

**PRECISELY-CRAFTED TIMEPIECES
BUILT WITH ORDINARY TOOLS**

Minnesota Farmer Builds Wooden-Gear Clocks

Minnesota farmer Bob Meyer has one of the most unusual hobbies you'll ever see - he builds elaborate and beautiful wooden-gear clocks.

Meyer uses ordinary tools, including a band saw and drill press, to make the clocks. He uses veneer plywood for the gears and hard maple for the gear supports. Clocks mount on vertical chrome tubes.

"People are impressed when they see them, but most can't figure out how they work," says Meyer, of Elgin. "Wooden gear clocks date back to the 1700's. However, today very few people know how to build them. I got started four years ago after I read a story in a wood working magazine that described how wooden clocks work. It showed how to make the 'Thomas clock' which has been around for 30 years. I tried making it but wasn't satisfied with the plans so I made my own design.

"The story said wooden clocks could be built only by advanced woodworkers, but I found that isn't true. However, it does require precision work. There are 120 teeth on the center wheel and each of them has to be cut at an exact 3 degree angle. The escapement wheel and lever also have to be cut perfect. The most difficult part is getting everything square when cutting holes for the gear shafts. There can't be any wobble in the gears or they'll skip or bind. I've built 22 clocks so far but have sold only four of them to neighbors and friends. I burned up the rest because I wasn't happy with the overall design.

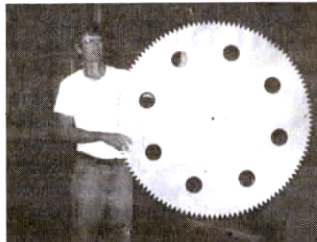
"Building wooden clocks is a great hobby because it doesn't take a lot of money or equipment to get started. I use a band saw to cut the teeth and to make the gear supports. I use a drill press to make holes for the shafts. If I push hard, I can make a clock in two days."

Wooden clocks are weight-driven. Meyer builds the weights by cutting off sections of 5-in. dia. chrome exhaust pipe designed for semi tractors and filling them with lead shot. The weights are mounted on a pulley that's connected to the center wheel. A crank mounted behind the center wheel is used to pull the weights up.

The heart of the clock is the center wheel which is connected to a timing gear that divides minutes and hours. The weights drive the center wheel which goes around



Meyer uses veneer plywood for gears and mounts clocks on vertical chrome tubes.



This 4-ft. dia. center gear wheel will be part of 9-ft. tall wooden clock.

once an hour, driving an escapement wheel that drives the pendulum.

"It takes 30 hours for the weights to fall to the floor. That's the maximum time between windings for wooden clocks because they can't be geared down like grandfather clocks. There's too much friction between the gears," says Meyer, noting that his wooden clocks are accurate to within 1 or 2 min. between windings.

Meyer says he's willing to sell his latest clock (shown) for \$500. He's now working on a larger clock that will be 9 ft. tall, 6 ft. wide, and 4 ft. deep. It'll have a 4-ft. dia. center gear wheel. He has made up detailed plans for his first clock and will have other plans available early next year.

For more information, contact: FARM SHOW Followup, Bob Meyer, 7347 Hwy. 247 N.E., Elgin, Minn. 55932 (ph 507 876-2484).

ON-FARM CALLS MADE IN 50-MILE RADIUS

He Specializes In Baler Repair

A retired Idaho farmer is doing a brisk business repairing balers of all makes and models on farms within a 50-mile radius of his shop.

Albert Scafe, of Ashton, has a baler repair van that carries about \$3,000 worth of tools and parts. He charges \$8 per hour and can handle just about anything that could ever go wrong on a baler.

"I'm a machinery nut. I'd rather work with machinery than go fishing or golfing,"

says Scafe. "I work mostly on small square balers because they're the most common type of baler used in this area. Most of the time I make repairs in the field although sometimes farmers bring their balers to me. Some of my more common baler-repair jobs include replacing chains, changing belts, repairing pickup teeth, repairing plungers, changing rollers, sharpening knives, and adjusting the plunger timing. Timing is very important. The plunger, feeder system



Fletcher's children love to ride one-of-a-kind bike. Middle rider controls gear shift and front and rear riders each control set of brakes.

HE WELDED THREE OLD BIKES TOGETHER

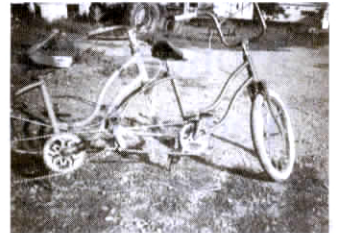
Bicycle Built For Three

"My kids love to ride it," says Wisconsin farmer Douglas Fletcher about the "bicycle built for three" he made out of three old 20-in. single-speed bikes.

Fletcher removed the rear wheel from the front bike, both wheels from the middle bike, and the front wheel from the rear bike. He welded the front forks of the middle and rear bikes to the frames of the bikes ahead of them, just behind the seat. He also bent the forks to make room for a chain that connects the drive sprockets on all three bikes. He bought a used 20 in. wheel rim equipped with a 5-speed sprocket for \$20 and mounted it on the rear bike, then mounted a 5-speed gearshift lever on the middle bike.

"I took it to a Sunday school picnic last summer and could hardly get the kids off it," says Fletcher, of Waupaca. "I built it because I wanted something different and I had never heard of a home-built bike for three. The front rider must be older because steering takes a lot of strength. My 11-year-old daughter rides in front and my 7- and 9-year-old boys ride behind her. Everyone has a job. The middle rider controls the gear shift and the front and rear riders each control a set of brakes. I added the 5-speed gearshift because with three people peddling you need more than just one gear.

"One, two, or three can ride it. My daughter sometimes rides it by herself. It doesn't turn very short - she can hardly turn it around on a 16-ft. wide road. The disadvantage of having only one rider is that they can't use the rear brake, but generally the front brake is enough to stop the bike. The



Front forks of middle and rear bikes were welded to frames of bikes ahead of them.



Fletcher modified 10-speed bike by mounting tricycle seat onto frame between handlebars and rider. Child carrier is mounted behind rider.

front rider can reach behind to shift gears."

Fletcher also modified a 10-speed bike by mounting a tricycle seat onto the frame between the handlebars and rider. A child carrier is mounted behind the rider. "It lets me carry a 2 or 3-year-old in front of me and a 4 or 5-year old in back," he notes.

For more information, contact: FARM SHOW Followup, Douglas Fletcher, N4253 E. Ware Road, Waupaca, Wis. 54981 (ph 715 258-0615).

and tying mechanism all have to work closely together for everything to work right. The most difficult repair on a square baler is pulling out the plunger.

"Most farmers in my area use New Holland or Hession balers. Deere balers seem to require more work than other models. A local Deere dealer even refers his customers to me because I've had so much experience repairing Deere balers."

Scafe has come up with a number of new inventions and improvements, including a new square baler design that he says will work almost twice as fast as current models. "Maybe some day I'll be able to build it, but I'm 75 years old so time is running out. I have 12 other inventions at the prototype stage and 33 more on the drawing board."

Scafe says one of his best new ideas is a bale tension control system that lets you automatically adjust bale tension on-the-go as hay moisture conditions change. The system consists of a small steel "flag" connected to a steel rod that lays on top of hay inside the bale chamber. The friction of

wet hay moving through the bale chamber pulls the spring-loaded rod backward, stretching out the spring and raising the flag up in the air. The operator then uses the baler's hand cranks to adjust bale tension. Dry hay causes the rod to slip so the spring is released, causing the flag to drop back down. "It lets you know when bale tension needs to be adjusted so you can keep bales at a consistent weight in all moisture conditions," says Scafe.

Another of Scafe's inventions is what he calls a "three second" baler knot monitor that sounds a buzzer to let the operator know within three seconds whenever bales aren't being tied. A spring-loaded lever mounts just behind the bale knottor and is tripped by the twine as the knottor starts tying a bale. If the bale hasn't been tied after about three seconds, a timer sounds a buzzer in the tractor cab.

For more information, contact: FARM SHOW Followup, Albert Scafe, Ideas Unlimited, 1012 Grainville Rd., Ashton, Idaho 83420 (ph 208 652-3341).