MICROWAVE ANTENNAS
KS-15676 HORN REFLECTOR AND WAVEGUIDE SYSTEM
USE OF THE AT-8550 TOOLS

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1. GENERAL

1.01 This section describes the use of a kit of tools designated AT-8550. The kit of tools and associated carrying case are illustrated in Fig. 1 and 2. These tools are designed to facilitate the initial installation or the replacement of the circular waveguide connection between the KS-15676 feedhorn and the hanger plate on microwave antenna towers.

1.02 The tools are also designed to permit "hot-cut" procedures with a minimum of pressure-down-time and transmission degradation.

1.03 A "J"-bolt jack assembly L-501609 is used to facilitate lowering and raising the hanger plate and its associated run of circular waveguide components and networks.

1.04 A guide pin assembly L-501610 (Fig. 3) is used to maintain alignment of the circular waveguide during the periods of lowering and raising the hanger plate.

1.05 When a new circular waveguide connection is being installed in an existing system by "hot-cut" procedures, a clamp L-501857 (Fig. 4) is

Fig. 1—AT-8550 Tools in Container

Fig. 2—AT-8550 Tools Container—Exterior View

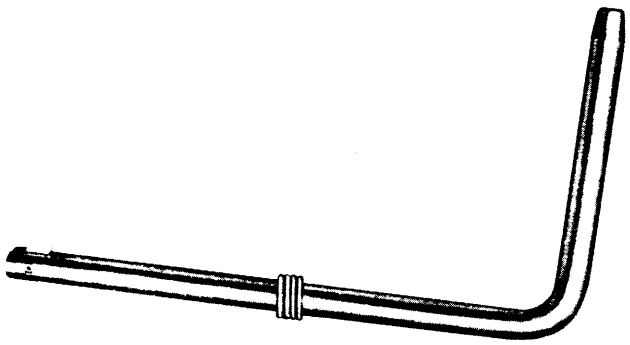

Fig. 3—Guide Pin Assembly L-501610

used for lashing the replacement waveguide to the waveguide in service in order to facilitate the cutover process.

2. PROCEDURE FOR USING "J"-BOLT JACK L-501609

2.01 The "J"-bolt jack assemblies are used to facilitate raising or lowering the circular waveguide hanger plate. This assembly is shown in place in Fig. 5.

2.02 The four "pal-nuts" which lock the 3/4-inch nuts on the top of the hanger plate are temporarily removed. The 3/4-inch nuts are then backed off to support the bar of the jack assembly (Fig. 5). The "J" bolts are then hooked to the angle iron member of the hanger plate. The nuts on the "J"-bolts are then tightened sufficiently to transfer the waveguide load weight from the hanger plate lower 3/4-inch nuts to the "J"-bolts.

2.03 Unlock the "pal-nuts" from the four 3/4-inch nuts on the bottom of the hanger plate and back them all off sufficiently to allow lowering of the hanger plate to the desired level.

2.04 The hanger plate is now carefully lowered, maintaining uniform loading of the waveguide flange on the hanger plate, by uniformly turning the four "J"-bolt nuts in a counterclockwise direction. Rotate each nut only one turn at a time, in sequence, until all four nuts have been rotated one full turn. Repeat this procedure until the desired level is reached.

2.05 To elevate the hanger plate, reverse the procedures of 2.02 through 2.04.

3. PROCEDURE FOR USING GUIDE PIN L-501610

3.01 These guide pin assemblies are used to maintain waveguide flange alignment. An example showing a feedhorn flange and a waveguide flange held aligned is illustrated in Fig. 6. A minimum of two guide pins are required to maintain alignment, or three guide pins may be used to assure optimum alignment.

3.02 The guide pins are inserted into the desired flange holes as each corresponding flange bolt is removed. They are inserted from below (through the waveguide flange first) and the tab on the guide pin is turned to straddle the hole. Position the rubber friction rings on the guide pin just below the waveguide flange to hold it in place (Fig. 6).

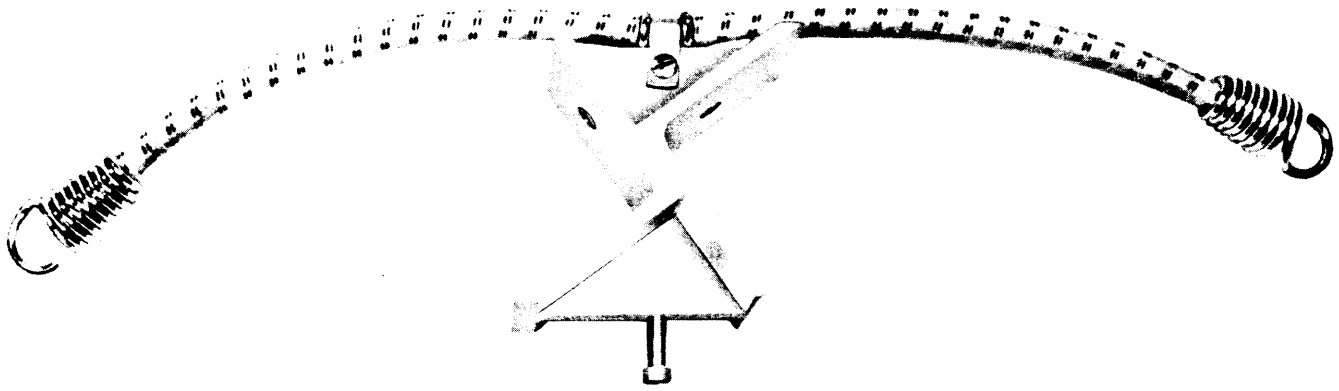

Fig. 4—Clamp L-501857

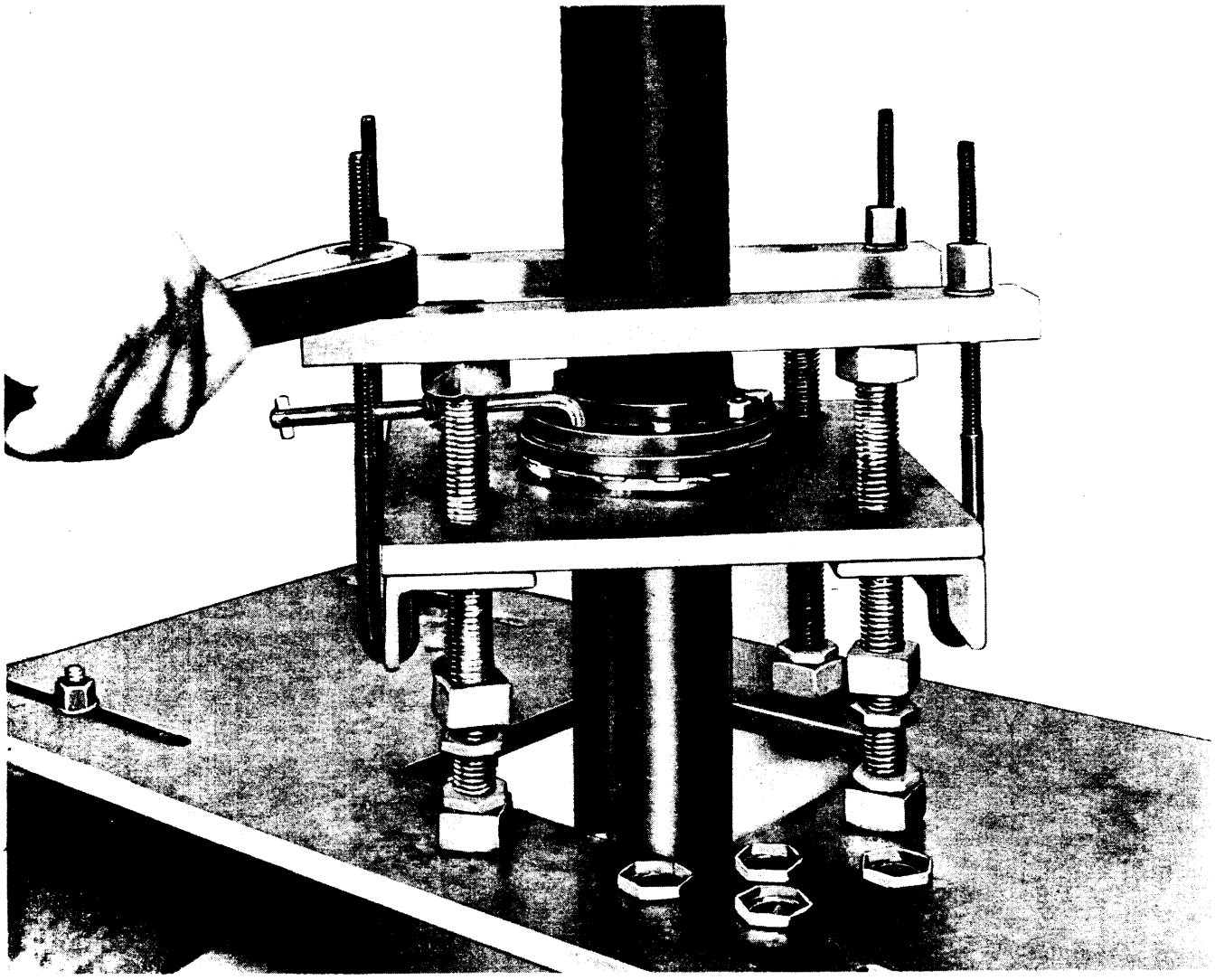

Fig. 5—"J"-bolt Jack L-501609 in Place on Waveguide Hanger Plate

3.03 When necessary to use the guide pin on the hanger plate waveguide flange, the plain end of the guide pin may be used. An example of this use is illustrated in Fig. 5.

4. PROCEDURE FOR USING CLAMP L-501857

4.01 A minimum of three of these clamp assemblies are used to lash a waveguide section in place for a "hot-cut" procedure.

4.02 The clamps are fixed to the in-service waveguide as illustrated in Fig. 7 ***before*** lowering the hanger plate.

4.03 When the hanger plate has been lowered, lash the new waveguide to the in-service waveguide as illustrated in Fig. 8. See Fig. 9 for a close-up view.

4.04 It is necessary for the waveguide flanges to overlap when the waveguides are lashed together. The flanges of the new waveguide should be above the flanges of the in-service waveguide (Fig. 6).

5. USE OF TOOLS DURING AND AFTER CUTOVER

5.01 Prior to cutting the replacement waveguide into service, remove any bolts remaining in the hanger plate waveguide flange. At the same

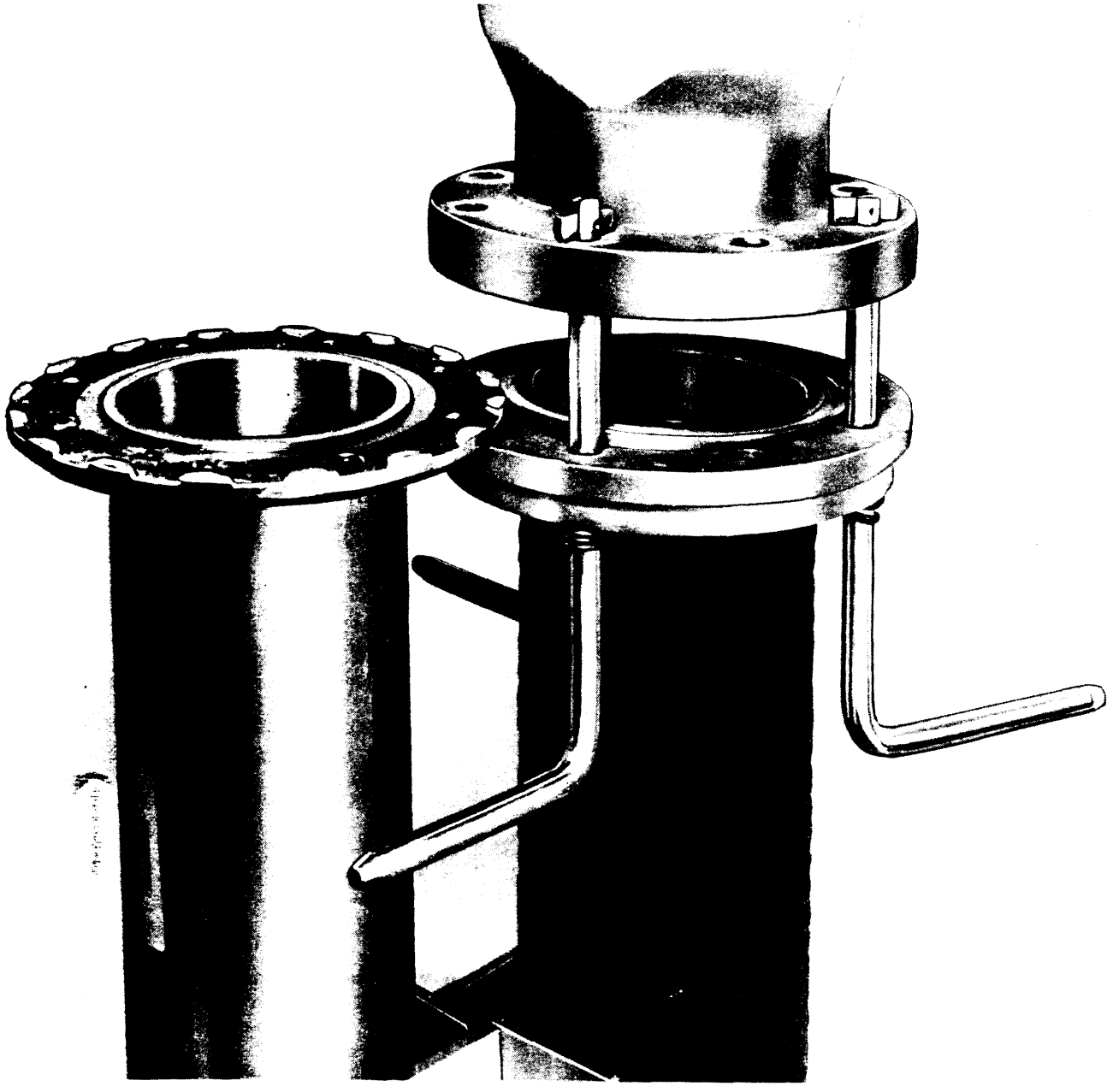

Fig. 6—Guide Pins L-501610 as Used to Align Waveguide Flanges

time, remove any guide pins that were used in either of the flanges. Proceed with the "hot-cut" in accordance with approved methods.

5.02 After a cutover has been completed, the guide pins are used to maintain alignment of the new waveguide and are installed by following the procedure of Part 3. They are left in place until the old waveguide has been removed and the hanger plate has been raised to close the gap at the feedhorn flange.

5.03 The hanger plate is raised by reversing the procedure given in Part 2. Before removing the "J"-bolt jack assemblies, verify that the lower 3/4-inch nuts are supporting the waveguide load.

5.04 After each use, repack the tools carefully in their container and store for future use. Verify that the contents of the container are two "J"-bolt jacks, six guide pins, and three clamps.

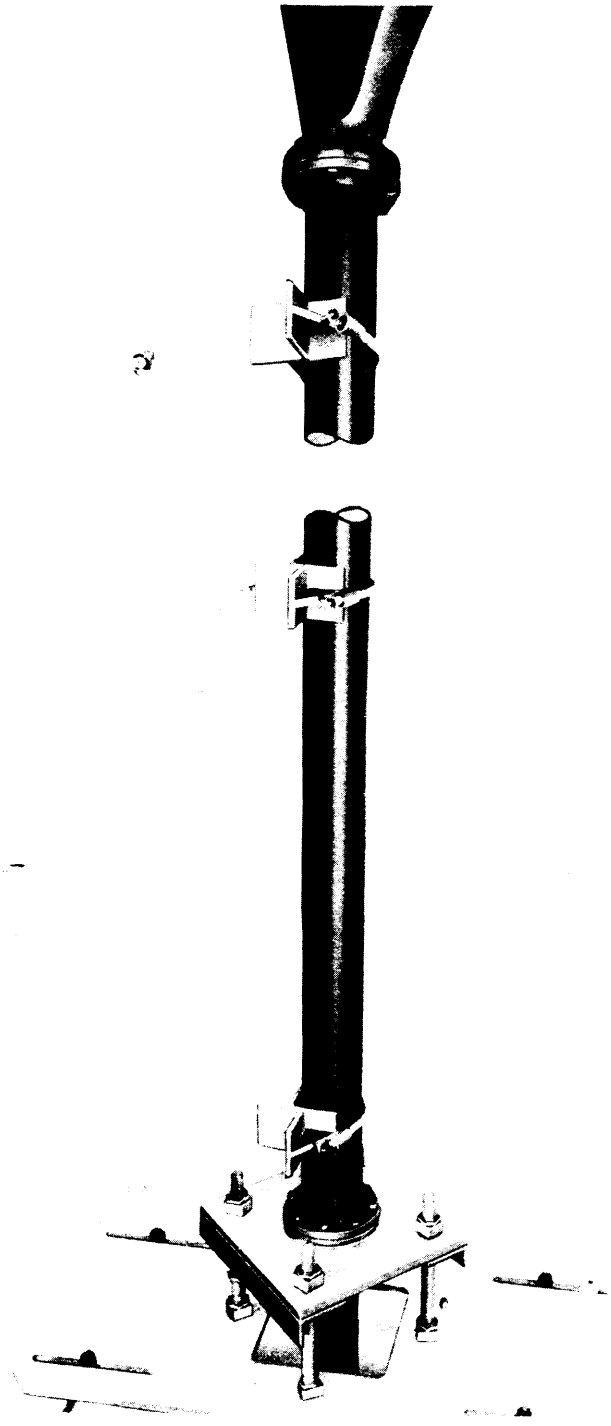

Fig. 7—Clamps L-501857 Fixed to In-Service Waveguide Before Hanger Plate Lowering

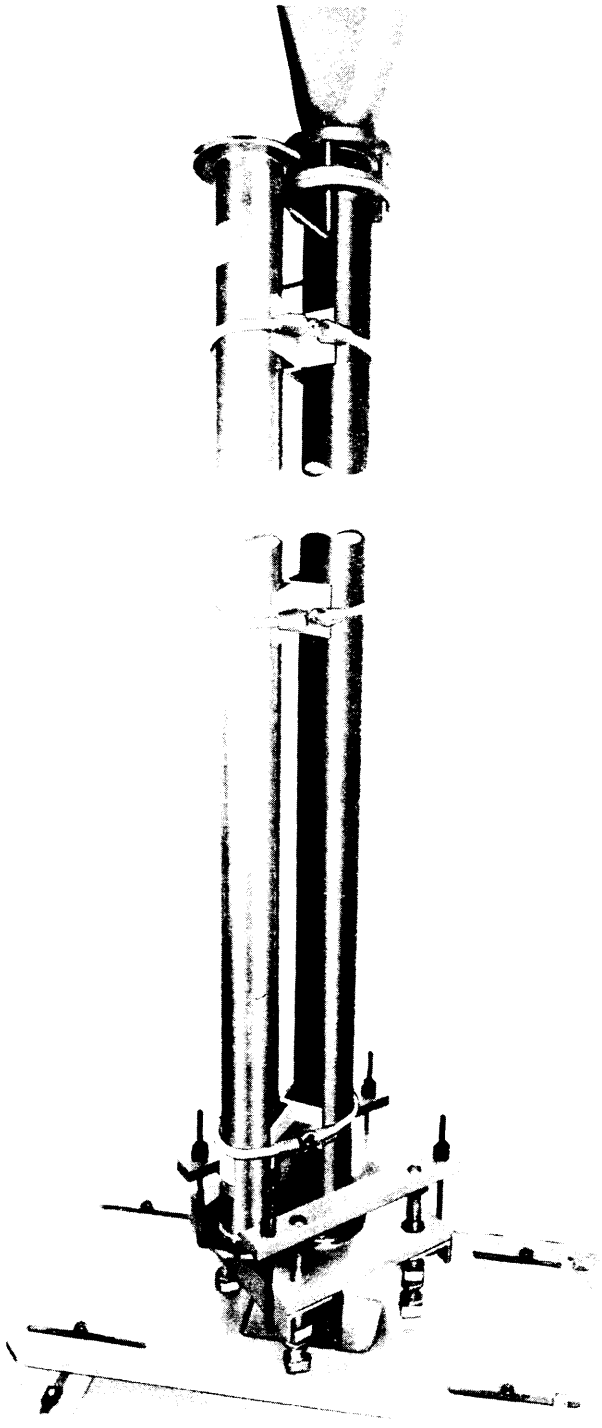

Fig. 8—Clamps L-501857 as Used to Hold The New Waveguide Section in Place

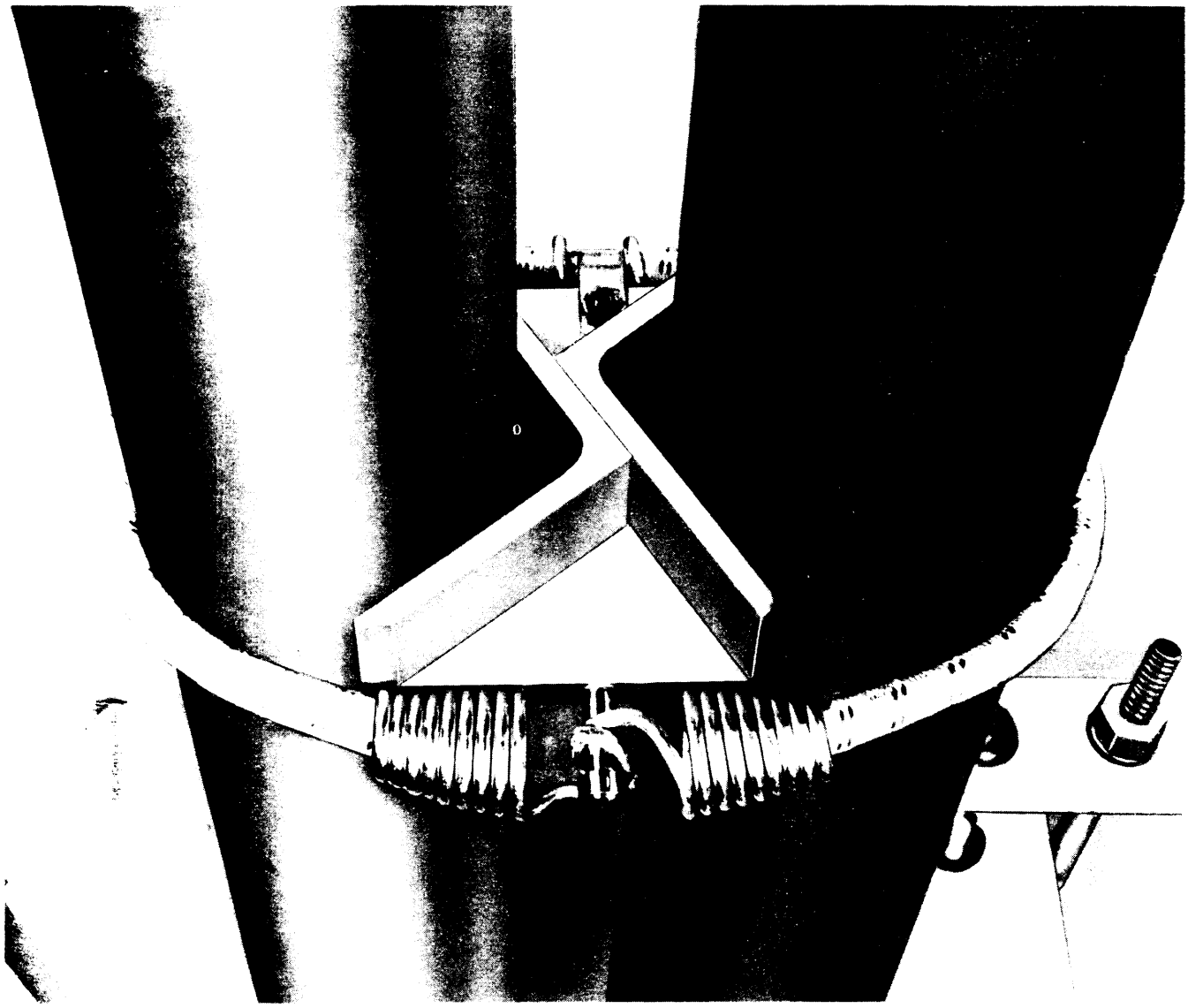

Fig. 9—Clamp L-501857 in Use