

138.110

University of Alaska
ALASKA AGRICULTURAL EXPERIMENT STATION

February 1961
Palmer, Alaska

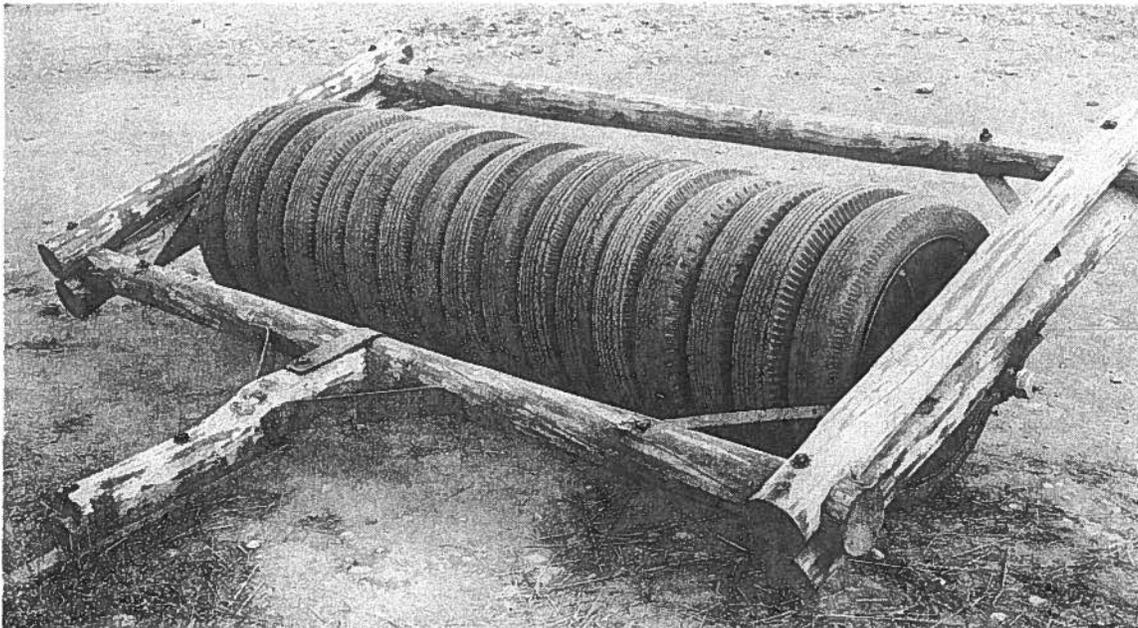
an inexpensive homemade

TIRE SOIL PACKER

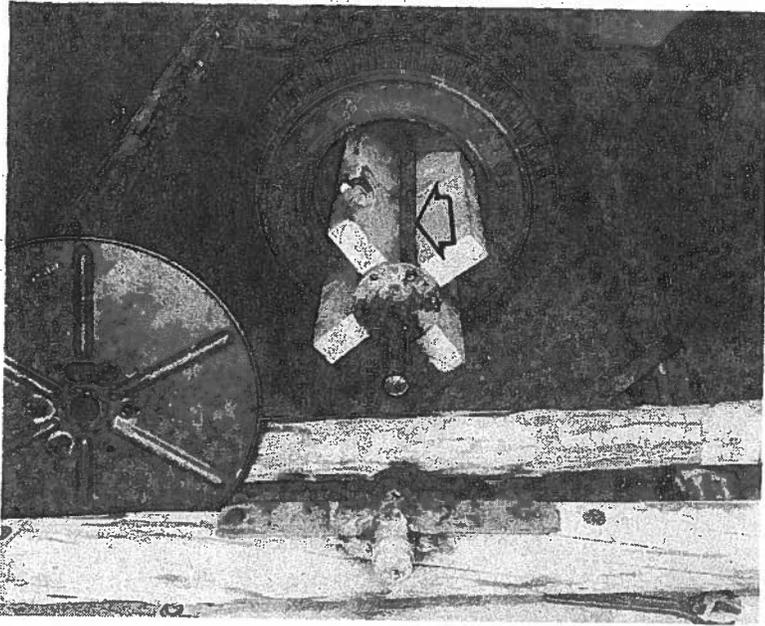
C. H. Dearborn, assisted by Larry and Barry Dearborn

INTERIOR Alaska's major farm regions usually suffer from spring droughts. In most years only frost moisture is available to germinate seeds. Under these conditions packing the seedbed after planting is essential, especially for small seeded crops. Even potatoes emerge faster if the soil is packed around them. Packing presses soil particles against the seed so that moisture is transferred to the seed coat. Without moisture many small seeds do not germinate so that stands are not uniform.

Most agricultural implements must be shipped to Alaska over long distances. Freight and handling charges may be nearly as much as the factory price of a heavy implement such as a cultipacker. Under most conditions an inexpensive home-made packer like that shown in the pictures does just as good a job as an expensive factory-built implement. In some situations it performs better than most commercial models. This implement was built from scrap materials—used automobile tires,



Overall view of eight foot soil packer constructed of used tires, local poles and scrap materials. See other side for details.



Details of assembly showing empty tires, plank core, tie rods (indicated by arrow) with threaded ends protruding through stub axles, tire retaining plate on left drilled for four tie rods, and frame with hub and cap assembly.

steel rod, flat steel—and local poles, all easily available for a cash cost of about \$25.

The empty tires fit over a core made of one 2" x 14" plank, to which are bolted two 2 x 6's, one on each side, as shown in the illustration. The axle seen protruding from the end of this core is from a truck, and is cut to the desired length. Two are needed, one for each end. These are held in place by four $\frac{3}{8}$ " rods, threaded on both ends. The tie rods run full length of the core. Nuts on both ends secure stub axles to the plank core.

The ends of a discarded telephone wire spool retain the tires on the core. Spool ends are better than the ends of a steel drum. The rolled end of heavy gauge spool ends do not chafe the sides of the tires.

Tires such as 6.70 or 7.10 by 15 or 16 work well on the 14-inch core. They should fit rather loosely. The illustrated implement has an 8-foot core which requires 17 or 18 tires. Better hillside performance is provided by 18 tires, because the weight of the implement exerts considerable pressure on the rubber, squeezing the tires in the down slope direction.

Hubs are of galvanized iron pipe big enough in diameter to fit snugly over the axle. Each is capped and tapped for a grease gun fitting. The left hand cap must be spot welded or

peened in place to prevent loosening by friction of the turning axle. Hubs are spot welded to the straps holding them to the frame. This prevents excessive end play within the frame.

Six or 8-inch logs make a good frame. Metal corner braces are firmly fastened with half-inch bolts that can be tightened as the wood shrinks. Preservative will prolong the life of the wood members.

This packer has been used behind a grain drill, for packing down newly planted potato fields, and for settling loose soil after plowing. These practices conserve spring moisture and promote seed germination. It has also been used to pack dry snow on open fields so that it was not blown away later by gusty winds.

Compared with conventional packers this home-made implement has five advantages. First, it does not require a large cash outlay. Second, its large diameter packs loose silt much better than small serrated metal disks which sometimes sink in a potato seed bed so that the plow layer flows over or around the packer. A third advantage is that the flexible tires are self-cleaning. Wet soil does not adhere to the rubber. The implement can be made any width to match a grain drill or other machine complements. And finally, this home-made implement can be towed at reasonable speed over gravel or blacktop roads.

