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(56) Documents cited
GB 2210113 A GB 1386253 A GB 1297559 A

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Online databases: EDOC ; WPI

(54) Flanged bearing

(57) In a flanged bearing, the flange 14 or flanges are joined to a half bearing liner 12 by means of a single co-operating lug 26 and slot 20. The outer edges 34 of the slot are deformed around chamfers 32 formed on the lug.

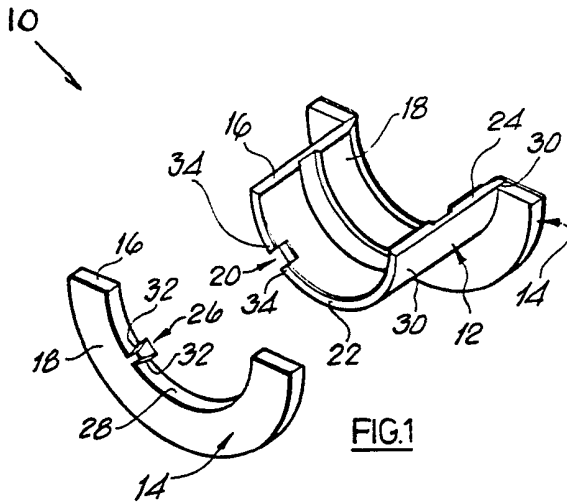


FIG.1

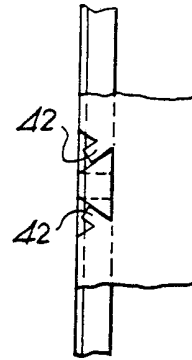


FIG.4

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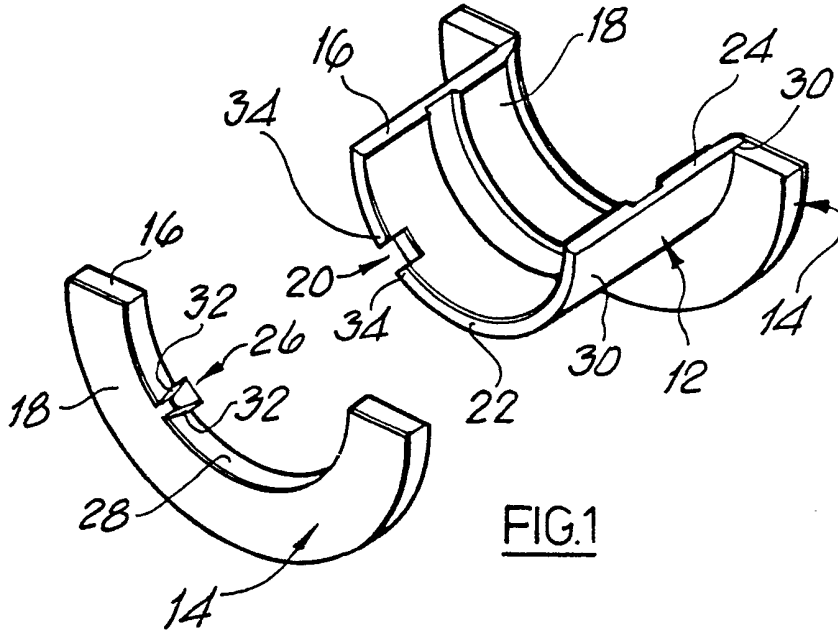


FIG. 1

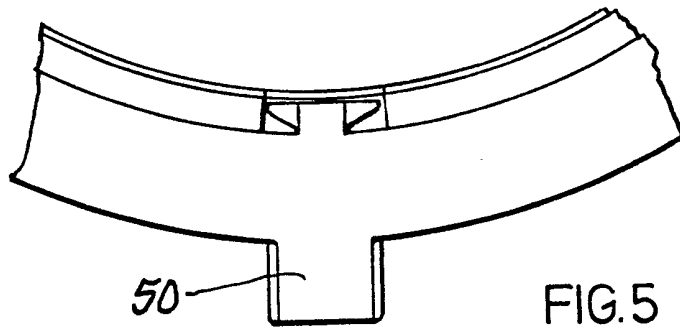


FIG. 5

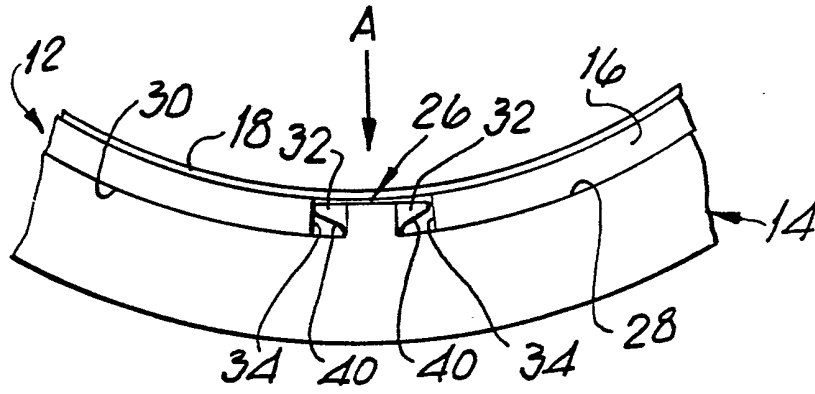


FIG. 2

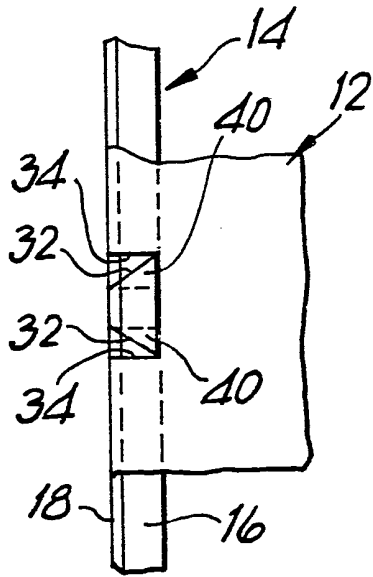


FIG. 3

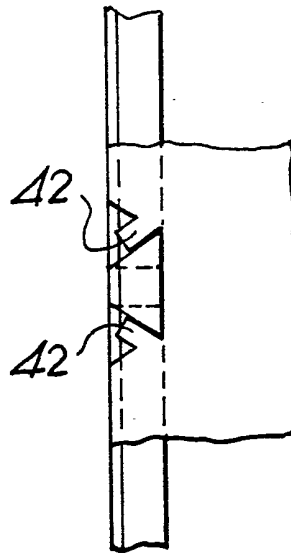


FIG. 4

Bearings

The present invention relates to bearings and particularly to flanged bearings.

In our British Patent Nos. 1297559 and 1386253, flanged bearings are described. These bearings are constructed by forming radially inwardly directed lugs on the inner periphery of an annular thrust bearing and which lugs co-operate with slots or recesses formed in one or both end faces of a thin wall half bearing liner. The circumferentially outer edges of the slots or recesses are then deformed such as to prevent detachment of the thrust bearing in the axial direction and still allow relative mutual movement between the components.

The above patent documents describe constructions having a "plurality" of lugs and a "plurality" of corresponding slots in the bearing liner end face. In the example given three such lugs and slots are used.

It has now been found that flanged bearings of adequate strength to withstand handling and assembly may be made with only one lug and co-operating slot.

According to the present invention a flanged bearing comprises a thin wall half bearing liner and at least one thrust flange attached to one bearing liner end face, the thrust flange having one radially inwardly directed lug on the inner periphery and which lug co-operates with a slot formed in the bearing liner end face, the circumferentially outer ends of said slot being deformed such as to retain the flange in the axial direction.

The co-operating lug and slot may be offset circumferentially from the central position to facilitate retention in the radial direction and as an aid for correct assembly.

The lug may be undercut in the area adjacent the thrust flange inner periphery and the slot edges deformed into the undercut area to further assist in retention in the radial direction.

The lug edges may be chamfered in the plane of the thrust flang to facilitate forming metal from the slot edges around the lug.

The thrust flange may also have a location tongue which co-operates with an appropriate recess in the bearing housing.

In order that the present invention may be more fully understood examples will now be described by way of illustration only with reference to the accompanying drawings, of which:

Figure 1 shows a perspective view of a part-assembled flanged bearing according to the present invention;

Figure 2 shows a view in elevation of the lug and slot area of a first alternative bearing;

Figure 3 shows a view in the direction A of Figure 2 before deformation of the slot edges;

Figure 4 shows a view of Figure 3 after deformation of the slot edges; and

Figure 5 which shows a thrust flange having a locating tongue.

Referring now to Figure 1 where a flanged bearing is denoted generally at 10. The bearing comprises a thin

wall half bearing liner 12 and two thrust flanges 14 which may be of a different design.

The liner and thrust flanges are formed from strip material having a steel backing 16 and a bearing alloy lining 18 which may, if desired, be different for the liner and flanges. The liner has a slot 20 in each end face 22 (only one shown). The angular positions of these slots may be at the same or different relative to each joint face 24. The thrust flanges 14 have a single lug 26 on the inner periphery 28 and which lug co-operates with the slot 20 when the inner periphery 28 lies adjacent the outer surface 30 of the liner steel backing 16. The lug 26 has a chamfer 32 on one or both sides in the plane of the flange. On assembly of the flange to the liner the outer edges 34 of the slot are deformed around the lug chamfers thus retaining the flange in both the radial and axial directions.

In Figures 2 to 4, and where the same features as above are denoted by common reference numerals, the lug 26 has undercuts 40 in the area adjacent the flange inner periphery 28. When the slot edges 34 are deformed, material 42 is swaged about both the undercuts 40 and the chamfers 32. Where undercuts are used the slot and lug may be sited at the circumferential mid-point.

In Figure 5 a tongue 50 is shown, the tongue co-operating with a recess (not shown) in the bearing housing (not shown). In this manner assembled flanged bearings may be used in applications where separate thrust flanges are normally employed.

CLAIMS

1. A flanged bearing, the bearing comprising a thin wall half bearing liner and at least one thrust flange attached to one bearing liner end face, the thrust flange having one radially inwardly directed lug on the inner periphery and which lug co-operates with a slot formed in the bearing liner end face, the circumferentially outer ends of said slot being deformed such as to retain the flange in the axial direction.
2. A bearing according to Claim 1 wherein the lug and slot are offset from the central position of the bearing liner end face.
3. A bearing according to either Claim 1 or Claim 2 wherein the lug is undercut adjacent the thrust flange inner periphery.
4. A bearing according to Claim 3 wherein the lug and slot are sited centrally with respect to the bearing liner end face.
5. A bearing according to any one preceding claim further including a location tongue on the thrust flange or flanges.

6. A flanged bearing substantially as hereinbefore described with reference to the accompanying specification and Figures 1, 2 to 4 or 5 of the drawings.