

The workmen should see that jacks are well lubricated, but only at points where lubrication is specified, and should inspect them for broken teeth or faulty holding fixtures. A jack should never be thrown or dropped upon the floor, such treatment may crack or distort the metal, thus causing the jack to break when a load is lifted.

It is important that the floor or ground surface upon which the jack is placed be level and clean, and that the safe limit of floor loading is not exceeded. If the surface is earth, the jack base should be set on substantial heavy wood blocking, preferably hardwood, of sufficient size that the blocking will not turn over, shift, or sink. If the surface is not perfectly level, the jack may be set on blocking, which should be leveled by substantial shims or wedges securely placed so that they cannot be crushed or forced out of place.

To prevent the load from slipping, no metal-to-metal contact should be permitted between the jack head and the load. A wood shim, preferably hardwood and longer and wider than the face of the jack head, should be placed between the jack head and the contact surface of the load. One-inch wood stock is suitable for this purpose (Fig. 19-6).

"Extenders" of wood or metal, intended to provide a higher rise where a jack cannot reach up to the load nor lift it high enough, should never be used. Instead, a larger jack should be obtained or higher blocking—which is correspondingly wider and longer—should be placed under the jack.

All lifts should be vertical with the jack correctly centered for the lift, the base on a perfectly level surface, and the head with its shim bearing against a perfectly level meeting surface. When an emergency requires that the lifting force be applied at an angle, extra precautions must be taken which include

- 1 A base of blocking securely fastened together and to the ground to make an immovable surface at right angles to the lift for the jack base to rest on
- 2 Cleats on the blocking to prevent shifting of the jack base
- 3 A meeting surface at right angles to the direction of the lift for the jack head with its shim to bear against
- 4 Props or guys to the load to prevent its swinging sidewise when lifting begins

When a jack handle is placed in the socket, the workman should make sure that the area is clear and that there is ample room for an unobstructed swing of the handle before he applies pressure. A faulty movement in the load may cause the handle to pop up and strike another worker. The man operating the handle should stand to one side so that if the handle kicks, it will not catch him in the body or face.

After the load is raised, metal horses or substantial heavy wooden horses or blocking should be placed under it for support in case the jack should let go. A raised load should never be allowed to remain supported only by jacks. The handles of the jacks should be removed and placed out of the way to prevent workers from walking into them.

When a jack is released, the worker should keep all parts of his body clear of the movement of the handle.

A hydraulic jack which leaks oil should be taken out of service and repaired. Hydraulic jacks may settle after raising a load. It is, therefore, especially important to place blocking under a load that has been raised by such jacks.

Screw jacks have a tendency to twist when a heavy load causes the floating head of the jack to bind. The base of a screw jack should be anchored as securely as possible so that the jack base will not twist and slip out from under the load when force is applied on the bars to raise the screw.

To raise a large piece of equipment with screw jacks, two or more jacks should be used. The load should be equally distributed on each jack. The jacks should be raised each a little at a time to keep the load level and the strain equal on each screw jack head.

Workmen using jacks should wear safety shoes and instep-guard protection because jack handles may slip and fall or parts of machinery or equipment may come loose and drop as the load is being lifted or shifted. Waste or other wiping material should be furnished to jack operators who should use it to remove oil from their hands and from the jack handles so that they will always have a firm grip.

Oil that has collected in the bases of equipment or machines to be jacked should be removed before the operation is begun to prevent spillage when the equipment or ma-