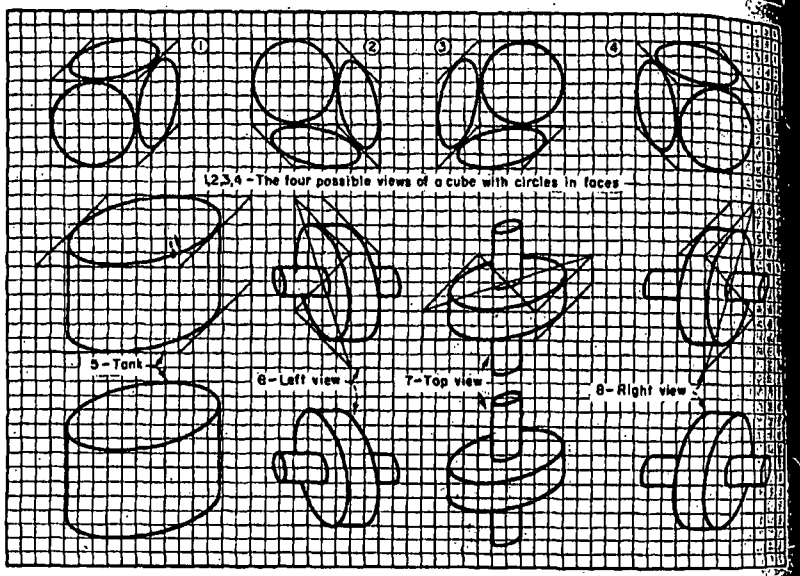


HEADWORK

PHIL SWAIN BRINGS ENGINEERING THEORY DOWN TO EARTH



Easy Sketching System—9

► THIS MONTH and next we shall show how to save time and effort, and get a first-class job, using ellipse templates to draw oblique circles in cabinet projection.

Note that ellipses for isometric sketching are not thin enough for cabinet. You need special "25-deg tilt" ellipses, which should be so marked.

When ellipses represent oblique circles in cabinet we must admit the effect is somewhat less true, less pleasing than that of *isometric ellipses*. That's one reason why isometric sketching is a quality system, preferable to cabinet projecting where the finest style is required for exhibition or publication. Yet cabinet's greater convenience usually makes it preferable for many uses.

But if you choose cabinet, be prepared, now and then, to sketch an oblique circle, preferably with an ellipse template, such as all our sketches use this month and next.

Always draw the enclosing diamond first. Then find, on your template, largest ellipse that just fits in this diamond, tangent to all four sides.

Fig. 1, 2, 3, 4 show four possible views of a cube in cabinet projection. Note how ellipses fit into the diamonds representing top, sides, bottom of cube. For a given-size cube, you need only one ellipse, tilted to fit diamond.

In Fig. 5, first draw an imaginary square-topped box enclosing the tank. You have a 10-ft square (shown as a diamond) enclosing a circle (ellipse).

It's easy to fit ellipse in the top diamond, and move template straight down to make the tank's bottom edge.

Fig. 6, 7, 8 show how to draw a simple pulley and shaft in three positions. If you drew this shaft with end facing you, ends of both shaft and pulley would appear as a simple circle.

Next month we'll show how to draw a flanged tee using ellipse templates.

NOTE: *We suggest Dietzgen Trimmy Ellipse Templates from drafting-supply stores, or direct from Eugene Dietzgen, 218 E 23 St, New York, N. Y. For a template of 20 ellipses ⅛ in. to 1 in. long, order 2275-25, about $2. For 12 ellipses 2⅛ to 4 in. long, order 2275L-25, the price of which is about $3.50.*

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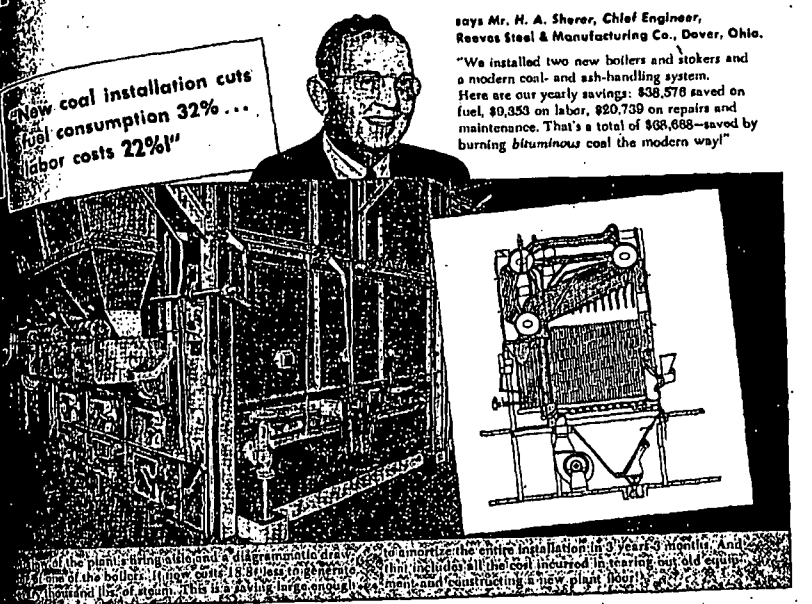
"New coal installation cuts fuel consumption 32% . . . labor costs 22%!"

...of the plant's firing aisle and a diagrammatic draw... of one of the boilers. It now costs 18.8¢ less to generate ... thousand lbs. of steam. This is a saving large enough to amortize the entire installation in 3 years-3 months. And that includes all the cost incurred in tearing out old equipment and constructing a new plant floor!

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