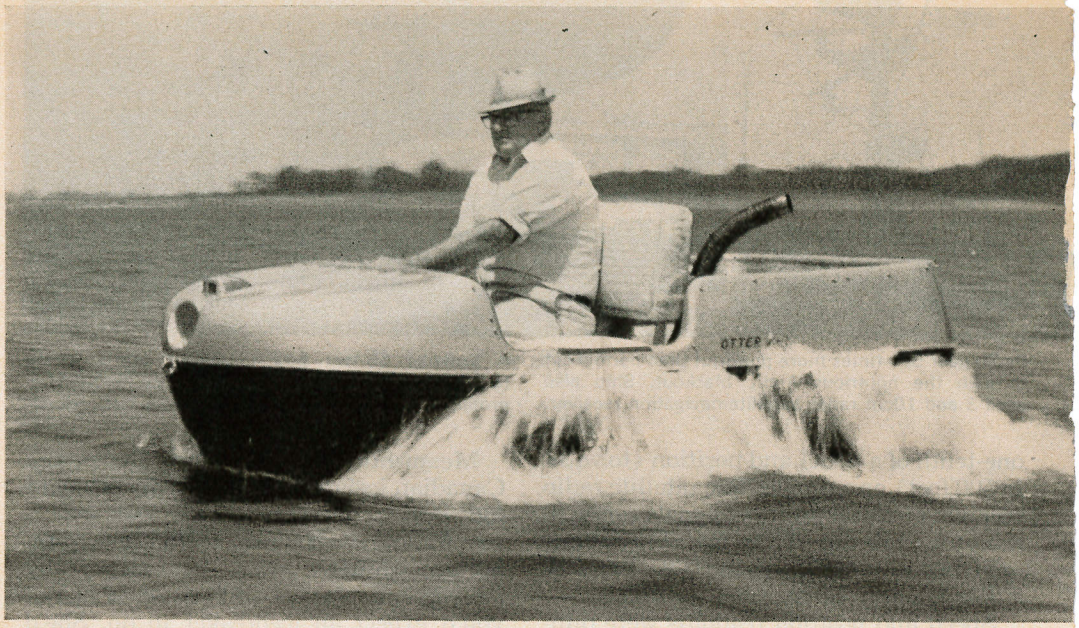
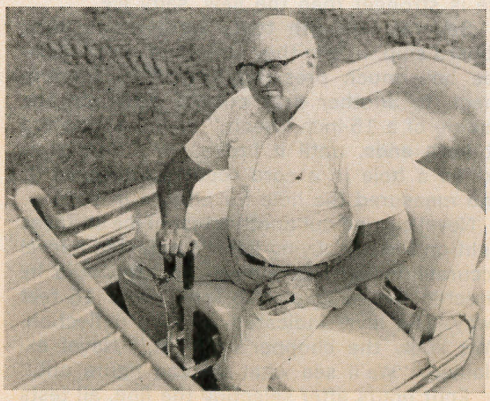


Churning through the water at 10 m.p.h.—fast for an ATV—Otter shows off its "aqua pads." Three of these fiberglass paddles are bolted to each front wheel. Land speed is 20 m.p.h. with a prototype seven-hp. four-stroke engine.

One Hand Controls

You squeeze the throttle with your right hand and ease both control sticks forward. The Otter rumbles ahead at a walking pace. More squeeze, more push on the sticks—she breaks into a brisk run, rocking gently over the rough ground on her four balloon tires with tractor treads.



One hand can steer it! Pushing or pulling both control sticks together moves the Otter straight ahead or back. Twisting your hand left or right turns it.

A big hole appears ahead. You pull the control sticks back into upright, neutral position; the Otter stops dead. Then you jiggle the right-hand stick forward, the left one back; the Otter does a left face in place. Go forward a bit, reverse stick movements for a right face, and she's zigzagged around the hole.

Just for fun, you pull both sticks toward you. The ATV takes off in reverse, racing backward as fast as it did forward—the overall gear ratio is the same in both directions.

At the base of a steep hill you pause long enough to shove down a rubber-covered handle between the control sticks and the seat. This locks the transmission in low gear. The Otter lumbers steadily upward, its engine churning happily.

Still a prototype. You can't buy one of these unique new ATVs yet. But a leading manufacturer of recreational vehicles is seriously interested in it, according to

Cone drive lets the Otter rotate in place, as tire marks in the sand show. Wheels on one side go forward, while the wheels on the other side reverse.

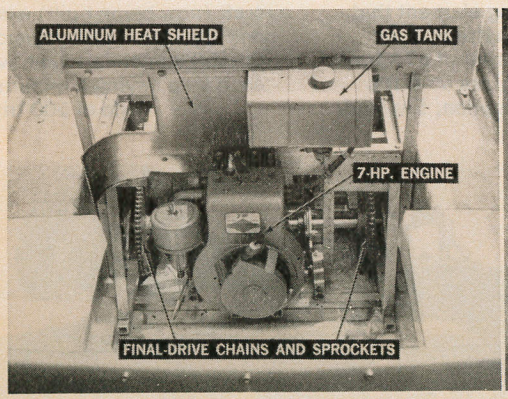
Squeezing through dense woods is a cinch. With simultaneous forward and reverse on the two sets of wheels, you can pivot precisely in any direction.

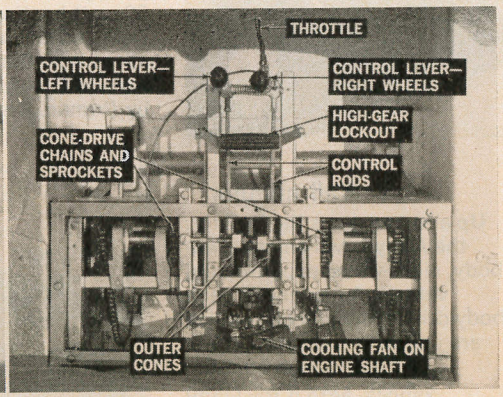
New Cone-Drive ATV

the Otter's inventor, John D. Alger of Essex Junction, Vt.

Alger expects the production version—a 400-pound rig—to sell for about $1,000. It will have one control stick instead of two. You'll move the stick an inch forward or back for forward or reverse, twist it to left or right for a left or right turn. The throttle lever will be mounted on the stick. A 12½-hp. four-stroke engine will give the lighter Otter a 25-m.p.h. top speed.

[*Continued on page 194*]





A four-cycle Briggs & Stratton (above) powers the prototype; production Otter will have a 12½-hp. engine. Compact cone-drive unit (above, right) combines the functions of an automatic clutch, variable-speed transmission, and differential. Output shafts rotate crown gears in mesh with the wheels.

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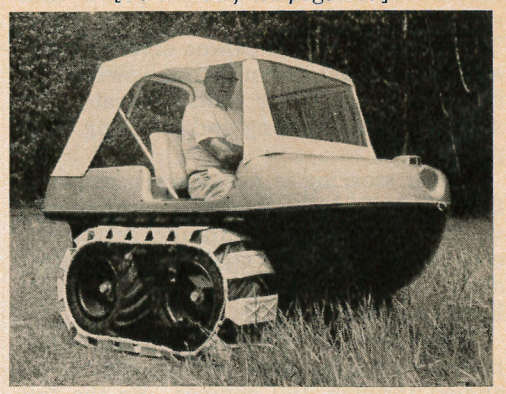
One Hand Controls Cone-Drive ATV

[Continued from page 107]



Otter's accessories include a plastic windshield, a canvas top with zip-in side curtains, and plastic snow tracks that tie on over the balloon tires.

What makes the Otter unique? Its cone drive [first described in PS, June '66]. A driving shaft coupled to the engine turns two small cones. Two large cones, outside and at right angles to the small ones, are attached to driving shafts that turn the wheels on each side. Moving the control sticks twists the metal frame holding the large cones, so that they make contact in varying ways with the small ones. All the variations possible give the Otter its versatility.

Alger worked closely with Marion H. Davis, the Indiana inventor of the cone drive, to develop a more rugged unit for the Otter's bigger engine and rougher use. He beefed up the parts, found a way to put pressure on the cones to keep them in contact under heavy load, and devised a modified control system. The result, Alger says, is a much sturdier clutch-transmission-differential than Davis's original, built for small yard tractors and golf carts.—*Erik H. Arctander.*

SPECS ON THE OTTER PROTOTYPE

Length overall	86 in.
Wheelbase	27 in.
Width overall	58 in.
Height overall	48 in.
Ground clearance	12 in.
Weight	600 lb.
Engine type	single-cyl., 2-stroke
Engine output	7 hp.
Power train	cone drive
Final drive	crown drive
No. of wheels	4
Land speed	20 m.p.h.
Water speed	10 m.p.h.
Climbing ability	45 degrees
Carrying capacity	700 lb./4 people