Aug. 10, 1954 J. A. WHITE, JR 2,685,958

WIPER FOR WEAR STRIPS OF ENDLESS BELT CONVEYERS

Filed April 13, 1953

Fig. 1

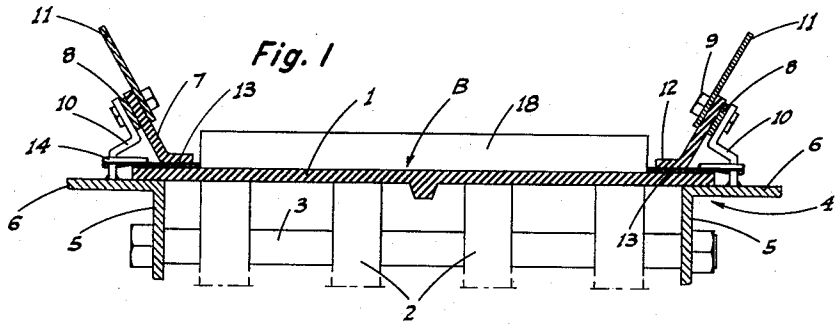


Fig. 2

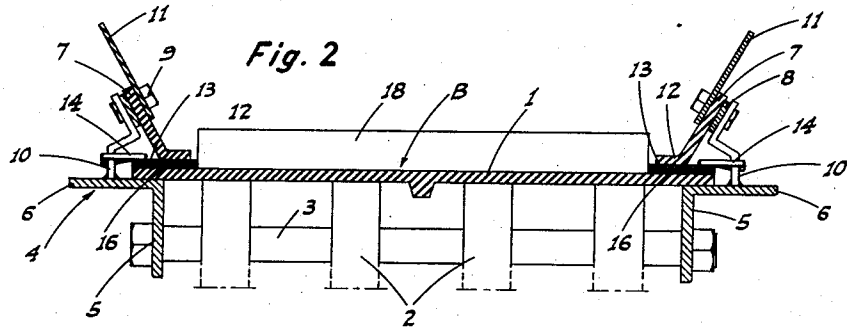


Fig. 3

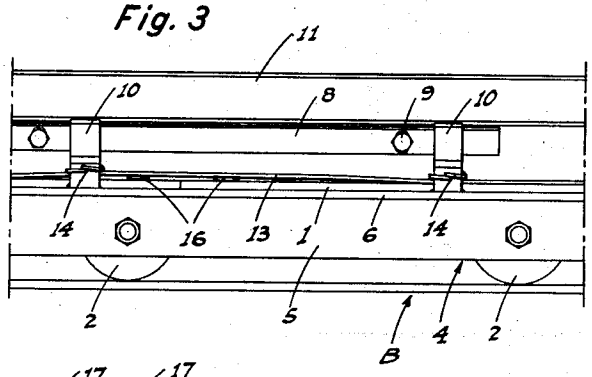
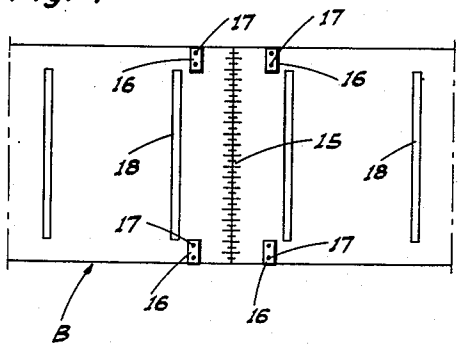


Fig. 4



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WIPER FOR WEAR STRIPS OF ENDLESS BELT CONVEYERS

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4 Claims. (Cl. 198—204)

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This invention relates generally to an improvement in driven endless belt material conveyors of the type used on trenching machines or the like to carry off the dug earth.

In driven endless conveyors of the above type there is included upstanding, longitudinal side skirts of resilient material disposed directly above the side edge portions of the upper run of the conveyor belt. A previous improvement in such a conveyor has been the interposition of longitudinal metallic wear strips disposed in engagement between the lower edges of the side skirts and the belt for the purpose of preventing undue wear therebetween; such improvement being the subject of copending application, Serial No. 302,467, entitled Conveyor Assembly.

Such wear strips, while effectively preventing frictional abrading between the side skirts and belt, do tend to accumulate dirt on the under side, which dirt—if not removed—being deleterious to the endless belt.

It is therefore the major object of the present invention to provide a novel wiper for recurringly sweeping the under side of the metallic wear strips so that the aforesaid deleterious effect of the dirt on the belt is eliminated.

Another important object of the invention is to provide a wiper, in a conveyor assembly as described, which also functions to prevent wear of the lacing which connects adjacent ends of the conveyor belt.

It is also an object of the invention to provide a wiper for the purpose described which is simple in structure and designed for ease and economy of installation.

Still another object of the invention is to provide a practical and reliable wiper for wear strips of endless belt conveyors, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a transverse sectional elevation of the upper run assembly of a driven endless belt conveyor of the type to which the present invention is applied; the view showing the relationship of the parts prior to passage of the wiper pads.

Fig. 2 is a similar view, but shows the relationship of the parts as the wiper pads pass in engagement with the wear strips.

Fig. 3 is a fragmentary side elevation showing the passage of the wiper pads in engagement with the wear strips; i. e., as in Fig. 2.

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Fig. 4 is a fragmentary plan view of the endless belt detached, but showing the wiper pads as secured thereto.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 indicates the upper run of the endless rubber belt—indicated generally at B—of a driven endless conveyor; such upper run being supported, at spaced points in the length thereof, by roller assemblies, one of which is shown herein; each such roller assembly including transversely spaced rollers 2 carried on a cross shaft 3.

The conveyor frame is indicated generally at 4 and includes longitudinal side beams 5 which support the cross shaft 3 of each roller assembly.

The upper run 1 of the endless rubber belt B of the conveyor is supported, at opposite sides, on the top flanges 6 of the side beams 5.

Longitudinal side skirts 7—of rubber—upstand, at an upward and outward incline, directly above the longitudinal side edge portions of said upper run 1; such side skirts being supported, on the outside and adjacent the top, by longitudinal backing strips 8, and the skirts 7 and strips 8 are secured by bolts 9 to brackets 10 which upstand from the flanges 6 in longitudinally spaced relation.

Additionally, the bolts 9 secure longitudinal trough plates 11 which form in effect upward extensions of the side skirts 7. At their lower edges the side skirts 7 are turned inwardly, each with a longitudinal foot 12.

In order to prevent frictional abrading between the longitudinal feet 12 and the side edge portions of the upper run 1, a flat, longitudinal metallic wear strip 13 is interposed between each foot 12 and the adjacent side edge portion of the upper run 1 of the endless belt. These wear strips 13 are immovable lengthwise, being secured at spaced points to the brackets 10 by eye-like attachment clips 14 which surround, in vertical play relation, the shanks of said brackets. Thus, while the wear strips 13 are prevented from lengthwise motion, they are capable of limited vertical floating motion.

In the operation of a driven endless conveyor embodying the foregoing assembly, it has been found that the wear strips 13 are most effective in the prevention of frictional abrading between the longitudinal feet 12 of the side skirts 7, and the adjacent side edge portions of the upper run 1 of the endless belt. However, there is a tendency for the wear strips 13 to accumulate a deposit of dirt on the under side thereof, which deposit—if not removed—would have a wear-

action on the engaged side edge portions of the upper run 1 of the belt.

To avoid this result the following wiper arrangement is employed.

The initially separate ends of the rubber belt B are secured together by lacing 15, and the belt is fitted—on the outer surface and on each opposite side edge portion—with a pair of relatively small rectangular pads 16 secured to the belt by countersunk-head rivets 17.

The pads 16 are cut from a resilient material, such as belting, and each pair is disposed with the lacing lying therebetween.

Each time that the pads 16 travel in the upper run 1 of the belt, such pads pass in engagement with the under side of the related wear strips 13, effectively sweeping such strip clean from end to end thereof.

As the pads 16 so pass in engagement with the wear strips 13, the same are urged upwardly slightly in the manner shown in Figs. 2 and 3, thus permitting the swept off dirt to escape laterally either off the conveyor or onto the material carrying surface of the rubber belt B, which surface is cross-cleated, as at 18, at longitudinally spaced points.

The pads 16, while relatively short transversely of the belt B, are nevertheless at least the width of the wear strips 13, and when in engagement with the latter span the full distance between the opposite side edges thereof, whereby to accomplish a full or complete sweeping action.

In addition to their function to recurringly sweep the under side of the wear strips 13, the pads 16 maintain such strips raised above the lacing 15 as the latter moves in the upper run 1, with the result that such lacing has no wear thereon by said wear strips.

From the foregoing description it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention as set forth therein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. In a driven endless conveyor, an endless conveyor belt having an upper run, longitudinal side skirts of resilient material upstanding from the side edge portions of said upper run of the belt, a longitudinal metallic wear strip interposed in engagement between the lower edge of each side skirt and the upper surface of the corresponding side edge portion of said upper run, and wiping elements secured to the outer surface of the endless belt on said side edge portions thereof in position to recurringly sweep in engagement with the under side of the related wear strips.

2. An endless conveyor, as in claim 1, in which said wiping elements are non-metallic pads.

3. In a driven endless conveyor, an endless conveyor belt having an upper run, longitudinal side skirts of resilient material upstanding from the side edge portions of said upper run of the belt, a longitudinal metallic wear strip interposed in engagement between the lower edge of each side skirt and the upper surface of the corresponding side edge portion of said upper run, and wiping pads secured to the outer surface of the endless belt on said side edge portions thereof in position to recurringly sweep in engagement with the under side of the related wear strips.

4. In a driven endless conveyor, an endless conveyor belt having an upper run, longitudinal side skirts of resilient material upstanding from the side edge portions of said upper run of the belt, a longitudinal metallic wear strip interposed in engagement between the lower edge of each side skirt and the upper surface of the corresponding side edge portion of said upper run, and a plurality of wiping pads secured to the outer surface of the endless belt at longitudinally spaced points along said side edge portions thereof in position to recurringly sweep in engagement with the under side of the related wear strips; the belt including end portions secured by lacing, there being a pair of said pads on each of the side edge portions of the belt in spaced but adjacent relation and the lacing extending between the pads of each such pair.

No references cited.