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A Tripod Mount to Aid in Lifting Heavy Objects

Howard L. Gary[1]

Describes an easily constructed tripod that can be mounted on legs of varying length. When equipped with a sheave or block and tackle, the mount can accommodate a wide variety of hoisting needs.

Keywords: Hoisting, tube pulling, construction aid.

Many types of derricks or towers—ranging from a tripod formed by chaining three poles together to an imaginary "sky hook"—have long been used or needed for hoisting or lowering heavy objects. The tripod mount described here, which has proved useful for such jobs, is easily constructed in a welding shop, durable, inexpensive, readily portable, easy to store, and can be used on legs of varying lengths.

Materials and Construction

Three legs of the tripod mount, about 2 feet long, were cut from 1-inch inside diameter (i.d.) galvanized steel pipe. An 8-inch-long spacer cut from the same sized steel pipe was used to join two of the legs. One end on two of the legs and both ends of the spacer were cut on a 25° diagonal. A 5-inch-long section of 1½-inch (i.d.) steel pipe was used as a pivotal sleeve. An 8-inch-long piece of 5/8-inch iron bar was heated and shaped to form a half hoop for a bail. Materials used in constructing the tripod mount are readily available. Depending on expected use, various sizes of steel pipe and iron bar stock may be substituted for the bail, pivotal sleeve, and legs. The basic tripod mount without legs weighs about 13 pounds, and is easily transported to any work site.

Assembly instructions were as follows:

1. Weld the half hoop to the pivotal sleeve to form a bail for attaching a sheave or block and tackle (fig. 1-A).
2. Notch the end of one leg to straddle the pivotal sleeve. This leg is centered and positioned on the pivotal sleeve to form a 40°-45° angle between it and the bail and then welded to the sleeve (fig. 1-B).
3. Weld one of the diagonally cut legs to the spacer to form a 110° angle (fig. 1-C).
4. The pivotal sleeve with attached bail and leg is then slipped over the free end of the spacer. The third leg is positioned and welded to the free end of the spacer to form another 110° angle to complete construction of the tripod mount.

[1]*Hydrologist, Rocky Mountain Forest and Range Experiment Station, with central headquarters at Fort Collins, in cooperation with Colorado State University.*

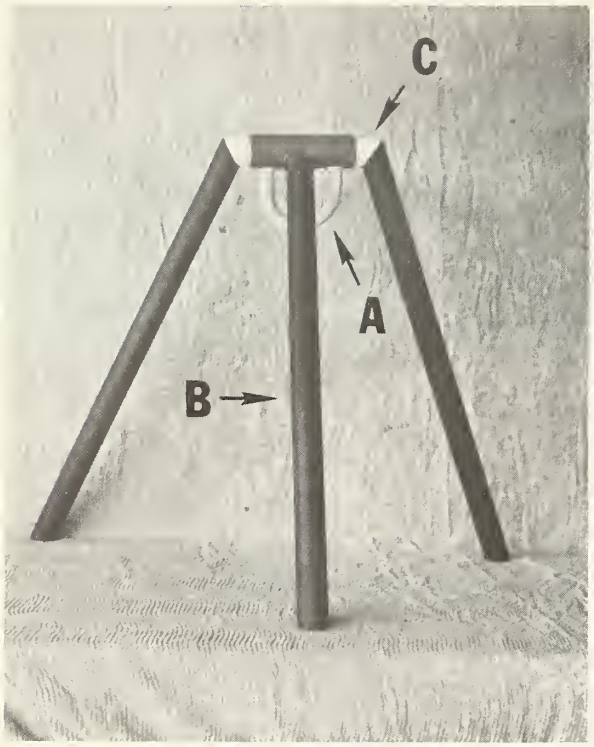

Figure 1.—Component parts of the tripod mount: **A**, bail; **B**, leg welded to pivotal sleeve, and **C**, spacer welded between two legs.

Figure 2.—Tripod mount equipped with 21-foot-long, 1½-inch pipe legs and block and tackle.

Setup and Use

For use, the tripod is spread full length with the bail against the ground. Sections of 1½-inch (i.d.) steel pipe are then inserted over each leg of the tripod mount. Length of the supporting pipe legs will depend on requirements of the individual lifting operation. Pipe sections up to 21 feet long have been satisfactorily used as legs for the tripod mount (fig. 2).

For overhead use, a sheave or block and tackle should be attached to the bail before the tripod is raised. To raise the tripod mount and attached legs, the pivotal leg is pushed upward and toward the two rigidly spaced legs. When the tripod is raised to about maximum obtainable height and/or when it is steady, it can be lifted or skidded one leg at a time to center it over the point of operation. The tower can be raised and positioned by one or two persons in a few minutes. If the pipe legs do not penetrate the ground to provide stability, they should be roped or chained together at ground level and/or midheight for safety.

The tripod mount and pipe legs have accommodated a wide variety of hoisting needs. During several years of testing, the mount has proved valuable for soil sampling, soil penetration tests, pulling well tubing, lifting motors and other bulky equipment, and for lifting and holding trees weighing up to 1,000 pounds without any evidence of failure.