AN IMPROVEMENT FOR MACHINERY TO DRILL SEED INTO PASTURE SOD

Experimental work was undertaken in the fall of 1952 with the objective of seeding winter annual grasses and legumes into existing pasture sods located on the sandy soils of the lower Florida east coast. A commercial pasture renovating machine was used, which consists essentially of rolling coulters followed closely by sharp points, or furrow openers, attached to hollow boots (see figure 1) through which seed or fertilizer, or both, may be dropped from hoppers mounted above. This machine was developed in Mississippi where pastures are largely of bunch type grasses on clay soils.

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Under South Florida conditions, with runner type grasses and light sandy soils predominating, considerable difficulty was experienced with this machine. Due to the "give" or lack of resistance of the sand soils, and to the uneven ground surface, the coulters failed to shear all the runners, and those which were not cut were picked up on the points and collected in front of the boots, in much the same manner as a hay crop being windrowed by a dump rake. (See figure 2). In some cases it was necessary to clean the machine after as little as 100 feet of forward travel.

After all possible adjustments had been made without alleviating this tendency toward "hayraking," it was realized that the open space between the point and the coulter must be eliminated, but in such a manner that the coulter would not be jammed against the point.

The idea was conceived that if the point were slotted and the coulter adjusted to run in the slot, with the bottom of the coulter slightly lower than the tips of the point, (See figure 3), then any material which was forced down by the coulter, but not sheared would also be held down by the point, and would be left in place as the machine moved forward. To check this idea, four boots were equipped with slotted points and the remaining three left with the regular points. In approximately 200 feet of forward travel in a stand of paragrass which had been mowed and the cut material removed, the regular points (figure 1), "hayraked" to such an extent that the coulters jammed, while the boots equipped with slotted points (figure 3), remained entirely free. The machine was then fully equipped with slotted points and several acres of legumes and small grains were planted into both paragrass and pangolagrass with no further difficulty of the above nature.

After limited discussion with other workers in the fields of agronomy and agricultural engineering, it is believed that this is a basic improvement in this type of machinery and it is therefore being submitted through the university research council to Research Corporation, to determine if it is eligible for a patent.—R. J. ALLEN, JR., Assistant Agronomist, Everglade Exp. Sta., Belle Glade, Fla.