REPORT OF SUBCOMMITTEE ON MECHANIZATION OF ROADSIDE OPERATIONS

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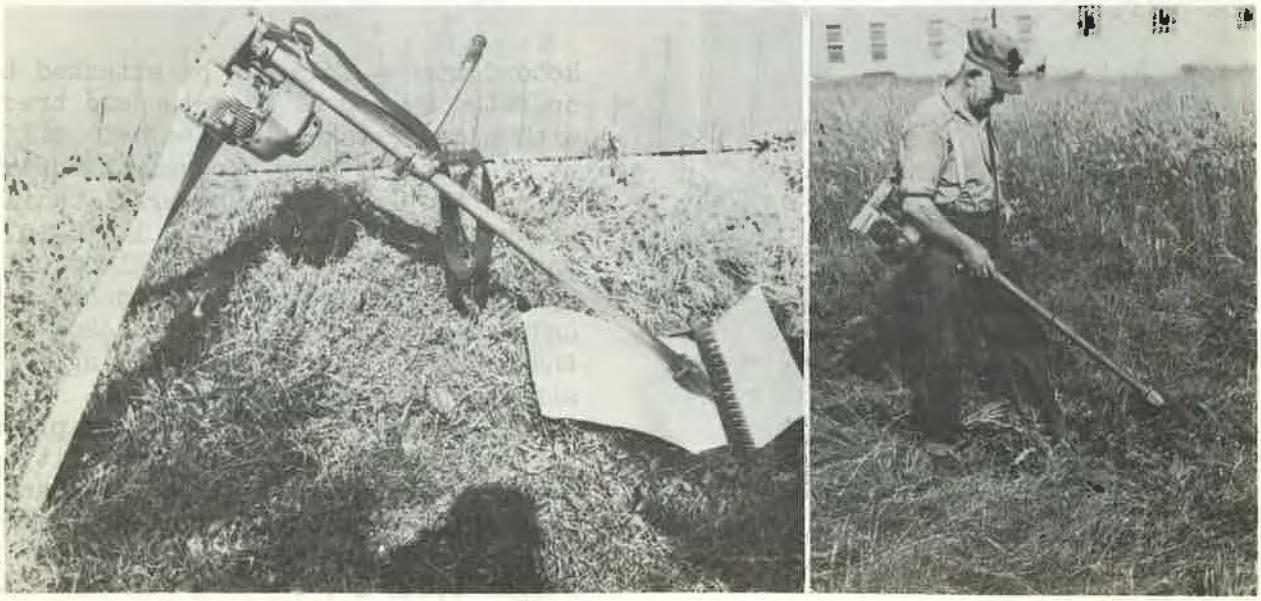
EACH YEAR we find more mechanized equipment in use because it has been found to be a saving in both time and money. We hope that if you are using any equipment that we have not included in the reports of the past four years you will bring it to our attention.

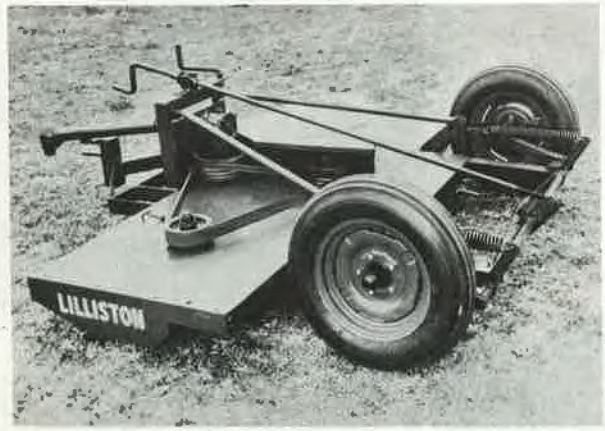
M. E. Tiller - This equipment is self-propelled and mounted on dual declutching wheels with 4- by 8-in. rubber tires. All controls are on the handle bars, which are adjustable vertically and horizontally. The unit is powered by a 7½-hp. Wisconsin or a 10-hp. Onan 4-cycle air-cooled engine. It has a V-belt cushioned drive. The transmission has two forward speeds, positive rotor clutch, and forged alloy-steel heat-treated gears; 12-in. tines of alloy heat-treated steel circle an alloy shaft fitted with Timken bearings. All of the unit rotates under a protective steel hood, part of which can be raised and lowered. An area 26 in. wide can be prepared to a depth of 1 to 8 in.



Scythette - This trims perfectly and evenly as you walk, and can be carried anywhere

with ease. It weighs 24 lb., is 54 in. long, and is well balanced. It is a precision-engineered, power-driven unit with double-action ground steel cutting head 20 in. wide. It has a 1¼-hp. single-cylinder 2 cycle 2-port-type air-cooled motor. The transmission has helical gears mounted in Torrington needle bearings. The gear case is cast aluminum equipped with Chrysler Amplex-powered bronze self-lubricating bearings. The drive shaft is a steel torque tube housed in aluminum tubing supported by bronze self-lubricating bearings. The shoulder strap is made of 1½-in. heavy-duty adjustable web belting. In 1 hr. the unit can do the work ordinarily requiring 4 hr. by hand. It operates 4 hr. per gal. of fuel.

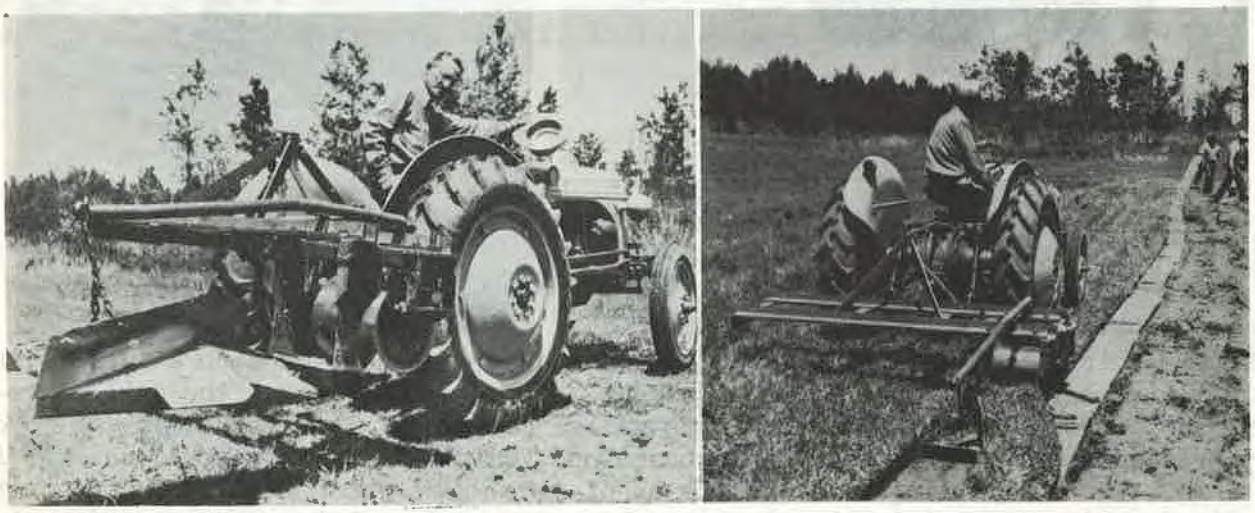
Sickle Bar Mower - This mower has an attachment which assists in holding it on the slope. It consists of a steel frame about 4 ft. long which attaches to a vertical pivot shaft on the top of the power scythe. A bicycle wheel is fastened on the opposite end of the frame. A stabilizing bar is attached to the front of the scythe by a swivel joint and hooks to the outer end of the frame. By unhooking the stabilizer bar the entire attachment swings around on the vertical pivot pin to the opposite side of the unit.



Roto Cutter - This can be attached to and operated by any of the standard tractors with a power take-off, the only difference being that the Ford Ferguson tractor requires the 1 1/8-in. universal, while the other tractors all require 1 3/8-in. universals. A Blood Bros. shielded universal connection is used for dependable power and safety. A hand-operated jack raises the machine for one-man hitching. Construction is strong and rugged. The frame is all-steel with a rigid floor plate deck for maximum strength and durability. A steel cover protects all pulleys and belts. Wing skids protect the blades by preventing "digging in" on uneven ground. It weighs 1,040 lb. and has standard 15-in.

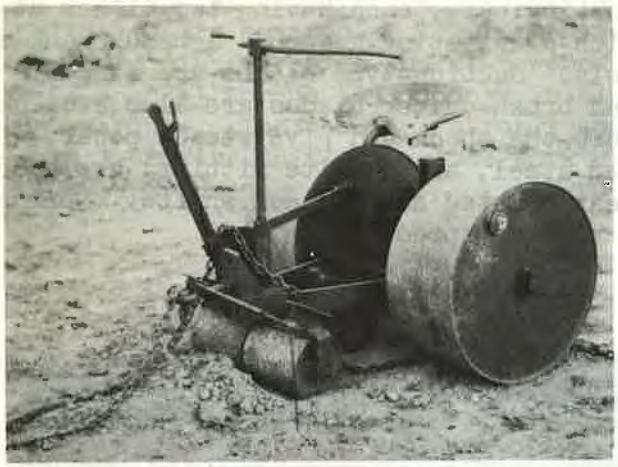
wheel rims. It operates up to a speed of 10 mph. Its whirling blades cut a clean wide 7½-ft. swath. Adjustable cutting height is up to 16 in. Individual shear pins for each of the six blades protect them when hitting stumps or other large objects. The blades require no sharpening. Three rotary cutting bars, each having two blades attached, produce a fine chopped or shredded mulch of existing growth. A hand crank adjusts belt tension for all blades simultaneously. Suction-type blades are standard equipment. Heavy-duty high-carbon heat-treated brush-cutter blades are also available. Five drive belts, all of the same length, absorb the shock and give steady power. Genuine Timken bearings, enclosed in case-hardened steel, and Alemite fittings are used throughout. The steel gears run in oil, on heat treated alloy steel shafts. Spring shock absorbers reduce vibration and increase working speed.

Tractor - This tractor is engineered and built for mobility and compactness for swift maneuvering and extra stability to work safely on hillsides. The tread width range is 60 and 68 in.

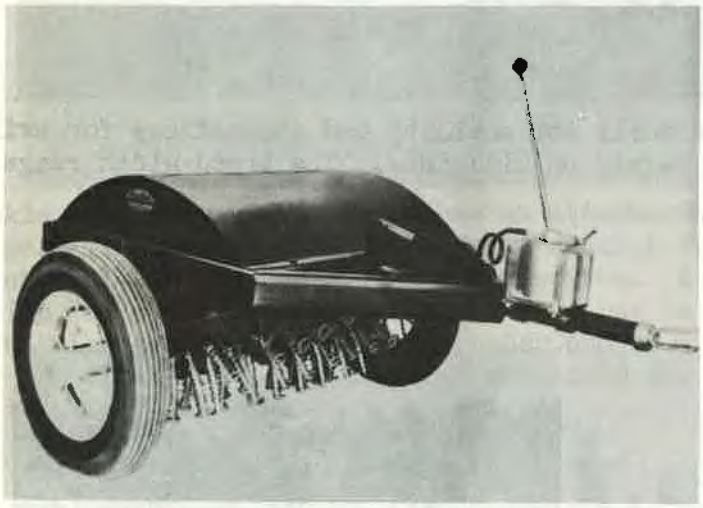


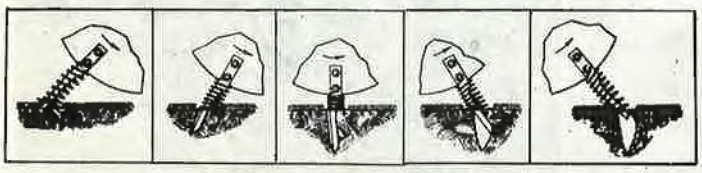
Sod Cutter - This unit is attached to the power take-off of a tractor. It cuts the sod a designated width, and the cutterbar undercuts the sod to a specified thickness. As the sod is cut, it is lifted and moved into a compartment which directs it off to one side and on to boards. These boards are 12 in. wide and 8 ft. long, previously

placed along the sod which is to be cut. As soon as the sod is placed on top of the board, sod and board are ready for loading and delivery.



Sod Cutter - This sod cutter is towed by truck, tractor, or jeep. The cutterbar is an arrow-shaped plow which cuts one-half a strip of sod at a time on each side of the rolling coulter wheel. The depth of cut is regulated by a hand lever. The machine is steered by means of a handle bar so that the sod can be cut to a line by using a guide arm at the front of the machine. The rear wheels may be filled with gravel or water if desired.





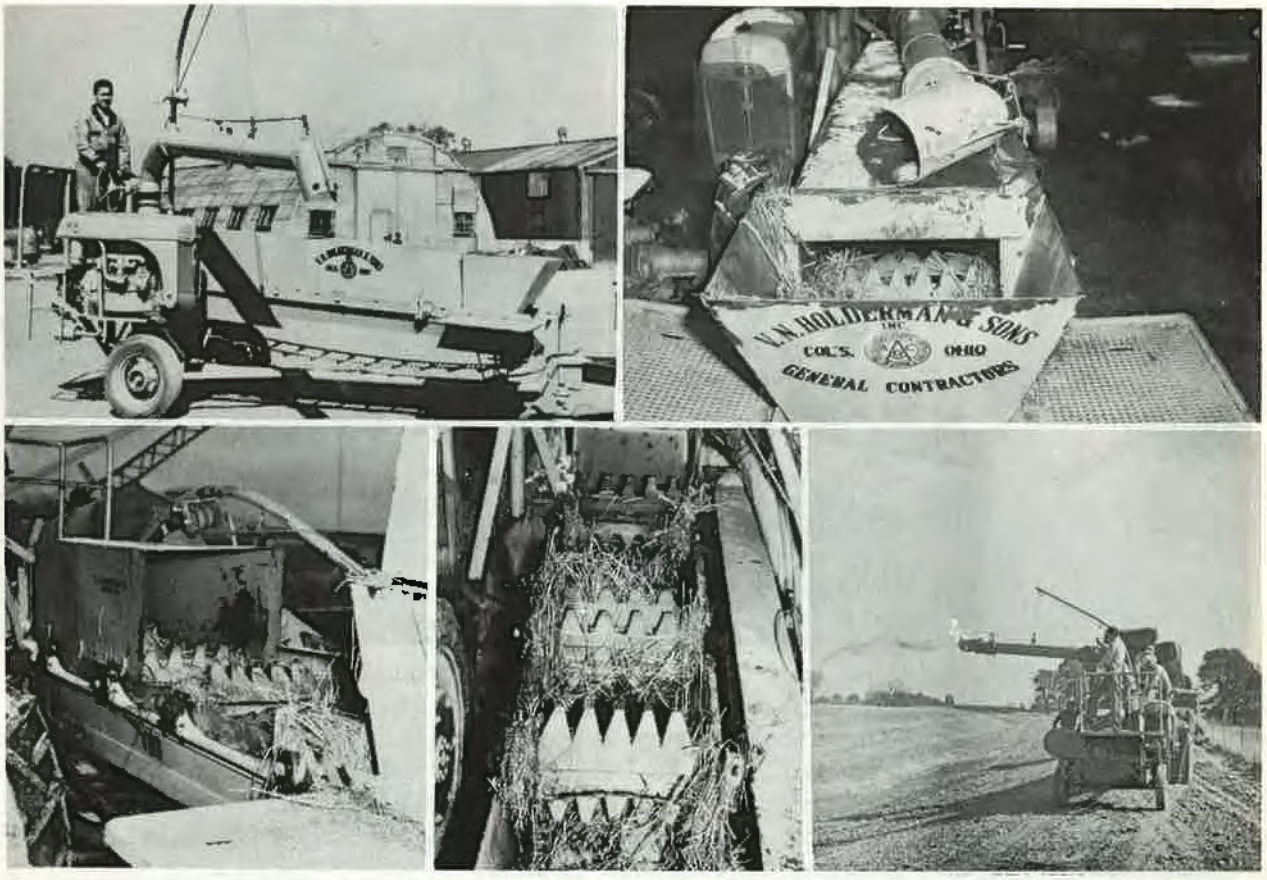
Aerifier - This F-G model Aerifier cultivates and aerates soil beneath a turf cover, with a minimum of disturbance to the surface. Hollow spoons loosen the soil by removing soil cores, leaving numerous loose-walled cavities. The Aerifier frame is of heavy pressed-steel channel-welded construction. Cultivation depth is adjustable from 1 to 4 in. The cultivating reel is made up of nine discs which revolve independently on a fixed shaft, to minimize tearing when turns are made. Discs are mounted on individual bearings which have removable bronze inserts. Grease fittings are standard. Each disc is equipped with twelve hollow spoons 4 in. apart at the base. The standard unit may be used with 1 or $\frac{1}{2}$-in.-diameter spoons. The machine is equipped with

standard hitch and can be pulled by any tractor. It is available with flexi-press, a device which reduces to a minimum any disturbance of the turf surface by holding turf down around each spoon, providing safe aerification for thin, shallow-rooted turf. Soil cores pass through the wire spiral of flexipress and are partially broken up, so a much cleaner aerification job is done. The machine may be equipped with a hydraulic lift unit, operated from the tractor. The hydraulic unit raises and lowers the cultivating reel without altering the cultivation depth originally set. The single unit cultivates a swath 3 ft. wide.

Tamping Roller - This is used to roll straw into the ground. The roller is a double drum with the studs on 8-in. centers. The studs are 6 in. high and 6 in. wide at the base, and are made of 7/8-in. stock. They are shaped as shown in the picture to prevent withdrawing of the straw while it is being rolled into the ground. It weighs 1850 lb. empty, and approximately 3850 lb. when loaded; each drum is 30 in. wide. A machine may be obtained with four drums instead of two. It covers a total width of approximately 10 ft. and is used for flatter grades.

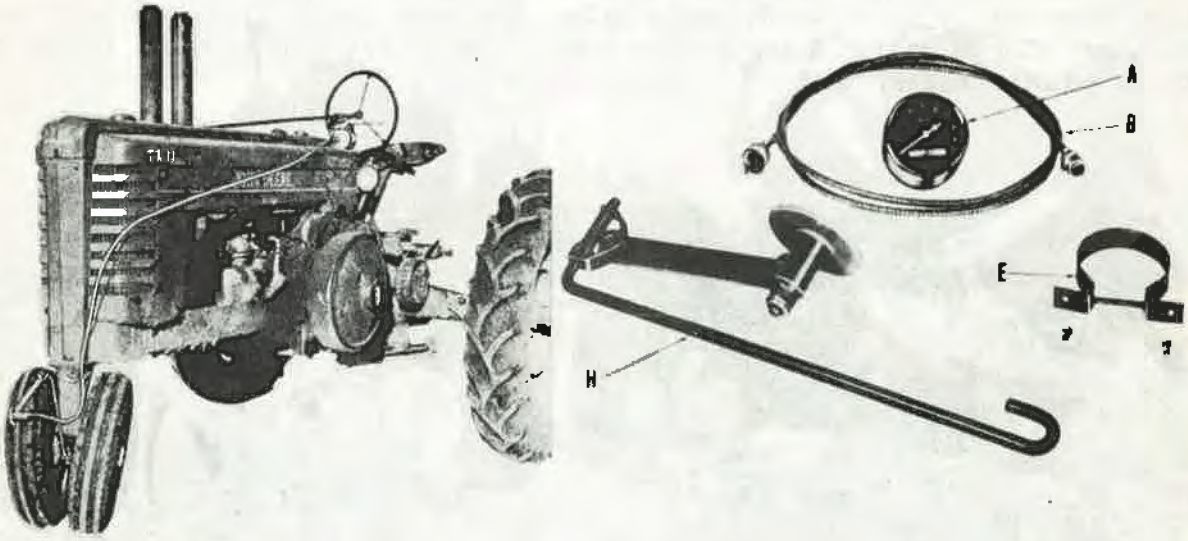
Tree-Mover - This piece of equipment consists of all-steel-welded frame; welded steel cradle and boom assembly operated by push-pull ratchet jack; swivel front-wheel assembly that swings up out of the way, with 15-in. by 7.60 tire and tube; and rear axles

equipped with 15 by 6-in. wheels and Timken bearings. The tire tread is adjustable from 52 to 64 in. The machine is 12 ft. long, 7 ft. 6 in. high, and weighs 800 lb. It has a carrying capacity of 3,000 lb. and/or a 52-in.-diameter tree ball 30 in. deep. The ratchet lever jack positions the boom 30 deg. forward and 30 deg. backward. The cradle is made of ¼-in. dished boiler plate 24 by 36 in. The six sloping sides support the tree ball at more than one point of contact to prevent breaking up of ball. The tree-ball sling, made of rubber-covered belting with rust-resistant metal parts, is easily installed or removed and is adjustable for tree-ball size. The lifting yoke is rust resistant; the ratchet lever chain hoist is supplied with a special 7-ft. load chain.



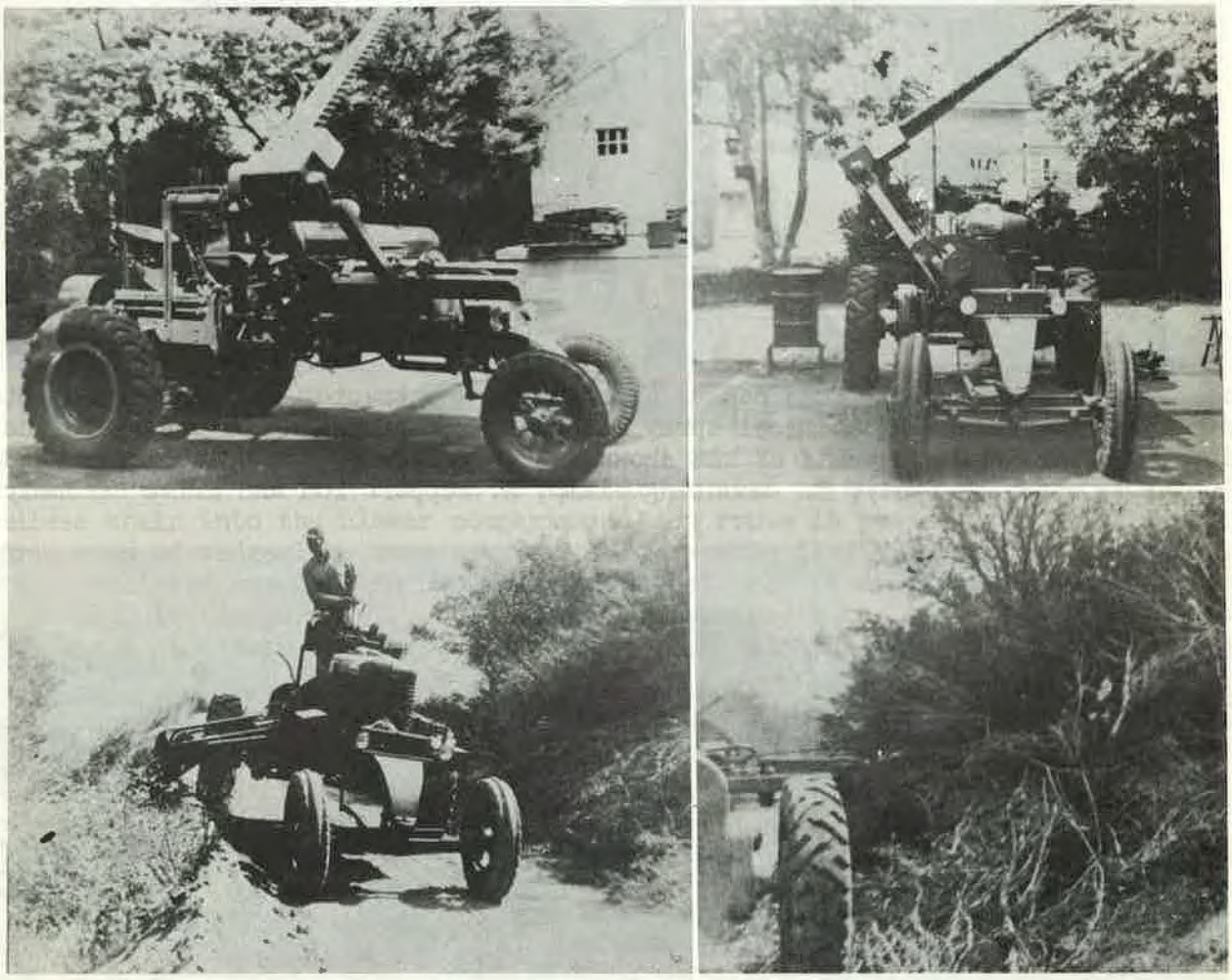
Straw Blower - This piece of equipment is towed behind a truck. A section of a bale of straw is started through the end of the blower next to the truck, and is carried by an endless chain into the blower compartment. En route it passes over a cylinder which has four rows of wedge-like tapered steel fingers with five fingers in each row. Each alternate cylinder revolves in the opposite direction; this fluffs the straw as it moves through the compartment. These drums are encased in a steel hood which can be easily raised and lowered. A Fordson tractor motor provides sufficient power.

Stone Rake - This machine, which can be towed by truck or tractor, can be adjusted as to height by a hand-operated hydraulic lift. The frame is of steel channel iron. The spring-steel tines are bolted between two pieces of steel which hold them in place. The angle of the rake is adjustable by rotating the front of the frame and tongue. Coil springs allow for the release of pressure exerted on the surface when an obstruction is encountered.

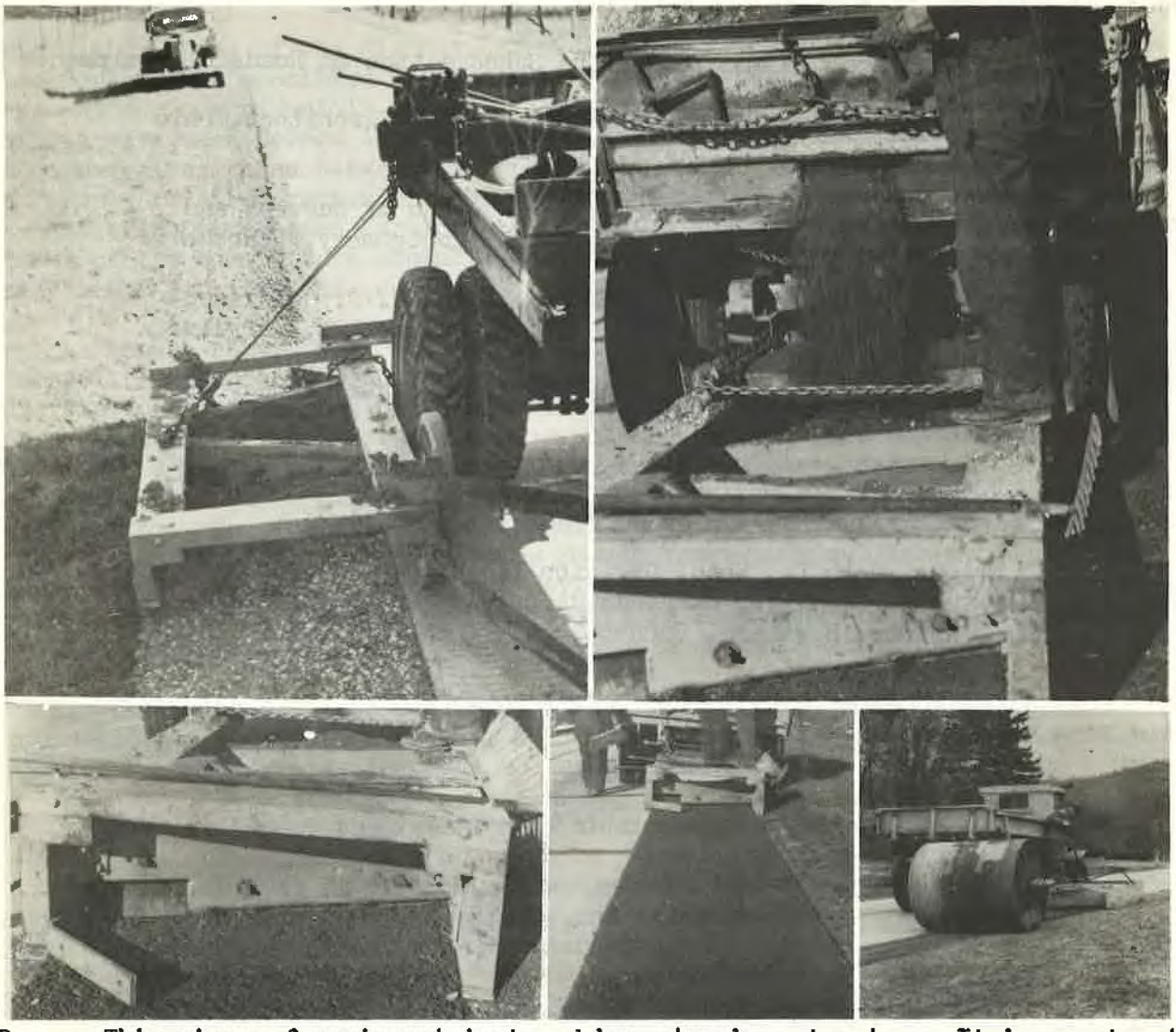


Tractor Speedometer Drive - This can be attached to any tractor spraying equipment. It regulates the amount of chemical spray material used according to the speed the tractor is traveling. Contents of kit shown are as follows: A. speedometer head; B. flexible shaft (9-foot); E. mounting clamp; H. support rod and drive assembly.

Spreader - This equipment may be used to spread sawdust and Baker bark, a mixture of chipped slab bark mixed with sawdust, for mulching purposes. It is a two-wheel tractor spreader, one-piece hitch and frame. All controls are within easy reach of the tractor driver. The short coupled hitch is extra strong and well braced, and permits shorter turns and easier handling. An upright rod controlling the king pin makes the hinged hitch easy to guide directly over the tractor drawbar. The self-locking stand couples easily and quickly to tractor drawbars of various heights. A support leg is automatically held and locked in position for clearance in transit and while spreading, but drops down when tripped with a rope. A large bearing foot minimizes sinking when the tractor is unhitched. An endless chain, working off a slowly revolving sprocket wheel, delivers the load contents to the rear of the spreader. A four-bar top cylinder controls the flow of material to the main cylinder which has eight bars. Open cylinder ends prevent wrapping. The teeth on the cylinders are round high-carbon steel. The hammer mill revolves at a high speed and evenly distributes the material over a full 7-ft. width. The eight cleaver-shaped blades are mounted on a square shaft and are equipped with anti-friction roller bearings on the drive end. Drive chain and sprockets are protected by wide full-length shields. Direct action drive makes up the simple drive construction. Seven sprocket teeth are always in contact with the drive chain. The drive sprocket is keyed to the main axle. The axle is of 2½-in.-diameter cold rolled steel. Large roller bearings are used. Wheels are demountable, fitted with high cleat tractor tires.



Brush Mower - This heavy-duty brush mower was developed by the U. S. Department of Agriculture Forest Service. It is mounted on a grader chasis; power to operate the mower is obtained from the grader motor.



Box Drag - This piece of equipment is towed by a truck or tractor. It is constructed of 3-in. oak plank and is 8 ft. long, 4 ft. wide, and 12 in. deep. Steel runners are bolted to the lower side of the box. Three blades and struts distribute and level the aggregate. The first is placed at an angle 15 in. back on one side and 33 in. on the other, so that the material is distributed to the pavement edge. The strut is a 3- by 10-in. oak plank with a 4 by 10-in. slot so that excess material can pass through it into the center compartment. A steel blade 3/8 by 11 by 32 in. is attached to the strut by bolts. Enlarged slots, 1 by 3½-in., allow the blade to be adjusted. The blade extends 2 in. below the strut but does not cover the slot. The middle strut and blade are designed the same as the first. They are placed at an angle, 58 in. back from the front of the drag on one side and 45 in. on the other, so that the material is distributed away from the pavement out toward the shoulder. The third strut is also a 3 by 10-in. oak plank but the slot is only 4 by 6 in. The blade is 8 by 36 in. The strut and blade are placed at an angle, 70 inches back on one side, and 88 in. back on the other, so that the material is again distributed to the pavement edge. A steel-blade fin assembly, 3/8 by 8 by 16 in., is adjustable and bolted to the frame at an angle so that it will level out any excess material left after the filling and leveling process has been completed. Two 3 by 6 by 4-ft. oak planks are bolted to the frame, one at the front and one at the rear, to allow a man to stand on the box to regulate the amount of material to be used. A stay bar at the front of the drag provides a hand hold for

security. The width of the drag varies, depending on width of shoulder to be maintained. For transportation the drag is drawn up and chained to the rear of the truck. An alternate provides wheels so the drag may be lifted and pulled. A roller may be attached, if desired, to compact the material.

The following are the members of the Subcommittee on Roadside Equipment:

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