July 26, 1949. H. LARO 2,477,188

TYMPAN GAUGE

Filed May 21, 1947

Fig. 1.

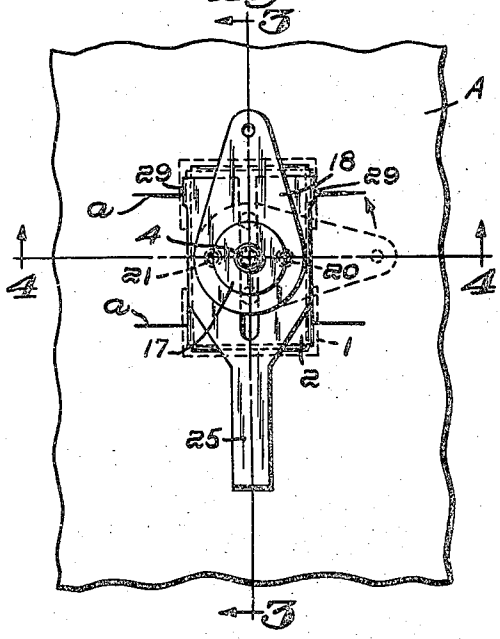


Fig. 2.

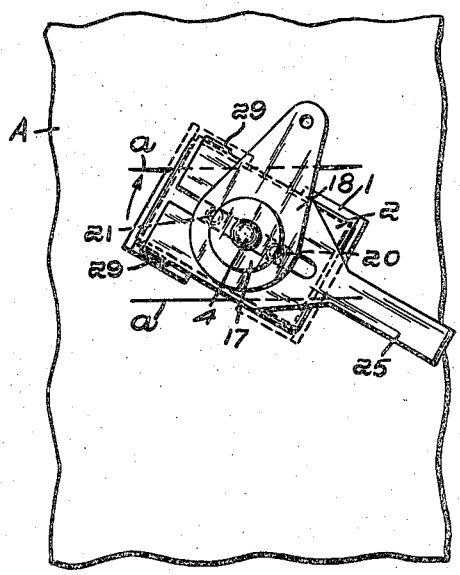


Fig. 3.

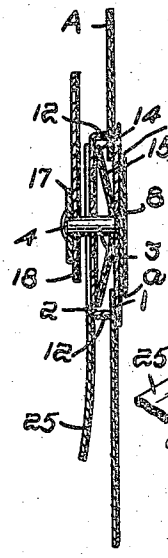


Fig. 5.

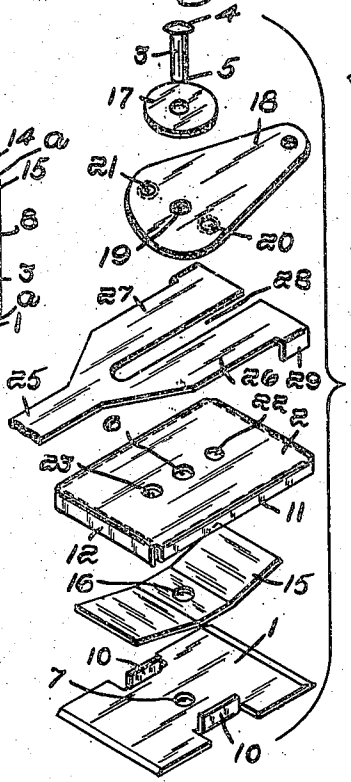
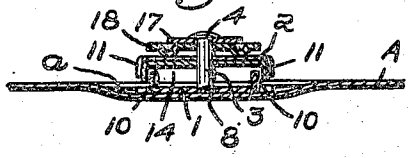


Fig. 4.



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Patented July 26, 1949 2,477,188

UNITED STATES PATENT OFFICE

2,477,188

TYMPAN GAUGE

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Application May 21, 1947, Serial No. 749,454

2 Claims. (Cl. 101—415)

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The objects of the invention are:

To provide a tympan gage which may be easily and securely applied to a tympan sheet in accurately adjusted position.

To provide a gage that will lie snug at all times to the tympan sheet and all of its operable parts function through and within planes parallel with the sheet, and with its clamping arm turning in a plane parallel with the sheet.

To provide, also, a gage in which a finger employed to prevent upward displacement of a sheet when held against the edge of the gage is one easily applied to have any properly adjusted position; one easily replaceable; and one that is held locked in place by the same means that secures the gage to the tympan sheet.

The invention can best be seen and understood by reference to the drawings in which—

Fig. 1 is a plan of the gage shown applied or clamped to a tympan sheet.

Fig. 2 is analogous to Fig. 1 excepting that the gage is shown in an unclamped position to illustrate the manner of its application to the tympan sheet.

Fig. 3 is a section on the line 3—3 of Fig. 1.

Fig. 4 is a section on the line 4—4 of Fig. 1; and

Fig. 5 shows in perspective the different elements which are combined to form the gage.

The gage is secured to the tympan sheet by a clamp consisting of a bottom plate 1 and a top plate 2 occupying a superposed relation to the bottom plate parallel thereto. The two plates are generally rectangular in form, the top plate being slightly smaller than the bottom plate.

Centrally disposed with relation to the respective plates 1 and 2 is a vertical post 3 having a head 4 and a tubular lower end 5. The post passes through an opening 6 in the plate 2, which is slidable thereon, and the lower end of the post passes through an opening 7 in the plate 1 and is fixedly set within a socket 8 formed within the under side of this plate as shown in Fig. 4.

The top plate 2 is prevented from turning on the post 3 by flanges on the respective plates. The plate 1 is incised along each of its opposite sides to form upstanding flanges 10. The plate 2 is provided along its opposite sides with downturned flanges 11 which overlap the flanges 10 on the plate 1, lying parallel therewith and snugly adjacent thereto so that the flanges 10 and 11 will co-operate to prevent the plate 2 from turning. When the plates 1 and 2 are in engagement the plate 2 will have been moved down so that its flanges 11 will engage the plate 1 along its sides just inwardly inset from its side edges. When

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the plates are occupying a disengaged position the co-operative relation between the flanges 10 and 11 for preventing turning of the plate 2 will still be maintained.

The plate 2 is provided along its ends with downturned flanges 12 which, when the two plates are in engagement, engage the plate 1 along its ends just inwardly inset from the edges thereof. When the two plates are in disengagement the ends of the flanges 12 on the plate 2 will lie spaced from the plate 1. The flanges 11 and 12 on the plate 2 are all of the same depth so that when the two plates are in engagement all the flanges on the plate 2 will squarely engage the plate 1.

The flanges 11 and 12 on the plate 2 together with the adjacent faces of the respective plates form a housing 14 in which is placed a U-shaped spring 15 having in it an opening 16 through which the post 3 passes. This spring acts to normally maintain the two plates in disengagement but is capable of being flattened, so enabling the plates being brought into engagement with the flanges on the plate 2 engaging the plate 1 as aforesaid.

Arranged to turn horizontally on the post 3 between the plate 2 and a washer 17 on the post below its head 4 is a clamping lever 18 having in it an opening 19 through which the post 3 extends. This clamping lever is provided with cams 20 and 21 laterally offset from the opening 19 in the lever through which the post extends. Each of these cams has the form of a pimple formed by indenting the plate which forms the clamping lever. When the clamping lever is inactive, turned to a position normal to the longitudinal line of the clamping plates 1 and 2 as shown in the dotted lines of Fig. 1; the cams will lie contained within openings 22, 23, formed in the plate 2.

Borne by the gage is a finger 25 having end extensions 26 and 27 and a slot 28 between the extensions. When the clamping lever 18 is lying inactive, as aforesaid, with the spring 15 undistorted, the extensions 26 and 27 of the finger may then be slidably inserted to lie on opposite sides of the post 3 between the plate 2 and the clamping lever 18. The finger will then be held against lateral displacement by the post and by flanges 29 on the sides of the extensions overlapping the flanged sides of the plate 2. When the parts are thus positioned the plate 2, extensions 26 and 27 of the finger, and the washer 17 will all lie in snug assembly beneath the head 4 of the post. The cams 20 and 21 on the clamping lever will then lie contained within the slot 28 of the

finger and may then enter the openings 22 and 23 prepared for them in the plate 2. On turning the clamping lever away from its inactive position into an active position in longitudinal alignment with the clamping plates as shown in full lines of Fig. 1, its cams will then ride up over the extensions 26 and 27 of the finger as shown in Fig. 4, thereby flattening the spring 15 and moving the clamping plates into an engaged position, the tension of the spring then enabling the cams on the clamping lever, by their bearing against the extensions of the finger, to hold the finger securely in place.

The general operation is as follows:

The tympan sheet A is provided with two parallelly spaced slits *a, a*. The spaced location of these slits, as may be seen by reference to Fig. 3, is such that when the gage is applied to the tympan sheet, as shown in Fig. 2, the plate 1 is applied to extend in part over that portion a^1 of the tympan sheet lying between the slits *a, a*, and the ends of the plate 1 to extend beneath the portions a^2 of the tympan sheet lying outwardly adjacent the slits. The portions a^2 of the tympan sheet will then lie interposed between the ends of the plate 1 and the flanges on the plate 2 which engage these ends when the plates are brought into engagement, but lying spaced from the ends of the plate 1, permitting of the insertion of the portions a^2 of the tympan sheet, when the plates are in disengagement. Having thus initially applied the gage to the tympan sheet then on turning the clamping lever so that its cam will ride up upon the extensions of the finger, as previously explained the clamping plates will be thrown into engagement and the flanges on the top plate will grip the portions a^2 of the tympan sheet then lying between the ends of the plate 1 and the adjacent flanges on the plate 2. At the same time the finger will be held securely in place by the cams on the clamping lever as previously explained.

After the fixing of the gage to the tympan sheet the flange 12 on the plate 2 will provide an edge against which the sheet to be positioned may bear. The gage is reversible in that either of the flanges 12 may provide the edge against which the sheet to be positioned may have bearing dependent upon the turned position of the gage.

I claim:

1. In a tympan gage the combination comprising a set of top and bottom plates, means for maintaining said plates in aligned position and enabling said top plate to occupy an engaged or disengaged relation to the bottom plate, said means including a post fixed to the bottom plate with extension through the top plate, flanges borne by the top plate and engaging the end portions of the bottom plate when the top plate is in its said engaged position, said flanges together with the adjacent faces of said plates forming a housing between said plates, a spring contained within said housing normally functioning to hold said top plate in a disengaged position with relation to the bottom plate but distortable to permit of engagement between said plates, a clamping lever on said post arranged to turn within a plane normal thereto, a finger having spaced end extensions with slot between said extensions interposed between said clamping lever and said top plate and with said post extending through said slot, means for maintaining said plates, clamping lever and end extensions of the finger in closely nested relation to each other when said spring lies undistorted and said top plate is occupying a disengaged position with relation to the bottom plate, and cam forming means borne by said clamping lever normally contained for a determinate turned position of the lever to lie in the slot between the said end extensions of the finger when the top plate is occupying a disengaged position as aforesaid and to have bearing engagement against said end extensions of the finger when the lever is turned thereby distorting said spring, moving said top plate into engagement with the bottom plate, and locking said finger.

2. In a tympan gage the combination comprising a set of top and bottom plates, means for maintaining said plates in aligned position and enabling said top plate to occupy an engaged or disengaged relation to the bottom plate, said means including a post fixed to the bottom plate with extension through the top plate, flanges borne by the top plate and engaging the end portions of the bottom plate when the top plate is in its said engaged position, said flanges together with the adjacent faces of said plates forming a housing between said plates, a spring contained within said housing normally functioning to hold said top plate in a disengaged position with relation to the bottom plate but distortable to permit of engagement between said plates, a clamping lever on said post arranged to turn within a plane normal thereto, a finger having spaced end extensions with slot between said extensions interposed between said clamping lever and said top plate and with said post extending through said slot, flanges on the extensions overlapping the flanged sides of the top plate for assisting in the positioning of the finger, means for maintaining said plates, clamping lever and end extensions of the finger in closely nested relation to each other when said spring lies undistorted and said top plate is occupying a disengaged position with relation to the bottom plate, and cam forming means borne by said clamping lever normally contained for a determinate turned position of the lever to lie in the slot between the said end extensions of the finger when the top plate is occupying a disengaged position as aforesaid and to have bearing engagement against said end extensions of the finger when the lever is turned thereby distorting said spring, moving said top plate into engagement with the bottom plate, and locking said finger.

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