

# Implements.

## Care of Farm Machinery.

We have heard competent machinists say that fully one-quarter of the value of machinery was lost by a failure to keep the bearing-surfaces well oiled. Our observation is, that farmers, as a rule, use too much oil on the bearings of farm-machinery, and to the detriment of the bearings. They put on large quantities of oil, but not sufficiently often.

The use and value of oil are to keep the surfaces apart, so they may not grind, and to furnish a medium upon which they may slide or roll upon each other, with the least possible friction. To do this properly, judgment must be used. If too much oil be given, the surplus immediately runs away, and is lost; if not enough is given, the bearings run and wear upon each other, and are soon destroyed, or rendered so loose as to become comparatively worthless. So, the first thing to be considered is the exact quantity of oil to properly lubricate the surfaces without waste, and the time in which the oil will be worn away, which will be in proportion to the swiftness of the motion.

According to experiments in France, the friction of wooden surfaces rubbing on wood amounted to one-quarter to one-half of the force employed. The friction of metal on wood was something less; while the friction of metal on metal surfaces was from one-fifth to one-seventh. Lard, applied to wood on wood, reduced the friction from one-tenth to one-twenty eighth of the power required to move the surfaces dry, and on metal running upon metal, the friction was reduced to one-half of what it was before.

One of the best substances for lubricating cast iron running upon cast iron that we have ever used, is oil or lard and black lead-plumbago. The best lubricators for wrought-iron axes and the fast-running bearings of machinery is pure oil, entirely freed from all gummy substances.

If machinery could be kept entirely free from dust and other grit the bearings and joints would last indefinitely. This is, however, impossible to do perfectly, but, by keeping the boxes through which journals are oiled carefully covered, and by occasionally wiping such parts as may be got at when oiling, great waste of power may be saved, and the value and usefulness of machinery prolonged. A case in point will suffice for a

Good wagonners always wipe the axles of their waggons before they reoil them; very few, however, wipe the boxes; and yet the one is as essential as the other, and one is as easily done as the other. How? Shave a spindle to fit the hole through the hub. Cover it with a piece of cloth, and, twisting it within the hub, it is easily cleaned. This will keep your wheels true for a long time, and save much labor to your team and vexation to yourself.

Manufacturers and those who sell machines well know that implements and machinery will last more than double the length of time for some farmers than for others. The reason is simple. They are carefully oiled, and as carefully kept when not in use, for any man who is careful in the care of machinery when in use, is fully as sure to care for it when not in use. Such men, for instance, never have trouble with the earth loading on their ploughs; they never spend half a day repairing their ploughs on the road, in the spring; their ploughs are always bright, winter and summer. Then, when the ploughs have done their spring work, clean them thoroughly, and paint the bright surfaces with kerosene and lampblack, and put them where this coating may not be rubbed or get washed away. When the bearings of machines get gummy from the use of bad oil, they clean these also with kerosene, and are always particular to get only the best oil when possible. There may be a great deal of money and horse-flesh saved by proper attention to and cleanliness in oiling farm machinery, and in properly caring for it while not in use. — *Chicago Tribune.*

**SIMPLE TEST FOR LUBRICATING OILS.**—The following simple method for testing the products of hydrocarbons or mineral oils in lubricating mediums will be found both convenient and useful for every engineer or mechanist. Fill a bottle with the oil in question, moistening the cork and inside of the neck of the bottle, and then twisting the cork about its longer axis. The best lubricating oils produce a smooth, but the more the oil is adulterated with hydrocarbons and products of dry distillation, the louder the noise produced. An oil that gives a loud cry is most unfitness for a lubricator.

## How to Work a Bull.

One reason why bulls are vicious, says the *American Agriculturist*, or at least unruly or dangerous, is that they have never passed through any course of discipline. Well bred from the first, they are permitted to learn and exercise their strength at all times until their owners are frequently surprised to find them turn suddenly upon them without warning. Besides this, the usefulness of these animals is greatly curtailed in consequence of their idle life and good keeping, and the complaint of unfruitfulness is frequently made. A remedy for both these evils consists in putting these animals to work. Viciousness is prevented by the hepline and training, and a bull that is broken to the yoke when young, and occasionally used, is kept in good temper and under safe restraint. He is no longer an uncertain and dangerous animal, possessing all the ferocity of a wild beast. He is kept in better health than when idle, and his value for stock purposes is greatly increased. Cases are known to us in which bulls, entirely uncertain as stock getters, and consequently broken to the yoke, have after some time become perfectly sure, and have more than doubled their owner's profit in this way alone. One of the best common bulls for producing calves we have known, was constantly worked in a cart or at the plough. The practice might be profitably followed with high bred bulls which fail of producing calves, and are consequently greatly reduced in value.

A harness for a bull consists of a yoke and bow, shaped as shown in figure 1. The yoke is made to fit the neck

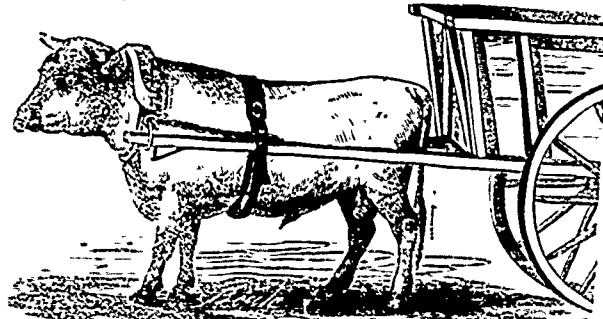


FIG. 1

snugly, with a curve sufficient to bring the ends low down at the sides. At each end there is a strong bolt and ring. The rings are made large enough to admit the end of a cart shaft, a hold-back being fixed on the under side of the shaft, as shown in figure 2. A draft-chain hooks into the

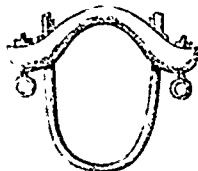


FIG. 2

eye of each bolt. A belly-band is buckled around the animal's body. This harness is very light and easy, and there is nothing about it to chafe or worry the bull. The harness for ploughing or cultivating consists of the same yoke and bow, and a pair of draft chains, shown in figure 3, which hook into the rings on the yoke. A broad leather



FIG. 3

band passes over the animal's back arranged as to length to suit his height, and to allow the chains to hang in the line of draft, without pressing on the back. There are rings on the lower ends of the chains, by which they are attached to the hooks of the whiffle-tree. The length of yoke should be adapted to the size of the bull, but should not be so long as to give too much room between the shaft or the draft chains, nor so short as to allow them to chafe the animal's sides. In working a bull it is best to use gentleness with firmness, and to avoid irritating or worrying the animal, so as to provoke his temper. The same harness may be used to work cows, for there are many cases in which they may be worked to advantage as well as a bull.

## Oil the Harness Now.

A good harness is costly, but if properly used and cared for, will last a good many years. If neglected, it will soon need repairs, and in a short time become utterly worthless. In caring for a harness, one great point is to see that it is kept suitably oiled. A work harness, in use on a farm, should be oiled twice each year, in the spring and fall. It should be taken entirely apart, the places where sweat and dirt have collected, cleaned with a chip, or an old case-knife, then washed clean in warm water, in which a little Castile soap has been dissolved. As they are washed, the straps should be hung on a pole to dry.

When the outside is nearly dry, but before the moisture is all out of the leather, the oil should be applied. This may be done with a clean paint brush, which is the best thing for the purpose, a sponge, or a woollen cloth. A moderate quantity should be used, and if it does not soften the leather enough, another light coating may be applied, when the first one is well dried in. This is better than it is to put on a great deal at once.

Care should be taken to obtain a good quality of oil. Poor oils are of little use, and sometimes are injurious. Neat's-foot is the very best kind of oil for leather. There are some patent preparations in which a waterproof ingredient is added to the oil, and also a little coloring substance, to make the leather look black and glossy. An honest mixture of this kind is better than the crude oil. Cheap oils are generally poor. When dry, the harness should be rubbed with Castile soap, then with a dry woollen cloth. When this is done, it may be put together and used. This work should not be neglected until the hurry of planting and hoeing time, but should receive attention now. — *Live Stock Journal.*

## Whetting Knives.

Put the blade flat on the end of the stone which is the farthest from you; then raise very slightly the back, or thick end of the knife, so as to press the edge of the blade on the stone; draw the blade, thus raised, towards you along the stone, but so that the point of the blade is the only part that touches the stone at the end of the stroke; repeat this a dozen times, pressing firmly, and then reverse the process by raising the other side of the blade, putting it at the end of the stone which is nearest to you, and drawing it along the stone in the

direction away from you, finishing at the point as before. You will soon find a thorough and satisfactory improvement in the sharpness of the blade; and though you may not succeed at once, you will before long experience the pleasure and satisfaction of independence, and being able to do this matter for yourself, and will know the comfort of having always at command a well-sharpened knife.

Scissors also are constantly used in the garden, and as scissor-sharpening is easier of description and accomplishment, just let me say a word or two about that.

Examine the two blades carefully, and you will see that the insides are quite flat, but that the outsides have a small narrow bevel at the edge. Unscrew the centre pin, and separate the blades. Flat-sharpen both the inside flat sides, and the outside narrow bevels; and again screw in the centre pin till the blades work smoothly but firmly without "wobbling." "Voilà tout."

**DRIVING TACKS.**—A correspondent of one of the trade journals writes:—I had to put a number of small tacks into a piece of work. I was engaged upon, and the positions into which they were to be driven were so awkwardly situated that I found the greatest difficulty in getting them into their proper places. After many unsuccessful trials I hit upon the following plan, which answered perfectly. I magnetised a common brand punch, and then by simply placing tacks one after another on the end of the little bar magnet thus formed, I found I could insinuate them into their places with facility and grace.

**FLILING** seems an easy matter to the uninitiated, but it is far from being the case; for a skilful workman will, in a given time, cut away a far greater quantity of metal with a file than one who is unskilful, for he makes every tooth cut into the work, instead of rubbing over it. To do this, he must adapt the pressure and velocity of motion of the file to the coarseness of the teeth, and the hardness, brittleness, and toughness of the material he is working upon. To file flat requires much practice; that is, to avoid rounding the edges of a narrow piece of work. Many apprentices find this a most difficult thing to do; in fact there are some who never succeed in filing, smoothing, and polishing without rounding the edges of their work. The power of filing squarely and well is one of the marks of a good workman. In filing flat surfaces, it is quite an advantage to use a cork to rest the work upon when the form of it will admit of so doing—place the cork in the vice—use the file with one hand, the pressure on the file being communicated by the forefinger. It is mainly to aid the workman in filing flat that the rounded or bellied form is given to files,