

Revolutionary Front-Mount Mower Deck Design

"It can cut closer around trees and under bushes than anything on the market," says Lew Williams, who designed and built a totally new kind of deck for front-mount riding mowers. What makes it unique is that the caster wheels are underneath the deck – rather than out front – and the new-style mower blades rotate around them.

The prototype 54-in. deck mounts on a Deere zero-turn mower. The rider sets his feet on top of the deck, which is equipped with 3 spindles set in a triangular configuration, allowing 3 points of contact with the ground.

"The narrow front end allows mowing and trimming close to and in between obstacles, such as trees and bushes," says Williams. "I can mow to within 1/4 in. of whatever I want to trim."

For years, Williams worked as an independent consultant for the lawn and garden industry. Although intrigued by the zero-turn mowers on the market, he noticed they all had a major design flaw.

"The problem is the caster wheels are out in front and in the way," he says. "My design puts the caster wheels underneath the deck. My goal is to eliminate

secondary trimming as much as possible. With the deck's pointed front end I can mow right up to buildings or fences, or go under bushes or evergreen trees."

Williams fitted the deck with new disc-type mower blades that rotate around each caster wheel. Each "cupped" mower disc is fitted with 2 swinging cutter blades that cut a solid swath across the width of the deck. The caster wheel spindles ride inside the blade spindles, which in turn rotate inside specially designed hubs.

Williams says the new deck design offers a lot of potential for front-mount mowers of any kind, including walk-behind mowers. "Although my particular deck has 3 spindles, the same spindle-caster wheel design could be used whether you have one blade or multiple blades," he says.

Now that a U.S. patent has been issued for the caster spindle apparatus, he plans to offer purchase or licensing opportunities to manufacturing companies.

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Front-mount mower deck is designed with the caster wheels underneath the deck – rather than out front – and new-style mower blades that rotate around them.



New mower can cut close to buildings and under trees and bushes. "I can mow to within 1/4 in. of whatever I want to trim," says inventor Lew Williams.

Sprayer-Mounted Leaf Blower Wipes Out Mosquitoes

A 2-wheeled yard sprayer combined with a leaf blower can be used to make an effective mosquito fogger, says Marlin Galde, Wahpeton, N. Dak.

The leaf blower mounts on a turntable at the back of the sprayer and can be rotated back and forth up to 180 degrees by pulling on a pair of ropes from the tractor.

The 2-wheeled yard sprayer was originally equipped with a boom on back operated by a small electric pump. Galde replaced the boom with a Stihl leaf blower, attaching it to a small wooden frame that rides on the turntable. Wooden dowels protrude from both sides of the wooden frame and are attached to ropes that run up to the tractor. Vertical bolts on both sides of the L-shaped platform serve as rotation stops.

The sprayer's hand-operated spray wand fits inside the blower's plastic discharge tube and is used to "atomize" the spray. The tube had to be lengthened in order to make room for the wand, so Galde cut a 1-ft. length of plastic tubing off an old Sears Craftsman leaf blower and clamped it onto the end of the Stihl discharge tube. Then he drilled a hole in it and inserted the wand's brass nozzle, extending it about 3/4 in. beyond the end of the tube. A hose on

the tank hooks up to the wand by means of a screw-on adapter.

"It works fine and greatly reduces mosquito populations that transmit the West Nile Virus and other diseases," says Galde. "I usually spray in the morning when mosquitoes are still in the grass, shrubs and trees. I use it on my 2-acre yard and also on my neighbor's yard. It works fast. I can spray my yard in only about 10 min."

The last 8 in. of the sprayer wand is factory bent at an angle. Galde tightened the wand's nozzle so that it points upward at a 30 degree angle for better coverage in trees and shrubs. "The blower sends spray about 20 ft. out and about 15 ft. up so I can spray right up into shelterbelts," says Galde. "I use Tempo chemical which is quite effective and a little less toxic than some other chemicals."

The entire unit is held in place by a 6-in. long, 1/8-in. dia. metal pin so Galde can quickly detach the blower.

"I usually lock the leaf blower's handle so that it runs at full rpm's. With the leaf blower running at full speed, air comes out at about 180 mph, so it kicks the spray out pretty good," says Galde. A wire runs from the electric pump up to the tractor, where



Leaf blower mounts on a turntable at back of sprayer and, by pulling on a pair of ropes from the tractor, can be rotated back and forth up to 180 degrees.

Galde mounted a toggle switch so he can start the pump without having to get off the tractor.

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3-Pt. Yard Rake Makes Lawn Cleanup Easy

David Owings's home-built yard rake gets debris off his lawn quickly, and makes short work of other chores using an array of rubber-mounted rake/baler teeth. The teeth are mounted on an 8-ft. long, 1 1/2-in. dia. pipe that mounts on a Cat. 1, 3-pt. hitch frame.

"I use it on my Deere 4010 tractor for lawn raking, dethatching, light landscape work, seedbed preparation, and incorporating lawn seed," says Owings.

He bought the rake teeth at a local farm store. The teeth are 8 in. long and mount on rubber balls that fasten to the pipe where they're spaced about 2 in. apart. Owings drilled a series of holes in the pipe and then fastened the teeth as close to each other as

he could. He also welded together some scrap metal to make mounting brackets for the pipe.

"It works great for dragging sticks, and for dethatching as it spreads the material on top of the grass where it's easy to mow up. I can adjust the 3-pt.'s top link so the teeth will grab more aggressively, for example, if I want to drag up dirt. Sometimes I drag the material into windrows by stopping at the end of the yard and raising the 3-pt. to dump the load."

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David Owings recently used his home-built rake to collect storm debris into a big pile.