June 17, 1941. W. G. VAN VOORHIS 2,246,196

CONVEYER BELT CLIP

Filed March 22, 1940

Fig. 1

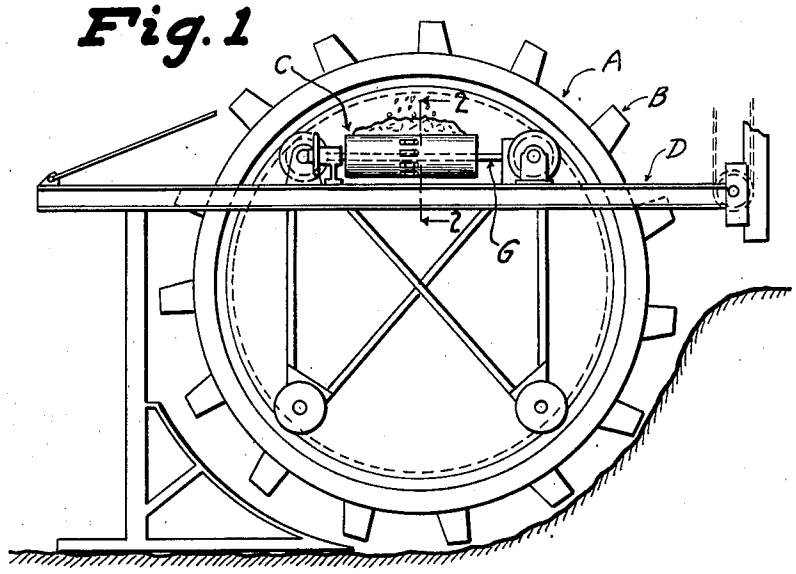


Fig. 2.

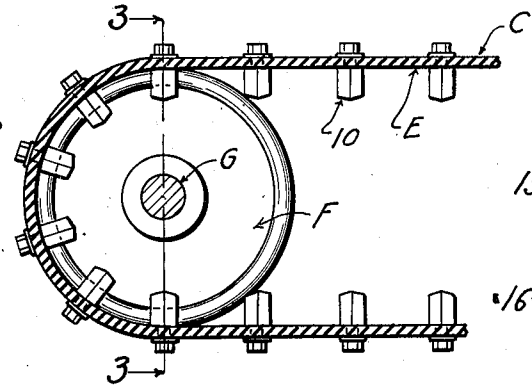
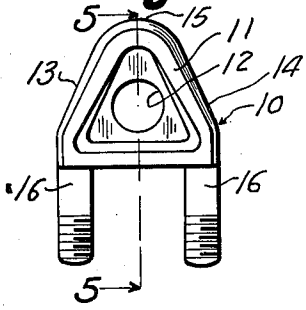


Fig. 4.



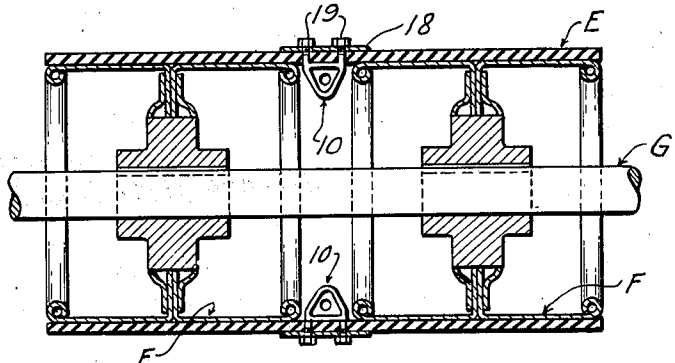
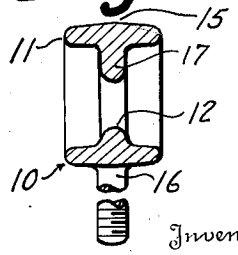


Fig. 3.

Fig. 5.



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CONVEYER BELT CLIP

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2 Claims. (Cl. 198—202)

This invention relates to endless conveyer belts particularly adapted for use with earth working machines such as trenching machines, but more particularly to devices for preventing lateral movement of the conveyer belts during use thereof. It will be understood that in machines of this character, the conveyers are used to discharge the dirt excavated by the digging implements to one side or forwardly of the machine and are so mounted as to be adjusted from one position to another. Not infrequently, these belts are disposed in angular positions such, for example, as the position inclined to the horizontal and unless the belts are provided with devices for holding them in the same relative position with respect to their pulleys, they will slide laterally and soon become disengaged from the pulleys.

Heretofore clips have been attached to the belts and project from the underside thereof to travel between laterally spaced pulleys but these have been objectionable for several reasons. They have been formed with sharp edges which are engageable with the faces of the pulleys and soon inflict such damage to the pulleys that replacement thereof is rendered necessary. Furthermore, these clips have been provided with laterally extending portions which are adapted to ride over the perimeter of the pulleys and in so doing, raise that portion of the belt from the pulleys. As a result, the belts soon become worn and frequently crack in that region. A still further objection to that form of clip is that the metal to metal contact between the clips and pulleys is exceedingly noisy.

An object of this invention is to produce a new and improved clip of the above character which is free from the above objections and which operates efficiently to hold the conveyer belt against lateral shifting movements.

Another object is to produce a clip of the above character having the new and improved features of construction and arrangement hereinafter described and for purposes of illustration but not of limitation, an embodiment of the invention is shown on the accompanying drawing in which

Figure 1 is a side elevation of a digging wheel of a trenching machine with its supporting frame and endless belt conveyer equipped with clips for holding the belt against lateral shifting movements;

Figure 2 is an enlarged vertical sectional elevation on the line 2—2 of Figure 1;

Figure 3 is a transverse sectional view on the line 3—3 of Figure 2;

Figure 4 is an enlarged elevation of one of the clips; and

Figure 5 is a vertical sectional elevation on the line 5—5 of Figure 4.

The illustrated embodiment of the invention comprises a digging wheel A having an annular series of excavating buckets B which, during the rotary movements of the digging wheel, dig into the ground and elevate the dirt which is discharged therefrom onto a conveyer C. The digging wheel is carried by a suitable supporting frame D which is connected to the main frame of the machine in a manner well-known to those skilled in this art and the digging wheel and conveyer are driven from the power unit on the main frame in a well-known manner and since the same constitutes no part of the present invention, further description and illustration are not considered necessary.

The conveyer C is made up of a flexible endless belt E which is trained around a pair of laterally spaced pulleys F, only one pair being shown on the drawing but it being understood that another pair is similarly mounted at the opposite end of the belt. The pulleys F are keyed to a shaft G which is driven in any suitable manner to impart the desired movement to the belt to enable the dirt delivered thereto to be conveyed from the machine.

Projecting at substantially right angles from the underside of the conveyer belt C is a series of clips 10 which are spaced a short distance longitudinally of the belt from each other. These clips are adapted to pass between the pulleys F of each pair, the latter being spaced from each other a short distance to accommodate the clips with a slight amount of space between the respective pulley and the adjacent side of the clip.

Each clip 10 consists of a cast metal head 11 which is generally triangular in shape, a hole 12 being cut out, for reducing the weight of the piece, in an internal centrally disposed web 17. It will be observed that the head 10 is provided with downwardly and inwardly inclined sides 13 and 14 which form at the lower end a relatively blunt point 15. Integral with the clip is a pair of studs 16 which project outwardly from an intermediate portion of the clip as shown on Figure 5, one stud being disposed at each side of the body 11 and with the outer side of the stud in alignment with the adjacent side of the clip body.

As shown most clearly on Figure 3, the clips are connected to the belt E in such manner that

the downwardly inclined sides 13 and 14 are adjacent the inner faces of the pulleys F respectively so that tendency of the belt E to creep laterally in one direction or the other will bring the one or the other inclined edge portion into engagement with one or the other of the inner faces of the pulley, the latter in this instance being curved by rolling over the edge portion of the metal as shown in the drawing. The studs 16 extend through holes in the belt E so that the portion of the screw-threaded ends extend above the outer face of the belt. Apertured metal strips or plates 18 fit over the studs 16 and nuts 19 engage the screw-threaded end portions of the studs for holding the clip securely in place.

From the above description, it will be manifest that the clips are disposed wholly between the inner faces of the pulleys and no portion thereof extends between the underside of the belt and the outer surface or perimeter of the pulleys. Any tendency of the belt to creep laterally in one direction or the other will be blocked by engagement between the clips and the adjacent face of the respective pulley. Since contacting surfaces are rounded or free from sharp edges, liability of damage to the pulleys is substantially eliminated.

It is to be understood that numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention especially as defined in the appended claims.

What I claim is:

1. A device for preventing lateral shifting of an endless conveyer belt of flexible material and trained over pairs of laterally spaced pulleys, comprising a triangular shaped head disposed between the inner faces of the pulleys and projecting from the underside of the belt, an internal centrally disposed reenforcing web for said head, a pair of laterally spaced studs with the sides substantially flush with the adjacent side of the head, plate means fitting said studs on the outer side of the belt, and nuts on said studs.

2. An article of manufacture comprising a triangular shaped head, an internal centrally disposed reinforcing web for said head, and a pair of laterally spaced studs projecting from the base of said head, the sides of said studs being substantially flush with adjacent sides of said head.

WILLIAM G. VAN VOORHIS.