

guy derrick is its ability to lift itself from one erection floor to the next. First, the hinge pin is removed to disconnect the boom (which is shorter than the mast and has four spare guy ropes near its upper end) from the mast. The boom hoist cable (or topping lift) then lifts the boom in a vertical position and sets it on the foot blocks close to the mast. The boom is rotated 180 degrees, the normally unused guys are secured, and the boom then stands as a guyed gin pole.

The load hoist of the boom then is used to pick up the mast, the mast guys being slackened off a few at a time and reattached at the upper level. When the mast is secured at the new erection floor, the boom is raised and again connected at the hinge.

To swing guy derricks, the men push either on the suspended load or on a pipe "bull stick" attached near the base of the mast.

Other types of derricks are the gin pole and the breast derrick. The gin pole is merely a mast slightly out of plumb, with a hoisting tackle suspended from its upper end. The gin pole is supported by a number of guys, most of which are on the side away from the load. This rig is used for raising and lowering a load that needs to be moved only a few feet horizontally.

The breast derrick is a small portable A-frame with a winch attached to it. Like the gin pole, it is erected in a nearly vertical position, with one or two guys to support it. Care must be exercised to prevent the base from slipping and causing the load to fall. The men should be warned to watch their fingers when they operate the winch.

Mobile cranes

Mobile cranes include locomotive cranes, crawler cranes, truck cranes (Fig 20-17), and industrial truck cranes. The first three types are well standardized in design, but there is a great variety of industrial truck cranes.

All mobile cranes have booms with load hoists and boom hoists. In most instances, the rig swings or rotates on a turntable, which rests on a railroad car, crawler, or autotruck chassis. Power is provided by electric motor, steam, gasoline, or diesel engine.

On a steam-powered rig, all safety appliances required for a boiler should be provided and necessary precautions observed. Boilers

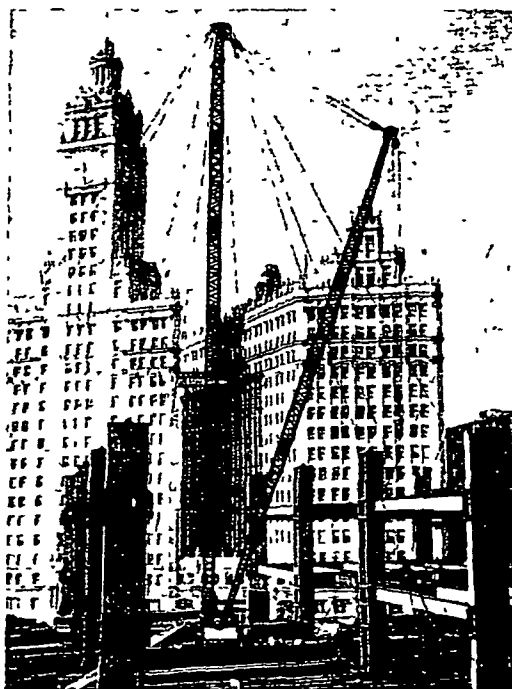


FIG 20-16 —Guy derrick of latticed steel construction lifts structural steel in place

should be inspected regularly by a licensed inspector.

Electric powered equipment should be grounded as specified in the *ASI National Electrical Safety Code*.

Repairs or adjustments on an electric-powered rig should be made only by qualified electricians. Power should be disconnected before repairs are made. Trailing cables should be kept off the ground whenever possible and should be handled only with insulated hooks.

Gasoline-operated rigs require protection against the hazards of fire and explosion. Engines should not be refueled while running. If refueling is done by hose connection from a tank truck or from drums by means of pumps, metallic connection between the hose nozzle and fill pipe should be maintained.

If fuel is transported to the rig by hand, safety cans should be used. Open lights, flames, and sparks should be eliminated, and lights on the equipment should be of an ap-