

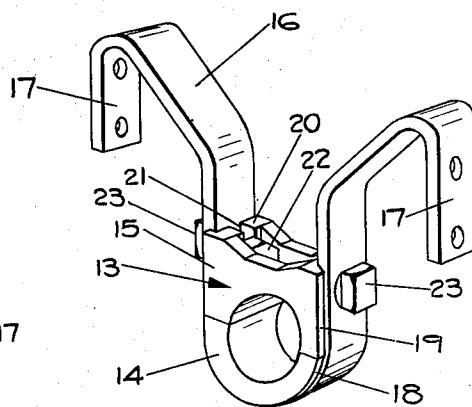
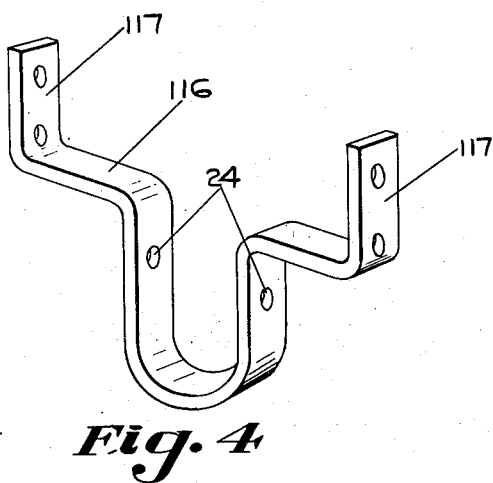
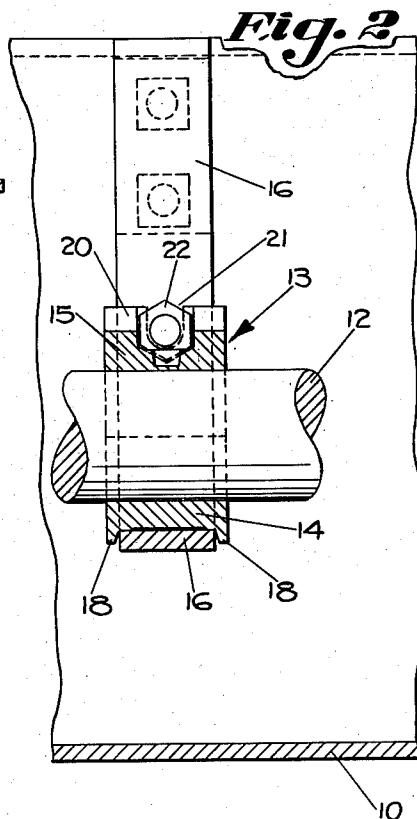
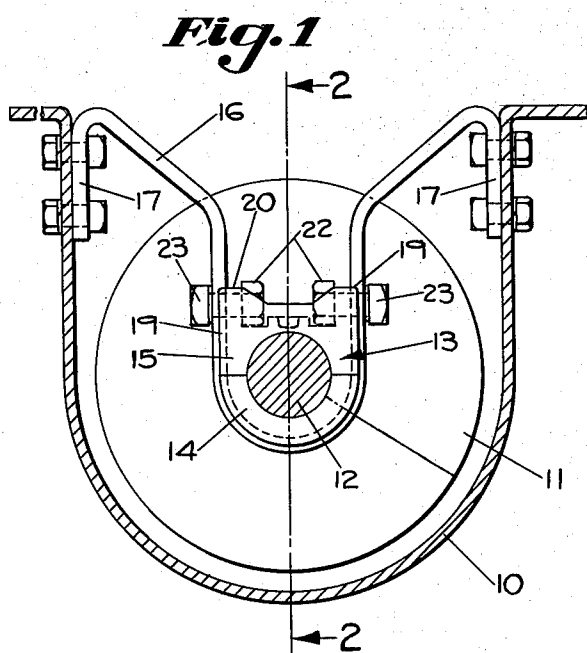
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HANGER AND BEARING ASSEMBLY FOR SPIRAL CONVEYERS

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HANGER AND BEARING ASSEMBLY FOR
SPIRAL CONVEYERS

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1 Claim. (Cl. 198—213)

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This invention relates to a spiral conveyer having an improved hanger and bearing assembly which includes a minimum number of parts and yet provides for ready removal of the bearing while the hanger is held in the conveyer trough or casing.

An object of the invention therefore is to provide improved and simplified construction of the above-mentioned type.

Other objects of the invention will appear hereinafter, the novel features and combinations being set forth in the appended claim.

In the accompanying drawings,

Fig. 1 is a transverse sectional view through the trough or casing of a spiral conveyer, showing the hanger and bearing assembly in elevation;

Fig. 2 is an enlarged sectional view taken on the line 2—2 of Fig. 1, looking in the direction of the arrows;

Fig. 3 is a perspective view of the hanger and bearing assembly of Figs. 1 and 2; and

Fig. 4 shows a modified form of hanger which may be employed.

In Figs. 1 and 2 of the drawings a portion of a spiral trough conveyer is shown, including a trough type casing 10 in which a spiral conveyer 11 is mounted, the spiral being carried on a shaft 12. The spiral is omitted from Fig. 2 of the drawings. Shaft 12 is supported on spaced bearings, only one of which is illustrated in the drawings, said bearing in its entirety being designated by the reference character 13.

The bearing 13 includes a lower half 14 and an upper half 15, the two halves being split along a horizontal diameter. Said two halves cooperate to provide a cylindrical bearing surface to support the shaft 12. The bearing 13 fits in the central U-shaped portion of a one-piece symmetrical bracket or strap hanger 16 which includes a central U-shaper portion having two vertically spaced parallel portions each merging into one of two symmetrically arranged outwardly extending portions each of which terminates in a vertically downwardly extending wing 17 each of which is removably bolted to the inner top surfaces of the side walls of the U-shaped trough 10.

The lower half 14 of bearing 13 rests in and is supported by the central U-shaped portion of the bracket or strap hanger 16 and is provided with two radially extending guiding flanges 18 which extend outwardly at opposite sides of the bracket or strap hanger 16 and hold the lower half 14 against axial movement relative to the

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hanger 16, the outer lower surface of said bearing half 14 being curved to provide a close fit with the curved semi-circular bottom of the U-shaped portion of said hanger 16.

The upper half of bearing 13 includes opposite side surfaces each flanked between two outwardly extending guiding flanges 19 which guide it into the way formed by and between the parallel spaced straps or portions of the U-shaped central portion of bracket 16 when the upper half 15 is being positioned and these flanges 19 extend at opposite sides of each of the vertically extending bracket portions to hold the upper half 15 against axial movement. The bracket 16 and the two halves of bearing 13 therefore have cooperating means to hold said bearing halves 14 and 15 in proper position when the parts are assembled as shown in Figs. 1, 2 and 3 of the drawings.

In one known type of prior art arrangement a separate clamping strap has been provided to clamp against the top of the upper half of the split bearing and hold the parts together. In the structure here provided this clamping strap or bar has been eliminated, thus eliminating one part which may become lost during shipment of apparatus.

In another known type one or more relatively long through bolts are provided which extend through the top of the upper bearing half and through opposite sides of the U-shaped portion of the supporting bracket. The objection to this has been that it is generally impossible to remove this long bolt while the bracket or hanger is in the conveyer trough, thus requiring removal of the hanger to remove the bearing.

In the construction here provided it is possible to remove the upper portion or half 15 of the bearing 13 while the conveyer is still in the bracket and while the bracket is attached to the trough. This is effectuated by virtue of the cooperating structure of the upper bearing half 15 and its removable attaching mechanism which will now be described.

Adjacent its upper end and at opposite sides the upper bearing half 15 is provided with spaced wings or flanges 20. Adjacent the strap or bar portion of the hanger 16 the central upper portion of each wing 20 is notched at 21. If desired, a through hole may be provided in lieu of said notch.

The wings or flanges 20 are preferably thickened inwardly and are formed to receive either a machine screw head or a nut and to hold the same against rotation. As illustrated in the

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drawings, a nut 22 is so received and held and it constitutes the clamping nut for a short bolt or machine screw 23. The bolts or machine screws 23 extend through holes in the bracket 16, similar holes for a modified bracket being seen at 24 in Fig. 4 of the drawings.

It is evident that, if desired, the bolts or machine screws 23 may be reversed with their nuts 22 on the outside rather than on the inside. By tightening the bolts and nuts 22 and 23 it is evident that the entire assembly of the two bearing halves 14 and 15 will be held rigid in the U-shaped portion of the bracket 16, thus holding the conveyer shaft 12 in position. Likewise, by the simple expedient of removing these two bolts or machine screws 23, the upper half 15 of bearing 13 may be lifted vertically upward to remove it from the bracket 16. Thereafter, the shaft 12 may be lifted out or, if desired, the lower bearing half 14 may be rotated 180° without removing the shaft 12, whereupon it may be radially removed.

It is thus evident that the complete bracket and bearing assembly comprises only the bracket, the two bearing halves and two short nuts and bolts, either with or without lock washers. At the same time the bearing assembly may be radially removed and inserted without requiring removal of the bracket or hanger and without requiring removal of the spiral conveyer or shaft.

In Fig. 4 of the drawings I have illustrated a modified form of bracket 116 which differs from the bracket 16 primarily in that the wings 117 extend upwardly from the rest of the bracket rather than extending downwardly, as in bracket 16. The bracket or hanger 116 is obviously otherwise formed to accommodate this difference. It functions in cooperation with the bearing 13 and attaching nuts and bolts 22 and 23 in the same manner as above described for hanger or bracket 16.

Obviously those skilled in the art may make various changes in the details and arrangement of parts without departing from the spirit and scope of the invention as defined by the claim hereto appended, and I therefore wish not to be restricted to the precise construction herein disclosed.

Having thus described and shown an embodiment of my invention, what I desire to secure by Letters Patent of the United States is:

In a spiral conveyer, a U-shaped conveyer trough, a symmetrical one-piece strap hanger mounted in said trough for supporting a spiral

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conveyer therein, said one-piece strap hanger including a central U-shaped portion having two vertically extending spaced parallel portions each merging into one of two symmetrically arranged outwardly extending hanger portions each of which terminates in a vertically extending wing bolted to a side of said U-shaped conveyer trough, a horizontally split bearing having upper and lower halves, the lower half resting in and being supported by said central U-shaped portion of the one-piece strap hanger and having two radially extending side flange portions adapted to extend outwardly at opposite sides of said U-shaped portion of the strap hanger for preventing axial movement of the lower bearing half, the upper half of said split bearing including spaced parallel side surfaces and outwardly extending spaced side flange portions adapted to extend at opposite sides of the vertically extending spaced parallel portions of said symmetrical one-piece strap hanger, said upper bearing half also including adjacent each of said spaced upwardly extending side surfaces spaced wings forming open top notches adapted to receive a bolt extending through said hanger and to hold a nut against rotation, and a separate short bolt extending through each wing and the adjacent vertically extending portion of said one-piece strap hanger, said bolts each having an individual clamping nut in one of said notches formed by said spaced wings, said bolts and nuts cooperating to clamp the vertically extending portions of the one-piece strap hanger and the upper bearing half together, the said vertically extending spaced parallel portions of said one-piece hanger forming a way for guiding said upper bearing half into position when said bearing is being assembled.

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