

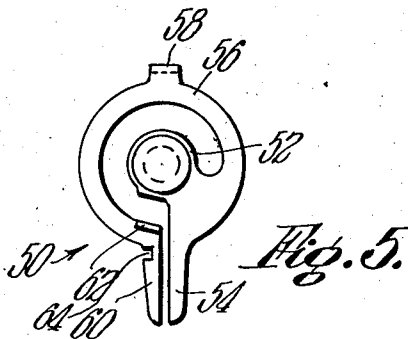
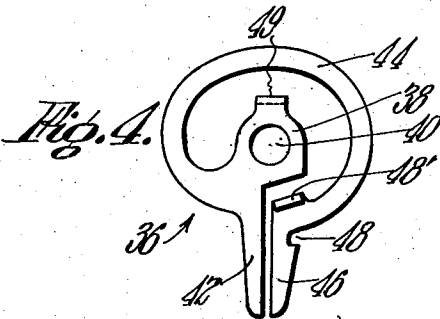
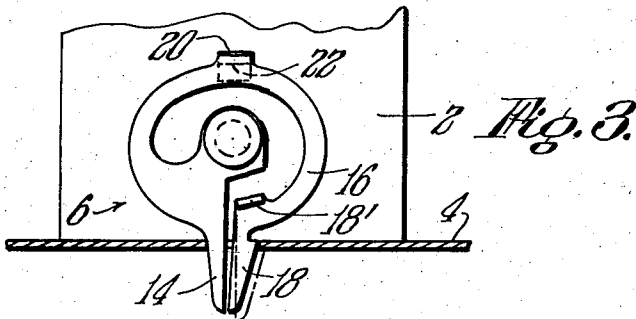
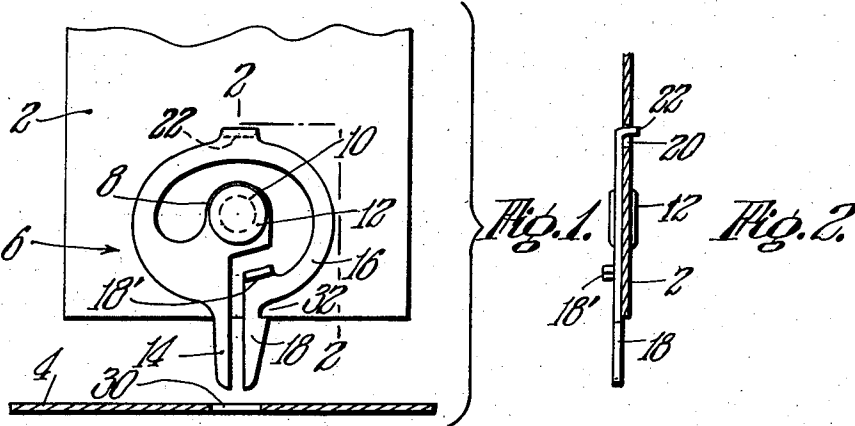
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2,450,306

SECURING DEVICE

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UNITED STATES PATENT OFFICE

2,450,306

SECURING DEVICE

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This invention relates to improvements in securing means and is directed more particularly to devices for releasably securing objects together.

The principal objects of the invention are directed to the provision of a device which is adapted to be secured to one object and that is arranged to engage another object so as to hold the objects in releasable association.

The device of the invention is adapted for broad application and may be used for securing various objects together but for purpose of disclosure will be described in connection with securing the shield of radio apparatus to the chassis thereof.

It is customary in radio apparatus to provide a chassis formed from metal and to secure thereto shields which enclose various components of the apparatus. Various means have been employed for this purpose but they are difficult to manipulate and expensive to produce.

According to this invention, a securing device is provided which is simple in form and is so constructed and arranged as to be automatic in operation. That is, the device may be secured to one part such as a shield and the shield may be brought into association with the chassis or other part in such a way that the parts are relatively locked in the desired relation.

It will be understood that while the invention will be described in connection with a shield and chassis of a radio apparatus that the invention is not to be so limited.

With the foregoing and various other novel features and advantages and other objects of my invention as will become more apparent as the description proceeds, the invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claims hereunto annexed and more fully described and referred to in connection with the accompanying drawings wherein:

Fig. 1 is a front elevational view of the securing device of the invention shown attached to an object such as a shield;

Fig. 2 is a sectional elevational view on the line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 1 to explain the operation of the device; and

Figs. 4 and 5 are elevational views of modified forms of the device of the invention.

Referring now to the drawings more in detail, the invention will be fully described.

2 represents a shield and 4 represents a plate or part of a chassis with which the shield is to

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be associated. The device of the invention comprises a clip 6 which is made from material that is relatively thin.

The clip 6 may be formed by any suitable operation such as stamping or the like. A hub 8 is provided which has a suitable aperture 10. A rivet 12 extends through the aperture and secures the hub to a wall of the shield 2. From the hub 8 there extends a leg or prong 14 and a ring portion 16 having a leg or prong 18 on the end thereof.

The clip is preferably made from material which is springlike or resilient and being formed as it is the legs 14 and 18 tend to assume an open or expanded open relation, as shown in Fig. 1. However, the curving part 16 is yieldable so that the legs 14 and 18 may be moved relatively and the leg 18 may be moved downwardly relative to the leg 14 against the spring action of the portion 16.

A slot 20 is provided in the shield and an ear 22 extends rearwardly from the curving part 16 into said slot. The ear and slot prevent twisting movements of the clip on its connection with the shield. Said slot is arranged to facilitate movements of the part 16 of the clip within the desired limits. The plate 4 is provided with a hole 30 for receiving the prongs of the clip.

In associating the shield and plate the prongs 14 and 18 are inserted in the hole 30 which brings the prong 18 toward the prong 14, as shown in Fig. 3. When the shield and plate are in this relation the prong 18 is moved downwardly relatively to the prong 14 whereby with one side of the hole bearing against the outer side of prong 14 the other side of the hole enters a notch 32 of prong 18.

To facilitate this manipulation of the part 16 an ear 18' may be struck upwardly from the clip, as shown, which may be engaged by a tool of some sort or said ear may be omitted entirely and the member 16 acted upon by any suitable device and in any desired manner. As the prong 18 is moved downwardly so the edge of the hole is engaged in the notch 32 said prong is in the position shown in dot-dash lines.

To separate the parts 2 and 4 the prongs 14 and 18 may be squeezed together so that the side of the hole is disengaged from the notch 32 whereby the prongs may be withdrawn through the hole.

The modification of the invention shown in Fig. 4 will now be described.

In this form of the invention a clip 36 has a hub 38 which is provided with a hole 40 for a rivet or the like for securing the clip to an object such

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as a shield. This clip 36 has a prong 42 and a ring-like portion 44 extending from the hub 38. The part 44 terminates in a prong 46 there being a notch 48 associated therewith, as shown. An ear 49 is provided on the hub 38 for reception in a slot as in the case with Fig. 1. The ear in this case extends from the hub and the portion 44 is arranged to facilitate this. As in the former case there may be a projection or ear 48' which is similar to the projection 18 or it may be omitted.

The modification of the invention in Fig. 5 will now be described. In this form of the invention, a clip 50 has a hub 52 from which extends a prong 54 and a more or less circular spring-like part 53 which is provided with an air 58 adapted to function similarly to the ears 22 and 49. A prong 60 is provided at the termination of the part 56 and there may be an ear if desired which is indicated by 62. A notch 64 is provided as shown.

The clips shown in Figs. 4 and 5 are used similarly to the clip described in connection with Figs. 1 to 3.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. Hence, the present embodiments are therefore to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all modifications and variations as fall within the meaning and purview and range of equivalency of the appended claims are therefore intended to be embraced therein.

What it is desired to claim and secure by Letters Patent of the United States is:

1. In combination, a first object and a securing device secured to said first object for releasably securing the same to a second object, said device comprising a clip formed from sheet metal and having a central hub secured to said first object, a first prong depending therefrom so as to be resiliently movable laterally but not longitudinally, a relatively yieldable ring-like arm portion extending from a side of said hub upwardly and around said hub and spaced therefrom terminating in a second prong adjacent said first prong, said second prong thereby being resiliently movable both towards and away from the first prong and also longitudinally thereof, said first object having a slot of limited length and said ring-like portion having an ear received within said slot, said slot and said ear cooperating to prevent rotation of said securing device on said first object and to limit the longitudinal motion of said second prong.

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2. In combination, a first object and a securing device secured to said first object for releasably securing the same to a second object, said device comprising a clip formed from sheet metal and having a central hub secured to said first object, a first prong depending therefrom so as to be resiliently movable laterally but not longitudinally, a relatively yieldable ring-like arm portion extending from the upper outer side of said first prong around said hub and spaced therefrom terminating in a second prong adjacent said first prong, said second prong thereby being resiliently movable both towards and away from the first prong and also longitudinally thereof, said first object having a slot of limited length and said ring-like portion having an ear received within said slot, said slot and said ear cooperating to prevent rotation of said securing device on said first object and to limit the longitudinal motion of said second prong.

3. The combination of claim 1, in which the depending outer side of said first prong is smooth and the depending outer side of said second prong is provided with a notch.

4. In combination, a first object and a securing device secured to said first object for releasably securing the same to a second object, said device comprising a clip formed from sheet metal and having a central portion secured to said first object, a first prong depending therefrom and resiliently movable laterally but not longitudinally, and a second prong disposed adjacent said first prong and connected to said central portion via a resilient arm portion, said second prong being thereby resiliently movable both laterally and longitudinally with respect to said first prong, the depending outer side of said first prong being smooth and the depending outer side of said second prong being provided with a notch, said first object having a slot of limited length and said arm having an ear receivable within said slot, said slot and said ear cooperating to prevent rotation of said securing device on said first object and to limit the longitudinal motion of said second prong.

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