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FLEXIBLE SUPPORTING STAND FOR ROPE SIDEFRAME CONVEYOR

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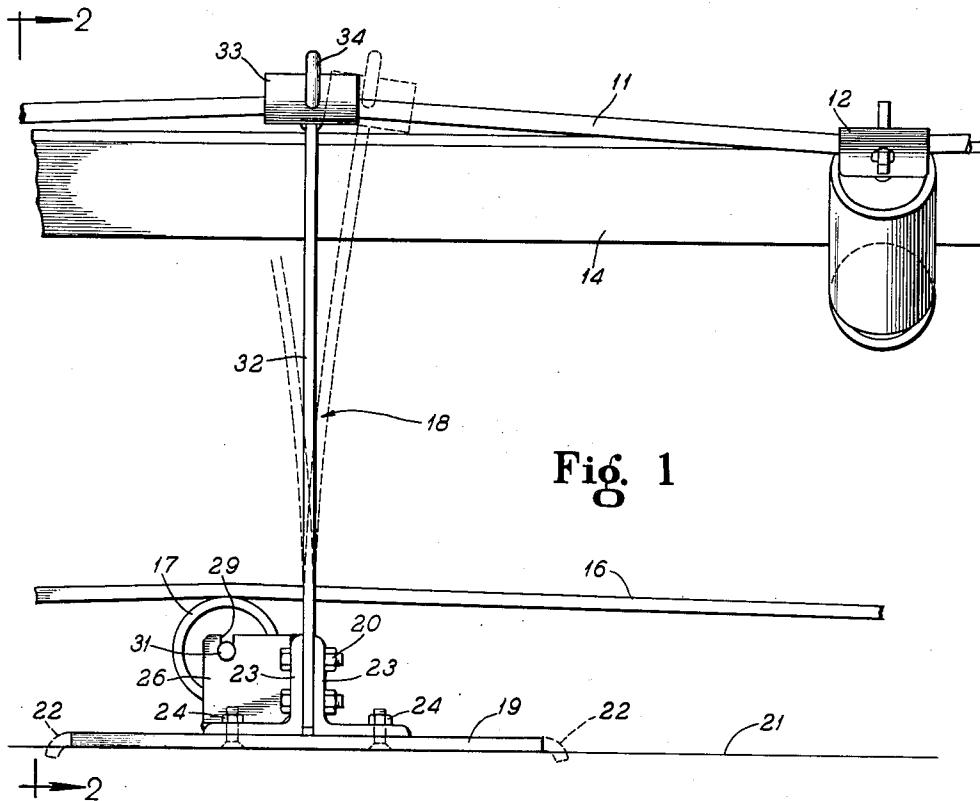


Fig. 1

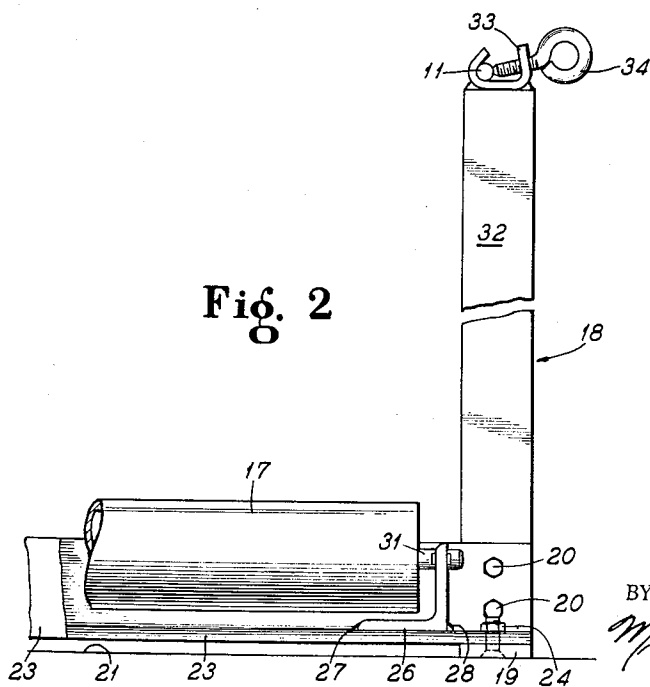


Fig. 2

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## FLEXIBLE SUPPORTING STAND FOR ROPE SIDEFRAME CONVEYOR

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4 Claims. (Cl. 198—184)

This invention relates to belt conveyors and particularly to an improved flexible supporting stand for a flexible rope or strand sideframe conveyor.

In rope sideframe conveyors of the character described in Newbury Patent 2,831,567, the ropes constituting the flexible sideframes are free to shift or migrate longitudinally under the influence of varying loads. There are some advantages such as improved impact absorption in providing relatively free longitudinal shiftability of the ropes.

A primary object of this invention, accordingly, is to provide a supporting stand wherein the ropes are supported on a base by means of a pair of upstanding leaf spring arms so dimensioned and so oriented that the arms shift freely back and forth with the ropes, yet they resist loads on the ropes which tend to pull the arms downward and inward.

Other objects and advantages will be apparent from the following description taken in connection with the drawings in which:

FIGURE 1 is a fragmentary side view of a rope sideframe conveyor illustrating a preferred embodiment of a rope supporting stand in accordance with the present invention; and

FIGURE 2 is a fragmentary view of FIGURE 1 taken in the direction of the arrows 2—2.

Referring now more particularly to the drawings, the conveyor includes a pair of wire rope sideframes which will be trained in generally parallel relationship along a horizontal course. For a detailed description of this general type of conveyor and the longitudinally shiftable nature of the ropes, reference should be made to the above-mentioned Newbury Patent 2,831,567 and to Craggs and McCann Patent 2,773,257. Troughing roller assemblies such as indicated at 12 span the ropes and are supported thereby at intervals along the course. They, in turn, support the load-carrying reach 14 of an endless conveyor belt. The return reach 16 of the conveyor belt is supported on a return roller 17.

Directing attention now to the subject matter of the present invention, namely the stand generally designated 18, it comprises a substantial duplication of the parts shown in FIGURE 2. It will be understood that FIGURE 2 illustrates only the right hand portion of the stand and that the left hand portion, not shown, may be a substantial duplicate. Each side comprises a base plate 19 which rests on the ground as indicated at 21. If preferred, to restrain the base from shifting movement, it may be provided at the ends with down-turned portions indicated at 22 in broken lines. The two base plates are interconnected by a pair of angle iron tie members 23, 23 held to the base plates by bolts 24. Atop one of the tie members, and at each side thereof, is an upstanding bracket 26 held in place as by welding at 27 and 28. Each bracket has an upwardly open slot 29 for receiving the shaft 31 of the return roller 17.

Upstanding, in the space between the tie members, at each end of the stand, and held in place by bolts 20, is a leaf spring member or yieldable arm 32. At the top of each spring 32 and welded thereto is a bracket 33 in

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which a corresponding rope 11 is held by an eye screw 34. In FIGURE 1, the arm or support member 32 is shown in full lines in an equilibrium condition.

It will be observed that the springs 32 are oriented flatwise transversely of the course of the conveyor. This enables the springs to flex in the direction of the course, freely permitting the ropes to shift back and forth while being supported against downward and inward pull exerted by a load on the belt reach 14. The forward and backward displacement of the springs and brackets is illustrated by the broken line position in FIGURE 1. An important factor in providing stability and preventing the leaf spring members 32 from twisting and collapsing inward is that there is a substantial lengthwise engagement between the bracket 33 and the corresponding rope 11; this enables the spring 32 to be quite flexible, yet stable.

While one form in which the present invention may be embodied has been shown and described it will be understood that various modifications thereof may be effected without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. A flexible strand support for use in a flexible strand conveyor, said support including, in combination, a base, an elongated flexible strand supporting member extending outwardly from the base, said supporting member having a bodily yieldable portion displaceable back and forth in directions generally parallel to the flexible strand to be supported in response to back and forth movement of the flexible strand, and means for securing the bodily yieldable portion to a flexible strand to thereby enable the bodily yieldable portion to move with the strand as the strand migrates back and forth along a conveyor course.

2. The flexible strand support of claim 1 further characterized in that the bodily yieldable portion of the support member extends upwardly from the base.

3. The flexible strand support of claim 1 further characterized in that the supporting member is a flat leaf spring substantially wider than it is thick and substantially longer than it is wide, and having its width dimension positioned generally transverse to the directions in which the bodily yieldable portion of the supporting member moves.

4. A rope supporting stand for use in a rope sideframe conveyor, said stand including, in combination, a base, a flat leaf spring secured to and extending upwardly from the base, said spring having its width dimension located transversely to the length dimension of the conveyor, and means for securing the upper, free end of the leaf spring to a rope sideframe of the conveyor so that the leaf spring may move back and forth with the rope sideframe as said rope sideframe migrates back and forth under varying load conditions.

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