of a curve, which gives the part the beautiful set on which we so much admire in the game cock. Regarding colour, we need only remark on the not unreasonable prejudice against mealy chestnuts, and washy browns, especially when the colour becomes lighter under the abdomen, and on the inside of the limbs, and to state the fact that the darker the coat the better will the animal stand exposure to the influence of a tropical sun, other things being equal. We mention this merely as an interesting point of equine physiology, and one that is borne out by the fact that, in torrid zones, animal colours are more pronounced than in frigid, as demonstrated by the dark skin of the negro, and white coat of the hare in

northern climates on the approach of winter. The reason of this is that although the dark surface will absorb heat more readily than the light coloured one it radiates heat much faster.

We now come to the important subject of strength and speed, which are dependent upon the shape and size of the muscles, and form and arrangement of the bones. The action of a muscle is affected by its length and by its transverse section, for the longer it is, the greater space will it be able to move the object in which it is inserted, while the thicker it is, the stronger will it be. We know that, as a rule, a high degree of speed, whether in horse or man, is unattainable without length of stride, in other words, successful race horses must have long muscles. It may therefore be assumed that, for speed, the muscles of locomotion in the horse should be as long as possible, while, if their length is granted, they cannot well be too thick, for, even in the race horse, strength is an essential condition for staying and carrying weight. The desirability of the cannon bone being short is admitted by everybody in all classes of horses, although the reason why this point should be considered valuable is not very generally understood.



THE DANISH CREAM SEPARATOR.

Let us just take the hind extremity: in it we find that one of the chief levers which move the body forwards is formed by the bones of the limb from the point of the hock downwards. When the hind toe is applied to the ground as a fulcrum, the power is furnished by the contraction of the muscles whose tendons go to the point of the hock while the thigh bone, "tibia," is the weight moved onwards. Here we have a lever of the second order and consequently the distance between the weight and the fulcrum, or, in other words, the shorter the hind cannon bone, the greater will be the mechanical advantage at which the extension muscles of the hock will work. In the fore leg, the bones below the knee serve as a lever for the flexors of that joint. These muscles are the power, the bones of the arm the fulcrum, and the pressure of the foot on the ground is the weight to be moved. Here we have a lever of the third order, and consequently the shorter the cannon bone the greater will be the advantage at which the muscles will act. Bent or sickle hocks are very faulty in conformation, for the horse that is cursed with this defect is unable to extend these joints as much as he ought to do. Amateur horsemen being probably misled by the term "bent" being applied to such hocks, not infrequently consider that a horse with sickle hocks can bend them better than an animal that has straight ones, and consequently that the former is superior to the latter for cross-country work: nothing can be more absurd, for both forms of hocks can be equally flexed, although they cannot be equally extended. From the fetlock joint to the hock, the flexor tendons should run as nearly as possible parallel to the cannon bone. If the lateral width of the fetlock is so great as to make them converge in a marked manner towards the head of the cannon bone, the leg will be ill fitted to stand hard work, no matter how much it will