MAKES MOVING GRAIN A SNAP

Build Yourself A Self-propelled Auger

Canadian farmer, Edgar Raabel, of Pelly, Saskatchewan, needed a bigger auger for moving grain. Instead of buying a new one, he built a 30 ft. self-propelled unit with a 7-in. screw for a total cost of only $80.

All he had to buy was the tube and flighting for the auger. "Most of the other parts were salvaged right around the farm," he points out.

A 4-cylinder Hercules gas engine powers the loader. The transmission, salvaged from an old car, is attached to the rear of the differential, also from an old car. Reverse, first and neutral are the only gear selections available.

To load grain, the auger is driven by a belt from the engine flywheel to an overhead pulley which, in turn, drives two shafts. At the opposite end of each shaft is a gear mounted on the upper end of the auger flighting (see sketch).

Belt tension is controlled by a car jack mounted between the main frame and top pulley.

"Putting the auger into transport is simple," says Raabel. "Just select forward or reverse gear and, using the extended rod, engage the clutch and away you go."

The clutch control rod is extended towards the rear of the auger to provide easier and safer control of the machine while it's being moved.

A skid plate at the bottom end of the auger prevents damage when it's dragged over the ground.

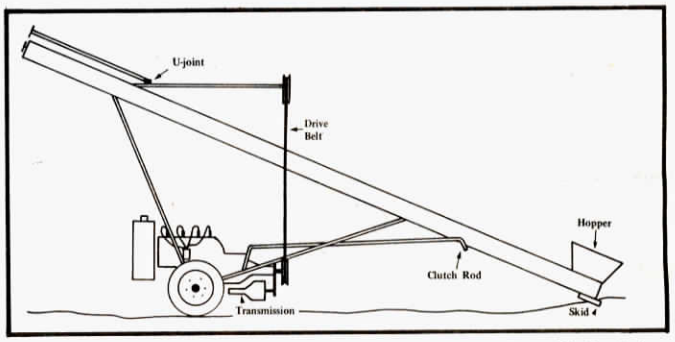
The loader is raised and lowered either manually through a worm gear and shaft cable arrangement, or mechanically using the same arrangement but powered by a series of gears and shafts driven from the transmission.

The loader is also fitted with an hydraulic motor which operates a bin sweep auger. The sweep auger consists of flighting and hydraulic hoses that attach to the hydraulic pump mounted on the grain auger. Both the loader and bin sweep can be used at the same time.

Raabel has just completed a second self-propelled auger which is larger (10-in.) and longer (50 ft.). It's mounted on the front end from a 1955 John Deere combine, complete with 7:50 x 24 wheels and tires. Power to drive the 10-in. auger is supplied by a 40-hp gas engine, but in a pinch, it can be driven from the tractor's pto. Power to move the unit from place to place is provided by a small air-cooled engine. Raabel plans to add two guide wheels to the rear end of the auger for transportation.

The system for lifting the auger will be the same as on the original smaller unit he built.

Raabel's self-propelled auger is powered by a 40 hp. gas engine. It's mounted on Deere combine chassis.



Total cost of home-built 30-ft., 7 in. dia. auger was $80. Chain drive, cable and worm gear raise and lower auger.

"WILL CUT THE COST OF HYDROSTATIC DRIVE IN HALF"

New Engine Combines Diesel, Hydraulics

The developer of an experimental hydraulic engine from the Ferris Engine Co., Guilford, Conn., predicts that it could revolutionize tractors by eliminating the need for crankshaft, flywheel and conventional drive train. It ties diesel-driven pistons directly to the workings of a hydraulic pump.

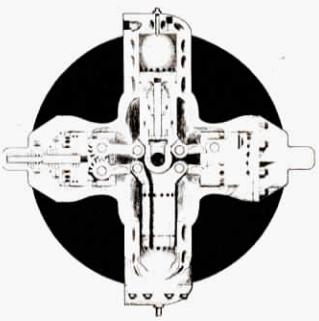
"It combines diesel fuel and hydraulics and is geared toward tractors and heavy construction equipment which already has hydrostatic drive," says James J. Ferris, engine designer. "Instead of running a hydraulic pump with belts off the crankshaft, you build the pump directly into the engine, tying the stroke of the pumping pistons directly to the stroke of the combustion pistons.

"The engine and pump are one unit with high pressure lines running to the wheels, to replace the drive train," explains Ferris. "The engine runs only at one speed and only when pressure is down. It operates independent from the driver, who simply opens and closes a valve to control the vehicle."

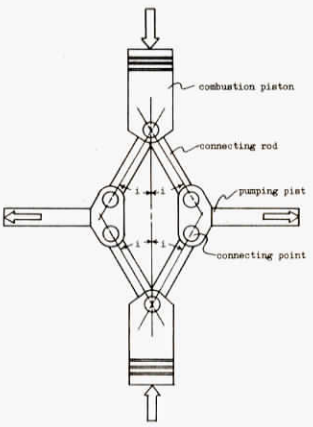
Engines actually could be suspended by cables rather than mounted, because they aren't needed to drive anything. That cuts both vibration and noise, explains Ferris.

Another advantage is that energy normally wasted in braking is reclaimed by "regenerative" braking. Hydraulic motors driving the wheels reverse themselves, turning into pumps when brakes are applied.

You'll save on maintenance too because without a crankshaft, you can gang several smaller engines together without so many pistons tied to one crankshaft. When one breaks down, you only have to work on that one engine and not the whole system.



Experimental engine uses no crankshaft or flywheel.



Conventional combustion pistons are tied directly to hydraulic pumping pistons.

And at times, one small engine may be all that's needed to maintain full hydraulic power.

"That makes the concept attractive for city buses which stop practically every block," explains Ferris. "But the main market is agriculture because farmers are already familiar with hydrostatic drive and less conservative about leaving old transmissions and driveshafts behind."

Ferris has patented the engine and is working on the first prototype. He expects to be on the market in two years or less. He estimates cost at "half the cost of a conventional engine and pump combination".

For more details, contact: FARM SHOW Followup, James J. Ferris, Ferris Egnine Co., P.O. Box 396, Guilford, Conn. 06437 (ph 203 453-5983).