

This Tractor Cost Only \$50



A powerful midget, it shows what you can do with junk-yard bargains, a hacksaw, and a welding outfit.

PS photos by W. W. Morris

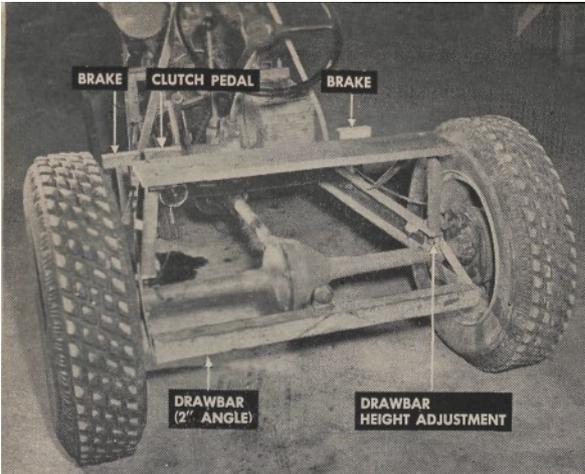
SOON after Paul E. Matous completed his \$50 tractor, a friend's automobile got stuck in the mud.

"As a gag, he yelled to me to come and pull him out," says Matous, a building contractor at Orangeburg, N. Y. "He thought I couldn't possibly move the car."

Matous was doubtful too. After all, a tractor with a 7-hp. engine is no road-building giant. Another car already had failed to budge the stuck car, even with the



It weighs 450 lbs. One man can easily tip it over. But don't let that fool you about its stability. The builder reports it never "rears up."



Individual brakes make short turns possible. Axle is hooked in notched frame, but U bolts, as in drawing at bottom of page, would be better.

help of a couple of well-muscled pushers. As Matous hooked on, the pushers winked at each other. But the little tractor buckled down and dragged the car free.

Matous then turned to the others. "You guys certainly can push," he grinned. "Push!" one of them said. "We weren't pushing! We were *riding!*"

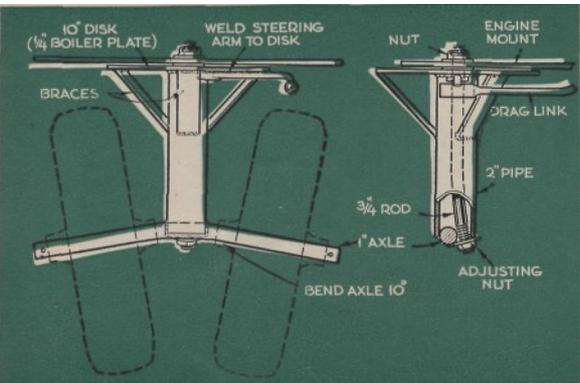
Matous is a shrewd bargainer, as well as a good craftsman. Otherwise, he couldn't have kept the cost of his doodlebug so low. He paid only \$35 for a surplus engine—a single-cylinder, air-cooled, four-cycle Briggs & Stratton. A Ford transmission, Ford steering gear, pre-war Austin rear end, and other parts came from a junk yard.

In assembling these, Matous worked mostly with a hacksaw and welding outfit. No machining was required.

The Matous tractor doesn't compare in looks with some of the commercial jobs, but its builder offers to bet it will easily outperform at least two famous makes. On that score, Matous argues with some authority. His main job several years ago consisted of repairing agricultural tractors.

Matous is proud of the tractor's stability. By experimenting, he produced a nice balance between traction and power. For easy maneuvering, the wheelbase was kept short. But so far Matous has not found a situation that will cause the front wheels to leave the ground.

Good weight distribution explains this. The engine rests as far forward on the frame



Front-wheel assembly pivots on a boiler-plate "fifth wheel." A 3/4" rod through the 2" pipe ties assembly to boiler-plate engine mount.

as he could get it. This shoves the balance point ahead, but there is no loss of traction. The operator's weight helps here. For some jobs, Matous adds about 100 lb. by filling the rear tires with water.

Sprockets, countershaft, and chains carry the drive to the Model-A transmission. Speeds are about 10 m.p.h. in high, 4 m.p.h. in second, and 1½ m.p.h. in low.

A brake-equalizer hanger from a Ford V-8 provided a readymade countershaft bearing. The shaft itself is a 9" length of 7/8" rod, tapped ¼" deep for setscrews that secure the sprockets. Each of the two bearing points was drilled and tapped for a grease fitting. Bolted through slots to its angle-iron mount, the countershaft hanger can be moved to adjust chain tension.

When Matous set out to build the tractor, he intended to cut down a Ford rear end. But he decided to forego this job on finding

that an available Austin unit had the 44" tread he wanted. He installed this with considerable misgivings. But despite its lightness it has stood up well.

Buick wheels at the rear take 7.00 by 15 mud-grip tires. Inflated to less than 10 lb., these put a large area of rubber on the ground. For some jobs, Matous puts on tire chains.

The front tires are 4.00 by 8 (the wheelbarrow type), standing 16" high. These roll on a 1" axle, bent 10° for the proper camber. Welded to the center of the axle is a length of 2" pipe, welded and braced at the upper end to a 10" disk of ¼" boiler plate. In operation, this disk bears against a sheet of ¼" boiler plate that ties together the front end of the channel-iron frame. A ¾" threaded rod, running down through the 2" pipe, holds the wheel assembly to the frame boiler plate. At the lower end, this rod is



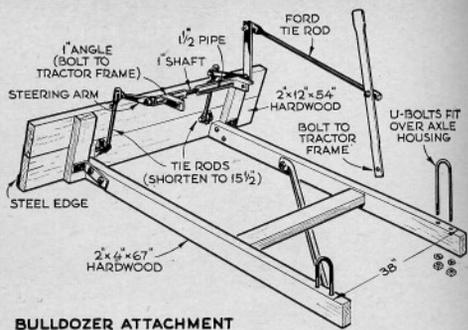
Homemade bulldozer attachment hangs on rear axle of tractor. As the sketch shows, Matous

bent toward the rear to clear the axle. A nut on its end provides adjustment.

The steering assembly came from a Ford V-8. After shortening the shaft to 24", Matous reversed and centered the steering arm. Then he attached the drag link to another steering arm welded to the disk.

For the frame, Matous welded together bed-spring angles in channel form. The engine is bolted to the boiler plate that brackets the front end of the frame. For easy starting, the engine is located with the starting pulley overhanging the plate. The tractor has no bumper, but one could easily be added, as suggested in the drawing.

At the present time, the lights draw juice directly from a 6-volt battery. The headlamps are back-up lights fitted with 32-candlepower bulbs. Future plans for the tractor include installation of a generator high up under the rear part of the hood. This part



BULLDOZER ATTACHMENT

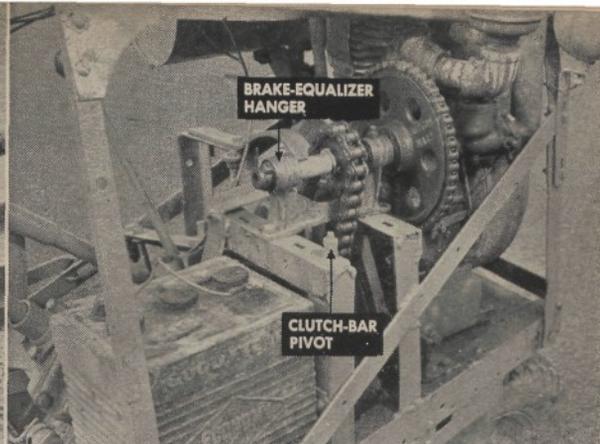
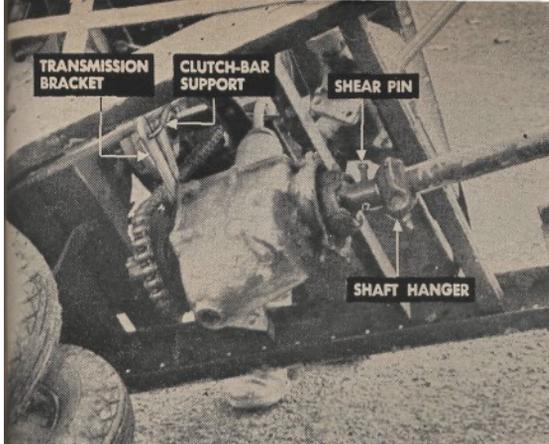
made generous use of junked auto parts when building bulldozer as well as the tractor itself.

is flat, and for a reason: it makes a convenient spot to lay tools or the gas-can cap.

A remote control for varying the tension of the governor spring from the driver's seat is another proposed improvement. A third is a conveniently located toggle switch to stop the engine by shorting out the magneto.

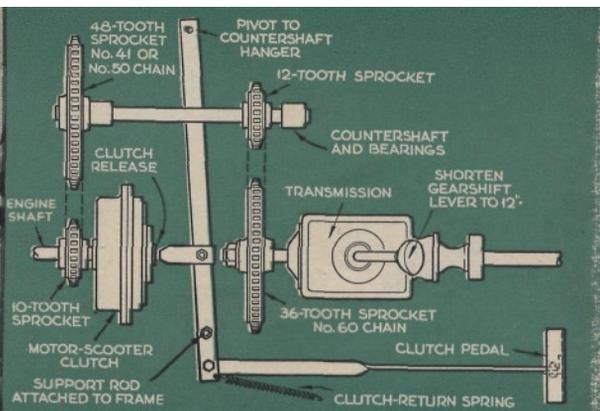
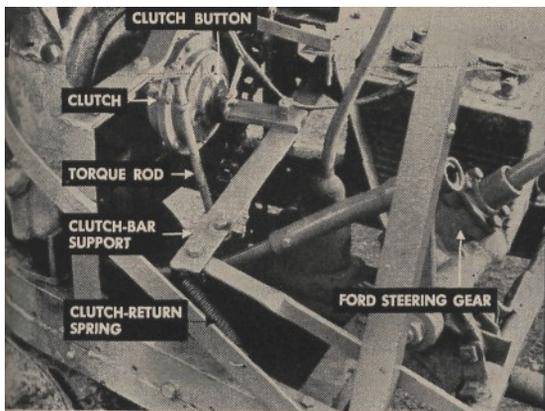
About the time Matous built the tractor he also bought a tract of rolling woodland. On this tract, which he refers to as his private Aberdeen proving ground, Matous has made the tractor a real workhorse. Among other jobs, he has used it to snake heavy logs, drag a heavily loaded trailer, and level off the ground with a homemade bulldozer blade.

He hasn't yet gotten around to setting it to the routine small-farm and garden chores—plowing, cultivating, mowing, and the like—but he feels confident the machine will take all these jobs in good stride. **END**



A **shear pin** protects power train. Universal joint was kept only to make assembly easier. Since rear is unsprung, it could be omitted.

A **brake-equalizer hanger** from a Ford V-8 supports the countershaft. Drive-chain tension is adjusted by moving the hanger in and out.



Clutch linkage is simple. When you press the pedal, a transverse bar pivots forward. Short arm depresses the button, disengaging clutch.

Sprockets and chains carry drive from engine to transmission. Sketch shows power train and clutch linkage from viewpoint directly above.

