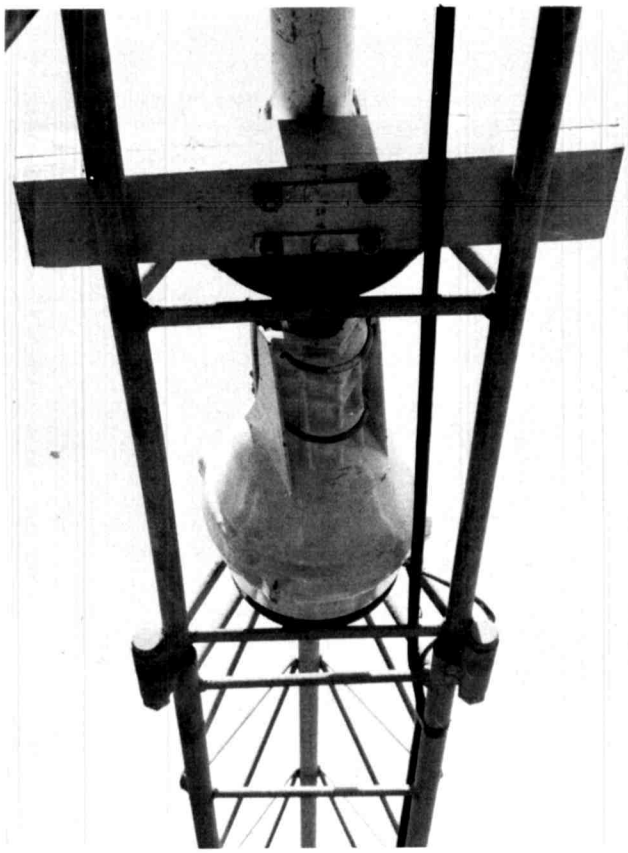

Mast lock installed on author's tower.

beam antenna mast lock

Simple clamp device for preventing windmilling

There are frequent occasions when it's necessary to secure a beam antenna in a fixed position to prevent it from spinning or windmilling, or from changing its vertical position relative to the rotator when the rotator has been removed for maintenance, routine or otherwise. The antenna clamp described here meets that requirement completely. It is not only effective and easy to make, but it even costs less than two dollars for materials. Before going further, I want to explain that the term *mast* is used to denote the pipe to which the antenna is mounted and which is turned by the rotator. It does not refer to the tower structure.

clamp description

Briefly, the clamp consists of a piece of oak or other hardwood 2 × 4 × 13 inches (50.8 × 102 × 330 mm) and a pair of 2 1/2 × 5/16 inch (64 × 8 mm) U bolts. See **fig. 1**. (The lumber dimensions are those that best fitted my EZ-WAY tower installation.) For other towers it may be necessary to change the longer dimensions, making it about 4 inches (102 mm) more than the distance between the legs at the height of the rotator.

The device is clamped to the mast by means of the U bolts (**fig. 2**). The 2-by-4 lumber piece should rest on the cross member, which is just above the rotator. It's important that the small backing plates that accompany the U bolts are used so that maximum pressure may be exerted on the wooden member to prevent any slippage between the bolts and the mast. Merely putting washers beneath the nuts *will not* accomplish this. Remember that we're dealing with considerable twisting force on the clamp.

The clamp not only prevents the antenna from turning but also maintains the vertical position relative to the rotator. This can be very critical when the rotator is reinstalled. It may be necessary

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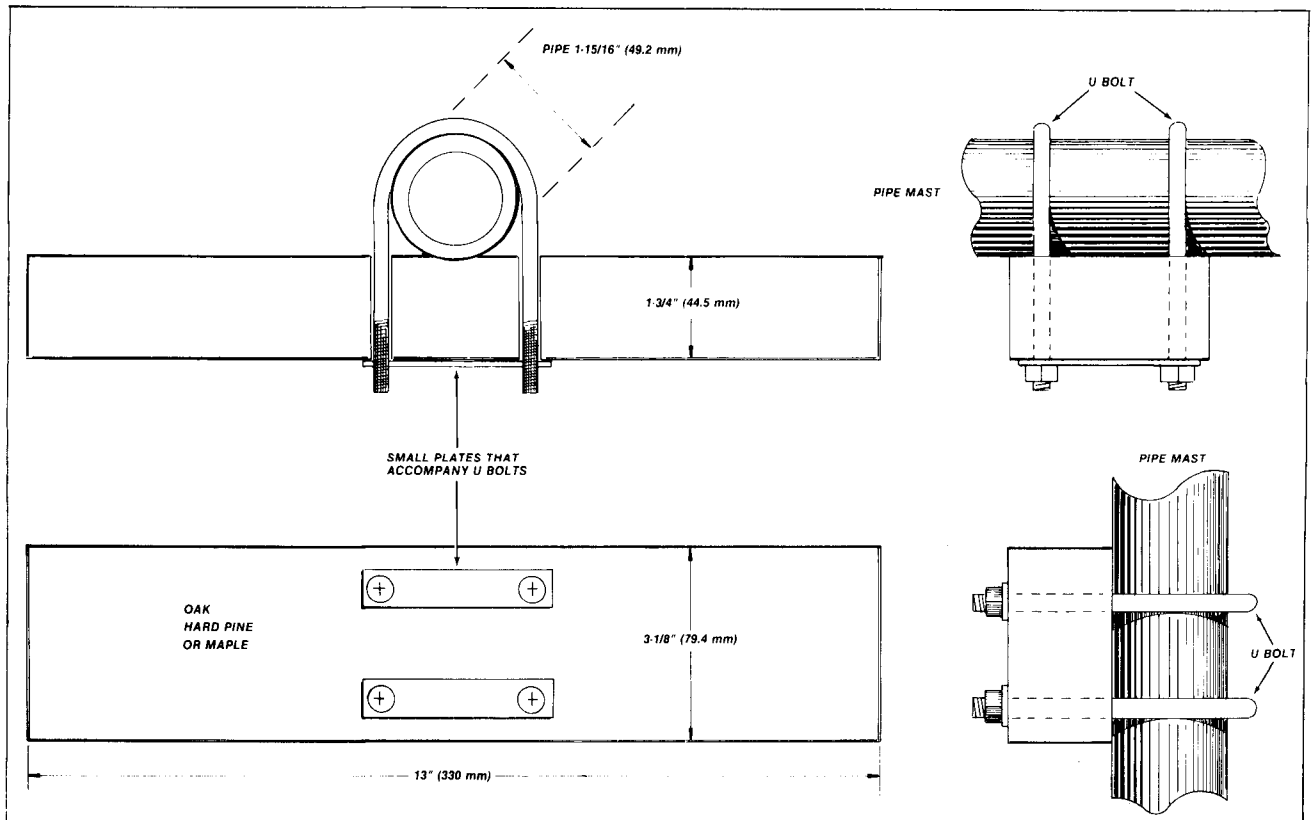

fig. 1. Assembly drawing of the beam antenna mast lock. These dimensions are measured from the clamp. Sizes given in the text are nominal; 2 × 4 lumber varies from 1-1/2 × 3-1/4 to 2 × 4 for unplaned mill material.

to add shims or small wedges between the clamp and the tower legs to obtain a tight lock-up.

With my EZ-WAY foldover tower, I position the beam antenna so that, when lowered, either the reflector or the director lies flat on the ground. This action relieves the strain on the antenna elements when the antenna is down and puts the antenna in a fixed position of reference. In this position, the base casting and rotatable upper casting should be indexed by means of a China marking pencil or a strip of paint. The dial of the control box should be marked to indicate the azimuth of the system before it was lowered. With everything thus marked no further alignment should be necessary after reinstallation of the serviced rotator.

Whenever I leave town for any length of time, I install the clamp to relieve the rotator of torque caused by heavy on-shore winds (my property is very close to the Atlantic Ocean.)

This has been a practical solution to a bothersome problem.

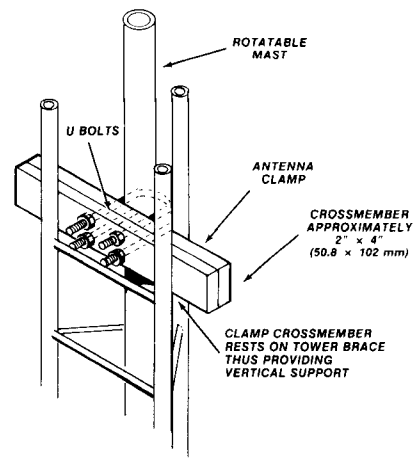

fig. 2. Isometric view of the mast lock.

ham radio