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SOME COMMON MOWING MACHINE TROUBLES AND THEIR REMEDIES.

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At this time of the year the mowing machine plays a large part in the work of the farm and some of the more common difficulties encountered in its use together with their remedies are given here.

Poor work on the part of the mower is evidenced by the uneven condition of the stubble and one of the most frequent causes is the lack of close adjustment of the cutting parts. The cutting principle of a mower is exactly the same as that of a pair of shears. Two sharpened edges approach each other and slice off any material in between. As a pair of shears will fail to cut when the two blades are not held in close contact by the screw, but will bend the material over and between the blades, so a mower will bend over the grass and it will be dragged through as the mower moves across the ground. The two cutting parts of a mower, that correspond to the blades of the shears are the ledger plate and the knife section. The former is that portion that is located in the guard and has serrated edges which help hold the material. The knife section is the triangular piece riveted to the bar and makes up the knife. The part corresponding to the screw of the shears is the knife clip - a malleable iron piece which holds the knife tightly against the ledger plates. Excessive wear on this clip or its being bent up will result in poor cutting and uneven stubble. Being malleable it can be bent down by striking with a hammer, but care should be used not to bind the parts too closely or excessive wear and breakage will occur.

Other causes of uneven stubble being left by the mower, which is evidence of poor cutting and unnecessary draft, are guards being out of alignment through bending or loose bolts, loose sections or failure of the mower to center or "register". This last term applies to the failure of each knife section to come to a stop directly

under a guard as it should at the end of each stroke. As the section advances on the ledger plate and fails to go all the way to its next guard, a certain amount of grass will not be cut, exactly as only partially closing the blades of shears will not complete the cut. As the mower moves forward over the ground this material is dragged under the knife and is never cut. 74

Two causes of non-register are that improper methods of aligning the cutter bar have resulted in throwing the sickle off center and the use of too long or too short a pitman. The second cause is brought about by replacing a broken pitman rod with one too long or too short, and the remedy is obvious. The first cause is more complicated and is discussed below. 67

Three or four seasons' hars usage usually result in a condition known as no-alignment of the cutter bar, which means that the general line of the bar is bent back in relation to the line of the pitman rod. As the thrust and pull of pitman transmits the motion of the wheels to the knife it is evident that the best thrust will be given unless the pitman and cutter blade are in line and do not fit at an angle. Wear in the joints at the inner shoe is responsible for this condition and in mowers having no re-aligning device, replacement of these work parts will re-align the blade. 112

Most mowers now carry a special device to realign the blade. This is done by causing the outer end of the blade to be moved forward again to its original position. Such adjustments are so placed that they change the position of either the inner shoe in respect to the yoke or the yoke in respect to the push and drag bars, and are successful because they change the angle between the cutter bar and the pitman at its apex, straightening it out to a straight line. Adjustments which do not make this change are not to be used as they result in throwing the knives out of register as explained above. The most common of these incorrect adjustment is shortening the drag bar. 127

The repeated breaking of knives is a frequent source of trouble and is chiefly caused by extreme wear on the knife clips and wearing plates at the inner shoe. The pitman in thrusting the knife outward causes a downward pressure here and as it is 95

drawn in an upward pressure results, these pressures cause undue wear and gradually that end of the knife begin to flop up and down increasing the play and also bending the knife backwards and forward and even though slight, this bending, will in time like repeatedly bending a piece of wire, cause a break. New parts will prevent this trouble.

When the cutter bar gets badly gummed up in clover or similar crops, do not use oil but allow the grass juice to lubricate the cutting parts. Oil and grass juice worked together will make a heavy gum which increases draft.

Sometimes the board does not throw the cut grass and this is especially true in short or slippery grass or in very heavy green stuff. No exact remedy can be given other than raising the grass stick which tends to bunch the grass which will roll back in bunches. If bunching is more objectionable than the lack of a clear path then this should not be done. Lowering the grass stick tends to prevent bunching in heavy crops.