

MORE THAN

BALING WIRE

GOING BEYOND FIX-IT-UP

The running gag among farmers is that baling wire, duct tape and WD40 is all that is needed to keep patch things up to keep working. Throw in a pair of pliers and knife for good measure. Farmers and ranchers are a resourceful lot out in the field. Get them in the shop and amazing things begin to happen. As self-made tinkerers, the ingenious group has always been innovative. There are many great ideas for gadgets and gizmos that have been turned into a reality because a farmer saw a way to make their job easier.

To focus on what farmers can do with a great idea and some tools, we found three Farm Bureau members who have taken their ideas beyond their own farms to benefit others. It is just a small sampling clever solutions to problems found by thousands of farmers every day

CUSTOMIZED PLANTERS

Missouri farmers Vernon and son, Jeff Zerr, have turned a longtime hobby into a business venture. The pair has found a niche building specialized planters for other farmers and scientists.

Vernon is a certified diesel mechanic. Prior to building planters, he worked on tractors, a job that was not without its frustrations. "The trouble was working on someone's tractor they wouldn't let me fix it. They didn't want me to fix it like we'd fix our own. They wanted me to patch it. To be patching something you knew was going to have to come back, that just wasn't enjoyable."

Tired of people asking him to just patch up their tractors instead of allowing him to do preventative maintenance on them, Vernon decided to try something different quite by accident.

After he rebuilt and painted an eight-row narrow planter, no one would buy it. He advertised it in the paper for two years before he finally took it to an auction. A second auction later and no sale, the frustrated farmer took it back to his shop, cut a row off each end, shortened the markers, and relisted it in the newspaper as a six-row narrow planter. The same day it was sold. He discovered a market for hard to find planters no longer manufactured by equipment companies. Since then, he and Jeff have made around 50 or 60 similar planters.

In 2001, Jeff graduated from John Deere school as a certified John Deere technician and joined his father in building custom planters. Once word got out, seed



Vernon and Jeff Zerr farm near Montgomery City. When not in the field they can be found in their shop building custom planters to meet some very unique needs. Some of their planters and other equipment can be found in the classified section of U.S. Farmer at www.usfarmer.com/#/vernon_zerr_farm_7125/.

AND DUCT TAPE

WITH FARMER INGENUITY

By Jenna Hurty

companies and universities were contacting him to build specialty planters for their research plots.

Being full-time farmers has enabled Vernon and Jeff to design and build planters backed by personal experience. They know how important it is to have equipment running smoothly at all times. “We realize what it costs to be broke down in the field because something wasn’t done right,” Vernon said. “So when we build a planter we know that that thing has to work.”

Each year the Zerrs build around 30 planters. The time spent on each varies greatly depending on the size and specification of the planter. Over the years prices have gone up and some pieces have become harder to find. Their business, however has grown beyond local. They have shipped planters all over the United States as well as internationally, even as far away as Madagascar where one was needed for research.

The challenge that comes with building custom planters is what the Zerrs love about the business. “We wouldn’t do it if it wasn’t a challenge that’s the best part of it,” Jeff said. “We know what we can build. I mean we don’t know the limit, but we know if we can do it or not. And when we can’t do it, we know enough to guide them in a different direction. With what can be done and their ideas, we can make it happen.”

WATERBUCK PUMP

What Darren Holliday, inventor of the WaterBuck hand pump, built out of necessity to save his garden has become a record breaking machine.

Holliday and his wife, Linda, live in sparsely populated Oregon County. They were going off the electrical grid, investing in alternative energy sources like wind and solar systems, when the 2012 drought hit and lack of water became a serious concern.

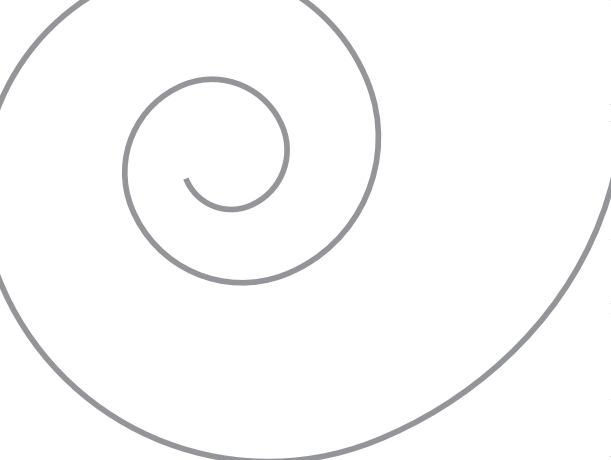
At the time, their only source of water was from a well. When it started sucking air, Holliday knew he had to do something. His first solution was to save what was left of the well water for house and hand pump water for his large garden from an adjoining cattle pond. Darren and Linda would spend two-to-three hours a day pumping water from the seven-foot-deep pond. He took 10 minutes to pump just 8 gallons of water. The hand pump they used couldn’t generate the volume of water necessary for their garden. Vegetable plants and small trees died. After the pump broke, Holliday decided to build a well hand pump that could reach below the standard 300 foot well.

An inventor at heart, Holliday decided to have a large windmill cylinder installed in his deep well and design a hand pump for it.

His first prototype was promising. Holliday was able to get nearly three gallons a minute from a deep well with a water level of 80 feet. From there, he made adjustments and with each change his output increased. Pump volume increased, first to four, then to six and finally 10 gallons a minute. The tinkering finally produced a

Darren Holliday designs and builds human-powered equipment for self-reliance. His inventions include a patented a pedal-powered power-take-off and the WaterBoy well bucket. One of his most promising inventions, the WaterBuck Pump, was built out of necessity during the 2012 drought. Found out more about these inventions at waterbuckpump.com.





hand pump that exceeded the output of a windmill pump on a per minute basis.

“I didn’t set out to really break any records or anything,” Holliday says. “The reason I put in a windmill cylinder is because they, windmills, put out a lot of water. I just wanted to come up with a hand pump that matched the lift and output of a windmill under human power.”

Born from these efforts was the WaterBuck hand pump, a hand pump that can reach depths of up to 600 feet and pump between 4 and 20 gallons per minute depending on the size, strength and enthusiasm of the operator. Holliday can pump about 15 gallons a minute. His 64-year-old grandmother can pump 5 gallons a minute.

Holliday describes it as an efficient use of human shape, motion and strength. “You basically rock back and forth. You can do a full range of motion or even a half range of motion,” he says.

Holliday’s thought is the WaterBuck pump can be installed at parks, campgrounds and other areas where electricity might not be readily available. For others, the pump is a backup system when electrical pumps fail. On a grander scale, Holliday’s hope is that the pump might be brought to third world countries where clean drinking water is not as accessible.

“Water is becoming a very important issue throughout the world and this hand pump is going to be a part of that long term,” Holliday says. “This is a solution and also an alternative.”

FLEXIBLE CORN HEADER



When his neighbor called him up and asked him to harvest his corn for him, Kevin Markt didn’t expect it to turn into a new business adventure. On his farm Markt was using an 8-row corn header. His neighbor, however, was using a 12-row header. Markt liked the capacity of 12 rows, but the wide, rigid header did not fit well with the rough terrain on his farm. Combining in terrace channels and on steep hills meant extra trips across the field to get some rows of corn, despite cutting 12 rows.

That winter Markt tackled the problem in his farm shop. He cut his corn head in half. He wanted it to flex better hug the terrain instead of catching dirt. His work showed promise. Improving on the concept, Markt worked closely with Headsight, Inc., a controls company in Indiana. Markt designed and built the head and Headsight developed the electronics to make the head automatically flex with the contour of the ground.

Now Markt has a patented and trademarked Split-Flex Corn Head corn head that “smiles” or “frowns” depending on the flex. His company, Innovative Ag Technologies, manufactures the headers for farmers, as well as companies like John Deere, Lexion and Case IH. The size of their Split-Flex headers has grown to 20-rows with a flex of just over 23 inches up and down.

Markt feels they have as much flex as they need with the current headers. “That’s about maxed out. We run in pretty rough terrain ourselves and we haven’t found anything it wouldn’t accommodate.”

This is the fifth year of sales for Markt and as farmers move towards greater efficiency with their equipment, he sees the business expanding. “Everybody wants to get more done with their equipment and make their equipment more efficient. On certain types of terrain the only way to go bigger is to make the header fit the contour of the ground.” Using ingenuity and the willingness to cut into that first corn header, Markt is confident he has the right tool for the job. **IB**

Kevin Markt farms in _____ County where the hills can be steep and terraces cause headaches for large combines during harvest. Markt has found how to get the most out of combine corn headers on this rough terrain. Information on his Split-Flex TM header can be found at split-flex.com