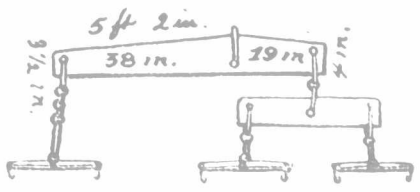
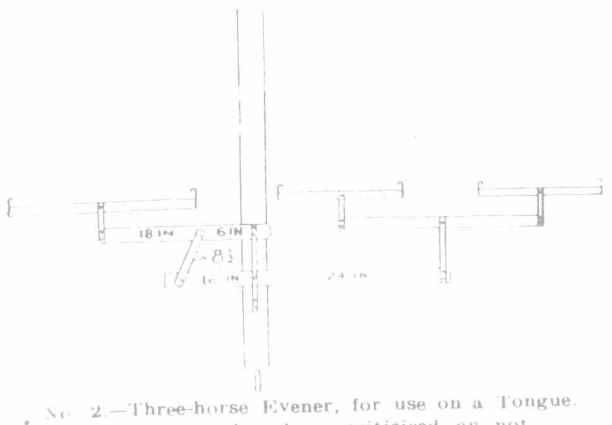


No. 1.—Three-horse Evener, for use on Harrows and Such Implements.



No. 2.—Three-horse Evener, for use on a Tongue. This device has been criticised as not equalizing the draft exactly.

in order to meet with reasonable success, he must have and observe system. In the first case, he must procure mares—pure-breds, if possible, but at least those in which the desirable characteristics of the class are at least reasonably well marked. Then, of course, he should secure the services of the very best sire of the class that can be had for a reasonable stud fee. We claim that a mare, without somewhat well-marked characteristics of some class or breed, will seldom prove a profitable breeder. In other words, if a prospective breeder has a mare, and he cannot make up his mind what breed of stallion he should breed her to in order to get the best results, it will probably be wise to defer breeding operations until he can procure a mare with special characteristics. There are exceptions to this, especially in the light classes. High-class saddlers are often produced by breeding a mare of this kind to a Thoroughbred, but, with few exceptions, he is the only sire that will, with reasonable certainty, give satisfactory results when so bred, and even with him the cross should not be too violent. Probably, in heavy horses, more haphazard breeding and mixing of breeds is followed than in the light classes. Especially in these classes, if system were observed for a few generations, and the breeders refused to sell their fillies, but kept them for breeding, and sold their dams or the geldings, even for a much lower price, there would soon be a class of draft horses that could be registered; but, on account of the too constant change in the breed of sire used, either on account of convenience, or to patronize a friend who has a stallion, or on account of the size of the stud fee, or other causes (often thoughtlessness), instead of the purity of breeding being increased generation after generation, it becomes mongrelized. How often do we notice a man with a mare with one or more crosses of Clydesdale or Shire, breed her to a Percheron, Suffolk, or other draft horse, or vice versa. The result may be fairly satisfactory, from a serviceable work-horse standpoint; but if the produce be a filly, what about her as a breeder?

If a breeder has a mare with Percheron blood, breed her to a Percheron, her filly to a Percheron, and hers again to a Percheron. With fillies with Clydesdale blood, or other blood, follow the same system. If this system were strictly adhered to, we would soon have a class of horses remarkable for their similarity and characteristics, and, in fact, which would register, and become pure-breds. But the too-constant change of breed of sires has resulted, and if not checked, must continue to result in the production, not of cross-breds, but of mongrels. The same arguments, of course, apply to horses of the light classes and breeds. We all know that horses are more often spoken of as classes, rather than breeds. At our horse shows or our fall exhibitions, we notice that there are few sections or classes for cattle, sheep or swine, other than for registered animals. The classes are mostly all for those of certain breeds. There are a few sections for grades of certain breeds, but these are not numerous. How about horses? Here, except in the breeding classes (and even in some of them, the carriage and roadsters, for instance), they are ranked as classes, rather than breeds. How do we account for this? Simply from the fact that horse-breeders have observed less system in breeding than the breeders of other classes of stock. It will require very thoughtful and careful breeding for a few generations of horses to change this order of things, but it can be done, and with the breeders rests the onus of doing it; but any thoughtful man will admit that the sooner it is done, the better it will be for the best interests of our country.

"WHIP."

Eveners for Several-horse Hitch.

The practice of reducing the wages for laborers on the farm, by using a greater number of horses on farm machinery, has led to many devices for three-, four-, five- and six-horse hitches. From those that seem to give general satisfaction in practical use we have selected simple types. The prime object in each case must be to equalize the labor for the various horses. With implements on which a tongue is necessary, special precautions must be taken to avoid side draft.

In No. 5, A represents the furrow; B, plow head; C, five-horse evener; D a pulley; E a chain; F a neckyoke; G the lead team's whiffletrees; H the fifth horse's whiffletree; I a spring connecting C and H; J the back team's set of whiffletrees.

The usual length of C is 45 inches. This length gives the four horses 9 inches of C, and the other horse 36 inches of the evener.

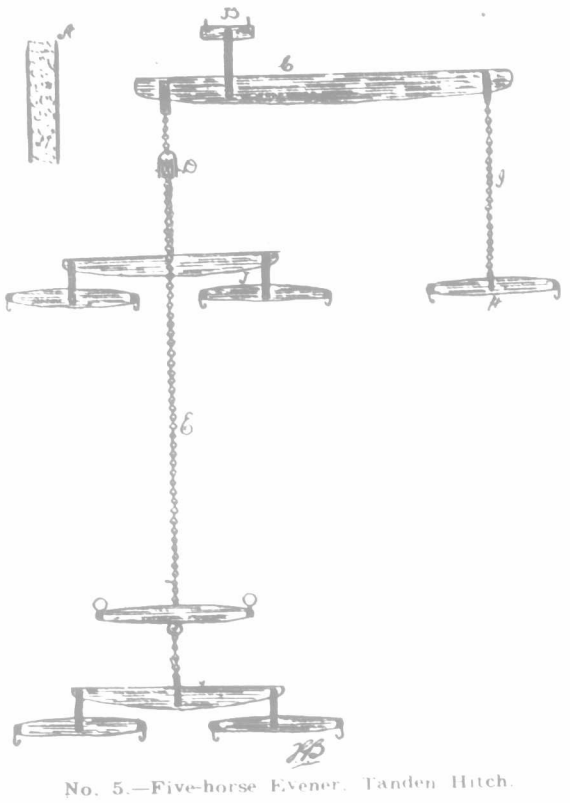
The pulley, D, needs to be rather heavy to stand the strain of the four horses.

The chain, E, should be quite heavy where it passes through the pulley. It should be allowed to pass through a ring attached to the ring of the neckyoke.

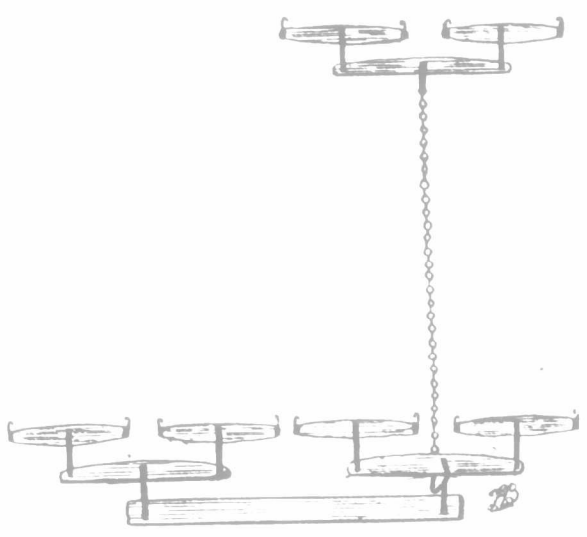
The use of the spring, I, is to break the jerk on the fifth horse when the plow strikes a stone or root.

The whiffletrees of the hind team should be placed above the tandem chain. By placing them above the chain the draft on the back team is not so low.

For six horses, No. 5 could be remodelled, having two horses hitched to I instead of one, and changing the lengths of the arm C to 30 and 15 inches instead of 36 and 9 inches. The accompanying illustration, No. 6, is of similar construc-



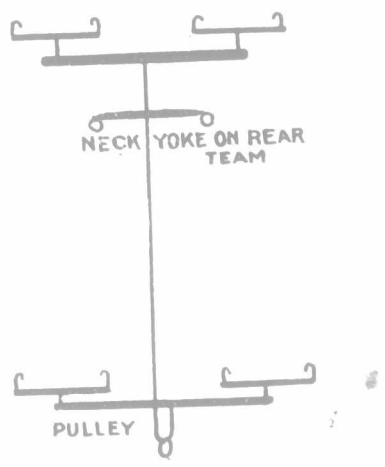
No. 5.—Five-horse Evener, Tandem Hitch.



No. 6.—Six-horse Evener, Tandem Hitch.

tion. None of the horses are obliged to walk on the plowed ground. The iron evener is upright, with tandem rod clevised to the bottom end and a doubletree on top end. The evener should be slightly curved, and both end holes exactly the same distance from the center hole. Many prefer this plan to working horses abreast, as they do not crowd, and are cooler in warm weather, and with six horses on, one can fasten a section of harrows behind and do two jobs at once. This rig can also be used for five horses, by putting a five-foot evener on the plow and giving the third horse behind 4 feet of evener, and the 4 horses 1 foot.

No. 3.—Four-horse Evener, for use when horses are hitched abreast on Harrows, etc.



No. 4.—Four-horse Evener, Tandem Hitch. The teams are hitched, one to each end of a chain, which passes through a pulley attached to the implement.

LIVE STOCK.

Fat Steers from Deep Milkers.

The much-needed and welcome movement in the direction of improving (or perhaps we should say restoring) the milking capacity of pedigree Shorthorns has now made considerable progress, and the pioneers of reform in this direction are already being besieged with applications for young bulls, not only from other pedigree breeders, but also from large dairy farmers, who, a very few years ago, would have looked askance at a registered bull, fearing to use it in case it should "spoil the milk yield." These men, it should be said, refuse to buy "a pig in a poke," and are guided in their choice, and in the price they are willing to give, by the evidence laid before them of the milking powers of the females on both sides in the bull's pedigree, and this evidence can only be given by means of careful and long-kept records. The milk-book record has, therefore, become as important as the pedigree itself, and, as recommendations for a dairy bull, they must stand or fall together. We have here the theory of heredity applied in practice; but, in order to test its full value, we must investigate the breeding for at least three or four generations. For a buyer to be told that a young bull is from a cow annually yielding 1,000 gallons, is not enough—not nearly enough—to induce him to give a long price, because, if that be all, he has no guarantee of unbroken and concentrated hereditary powers. To insure this, he must have the milk records of the cow's dam and grandam, and also those of the sire's dam and grandam. At present there are indeed few young bulls in any herd whose pedigree could bear such a test, because the movement is so recent, and the regular weighing of milk is an extremely modern practice. A breeder tells me that he has sold no less than twenty-three bulls since October last, at an average of about £40 each, specially as dairy sires, and this is the strongest possible proof of the direction in which things are tending. With regard to milk records, we are now very much in the same position as were the compilers of the first volume of the herdbook; that is, we are short of reliable materials. Recognizing their immense practical value, the pedigree dairy breeders will see to it that in a few years' time there will be an enormous increase of milk records, and breeding will be more and more carried on with an eye to the increase of total annual yields. This policy is understood to be that of those breeders who are cultivating milking herds, and is the only one which can be expected to succeed. Few, however, except the students of heredity, are likely to realize what it involves. Breeding exclusively for milk means an alteration of type, and a steady widening of the difference of shape and character between the beef and milking Shorthorn. Although we have had a few eminent prize cows as evidence telling against this statement, they have been only striking exceptions to the rule that deep milking and the perfection of beef points in the same animal are incompatible with each other. There seems no sufficient reason for fighting against this natural law, which is apparently struggling for the unattainable, or why we should attempt to maintain in the Shorthorn the uniformity of type which naturally belongs to a one-purpose breed. For the future success of the breed as a whole, it seems to the writer that it would be better for every breeder to frankly recognize that it is wants abundant