More PRACTICAL IDEAS

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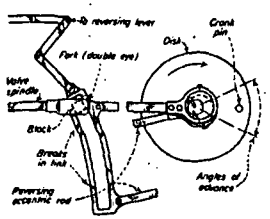
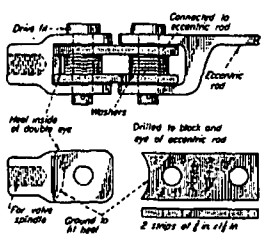
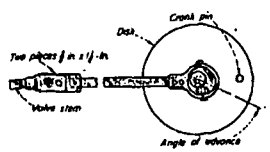






Fast Repair Saves Shutdown

I WAS CALLED out one early morning to repair the 14x16 hoisting engine. It hoists coal from lower section to a distribution center. Major output of mine depended on this engine.

Valve-gear link was broken on one side, top sketch. It was cast-iron, and we couldn't weld or braze it. Assembling all pieces with block in place, we measured centers of holes in block and lug link, which connects to fork (double eye) of eccentric rod.

I cut two pieces of ⅜x1½-in. steel, ground ends to fit heel inside of valve-spindle fork. I drilled two ¾-in. holes in each piece to centers of block and to link's lug, top right sketch.

While this was going on one man took off the eccentric strap and the rod on reversing the eccentric to prevent it from flopping about as it was disconnected from valve spindle. After drilling correct centers in ⅜ in. x 1⅛ in. pieces, it was quick work to connect eccentric rod to fork (double eye) of valve spindle.

A quick check of valve setting proved no further adjustment was needed so we started engine. We could still reverse engine on other undamaged side, providing crank was off center. But this wasn't important because weight of coal provided momentum down grade.

About 350 men were going to return home because of broken engine. But *this repair prevented a shut down.*

Engine continued to operate on this makeshift valve connection until a new brass link was delivered. We installed it at leisure on a weekend.

V STRAJIC *Glace Bay, Canada*

Why Wouldn't Engine-Driven Pump Start?

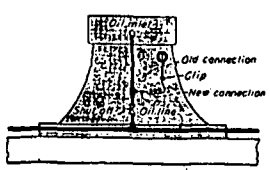
OUR PUMP HOUSE has a little standby emergency pump driven by a 6-cylinder gasoline engine. We start this engine once a week to be sure it'll run if needed.

Pump gave trouble one week, then finally started. I stopped and started it several times, but there was no sign of trouble. It didn't start first time next week. Engine has conventional cranking motor and Bendix assembly; motor is energized by a relay operated by start button on control panel.

When I pressed start button, there was a POK-like noise, and that was all. Contacts on starting motor relay were OK. I had visions of pulling down motor and Bendix assembly till I tried it again, watching closely this time. POK again. I noticed the cranking motor worked all right, but something seemed to be holding engine from turning. I asked mechanic if he had noticed anything unusual in its operation during past few weeks.

"No, except I have to add a little water to the radiator each week," he replied. That was enough for me. I started pulling plugs. Sure enough, one cylinder had water in it. We found later that a slight flaw in block (probably a sand hole in casting) allowed cooling water to leak into cylinder. Not enough water leaked to cause noticeable change in operation. But with engine shut down for a week, enough water leaked in to keep her from turning over until it worked out.

ED ECKERT *New York, N. Y.*



Coils Snub Pulsating Gage

BEARING OIL, registered on pressure gage on our big turbine-generator, pulsated. Cause was gear-type main oil-pump, driven from turbine shaft. Pulsations *were of about three pounds' magnitude,* not enough to prevent an average reading, but frequency would cause rapid wear on gage mechanism.

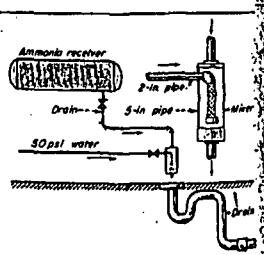
Throttling or snubbing with petcock was not possible because when it was snubbed enough to stop pulsations, it would shut off entirely.

Cage was connected to oil line by a straight run of 1/16-in. copper tubing as shown by dotted lines, in sketch. We replaced this with a longer piece having *a coil of five turns. Winding, on a 2-in.* mandrel, was supported to give the coil free play. Coil absorbed pulsations and gave a steady gage with a cock wide open. We were afraid to use a small orifice that might clog with dirt.

We had no exact rule for the number of turns and used the cut-and-try process. If turns in coil are too many or too *few, pulsations will continue.*

Best way is to test coils for pulsations after adding each turn. Then stop coiling when pulsation stops.

A H MOULTON *Pittsfield, Mass.*



Dumping Ammonia Safely

SKETCH SHOWS a successful method of dumping liquid ammonia directly into *the sewer. To make a harmless solution,* 2000 lb of ammonia would require about 40,000 lb of water.

M E EVANS *Chicago, Ill.*

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