NOTES

higher than about 9\(\frac{1}{2}\) feet, and may be transplanted behind automobiles or pickup trucks at legal highways speeds.

The combine cuts a swath 40 inches wide. In fertilizer experiments at this station plots are usually made 8 feet wide and 50 feet long; an area 40 inches wide and 40 feet long (133 square feet) is harvested from the central portion of the plots. Where wheat yields 30 bushels per acre this provides a 5\(\frac{1}{2}\) pound sample. The combine is employed for trimming the plot ends prior to harvesting plot samples.

During the past season, these combines have been used to harvest experimental plots of wheat, barley, beans, alfalfa, fescue, and vetch on approximately 80 farms in various portions of Oregon. Two men are sufficient to operate the combine, but it is convenient to have a third man to tie and label the bags containing threshed samples. Crews of 3 men have harvested 30 to 40 plots (50 feet long) per hour. Liljedahl, Hancock, and Butler estimated the combine resulted in 80\% saving of manpower in comparison with hand harvesting. With the cleaning mechanism of the combine carefully adjusted to clean the grain, satisfactory weights for yield determinations may be obtained immediately. Where necessary, grain samples may be quickly cleaned of chaff and straw with a Vogel Re-cleaner.\(^8\)

It is our opinion that portable self-propelled plot combines may be constructed from several other small commercial pull-type combines, but probably none is as compact and light weight as the Allis-Chalmers Model 40. Insofar as we are aware, no implement company is presently manufacturing a commercial combine of a size suitable for conversion into a small portable self-propelled plot combine. Combines of suitable size are only available on the used market. All repair parts are presently available. It is the policy of the larger manufacturers to maintain stocks of repair parts of machines no longer in production for as long as any considerable number of them are in use.

A list of needed materials, drawings, and further description of the Oregon plot combines are available from the authors on request.—ALBERT S. HUNTER and JAMES H. JOHNSON, Soil Scientist, Oregon Agr. Exp. Sta., and Western Section, Soil and Water Management, SWCRB,ARS, USDA, Corvallis, Oreg., and Farm Foreman, Farm Crops Dept., Oregon Agr. Exp. Sta., Corvallis, Oreg.

\(^8\)Designed by Dr. Orval A. Vogel, Agronomist, Agricultural Research Service, Agronomy Department, State College of Washington, Pullman, Wash.

GRASS-LEGUME BAND SEEDING WITH
A SHOE TYPE DRILL\(^1\)

Establishment of alfalfa, clovers and cool season grasses is often difficult during fall months in southeast Oklahoma. Soil moisture is frequently limiting, with early fall showers usually followed by droughty periods. Low soil fertility is a limiting factor for vigorous seedling growth in grasses and legumes is obtained in this manner (figure 1). An excellent stand of cool season grasses and legumes was obtained in this manner (figure 1). An excellent stand of cool season grasses and legumes was obtained in this manner (figure 1). An excellent stand of cool season grasses and legumes was obtained in this manner (figure 1). An excellent stand of cool season grasses and legumes was obtained in this manner (figure 1). An excellent stand of cool season grasses and legumes was obtained in this manner (figure 1). An excellent stand of cool season grasses and legumes was obtained in this manner (figure 1). 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