

WISCONSIN FARMER TURNS SPOILED HAY, WEEDS, CROP RESIDUES INTO FREE FUEL

Hay Furnace Heats Farm Home "For Nothing"

"I was so confident it would work that I removed my gas furnace and sold it in October — before the cold weather came," boasts Joseph Kopiness, of Oconomowoc, Wis. He replaced his gas furnace with a \$50 homemade, hay-burning furnace that heats his older farm home all winter long "for nothing" with regular-size bales of spoiled and rained on hay, marsh grass, weeds or crop residues.

"During the summer, I bale up weeds and residues, using my conventional hay baler," explains Kopiness. "We feed the full bales, unopened and with the string still on, directly into the hay burner down in the basement. In colder weather, we use two bales a day — one in the morning and one at night. If it's really cold and windy, it may take three. In the spring and fall, we generally use only one bale per day." Kopiness told FARM SHOW. "In addition to weeds, marshgrass and crop residues, we also burn, rather than feed, bales of spoiled or rained on hay. The burner will burn most anything, including wood, shelled corn or whatever you want to put into it."

In addition to heating his home with free fuel, Kopiness burns it in a virtually cost-free "hay-burner". He figures he has less than \$50 invested in the burner, which he built himself out of salvaged parts.

The main firing chamber or drum is made from a used 3/8-in. thick water boiler. The drum is 30 in. in dia. and 5 1/2 ft. long. Kopiness added a door (24 in. wide and 22 in. high) and welded a baffle inside (made of 5/16 in. steel) to recirculate smoke and gases, and thus increase combustion efficiency.

The horizontal baffle, welded to

the tank at approximately 10 o'clock and 2 o'clock when viewed from the end, extends from the front to within 3 in. of the back end of the tank. The baffle forms a 6 in. deep "smoke attic". Smoke and gases exit the main firing chamber through the 3 in. opening, into the "smoke attic", and then out the heater's pipe network (see drawing).

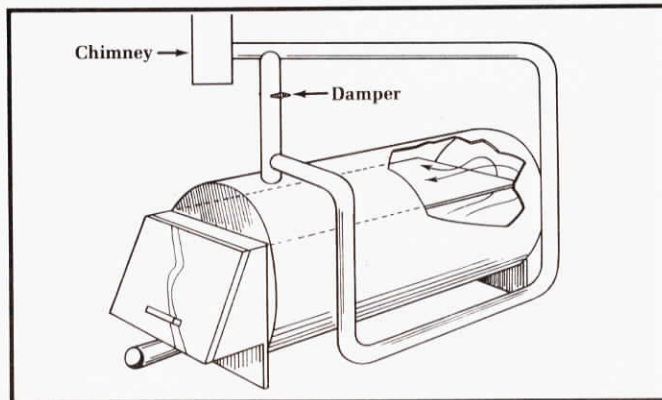
"Ours is a big, old farm house with 6 in. of insulation in the attic and none in the walls. We'd been spending about \$100 a week in winter to heat with LP gas. Now, thanks to the homemade hay burner, our only expenses are for the small amount of tractor fuel and labor it takes to bale up spoiled hay, marshgrass or other crop residues," Kopiness points out.

He literally forced himself to make the hay burner work by selling and removing his gas furnace before he began building the hay burner. "There were some problems with the burner at first but they were relatively easy to iron out. For example, we burned some hay bales that had dried out only a few weeks. Creosote was running out of pipe joints," Kopiness recalls. To solve the problem, he now burns only hay, weeds, wood or other residue only after it has been allowed to dry out for a year.

Initially, Kopiness used 6 in. dia. stove pipe coming out of the burner. It was too small and he switched to 8 in. pipe.

Except for these minor problems, he's had two winters of efficient heat — with no fuel bills.

Rate of burning is controlled by a damper located under the feed-in door, which regulates air intake into the main firing chamber, and another damper on the return smoke pipe (see drawing).



A 5 in. dia. pipe under slanted feed-in door brings air into main burner. Kopiness used 8 in. dia. silo filler pipe for the pipe coming out of and winding around the burner. Horizontal plate on which the "lift-up" door hinges goes all way back to within 3 in. of the rear of the burner. Note damper on vertical pipe. When closed, it forces smoke, and heat, to wind around the pipe "loop" before entering the chimney.

"We remove ashes from the hay burner every third day or so. I made a scraper with a blade that's curved to fit the bottom of the tank. We use it to rake ashes to the door of the burner where we scoop them up and into pails. We get about two 5-gal. pails full of ashes every third day," explains Kopiness.

One disadvantage of the manually-fueled hay burner is that the Kopinesses have to have someone come in to fire it up once a day when they're away from home. To eliminate this inconvenience, Joseph is toying with the idea of putting an electrically-operated boiler along side the hay burner, with a connecting water coil mounted inside the hay burner. "When we're home, heat from the hay burner will heat the water and the only electricity used will be that required to operate the boiler's water pump to circulate the

water. When we're gone, we'll let electricity take over to heat the water and keep the house from freezing — without having to have someone come in to hand-feed the hay burner.

"Another alternative would be to leave your old furnace in, and let it take over when you're away from home. If you keep your old furnace, you could duct heat from a supplemental hay or waste residue burner directly into the furnace's duct system, then run the furnace fan to move heat from the hay burner throughout the house. We sold our furnace so, instead of ducts, heat from our hay burner simply rises from the basement through floor registers."

For more information, contact: FARM SHOW Followup, Joseph Kopiness, 234 Island Road, Oconomowoc, Wis. 53066 (ph 414-567-7607).

LET'S MORE AIR THROUGH RADIATOR CORE

Chrome Grille For IH Tractors

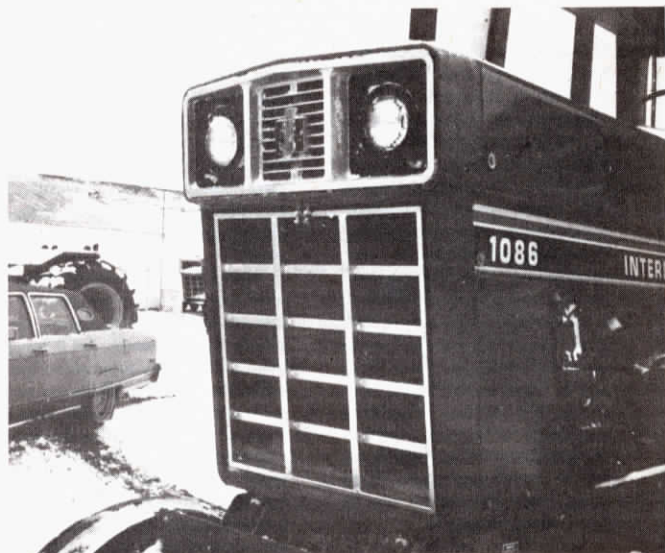
New from Thomure Manufacturing — the Missouri firm that's been doing a booming business in muffler eliminators for IH tractors — is a new chrome Air Flo grille for IH tractors.

Designed for all 66 and 86 series International tractors, the grilles are made of steel tubing, and are available in chrome plated or a bright aluminum paint finish. They install on the tractor with two 3/8 in. bolts at the top of the casting, rather than the conventional snap latch.

"Our new grilles offer more radiator protection and, thanks to the special design of the air flow through them, more air can be drawn through the radiator core," explains Claude Thomure, manufacturer.

Chrome grilles sell for \$70.50, and the painted ones for \$54.50.

For more details, contact: FARM SHOW Followup, Thomure Mfg., Rt. 1, East Prairie, Mo. 63845 (ph 314-649-3628).



"Dressy" chrome grilles sell for \$70.50.