



Trimming arm, fitted with two round cutting discs, bends freely backward and also folds up 90° for transport or storage. (Photo shows 3-pt. unit without rear mower.)

SPRING-LOADED CUTTING ARM "ROLLS AROUND" TREES, SHRUBS, BUILDINGS "No-Stop" Trimming Mower

The need for a better way to mow a 7-acre farmstead that's home to some 400 trees led to the development of a new-style "no-stop" trimming mower by Missouri farmer David Gates.

"There's not another mower like it on the market anywhere. When I'm through mowing, I put the tractor away and go to the house. I don't have to do any hand trimming and the yard looks like it's been hand-groomed," says Gates, who's worked on the new-style mower for three years and recently received a patent for it. He's started building the mower for sale and hopes to have about 100 units on the market this year.

Gates says his goal in designing the mower was to build a unit that would mow up close around trees, shrubs and buildings without any need to slow down his rate of travel.



Edges of cutting discs are covered with rubber and small roller wheels on leading edges help roll trim arm around trees and other obstacles. (Photo shows unit mounted on side of rear mower.)

The add-on mower arm - which bends backward 90° - supports two 17 1/2-in. dia. cutting discs. Edges of the housings around the discs are covered in rubber and small roller wheels on front help roll the cutting arm around obstructions without doing damage. The outer cutting disc can be fitted with unbreakable plastic cutting cord, rather than blades, in order to reduce potential damage to trees. Gates has also used chain-saw chain on the outer disc.

The 35-in. wide trim arm is designed to mount off to the side of a 16 to 22 hp. tractor. Can be used with either rear-mount or belly mowers. Gates uses his with a 60-in. wide rear mower for a total cutting width of 95 in.

The arm is held in place by a pair of springs that run out along the length of the arm. A small closed hydraulic compression cylinder mounts on the front side of the arm. The cylinder pulls the cutting arm back up into position after it's pushed backwards. The cutting arm can also float down below the horizontal in ditches.

The cutting discs float over the ground on rounded, smooth concave discs which are also used to set cutting height. The cutting discs are powered by two hydraulic orbit motors that turn at about 4,460 rpm's. They require 3.5 gpm at about 1,950 psi. Gates says the trim arm could be used on smaller garden tractors but it would probably not work as well as a larger tractor. The mower plugs into one set of outlets.

"It so gentle you can use it even around your most precious and delicate fruit trees. It's great for mowing in orchards and around shelterbelts," says Gates, noting that when you're out in the open the trim arm simply works as a normal mower, increasing cutting width by the full 35 in.

For more information, contact: FARM SHOW Followup, David Gates, Rt. 5, Box 148-B, Chillicothe, Mo. 64601 (ph 816 646-2654).



Meyer put truck suspension under the front-end of 72-ft. combine sprayer so that it "rides as good as a pickup" in the field.

COST \$6,500 TO BUILD

Crop Sprayer Built From Old NH Combine

"It covers a 72-ft. swath and, at 10 mph, we can spray 80 acres per hour," says Edwin Meyer, who converted an old New Holland 995 combine into a state-of-the-art self-propelled crop sprayer.

"We've used it for 5 years with only a few modifications. It cost about \$6,500 to build and has made spraying an easy chore. The ride is as good as a pickup. The pressurized cab has an activated charcoal filter, protecting the operator," says Meyer.

"We used the steering axle, transaxle, cab, 361 Ford motor, hydraulic pump, variable speed drive and various miscellaneous parts - including hydraulic lines and electrical wiring - off the New Holland combine.

"We built the chassis from the ground up out of 6-in. channel iron, attaching the steering axle to the front of it, adding a cross mount truck spring, coil over shocks, and radius rods. The original steering is completely hydraulic with no mechanical linkage so it was easy to reconnect.

"The rear axle is mounted solid and fitted with large tires to provide flotation. The motor sits crossways behind the cab, mounted on the original subframe.

"An 800-gal. (imp.) poly tank mounts slightly ahead of the center of the rear axle. We used a factory-made cradle for the tank. A belt-driven Hypro 9203 pump with an electric clutch does all the pumping, including transfer of water from a nurse tank to the sprayer via a 1 1/2-in. ball valve. Filling takes about 15 min., during which we add chemical to a 12-gal. mix and fill tank. Mixing is almost instantaneous as all liquid passes through a perforated agitation tube running the full length of the tank.

"A separate 30-gal. pressure tank, mounted underneath the front of the main

tank, contains only pure water. It's pressurized by a small belt-driven air compressor and fitted with a pressure relief valve set at 30 psi. Gives us the convenience of a garden hose in the field at all times for rinsing and flushing.

"Boom wings are hydraulically raised and lowered, as is boom height. Combine header and reel height controls mounted right on the steering column are used for this. Two wheels are used on each wing with a knee action suspension and adjustable coil over shocks. The end wheel on each boom and the last 5 ft. of each boom pivot 90°'s hydraulically when lifting the wings for transport. The last 5-ft. section also features a breakaway to settle arguments with power poles.

"We use 110° nozzles with 20-in. spacing. At a 14 to 16-in. height, we get 100 percent overlap, so every plant gets a blast from two angles.

"We installed a Smith-Roles sprayer monitor-controller which automatically applies 10 gal. per acre at speeds between 7 and 11 mph. It also monitors gallons per hour, mph, gallons per acre, miles travelled, acres covered, gallons pumped, and psi.

"After much experimenting with various types of markers we ended up with Peacock pressurized foam tanks. Two 1/4-in. hydraulic hoses deliver foam to electric solenoids at the ends of the booms. Control of foam is manual using a switch in the cab. The foam is heavy enough to drop right to the ground and stay put and it lasts up to 12 hrs."

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Boom folds hydraulically for transport. Two large wheels support each wing.

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