

British Farmer Inventions

British farm magazine *Farmer's Weekly* (www.fwi.co.uk/) holds an annual invention contest for its readers. Machinery Editor Oliver Mark generously shared some of the amazing results from this year's contest.



"Stonebine" Clears Rocks From Fields

The flint rocks that Jack Bailey and his crew pick out of fields near Lyme Regis, England, are worth \$65 a ton in good condition for use as building materials. Commercial rock pickers have spring tines that flip rocks into a hopper, leaving them dirty and breaking off razor-sharp shards that stay in the field.

The men spent 5 years designing and building their "Stonebine" on the chassis of a 1970's Massey Ferguson combine. They stripped almost all components off it except the engine, axles, and cab. A 6-ft. wide digging head up front scoops the rocks onto a conveyor that carries them back to a rotating screen that cleans the rock and feeds it to an



elevator that unloads to a following wagon.

To give you an idea of how much rock they can "harvest", they picked up 1,250 tons from a 10-acre field in one day.



Wheel Weight Handler

Mounting wheel weights required 2 people on Derek Howard's farm until he came up with an attachment for his front-end loader.

Howard used a cultivator wheel hub mounted on a steel frame and fitted it with nylon-lined metal brackets that firmly grab each wheel weight. The attachment turns 90 degrees toward the ground to pick up the weight, then pivots up to approach the wheel. It rotates freely on the hub to make it easy to line up mounting bolts.



He 3D-Printed His Own Planter

British farmer Jonny Leech spent only about \$12 per row to 3D-print the metering system on his home-built planter. He says it works as well as most commercially available planters.

Leech bought a \$250 3D printer and a software package called "Solidworks" that allowed him to make 15 prototypes before he came up with a final design that he says provides 99 percent planting accuracy at speeds up to 7 mph. The seed meters are chain-driven off the rear press wheels by a stainless steel sprocket that drives a 3D-printed poly sprocket on the meter. Leech can change out the sprocket on the meter to alter planting rates.

He used Great Plains double-disc openers



and there are LED sensors in the seed tubes so he can monitor accuracy while planting. He's used the planter both for corn and canola seed.



Telehandler Bucket Pivots 90 Degrees

Northern Irish engineer Robert Wright was challenged to build a swiveling loader bucket by one of his dairy farm neighbors. It allows the operator to scoop up material normally and then pivot the bucket to the side to dump.

The pivoting bucket was designed for use inside narrow barn alleys. The bucket attaches to a pivoting frame that's fitted with a pair of hydraulic cylinders. Another set of cylinders pivots the frame away from the front of the loader.

The trickiest part of the design was balancing the weight once the frame was extended all the way out to dump.



Road-Transportable Field Roller With Brakes

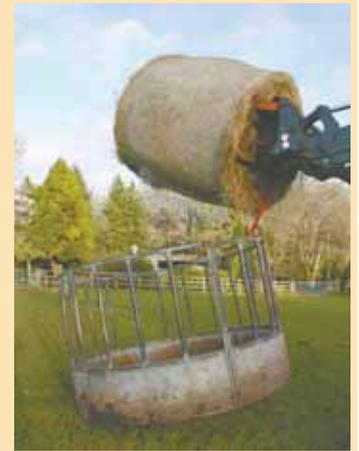
Cornish farmer John Phizacklea built an 8-ft. wide field roller with a heavy transport hitch that lifts out of the way in the field, adding to the weight of the roller. He incorporated a pair of brake shoes that are hydraulically-activated against the drum when using it on the steep hills on his farm.



Tractor-Mounted Power Winch

Andrew Burt built this self-anchoring winch in his farm shop near Towcester, Northants, England, to lower a giant wind turbine – with a 1-ton head – to the ground. He has since found other uses, such as extracting bogged-down tractors and other equipment.

The toothed feet at the front and back of the hydraulic-powered winch dig deeper into the ground as pulling force increases. A remote control lets him operate it from a couple hundred feet away, adding safety and giving the operator a better view of the job.



Bale Feeder Hook

Livestock farmer John Adams from Ringwood, Hampshire, saves a trip in the field by using a hook below his bale mover to also move his ring-type bale feeders.

Adams likes to move his feeders every time he refills them to avoid permanent ground damage around each feeder. A pair of hooks are mounted at right angles to each other so one of them almost always grabs onto the top rail of the feeder. After Adams picks up the feeder, he drags it backward to fresh ground.



Weight Box Snack Bar

Tucking a small microwave oven into his tractor's front weight box lets Paul Spinks heat up lunch in the field or make a late night snack when days get long.

Power for the microwave comes from a 1,000-watt inverter tucked under the tractor seat. It has enough juice to also power grinders, drills and other tools. The weight box is divided into 3 compartments with concrete ballast at the center, the microwave on one side, and tools or parts on the other.



Calf Carrier Lowers To The Ground

Dairy farmer Rob Frampton in Australia built this calf-carrying trailer that lowers to the ground by activating an electric winch on the tongue.

The wheels attach to a U-shaped frame that rises up over the trailer. For transport, the winch pulls down on the frame, raising the trailer to normal height. By letting out cable with the winch, the frame moves backward, lowering the trailer bed to the ground for easy loading.