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PALLET VIBRATION PREVENTION DEVICE FOR PEOPLE CONVEYOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a pallet vibration prevention device for a people conveyor, and more particularly, to an improved pallet vibration prevention device for a people conveyor which is capable of uniformly distributing a tightening force around a peripheral portion of a pallet shaft and is easily detachable.

2. Description of the Prior Art

Generally, a people conveyor like a moving sidewalk or an escalator is a device for automatically transporting passengers.

As shown in Figures 1 through 3, in a conventional people moving device, two pairs of pallet frames 2 in the shape of a loop are symmetrically mounted at the edge of the lower portion of a pallet 1, and through each pair of the pallet frame 2, two pallet shafts 3 are inserted to keep a mutual balance.

Between the pallet frame 2 and the pallet shaft 3, a bush 4 is inserted, and around the bush 4, a clamp 5 is provided for preventing the vibration of the pallet 1.

A pallet chain 5 is disposed at the side of the clamp 5, and at the side of the pallet chain 5, a space 7 is provided for securing a predetermined interval.

At the side of the space 7, a roller 9 having a bearing 8 therein is disposed, and on a lower portion of the roller 9, a guide rail 10 is equipped for guiding a moving course of the roller 9.

The clamp 5 has threading portions 11 protruding at a predetermined portion, and between the threading portions 11, a slit 12 is formed for controlling a tightening force, and at a central portion of the threading portions 11, a detachable hole 13 is formed to be able to be detached from the pallet shaft 3.

In the threading portion 11, a threading hole 48 is penetrably formed, and at one side of the threading portion 11, a bolt 15 with a washer 16 attached thereto is inserted to the threading hole 48. At the other side of the threading portion 11, a nut 17 is combined to the bolt 15.

The operation of the people moving device according to the conventional art will now be described in detail.

First, when power is applied to a motor (not illustrated), a terminal gear (not illustrated) is rotated by the rotating force of the motor, and the pallet chain 6 engaged with the terminal gear begins to move.

When the pallet chain 6 is moved, the pallet shaft 3 is

moved along therewith, and the rollers 9 disposed at both ends of the pallet shaft 3 are moved along the guide rail 10.

Here, since the pallet frame 2 is combined with the pallet shaft 3, the pallet 1 is moved with the pallet shaft 3, and the clamp 5 prevents the vibration of the pallet 1 during its movement.

However, the pallet shaft 3 tends to be pushed out when the pallet 1 vibrates, since the clamp 5 has the fastening portion 11 protruding from a predetermined portion on the clamp 5 where the tightening force cannot reach the pallet shaft 3 and the fastening portion 11 is fastened with a bolt 15 and a nut 17.

Further, to alternate the clamp 5, the pallet chain 6 is first removed, the roller 9 and the space 7 are disjointed, and the clamp 5 is loosened, which takes much time to finish.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide an improved pallet vibration prevention device for a people conveyor which is capable of uniformly distributing a tightening force around a peripheral portion of a pallet shaft and is easily detachable.

To achieve the above object, there is provided an improved pallet vibration prevention device for a people

conveyor which includes a pivot clamp means including a first contact portion having an inner semicircular surface so that it is contacted to a predetermined portion of a pallet shaft, a first combining portion formed at one end of the first contact portion, and a first fastening surface formed at the other end of the first contact portion, a counter-clamp means including a second contact portion formed to correspond to the first contact portion, a second combining portion combined to correspond to the first combining portion of the pivot clamp means at one end of the second contact portion, and a second fastening surface fastened to correspond to the first fastening surface at the other end of the second contact portion, and a fastening means for fastening the first fastening surface of the pivot clamp means and the second fastening surface of the counter-clamp means.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given hereinbelow and the accompanying drawings which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:

Figure 1 is a plane view showing the construction of pallet according to the conventional art;

Figure 2 is a cross-sectional view taken along the line $\Pi-\Pi'$ in Fig. 1;

Figure 3 is a perspective view showing a clamp affixed to a pallet shaft according to the present invention;

Figure 4 is a perspective view showing a pallet vibration prevention device for a people conveyor according to the present invention;

Figure 5 is an exploded perspective view showing a pallet vibration prevention device for a people conveyor according to the present invention; and

Figure 6 is a perspective view showing a pallet vibration prevention device affixed to a pallet shaft according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in Figures 4 through 6, a pallet vibration prevention device for a people conveyor according to the present invention includes a pivot clamp 20 in the shape of a semicircle, a counter-clamp 40 in the shape of a semicircle which corresponds to the pivot clamp 20, and a fastening means 60.

The pivot clamp 20 has a first contact surface 22 in the shape of a semicircle for contacting the inner surface to a peripheral portion of a pallet shaft 30, and a circular

projection 24 is formed at one end of the first contact surface 22.

At the other end of the first contact surface 22, a first fastening surface 26 is formed to be flat in such a manner that the surface 26 is perpendicular to the peripheral portion of the pallet shaft 30, and an insert nut 28 is formed on an inner portion of the first fastening surface 26.

The counter-clamp 40 has a second contact surface 42 in the shape of a semicircle corresponding to the pivot clamp 20 so that the peripheral portion of the pallet shaft 30 is contacted to the inner surface of the counter-clamp 40, and at one end of the second contact surface 42, an insert portion 44 is formed to be circular so that the circular projection 24 of the pivot clamp 20 is inserted horizontally to be rotated at a predetermined angle.

At the other end of the second contact surface 42, a second fastening surface 46 is formed such that the surface 42 can be perpendicular to the peripheral portion of the pallet shaft 30, and on the inner portion of the second fastening surface 46, a fastening hole 48 is penetratingly formed to correspond to the insert nut 28 of the first fastening surface 26.

The fastening means 60 includes a washer 62 and a spring washer 64 inserted in the fastening hole 48 of the second fastening surface 46, and has one end of a bolt 66 with the

washer 62 and the spring washer 64 inserted thereon combined with the insert nut 28 of the first fastening surface.

The operation and effect of the pallet vibration prevention device for a people conveyor will now be described in detail.

When the device of the present invention is contacted to the pallet shaft 30, first the circular projection 24 of the pivot clamp 20 is horizontally moved to combine with the insert portion 44 of the counter-clamp 40.

Then, a turning moment is applied to the first fastening surface 26 of the pivot clamp 20 and the second fastening surface 46 of the counter-clamp 40, the pivot clamp 20 and the counter-clamp 40 are opened to have a predetermined angle.

The pivot clamp 20 and the counter-clamp 40 opened to have a predetermined angle are inserted onto the pallet shaft 30, and when force is applied to the first and second fastening surfaces 26,46, the two surfaces 26,46 face each other.

Then, the washer 62 and the spring washer 64 are inserted in the bolt 66, and the bolt 66 is fastened through the insert nut 28 through the fastening hole 48 to complete the equipment with the pallet shaft 30.

Here, the pivot clamp 20 and the counter-clamp 40 gains a uniform tightening force due to the fastening means 60 fastened on the peripheral portion of the clamps 20,40.

The clamps 20,40 are taken apart from the pallet shaft 30 according to the reverse order of attaching the clamps.

As described in detail above, since the device of the present invention can be equipped or taken apart without taking apart a pallet chain, a roller and a space, an operation efficiency can be enhanced.

Further, since the tightening force of the fastening means is uniformly given to the peripheral portion of the pallet shaft, the performance of the product can be improved.

Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as recited in the accompanying claims.



What is claimed is:

1. A pallet vibration prevention device for a people conveyor, comprising:

a pivot clamp means including a first contact portion having an inner semicircular surface so that it is contacted to a predetermined portion of a pallet shaft, a first combining portion formed at one end of the first contact portion, and a first fastening surface formed at the other end of the first contact portion;

a counter-clamp means including a second contact portion formed to correspond to the first contact portion, a second combining portion combined to correspond to the first combining portion of the pivot clamp means at one end of the second contact portion, and a second fastening surface fastened to correspond to the first fastening surface at the other end of the second contact portion; and

a fastening means for fastening the first fastening surface of the pivot clamp means and the second fastening surface of the counter-clamp means.

2. The device of claim 1, wherein the first combining portion comprises a circular projection the peripheral portion of which is formed to be circular.



3. The device of claim 1, wherein the second combining portion comprises an insert unit an inner peripheral portion of which is formed to be circular so that the circular projection of the pivot clamp means is horizontally inserted to be rotated at a predetermined angle.

4. The device of claim 1, wherein the first fastening surface comprises a first fastening surface having a first fastening surface in which an insert nut is formed.

5. The device of claim 1, wherein the second fastening surface comprises a second fastening surface having a fastening hole formed to correspond to the insert nut of the first fastening surface.

6. The device of claim 1, wherein the fastening means comprises a washer and a spring washer to be inserted in the fastening hole of the second fastening surface, and a bolt combined to the insert nut through the fastening hole of the second fastening surface.