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TONGS FOR REMOVING RADIO TUBES FROM CHASSIS

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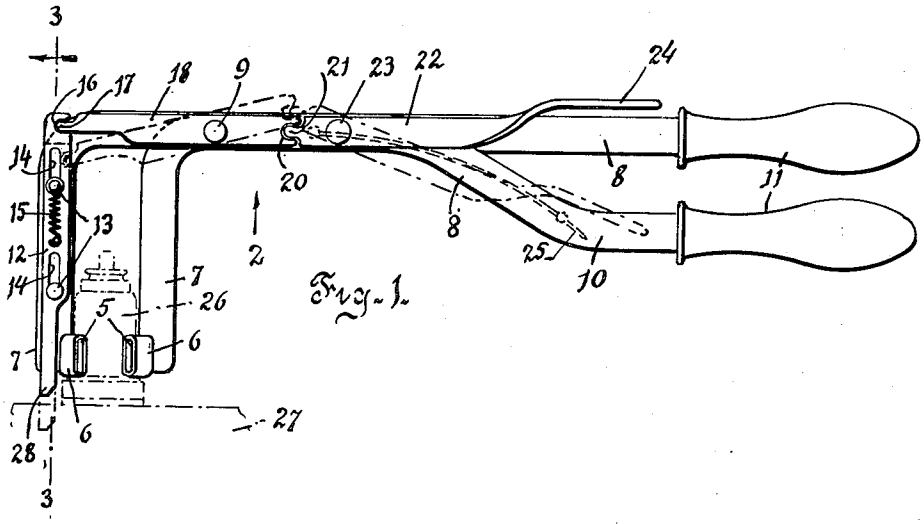


Fig. 1.

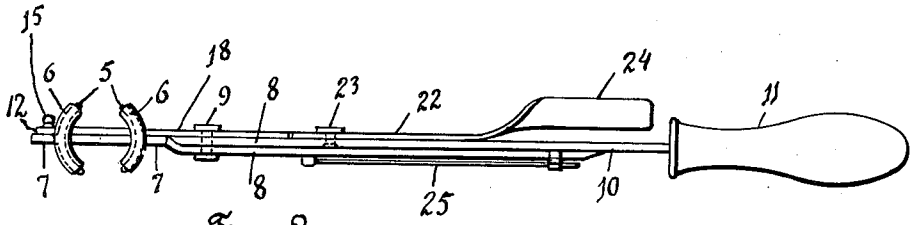


Fig. 2.

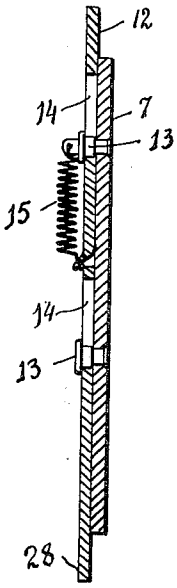


Fig. 3.

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TONGS FOR REMOVING RADIO TUBES FROM CHASSIS

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4 Claims. (Cl. 254—23)

Our invention has reference to tongs for removing metallic type of tubes from chassis.

The metallic tubes at present in use for radio purposes are rather small for a perfect grip by hand; also, the type of radio set in use at present leaves very little room for a perfect grip of the tube, and it is impossible to grip such a tube with the bare hand right after the current has been shut off, as the tubes get very hot.

In addition, the type of sockets used for such lamps call for a rather tight fit, and it requires a powerful pull to remove such a lamp from a chassis. Since there is no direct access from the top but only from the sides, it is rather a problem to remove such tubes from the chassis.

The purpose of our invention is to obviate this and provide a device which is simple in construction and permits it to get hold of the tube and jack it out of the chassis, from a point outside the cabinet in which the chassis is located.

The object of the invention is to provide a simple and efficient device that will accomplish the above purpose.

In the appended drawing forming part of this application, Figure 1 is a side elevation of tongs embodying our invention. Its application is shown to a metallic tube and chassis, both of which tube and chassis are shown in dash and dot lines.

Figure 2 is an elevation of Figure 1 in the direction of the arrow 2, and

Figure 3 is a section on line 3—3, Figure 1.

Referring to the drawing, 5 are the curved jaws which are preferably each covered with a rubber pad 6, so as not to injure a tube when gripping it. Each jaw is carried by an arm 7 rising from the jaws 5. The arms 7 have extensions 8 bent at substantially right angles to the arms but running in the same direction and are inter-connected by a pivot 9 forming the fulcrum of the tongs. One of the extensions 8 is bent downward, as shown at 10, to space the said extensions 8 of the tongs and the other extension is offset laterally to permit a proper grip on the handles 11 provided on the extensions 8.

A slide 12 is mounted on one of the arms 7. The movement of the slide on the arm is guided by two pins 13 provided on the arm and projecting through slots 14 of the slide 12. A spring 15 normally tends to retract the slide to its normal or raised position.

The slide 12 at its upper end has a recess 16 engaged by a projection 17 of an arm 18 fulcrumed also at the pivot 9 of the tongs. The other end of the arm 18 has a recess 20 engaged by a projection 21 of an arm 22 pivoted at 23 on the extensions 8 on which the arm 18 is located. Said arm 22 extends into the proximity of the handles 11 and thereat is provided with a flattened portion 24 easily engageable by a finger of the hand gripping the handles.

The two jaws 5 are normally maintained separated by a spring 25 provided between the extensions 8, as best shown in Figure 2. When it is desirable to remove a tube or bulb 26 from a chassis 27 (see Figure 1), the tongs are brought first into engagement with the tube, and it will be noted from Figure 1 that the lower end 28 of the slide 12, although extending below the jaws 5 of the arm 7, provides a sufficient clearance between said end and the surface of the chassis, so that there would be no interference between this lower end of the slide and the chassis when the jaws are brought into engagement with a tube.

By applying pressure to the handles 11, the jaws 5 will be brought into engagement with the tube 26 through the fulcrum 9, as illustrated in Figure 1. If then pressure is applied to the flattened end 24 of the arm 22, the same is caused to move on its pivot 23, and as it travels to the position indicated in dot and dash lines of Figure 1, the arm 18 is caused to move on its pivot 9 to the dash and dot lines as indicated in said Figure 1, thus forcing the slide 12 to descend and come into engagement with the surface of the chassis 27, and as the slide moves to the position indicated in dash and dot lines in said Figure 1, it jacks the tube 26 out of the chassis, which can then be removed by the tongs still gripping the tube.

It is evident that the lever arrangement provided is a form of toggle joint for the slide to be operated from the handles. The jaws 5, being designed to engage a cylindrical body, necessarily have for an axis the axis of a cylinder that may be engaged therebetween.

We claim

1. In combination, tongs having jaws, arms rising from said jaws so that a radio tube can be accommodated between the arms when the tube is engaged by the jaws, handles extending from said arms substantially at right angles thereto, and whereby said jaws may be actuated, a slide carried by one of said arms, means for operating said slide from the proximity of the handles, and means for restoring said slide to its normal position.

2. In combination, tongs having jaws for engaging a radio tube, arms rising from said jaws so that a radio tube can be accommodated there-

between when engaged by the jaws, an extension from each arm substantially at right angles thereto, each provided with a handle, a fulcrum for said tongs on the extensions of the arms, a slide mounted on one of said arms, a spring for normally maintaining said slide in a retracted position, a lever engaging said slide and having its fulcrum in the fulcrum of the tongs, and a second lever engaging the first lever to be operated from the proximity of the handles, and whereby said slide can be moved substantially as and for the purposes set forth.

3. In combination, tongs having jaws, arms rising from said jaws so that a radio tube can be accommodated between the arms when the tube is engaged by the jaws, handles extending from said arms substantially at right angles thereto, a slide carried by one of said arms and cooperating levers operable from the proximity of the handles and engaging the slide for actuating the same, substantially as and for the purposes set forth.

4. In combination, tongs having jaws, arms rising from said jaws so that a radio tube can be accommodated between the arms when the tube is engaged by the jaws, handles extending from said arms substantially at right angles thereto and whereby said jaws may be actuated, a slide carried by one of said arms, and a toggle joint engaging the slide and operable from the proximity of the handles for actuating said slide.

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