

PRACTICAL IDEAS...here's the trading post for your

operating and maintenance short cuts

STEVE ELONKA, Associate Editor



Burning Coal With Sawdust Shows Big Savings

WHEN LESS THAN THREE CARLOADS of coal were on hand at beginning of last major coal strike, Superintendent Kenneth Russell of Sauk County Hospital and Home turned to sawdust. Piles of sawdust were scattered through the vicinity. He not only saved on fuel, but also improved performance by burning this sawdust and coal mixture.

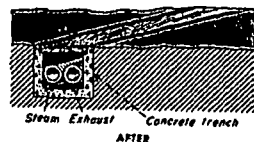
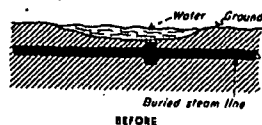
He tried various mixtures. Best luck came from 50% (by weight) sawdust for summer firing, and between 80 and 40% for winter. That depended on load that weather conditions called for. Saw-

mill operators have found their waste product a drug on the market, also a fire hazard in their locality. Sawdust, however, is on a come-and-get-it basis.

Figures for period before Jan. 1, 1950 when sawdust burning was begun, show this small plant saves four carloads of coal a year. At average cost of \$475 per carload, that's near \$2000 a year.

Guy Wheeler, engineer, reports less ash, fewer tube blowings since using coal-sawdust mixture. There has been a slight increase in flyash.

E C GREGORY Reedsburg, Wis.



Finding and Correcting Bad Steam Leak

STEAM for eight large lumber-processing kilns was piped through lines half buried in earth. Lines ran under shop floor, with about 2-ft clearance between floor joists and pipeline.

We found a hard-to-believe condition. Two feet of hot water (nearly boiling) lay over and around the pipe. Only way of finding leak was to shut down kilns and let water seep away.

That took three days. We crawled through wet mud to inspect suspicious spots. At each spot we tore up the floor, as nearly above the spot as we could. But we were hampered by piles of lumber stock and machinery on floor above.

Then we turned on steam again and tried to localize leaks.

After two or three nonproductive attempts, leak finally showed up. An 8-in. ell had given up the unequal struggle for survival. Local mechanic had remedied the trouble by installing a 6-in. ell in place. He ran nipples from new ell into 8-in. pipe both ways. Then somehow he poured lead around the two nipples, on both sides of ell, something like a ball-and-spigot joint in underground cast-iron pipe. I repaired with standard piping and built a concrete trench with wooden cover.

H B McDONNIN Cincinnati, Ohio.

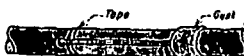


Hose Takes Care Of Misalignment

ONE OF OUR PRODUCTS solved a serious pump-failure problem at the Thermopump Co. A centrifugal pump driven by 15-hp motor supplies 250 gpm of cooling water at 120 psi to conveyor-belt vulcanizers. Intake pipe could not be aligned too well with intake side of pump. So rigid metal pipe and casing on intake side of pump broke often because of vibration and stresses caused by slight pump misalignment.

We replaced metal pipe by a length of suction hose, that's built to take pressures involved. It's flexible enough to absorb misalignment and vibration.

BUCKO JONES Trenton, N. J.

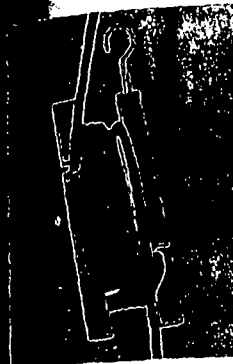


Quick Way to Take Pipe Temperature

EVER NEED a thermometer in a hurry to check operating conditions? Electrician's "gunk" and thermometer solves problem, sketch.

Pad the stuff to size and shape for job. Place thermometer on pipe in desired spot, and press pad firmly but gently around thermometer bulb and pipe. This not only holds thermometer to pipe but acts as a pretty good insulator. Then you read temperature of whatever is flowing in pipe accurately enough for field checks. Don't use this idea on high-temperature lines.

E R ECKERT New York, N. Y.

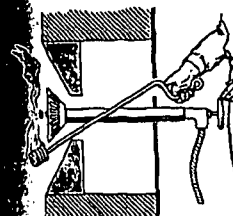


Taking Up Cable Slack

LONG FLEXIBLE CABLE is a big help for portable power tools like drills. But when long cable isn't needed, it snakes around the floor. That's dangerous.

We take up cable's slack with a simple photo. Reel is made of 3/4-in. thick wood. Cable is kept from unraveling by locking its ends in grooves. Locking slots are right angle or L-shape grooves. When not in use, hang up.

G T BOWEN London, England

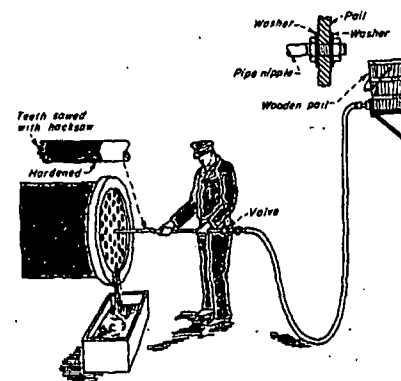


Offset Handle Is Safe

WE HAVE BALANCED draft for our boilers. When fireman secures a boiler because of drop in load he may forget to open uptake damper or "balance float" manually when he lights off again. Reason is that damper does not open quick enough when he lights off first burner.

A fireman burned his hand while holding the torch during a flare-back. An offset torch handle, sketch. Torch now hangs on light-off port without fireman's hand being burned.

L M MARTINEZ Rego Park, N. Y.



Acid Lance Cleans Scalded Tubes

WE BUILT an acid lance to remove stubborn scale from water heaters, condensers, and similar heat exchangers. Acid is saved, surface deterioration retarded, and tough cleaning jobs are done with a little effort. Completely plugged tubes are often cleared.

To make lance to clean 3/4-in. tubes for a hot-water watertube heater, use 3/4-in. standard black pipe, two feet longer than tubes. With hacksaw, cut teeth in one end as shown. Thread opposite end.

Then caseharden the teeth. Just heat metal red hot with acetylene torch for a distance of two inches. Shut off the oxygen, and use pure acetylene flame that covers the glowing metal with a heavy coating of carbon soot. Before pipe loses red color, quench in water. Thread pipe into a 3/4-in. brass globe valve, having a composition rubber seat.

To opposite side of valve, assemble a 6-in. nipple and union, followed by a short nipple, reduced to fit inside a 3/4-in. rubber hose.

For acid supply, drill a hole on side, near bottom of a 16-quart wooden pail.

Screw a long-threaded nipple into this hole and fasten it securely. To do this, slide close-fitting flat metal washers over each end of the nipple, and use electrician's lock nuts to force them tightly against the side of the pail. Coat the inside of container with hot pitch or asphalt. Be careful not to plug pipe.

Hang acid pail on hook from ceiling, or place on a wall as shown. Then fasten free end of 3/4-in. hose to nipple.

When using lance, an inhibited hydrochloric acid is best for most scales. Lacking an inhibitor in acid, one part of acid to four parts of water gives good results without harm to metal. Use a small trickle of acid while working lance to loosen scale.

A few ounces of inhibitor added to a 100-lb carboy of acid is about right. H N JOSLEYN Fort Dodge, Iowa

ERRON'S NOTE:—Caution: Make sure acid container is fastened to wall so it cannot be upset on someone. Also, be sure only responsible person does this job or damage will be more than good gained from cleaning with acid.

Watch Those Light Metal Ladders

ALLOYS of aluminum and magnesium are light and resist moisture. When overloaded, unlike wooden ladder, there's a deflection warning instead of sudden break.

But you must examine metal ladders for sharp edges and burrs on the side rails. Also for soft metal rivets that

might shear off under load. Remember, metal ladders are conductors of electricity. Never use around electrical equipment. Have a painted warning attached to all metal ladders. That's the only way to prevent accidents.

—NATIONAL SAFETY COUNCIL
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