

UNITED STATES PATENT OFFICE

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ADAPTER

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4 Claims. (Cl. 29—284)

1

This invention relates to supports of wide ranges of adjustment to engage an article to be supported with wide ranges in shifting of the article thus supported.

This invention has utility when incorporated in a multiple clamp type of holder, as from a turn table base, transverse guide means carried thereby, arms adjustable along the guide means to extend away from the table, and swingably mounted C-clamps on the arms. This assembly provides wide adaptability for carrying on construction and repair programs, more particularly in conforming to dimension and special configurations of instrument chassis encountered in the commercial fields of television, radio and disk record apparatus. The assembly units have chassis of variant size decks, platforms, and different plane groupings, which chassis are usually rigid. Inspection and repair essentially requires ready access to chassis from all directions, not only for viewing, but setting, adjustments, replacements, and repairs, even as to refitting operations. Under the program as herein rendered practical for efficient handling, the chassis, when out of its cabinet exposing the parts which are to function in the performance, is engaged at two spaced apart regions by a pair of clamps, swung to meet the pair of faces of the chassis to be gripped by each clamp, thus supporting the chassis with access to all its parts. This provides a universal type mounting, with horizontal axis swinging at the mountings for the clamps, and vertical axis mounting as to the turn table base.

Referring to the drawings:

Fig. 1 is a side elevation, with parts broken away, of an embodiment of the invention for handling communications equipment chassis items;

Fig. 2 is a fragmentary plan view of the unit of Fig. 1, and

Fig. 3 is a partial end elevation looking from the left in Fig. 1, with a different item of work than in Figs. 1 or 2.

A turn table mounting or base 1 has a central internally threaded boss 2 from which radially extend ribs 3 to a circular track 4. A turn table 5 has a track 6 to ride on the track 4 of the base 1. The table 5 has a central bearing 7 from which radial ribs 8 extend to the track 6. A wing bolt 9 through the bearing 7 is operable to engage the threading in the boss 2. If desired, the turn table pair 1, 5, may be left free for relative rotation on a vertical axis. However, as there may be occasion for work strains upon a

2

chassis or other item for attention, the bolt 9 may be set in clamping relation, thereby to lock the turn table against any swinging or rotating, thus holding such firm to the base 1. The base 1 has ears 10, with bolt holes 11, so that bolts 12 through the holes 11 may serve positively to anchor the base 1 with a work bench 13.

Diametrically disposed and rising from the table 5 away from the track 6, is a pair of lugs 14 with parallel openings 15 therethrough in a plane parallel to the plane of the abutting tracks 4, 6. Knurl headed screws 16 at the lugs 14 extend to engage respective guide means or rods 17. The openings 15 locate the rods 17 in parallel relation. In order to cover the sharp edges of the ends of the rods 17 and/or to give rectangular frame rigidity thereto either or both pair of ends of the guide rods 17 may have detachably fixed therewith an end brace member 18. Parallel sockets or seats 19 in the member 18 may be thrust over the ends of the rods 17, and there anchored by set screws 20 in the members 18. The screws 16 permit ready longitudinal adjustment of the rods 17 relatively to the turn table 1, 5. In the event there be occasion for use independent of the members 18, one of the rods 17 may be adjusted relatively to the other. However, the normal occasion for adjustment is to centralize the work region or the weight of the item having attention, with the turn table 5.

According to the overall dimension of the items to be handled, there may be selected appropriate length for the rods or guides 17. Arms or risers are assembled with the guide rods, and in the carrying forward of the adjustment ranges hereunder, the risers are placed on the rods 17 before the members 18 are fastened over their ends; or the risers, if bridging the parallel rods, may be used without the members 18.

Wing bolts 21 at slide sections 22 lock the riser brackets or arms 23 at selected adjusted positions along the rods 17 toward and away from the lugs 14. After mounting the pair of brackets 23 on the rods 17 on opposite sides of the lugs 14, one or both of the members 18 also may be mounted on the rods 17.

The upper or free ends of the brackets 23 provide bearings 24, which as to the pair of brackets are located in axial alignment by the rods 17. At each of the bearings 24, is a threaded stem 25 rivet anchored with a C-clamp frame 26. The externally threaded stems 25 in protruding from the bearings 24 and extending away from each other, are there engaged by a handwheel nut 27 having hub 28 to be friction locked against the

face of the bracket 23 about the bearing 24. There is thus achieved a friction held angular setting for the C-clamp frames 26.

The C-frame 26 has a rigid plane face 29 in a plane parallel to the axis of the stem 25. Opposing this face 29 is an internally threaded overhang 30 in which is operable a knurl headed screw 31 having a relatively movable end or adaptor 32 to be thrust toward the face 29, to grip at a region 33 a radio chassis 34 or other item of work. Spaced therefrom a second region 35 of the chassis 34, may be gripped, thereby establishing a mounting along a horizontal axis for readily orienting the chassis into any one of a complete range of positions into which it may be locked by the nuts 27; while any one of a vertical axis range of positions may be selected by rotation of the turn table and the clamping of the wing bolt 9.

The disclosure herein is an adaptor having facility for fitting-into widely variant demands for operators on construction of equipment or apparatus, as well as upkeep, repair, remodeling, and testing performance thereof. Communication's equipment, whether for disk record operation, transmission or reception, including radio and television apparatus or equipment, usually is assembled on a base or chassis adapted to be housed in a cabinet or housing.

The adaptor readily responds to the dimension requirements in providing an axis for orienting the equipment 34 (Fig. 1), or thinner base or chassis 36 (Fig. 2) as well as the wider spacing required by the C-clamp gripping of chassis region 37 (Fig. 3).

There arise niceties requiring most thorough checking, as well as accuracy and neatness in work execution. Should there be occasion for placing an element requiring some structural departure as to the chassis, as by drilling, the adaptor may be turned on its turntable bearings, and then clamped by the wingheaded screw 9, if holding against work pressure be required. Further different axis turning, of the chassis proper at the bearings 24, may orient the work so that cut-away fines fall clear of the equipment. Again, as soldering or like problems as of coating, the section of wire, or face to be so treated, may be so exposed to approximate horizontal, so that the liquid may more readily set against sloughing off.

During the diagnosis course, lead in electric connection means 38 may be readily brought into the equipment at the clearway between the brackets 23, as with take off conduit or duct 39. These details for reproduction refinements are of great importance in broadcasting and reception equipment.

What is claimed and it is desired to secure by Letters Patent is:

1. A universal adaptor for construction and repair positioning of air-wave communication apparatus, said adaptor comprising a base providing a first axis bearing, a turntable coaxing with the base bearing, parallel guide rods slidably carried by and extending transversely of the turntable, first and second riser arms mounted on the guide rods and slidable therealong to vary the spacing between the arms; said rods, arms and turntable being swingable on the first axis bearing in a first unit relatively to the base, a pair of apparatus-engaging clamps, and axially aligned swivel bearings mounting the clamps on the arms and providing a second axis bearing extending in direction transversely of the first axis bearing direction, said clamps and apparatus engaged therebetween forming a second unit swingable on the second axis bearing in a direction different from the swingable direction of the first unit, the slidable mounting of the guide rods and riser arms permitting the weight of the apparatus to be centralized with respect to the turntable.

2. A universal adaptor for construction and repair positioning of air-wave communication apparatus, said adaptor comprising a base providing a bearing axis, a turntable coaxing with the base bearing, parallel guide rods slidably carried by and extending transversely of the turntable, first and second riser arms coaxing with the guide rods for sliding adjustment relatively to the turntable, axially aligned trunnions extending thru the arms, clamps in opposing relation carried by the trunnions, and locking means for the trunnions in angularly set positions as to the arms for the clamps, the slidable mounting of the guide rods and riser arms permitting the weight of the apparatus to be centralized with respect to the turntable.

3. The adaptor of claim 1 wherein the second axis bearing is parallel to the rods.

4. The adaptor of claim 1 wherein the first axis is vertical and the second axis is horizontal.

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