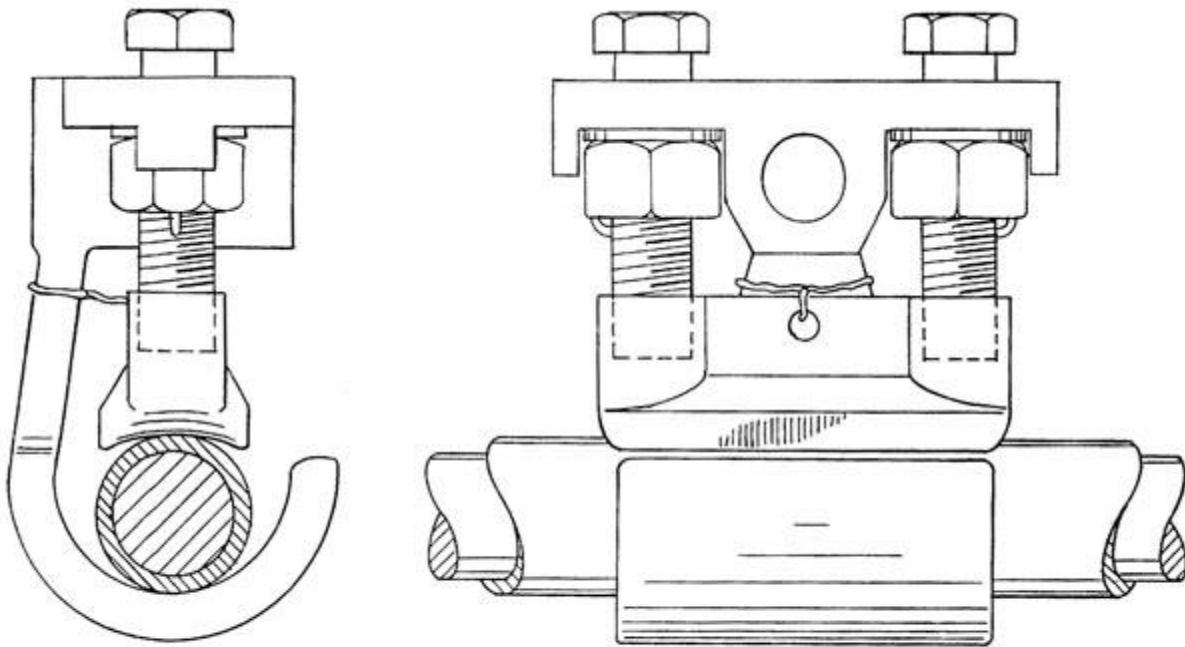




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**Transmission Line Spacer Twister Device**  
**US Patent 6,008,453**  
**AR®Spacer Twister**



**TRANSMISSION LINE SPACER TWISTER DEVICE**  
**UNITED STATES PATENT 6,008,453**  
**DECEMBER 28, 1999**

**ABSTRACT**

A spacer-twister device for securing to first and second conductors includes an elongate insulating member having first and second ends. A first clamp is rotatably coupled to the first end of the insulating member by a first joint for gripping the first conductor. A second clamp is rotatably coupled to the second end of the insulating member by a second joint for gripping the second conductor. The insulating member provides proper spacing between the first and second conductors with the first and second joints allowing twisting of the first and second conductors. In turn, the twisting prevents or dampens galloping of the conductors.

**BACKGROUND OF THE INVENTION**

During winter weather conditions, ice can form on the conductors of electrical power transmission lines. This ice sometimes behaves as an air foil when the wind passes over the conductors. Occasionally, when the wind conditions allow, the air foil ice formations exert lifting forces on the conductors which causes the conductors to gallop. Such galloping can result in short circuits. If an electrical power transmission line provides service to a region including business centers, hospitals,

major manufacturing plants or airport operations, protection against such galloping is desirable to prevent power interruption.

## **SUMMARY OF THE INVENTION**

The present invention is directed to a spacer-twister device for properly spacing and preventing galloping of conductors. The spacer-twister device is securable to first and second conductors and includes an elongate insulating member having first and second ends. A first clamp is rotatably coupled to the first end of the insulating member by a first joint, the first clamp for gripping the first conductor. A second clamp is rotatably coupled to the second end of the insulating member by a second joint for gripping the second conductor. The insulating member provides proper spacing between the first and second conductors with the first and second joints allowing twisting of the first and second conductors which prevents galloping. By allowing twisting of the conductors, the foil ice formation is twisted into a position where there is little or no lift caused by the wind passing over the ice formation on the conductors.

In preferred embodiments, the insulating member includes a first eyelet at the first and second eyelet at the second end. The first and second clamps each have a pair of mounting flanges. The first second eyelets are each rotatably coupled between the mounting flanges of respective first and second clamps by a bolt to form the first and second joints. The first and second joints preferably further include washers positioned on opposite sides of the first and second eyelets. In one preferred embodiment, the insulating member includes a first insulating portion rotatably coupled to a second insulating portion by a third joint. The first insulating portion comprises a smooth insulating rod and the second insulating portion comprises an insulating rod having sheds.

The present invention spacer-twister device can be part of a system for spacing first, second and third conductors apart. The clamps of a first spacer-twister device grip the first and second conductors. The rotatable joints allow twisting of the first and second conductors for preventing galloping of those conductors. The clamps of a second spacer-twister device grip the second and third conductors. The insulating member of the second spacer-twister device provides proper spacing between the second and third conductors. The rotatable joints allow twisting of the second and third conductors for preventing galloping of those conductors. The first and second spacer-twister devices forming the present invention system may be employed in a wishbone conductor configuration or in a vertical conductor configuration.

The present invention spacer-twister system is easily and quickly installed in a cost effective manner. In both the wishbone conductor configuration and the vertical conductor configuration, only two spacer-twister devices are required per span.