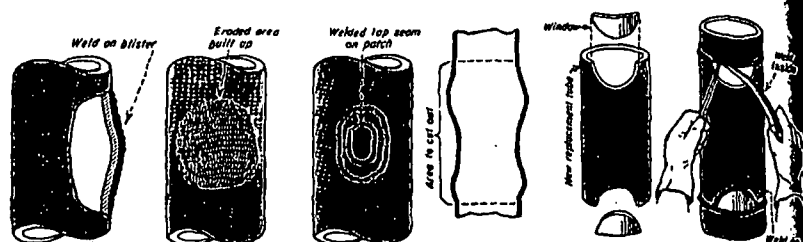


More PRACTICAL IDEAS



WRONG: Blistered tubes repaired like these will soon fail **RIGHT:** Remove blistered sections and 'window-weld' as shown

Window Welding Can Save Your Blistered Boiler Tubes

BOILER TUBES often fail and boiler must be taken out of service quickly.

Here are some causes of tube failure: (1) scale or heavy sludge on tube wall (2) oil adhering to tube (3) soot blower out of line, steam impinges on tube (4) plugged tube (5) flaw in tube (6) bad previous weld.

Repairs by window welding is quick, economical, and it's a permanent repair. Ruptured, bulged or thin tubes have been repaired temporarily, as shown, but they will fail again.

Repairs fail sooner or later from (1) localized welding stresses (2) cracks forming between weld heads or (3) weld making metal double thick, thus keeping away cooling effect of water.

Window welding is easy and as quick as these temporary repairs. First cut out damaged tube section. If tube has scale or oil blister, there's usually a smaller blister a short distance from failure. Cut out smaller blister also. After all damaged areas are cut out, square off tube end and grind to 30-degree angle on inside, all around. Cut new piece of tubing to exact length of piece removed from tube. Grind each end of this replacement piece.

If you could weld each boiler tube completely around outside, while you are inside a boiler, no window would be needed. But other tubes are usually too near. So cut a so-called window on replacement sections at ends.

Then cut out "window," or cut off a piece so replacement piece can be welded. First, cut out a half circle, about 2-inch radius and about two-thirds of tube's circumference in diameter. This opening gives plenty of room to weld inside tube, two-thirds of the way around. Now set wedge-shaped window in place snugly and weld solid from outside.

After damaged tubing is cut out and cause of failure found, treat boiler so scale or oil is removed before placing boiler in service. That means torblasting all remaining tubes and descaling drums, or boiling out boiler with caustic solution to remove harmful oil.

BILL DAVIS Chicago, Ill.

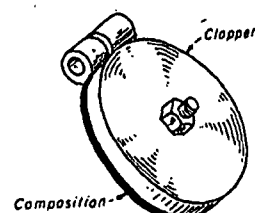
'No Spill' Oil Container

WE USE SPECIAL GRADES of lube oil from 1-gallon cans. Machines are oiled by squirt-type oil cans or small, pressure oil-guns. But filling small oil cans from 1-gallon can isn't easy.

Photo shows how we solved problem. Clip-on cap of gallon can is punched with hole in center. Solder a small-bore, flexible, metallic hose in place. It's easy to tilt can and guide narrow stream of oil into a small container. Oil supply is cut off quickly when hose end is bent upward. And you don't require hole for air entry to take place of oil removed because only a little oil is drawn off at one time.

When punching hole in cap, apply punch on concave side to keep from damaging snap-on cap. When gallon can is empty, place cap with its hose on a new can for more service.

C. T. BOWEN London, England



Stop Noisy Check Valve

INSERT a composition disk—same as used on water end of hot-water pump. Take clapper out and drill 3/16-in. hole in center. Make 1/4-in.-thick disk, same size as clapper. Screw clapper on with 3/16-in. stud and lock washer. It does the trick. Have one ready for replacement so repairs are not held up.

E. R. ROSE Detroit, Mich.
(Continued on page 152)

CLIP-ON CAP of gallon can is punched with hole. Solder metallic hose in place

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