Aug. 17, 1943. G. A. TINNERMAN 2,326,903

INSTRUMENT MOUNTING AND FASTENER THEREFOR

Filed June 12, 1940

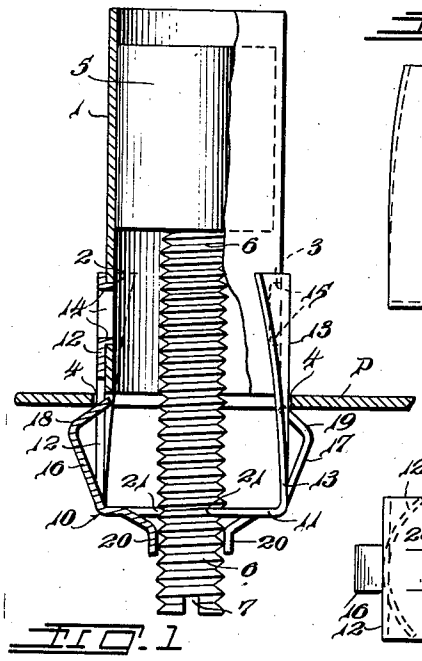


FIG. 1.

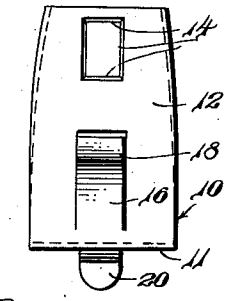


FIG. 2.

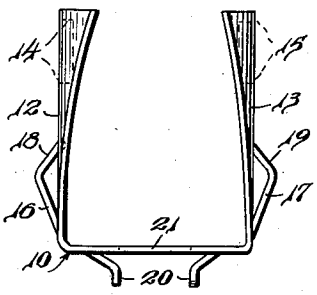


FIG. 3.

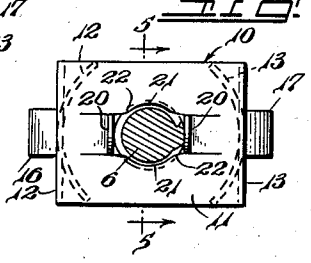


FIG. 4.

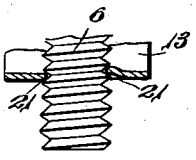


FIG. 5.

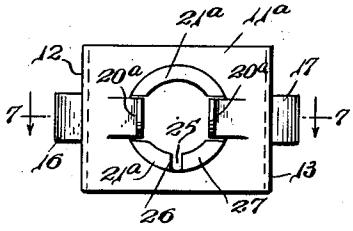


FIG. 6.

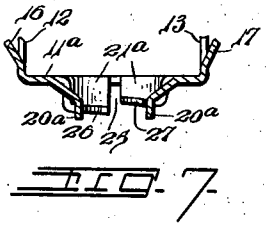


FIG. 7.

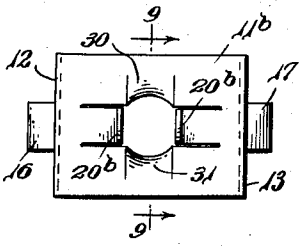


FIG. 8.

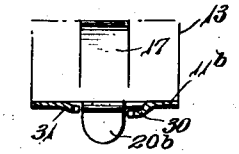


FIG. 9.

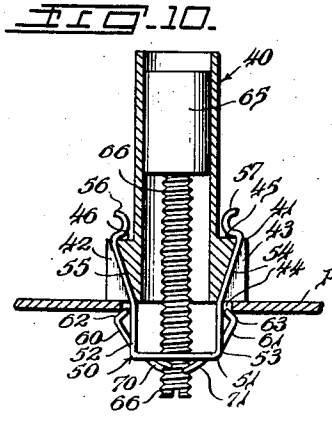


FIG. 10.

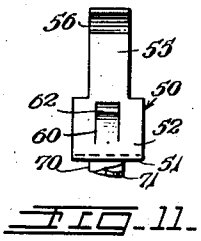


FIG. 11.

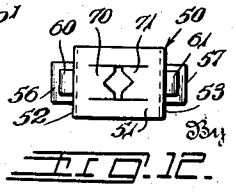


FIG. 12.

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UNITED STATES PATENT OFFICE

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INSTRUMENT MOUNTING AND FASTENER THEREFOR

George A. Tinnerman, Cleveland, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio

Application June 12, 1940, Serial No. 340,203

2 Claims. (Cl. 248—361)

This invention relates in general to improvements in instrument mountings and especially of the character wherein the instrument is mounted in a position generally perpendicular to a wall, panel member or other supporting surface.

More particularly, the invention deals with an improved mounting for various instruments such as fixed condensers, tuning elements, or like control units of radio apparatus, etc., which embody a tubular casing, post or similar member such as a coil form, for example, which is mounted firmly and rigidly in generally normal relation to a supporting panel in an installation.

In such a mounting, many instruments such as coil forms, and the like, embody an adjusting screw arrangement providing for axial adjustment of the tuning core within the coil form, and it has heretofore been necessary to provide separate and distinct means for threadedly engaging the adjusting screw in addition to diametrically spaced threaded studs attached to the coil form and fastened by separate nuts to mount the coil form on the panel or other chassis member. Such threaded studs involved considerable added expense in the coil structure and the assembly thereof inasmuch as two openings were required in the panel for receiving the threaded studs besides the time consuming operation of applying individual nuts thereto and tightening the same together with lock washers, etc. In addition, a third opening in the panel was necessary for passage of the tuning core adjustment screw which, as stated, also required separate and distinct means for threadedly engaging therewith and maintaining the same adjustable in operative position within the coil form.

The present invention overcomes all these objectionable features of prior constructions in the provision of an improved mounting which is simple, inexpensive, reliable and easily and quickly assembled through the use of a unitary fastener which embodies means both for mounting the coil form or other instrument on the supporting panel and also for threadedly engaging the adjusting screw of an adjustable element of the instrument, such as a tuning core within a coil form, in a manner to provide a thread locking action with the adjustment screw and yet permit any fine or minute adjustment thereof as may be necessary or desirable.

The fastener of this character requires merely a single socket opening in the supporting panel and only a simple assembling procedure to secure the coil form or like instrument to such supporting panel or other chassis member in an arrangement which reduces to a minimum not only the cost of such mounting means and the labor cost for the assembling operation involved, but also eliminates entirely the expense of providing separate and distinct means for threadedly engaging the adjusting screw for the tuning core within the coil form.

A principal object of the invention, therefore, is for the provision of an improved mounting which may be easily and economically manufactured and assembled and embodies a simple form of unitary fastener capable of the several purposes described and which is cheap and inexpensive and lends itself to economical quantity production in that such fasteners may be produced at very low cost from ordinary sheet metal with little or no loss or waste of material.

Another object of this invention is to provide an instrument mounting embodying a simplified fastener construction which is not only very economical to produce but highly efficient in operation and readily adapted for easy and speedy assembling methods in a minimum of time and effort.

A further object of the invention is for the provision of an instrument mounting embodying a fastener having means securing the article to be mounted to a support together with means receivable in an opening in the support in a manner to provide a firm, rigid mounting from which the instrument is not readily removable nor subject to displacement or other shifting movement even under conditions of extreme vibratory motion, and the like.

A more specific object of the invention is to provide an instrument mounting embodying such a fastener capable of providing a fixed, rigid attachment of an instrument body onto a supporting panel and including means for threadedly engaging an adjusting screw of an element to be retained in adjustable relation to such instrument body.

Another more specific object is to provide such a fastener including thread engaging means for this purpose together with means having frictional engagement with the screw threads in a manner to prevent displacement or loosening of the adjusting screw from any desired setting or adjusted operative position thereof.

Further objects and advantages and other new and useful features in the construction, arrangement and general combination of parts of the invention will be readily apparent to those skilled in the art as a description thereof proceeds with reference to the accompanying drawing, for pur-

poses of illustration but not of limitation, in which like reference characters designate like parts throughout the same, and in which:

Fig. 1 is a fragmentary sectional view of a completed instrument mounting in accordance with the invention, the fastener employed being shown partly in elevation and partly in section to illustrate the purpose and function of the various elements thereof;

Fig. 2 is a side elevational view of the fastener per se shown employed in Fig. 1;

Fig. 3 is an edge elevational view of this preferred form of the fastener;

Fig. 4 is a bottom plan of the fastener with the adjusting screw, represented in section, shown in assembled relation with the thread engaging portion provided in the base of the fastener; and,

Fig. 5 is a sectional view taken on line 5—5 of Fig. 4, looking in the direction of the arrows.

Fig. 6 is a bottom plan view of a similar type of fastener showing another form of thread engaging portion provided in the base thereof; and,

Fig. 7 is a fragmentary sectional view taken on line 7—7 of Fig. 6, looking in the direction of the arrows.

Fig. 8 is a bottom plan view similar to Fig. 4 showing the provision of a further form of thread engaging portion in the base of the fastener; and,

Fig. 9 is a fragmentary sectional view taken on line 9—9 of Fig. 8, looking in the direction of the arrows.

Figs. 10 to 12 inclusive illustrate a further embodiment of the invention wherein Fig. 10 is a vertical sectional view of a completed instrument mounting comprising another form of fastener;

Fig. 11 is a side view of the fastener per se shown employed in Fig. 10; and,

Fig. 12 is a bottom plan view of the fastener shown in Figs. 10 and 11.

While the invention deals, more or less, with the provision of an instrument mounting embodying a simple, reliable and inexpensive fastening means for securing an electrical unit, such as a tuning coil or fixed condenser to a supporting panel of a radio set, for example, it is to be understood, however, that the invention is one of general utility and is not limited to a unit of the class illustrated and described inasmuch as the fastener and expedient modifications thereof may be applied advantageously to many other articles in a manner whereby the complete assembly would fall within the scope and spirit of the invention.

Referring now, more particularly, to Figs. 1 to 5 inclusive of the drawing, there is shown in Fig. 1 the general organization of an instrument mounting such as a tuning unit, fixed condenser, or the like, mounted onto a panel of a radio chassis, for example. The tuning unit comprises a generally tubular shaped member 1 such as a sleeve, post, cylinder or the like which is constructed of any suitable material such as cardboard, composition material, plastic, etc., and which serves as the coil form or equivalent body of any related type of instrument to be mounted on the supporting panel P. The coil form or tubular body 1 is provided with diametrically spaced slots or other perforations 2, 3, suitably spaced from the lower end thereof and these perforations are designed to receive the attaching means of the fastener which otherwise includes means applied to a substantial socket opening 4 in the panel P for securing the coil form in applied mounted position thereon. In this relation, said socket opening 4, in a preferred installation, is of generally rectangular configuration having a width less than its length. The coil form or other body 1 has a diameter approximately the length of such generally rectangular socket opening and, of course, the lower end edge thereof is adapted to bridge the width of the socket opening and seat firmly and rigidly on one face of the supporting panel P with the securing portion of the fastener designed to be applied into and through said socket opening to applied fastening position to complete the mounting in a simple and speedy assembling operation, as hereinafter more fully set forth.

In the present example, the tuning unit is shown as including an inner core element 5 which is axially movable within the hollow body or coil form 1, by an adjusting screw 6, which extends through the panel opening 4 and is supported in the assembly by a thread engaging portion of the fastener having a thread locking action therewith but permitting rotation thereof for any desired, fine or minute adjustment of said screw, as by a tool applied to the tool recess 7 provided at its free end, for example.

The fastener, designated generally 10, is a relatively simple and cheap article of manufacture in that it may be most economically constructed from a comparatively small, inexpensive section of any suitable sheet metal, preferably of a spring metal nature, such as spring steel or cold rolled metal having spring-like characteristics. The fastener, of course, may be formed from sheet metal sections of various outlines, but from the standpoint of economical quantity production is most advantageously provided from a generally rectangular blank obtained from ordinary sheet metal strip stock with little or no loss or waste of material. As shown in Fig. 3, a blank or stamping of such character is bent into the general form of a substantial U-shape comprising a base 11 intermediate a pair of cooperating arms 12, 13. The upper portions of said arms preferably are bent into a generally semicircular configuration, as illustrated in Fig. 4, complementary to the cylindrical circumference of the tubular coil form or other hollow body 1 in order to firmly and rigidly engage the same on its opposite faces. Adjacent the free ends of said arms 12, 13, lug means 14, 15, respectively, are provided in a manner to be received in the opposed assembling slots 2, 3, in the side walls of the coil form as illustrated in Fig. 1. Said means 14, 15, may be formed in any suitable manner, a most expedient arrangement being shown provided by a perforation having slit marginal edge portions which are bent inwardly to define a protuberance having a periphery designed to be snugly received in said opposed slots 2, 3, of the coil form to hold the same fixedly against any possible displacement from assembled relation with the fastener between the upper free end portions of said arms 12, 13, thereof. Said arms 12, 13, otherwise are designed to grip the coil form therebetween under tension with said lug means 14, 15, received in the slots 2, 3, respectively, as illustrated in Fig. 1, but being more or less flush with the inner side walls thereof so as not to impede movement of the adjustable core 5 within the coil form body. In such position, the lower end edges of the coil form between said arms 12, 13 are adapted to engage the adjacent upper face of said panel P to rest firmly and rigidly thereon. In this relation, the base 11 of the fastener and adjoining lower sections of said arms 12, 13, provided with substantial snap fastening means, are

received in the socket opening 4 to secure the assembly in applied mounted position on the panel, as presently to be described.

Such snap fastening means, in a preferred construction, are most expediently provided in the manner of substantial spring fingers 16, 17 struck and formed from the arms 12, 13, respectively, of the fastener as best seen in Figs. 2 and 3. Said fingers 16, 17 are preferably integral adjacent the base 11 of the fastener and are bent adjacent their free ends to define shoulders 18, 19, respectively, extending outwardly out of the planes of the respective arms 12, 13, with the lower portions thereof tapering gradually inwardly toward the base 11 of the fastener to serve as substantial guide surfaces facilitating the initial insertion and application of said spring fingers into the socket opening 4 to the position in which said shoulders 18, 19, thereon effectively lock the device in applied fastening engagement in such socket opening.

In this relation, the adjustable core 5 which is telescopically received within the coil form 1, is adapted to be supported in the assembly by means of the adjusting screw 6 thereof threadedly engaged with a thread engaging portion provided in the base 11 of the fastener, such thread engaging portion being of a nature adapted to supply a tensioned, frictional threaded engagement with said adjusting screw 6 to prevent displacement or loosening thereof from any desired setting or adjusted relation of the tuning core 5 within the coil body 1 in operative position. In the form of such thread engaging means shown in bottom plan in Fig. 4, the substantial center area of the base 11 of the fastener is perforated and slit to provide a pair of opposing yieldable elements 20 which are bent out of the plane of said base 11, substantially as shown in Figs. 1 and 3, to define what may be termed frictional tongue elements adapted to engage the crests of the threads of the adjusting screw under tension. In the space from which said friction tongues 20 are provided, there is presented a bolt passage with the extremities 21 of the side portions bordering such bolt passage so designed as to define thread engaging means adapted to threadedly engage the threads of the adjusting screw 6 substantially in the manner of a nut.

As shown in Figs. 4 and 5, the edges of such extremities 21 bordering the bolt passage, more or less approximate the root diameter of the adjusting screw and are concentric therewith to snugly engage in the helical groove defined by the thread of said screw; and, as illustrated in Fig. 5, said extremities otherwise are bent or formed in a manner to provide a thread engaging edge lying on a helix corresponding substantially to the helix of the screw thread for even and uniform threaded engagement therewith. Such threaded engagement is usually about thumb tight for best results and therefore, as best seen in Fig. 4, the corners 22 of said extremities 21, adjacent the effective thread engaging portions thereof, are preferably rounded off in order to minimize cutting, mutilation or other wear on the screw threads which might take place under extensive adjusting movements and possibly result in looseness or play in the thread engaging action after a period of use.

Accordingly, referring to Fig. 1, it will be understood that in the assembled relation of the adjusting screw 6 with such thread engaging means of the fastener, the thread engaging elements 21 are received in the helical thread groove of the screw and cooperate with the friction tongues 20 frictionally and grippingly engaging the crests of adjacent convolutions of such thread at all times. There is thus provided an exceptional thread locking action on the adjusting screw 6 taking place by reason of the combined drag exerted on the thread by the snug and tight engagement of the thread engaging portions 21 therewith together with the pronounced, frictional gripping action of the tensioned friction tongues 20 with the crests of the thread convolutions adjacent said thread engaging portions 21. Said friction tongues 20 otherwise serve to bolster and maintain the adjusting screw in substantially perpendicular relation to the base 11 of the fastener in the threaded relation thereof with the thread engaging elements 21. In this way the cooperative threading action of said thread engaging elements 21 with the adjusting screw is reinforced by said friction tongues 20 and made positive and secure such that any possible looseness or displacement of these parts incident to wear even after an extended period of use is minimized and practically eliminated. Thus, the arrangement is such that the adjusting screw 6 is held by a substantial thread locking action in any adjusted position against accidental turning or unintended rotation which ordinarily would disturb the proper setting of the bolt or screw. However, even though the adjusting screw is thus lockingly retained under the various spring forces set up on the thread thereof, said screw is capable of fine, minute adjustments by means of a tool applied to the recess 7 to turn the same as required in providing any necessary or desired relation of the core 5 within the body of the coil form 1, as may be readily understood.

With the several parts of the instrument mounting provided substantially in the manner aforesaid, assembly thereof and installation of the mounting is carried out in a most expedient manner by assembling first the coil form or tubular body 1 between the semicircular upper portions of the arms 12, 13, of the fastener. This is readily accomplished by spreading said arms as necessary to admit the coil form therebetween with the lug means 14, 15, thereof in position to snap into the diametrically opposed openings 2, 3, provided in the side walls of said coil form. When thus assembled, said semicircular portions of the arms 12, 13 firmly and rigidly engage the outer face of the coil form while said lug means prevent displacement or shifting of said assembled parts in any direction.

Preferably the adjustable core 5 is then added to the assembly by threadedly engaging the adjusting screw 6 thereof with the thread engaging portion in the base 11 of the fastener. Although the core may be assembled in a similar manner after the coil form is mounted onto the supporting panel, the foregoing procedure is preferable in that all the parts of the instrument are assembled and ready for the final step in mounting the unit on the panel in a simple and speedy procedure, which, of course, is most important in mass production methods in that the complete units may be prepared in quantities ready for quick and easy installation in a minimum of time and effort as is necessary on an assembly line, for example.

With the instrument unit thus assembled, the same is easily and quickly mounted on the supporting panel P by inserting the base 11 and the

adjacent lower securing portions of the arms 12, 13, of the fastener through the socket opening 4 in a manner whereby the leading inclined portions of the spring fingers 16, 17, adjacent said base 11, serve as substantial guide surfaces which cam the side walls of such socket opening with progressively increasing force. This causes a gradual compression of said fingers 16, 17 inwardly toward each other sufficient to permit passage thereof through said socket opening to a position in which the cam shoulders 18, 19, of said fingers snap into engagement with the corner edges of said socket opening and the adjacent portions of said panel member at one face thereof, substantially as shown in Fig. 1. In this position, the lower end of the body of the coil form 1 which, as stated, is of a diameter greater than the width of the socket opening, bears upon the opposite face of the panel member to cooperate with said shoulders 18, 19, of the spring fingers in engaging opposite sides of said panel member to retain the instrument in firm, rigid, fixedly mounted position thereon.

If desired, a substantially positive locked mounting may be provided by forming the shoulders 18, 19, in a more pronounced configuration to engage a material portion of the panel adjacent the socket opening in substantial abutting engagement therewith whereupon there is little or no possibility of displacement or accidental removal of the mounting. However, the provision of said shoulders 18, 19, in the manner of inclined or tapered substantial cam surfaces, as shown, is more advantageous in certain respects in that the use of a certain size fastener with supporting panel members of several thicknesses is possible and also, a positive, self-seating of the fastener in rigid mounted position is ensured by reason of the expansive action supplied by the inherent resiliency of the spring fingers 16, 17, to urge the said tapered cam shoulders 18, 19, outwardly in a manner to cause the same to ride automatically on the corner edges of the socket opening to the point of most effective locked fastening engagement, substantially as shown in Fig. 1. It is also to be appreciated that the spring finger securing means of this character is always effective to cause the tapered cam shoulders 18, 19, to compensate for slight clearances and other manufacturing variations in the size of the socket opening and the thickness of the panel member, and likewise, any looseness or play in the connection after a period of use is immediately taken up such that an installation embodying the improved mounting of the present invention is rigid and positive throughout its entire length of service.

If removal of the mounting is desired, this may be accomplished, in any case, simply by exerting suitable force on the spring fingers 16, 17, to urge the same inwardly in a manner whereby the shoulders 18, 19, thereon may clear the socket opening as the unit is pushed in an axial direction opposite to that in which the same was applied to mounted position, whereupon the several parts of the instrument may be disassociated in a more or less reverse manner to the procedure described for assembling the unit.

Figs. 6 and 7 illustrate a further embodiment of the invention in which another form of thread engaging portion is provided in the base 11ª of a fastener of the general character just described with reference to Figs. 1 to 5 inclusive. In this form of the invention, the friction tongues 20ª, Fig. 6, are provided in substantially the same manner to engage frictionally and grippingly the crests of the thread convolutions of the adjusting screw adjacent the thread engaging elements provided on the wall portions 21ª formed from the material at the sides of the bolt passage.

Such wall portions 21ª present a button-like protuberance the upstanding portions of which reinforce and otherwise provide for considerably increased strength in the thread engaging elements formed from the inwardly bent extremities thereof and which extremities, with the friction tongues 20ª, define a generally circular bolt passage, substantially as shown in Fig. 6. The screw thread engaging elements thus provided by the extremities of said wall portions 21ª are designed to conform to the helix of the screw thread for even, uniform threaded engagement therewith on lines substantially at right angles to the longitudinal axis of the screw. In a preferred construction, this is accomplished by the provision of a slot 25 in one of said elements with the sections adjoining said slot bent to define thread engaging tongues 26, 27, or the like, conforming to the helix of the screw thread with a suitable space therebetween, substantially as shown in Fig. 7, to permit the initial insertion of the screw and passage of the screw thread as the adjusting screw is rotated for axial movement in either direction.

In the assembled relation of the adjusting screw with such thread engaging portion of the fastener, the extremities of said thread engaging elements 21ª are snugly received in the helical groove defined by the thread of the screw and cooperate with the friction tongues 20ª frictionally and grippingly engaging the crests of adjacent convolutions of such thread at all times. Thus, in a manner similar to the form of the invention described with reference to Fig. 4, there is provided an exceptional thread locking action on the screw taking place by reason of combined drag exerted on the screw thread by the thread engaging elements 21ª, including tongues 26, 27, together with the frictional gripping action of the tensioned friction tongues 20ª with the crests of thread convolutions adjacent thereto.

Figs. 8 and 9 show an alternate form of such thread engaging portion as provided in a base 11ᵇ of a fastener similar to that described with reference to Figs. 1 to 5 inclusive. Friction tongues 20ᵇ are provided in substantially the same manner to present the desired size bolt passage and from the material of the sides bordering such bolt passage, opposing cooperating substantial tongues 30, 31, are extruded, pressed, stamped, or otherwise struck and formed therefrom to project out of the plane of the base of the fastener, substantially as shown in Fig. 9. The extremities of such tongues 30, 31, are designed to be received in the helical groove defined by the thread of the adjusting screw. To this end, said tongues are preferably bent into a substantially ogee formation in a manner whereby the extremities thereof lie on a helix corresponding generally to that of the screw thread for substantially equal and uniform threaded engagement therewith. Such extremities otherwise are so designed in a manner to provide a thumb tight threaded engagement with the adjusting screw and this together with friction tongues 20ᵇ engaging the crests of the adjacent thread convolutions provides the desired thread locking action, substantially in the manner of the previously described forms of the invention.

Figs. 10 to 12 inclusive disclose another form of the invention embodying opposing thread engaging tongues of the character just described and so designed as alone to provide the desired thread locking action with the adjusting screw. The complete instrument mounting is generally similar to that described with reference to Figs. 1 to 5 inclusive and embodies a simplified fastener construction as respects the means for attachment to a different type of coil form in mounting the same on the panel P'. The coil form body **40** includes an enlarged base portion **41** having opposed assembling slots **42, 43**, for receiving the attaching arms of the fastener. Said base portion **41** is larger than the socket opening **44** in the panel to seat firmly and rigidly thereon with said body **40** of the coil form in suitable alignment with such socket opening. The assembling slots **42, 43**, in said enlarged base portion **41** are tapered, as shown in Fig. 10, to lead into the socket opening adjacent their lower ends and define shoulders **45, 46** respectively, at the upper portions thereof.

The fastener, designated generally **50**, includes a base **51** intermediate lower side sections **52, 53**, carrying narrower spring arms **54, 55**, the extremities of which are suitably bent to define holding lugs **56, 57**, respectively. Said spring arms **54, 55** are adapted to seat in the slots **42, 43**, in the enlarged base portion **41** of the coil form with the lugs **56, 57** in abutting engagement with the shoulders **45, 46** thereon to maintain the coil form in assembled relation with the fastener, substantially as shown in Fig. 10.

The lower side sections **52, 53**, of the fastener are provided with securing means comprising cooperating spring fingers **60, 61**, struck and formed therefrom with the extremities thereof bent to define cam shoulders **62, 63**, respectively. Said shoulders are so designed as to be received in the socket opening to cooperate with the lower face of the base portion **41** of the coil form in engaging opposite sides of the panel P' to maintain the instrument fixedly and rigidly in applied mounted position thereon in a manner similar to the arrangement described with reference to Figs. 1 to 5 inclusive.

Also, in a similar manner, the adjustable core **65** of the instrument is received in the coil form body **40** with the adjusting screw **66** thereof threadedly engaged with thread engaging means comprising cooperating oppositely disposed tongues **70, 71** provided in the base **51** of the fastener somewhat similar to those described with reference to Figs. 8 and 9.

In this form of the invention, the use of various other equivalent forms of similar thread engaging means such as any of those previously described is fully contemplated. However, the provision of such thread engaging means in the manner of cooperating tongues, as shown, has been found a most effective arrangement in which such tongues are inclined toward each other and otherwise bent into a substantial ogee formation whereby the V-shaped extremities thereof engage the adjusting screw along lines approximately normal to its axis. In this relation, said tongue extremities are so formed as to lie on a helix corresponding substantially to the helix of the screw thread with an opening therebetween approximating or slightly less than the root diameter of the screw. In the application of the screw to such inclined tongues thus provided, the tongue extremities must be forced apart as necessary to admit the screw to threaded engagement therewith and, of course, upon continued rotation of the screw to desired adjusted position, there takes place what may be termed a biting action of said tongue extremities with the root diameter of the screw and the adjacents thread surfaces of the helical groove defined by the thread of the screw. In this way there is provided by such thread engaging tongues alone the desired thread locking action which is sufficiently pronounced as to require no other thread locking means, and in a manner whereby a simple, most inexpensive form of the fastener may be provided.

In any form, the fastener is preferably constructed of relatively thin sheet metal, the thickness thereof being selected according to service requirements and the predetermined size of the parts secured. The fasteners are most effective when provided of spring metal suitably spring tempered and heat treated to give the desired toughness or hardness, particularly in the case of fasteners which are put to heavy duty in installations where extreme vibratory motion takes place. A cheap but effective fastener may also be provided from cold rolled metal which is untempered and preferably harder than the metal of the adjusting screw in order that the integral thread engaging portion provided therein will not be subject to any degree of wear which would alter the precise and exact fit of the respective parts of the instrument mounting.

While the invention has been described in detail with specific examples, such examples are intended as illustrations only, since it will be apparent to those skilled in the art that other modifications in the construction, arrangement and general combination of parts thereof may be devised without departing from the spirit and scope of the invention. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, with all changes falling within the scope, meaning and range of equivalency of the claims intended to be embraced therein.

Reference is made to my copending application Ser. No. 448,592, filed June 26, 1943, as a continuation in part of this application, for claims relating to the fastener per se illustrated herein or the same combined with a support.

What is claimed is:

1. The combination of an instrument and a support therefor having an opening through it of such dimensions that the instrument may rest on the support at opposite sides of the opening while leaving portions of the opening in other regions uncovered and a fastening device comprising a generally U-shaped member having arms adapted to embrace the instrument and provided with shoulders to coact with shoulders on the instrument, said arms extending beyond the instrument and being there connected by a bridge, the U-shaped member being of a size adapted when mounted on the instrument to be pushed U-end foremost through the opening so that the arms stand in the opening with the instrument on one side of the support and the bridge of the fastener on the other side, and spring tongues formed on the arms adapted to be passed through the opening and thereafter to spring outwardly into engagement with the support.

2. An instrument mounting comprising an instrument body, a support for the body having a

socket opening larger in one direction and smaller in another than the base of the instrument, and a fastener to hold the body on the support comprising a generally U-shaped member having two opposed arms adapted to engage opposite sides of the instrument and resilient tongues anchored to the fastener adjacent the junction of the arms and the base and diverted outwardly from the arms and then inwardly so as to have a snap fastening engagement with corners provided by the socket opening and the under surface of the support.

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