March 17, 1942. B. M. HYMAN ET AL 2,276,978

CONVEYER

Filed June 27, 1940 2 Sheets-Sheet 1

Fig. 1.

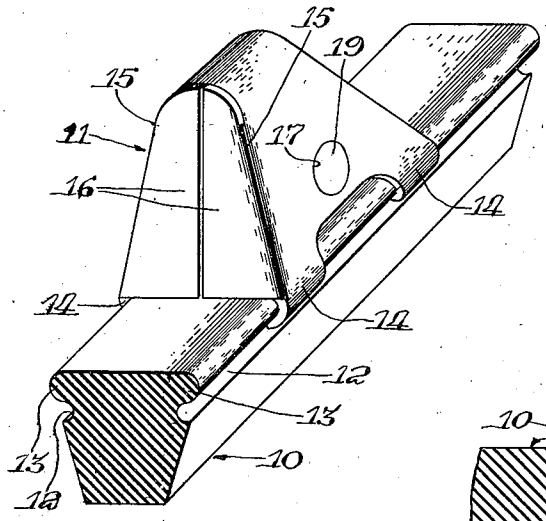


Fig. 2.

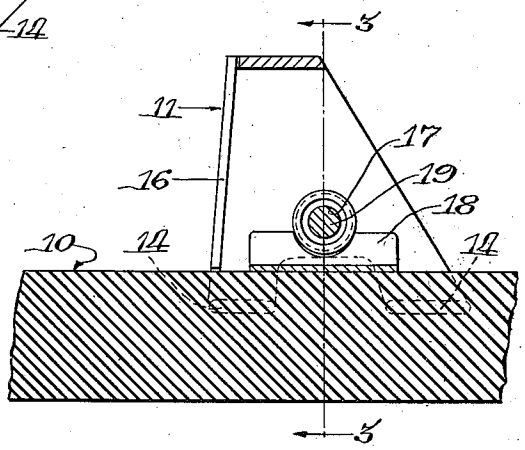


Fig. 4.

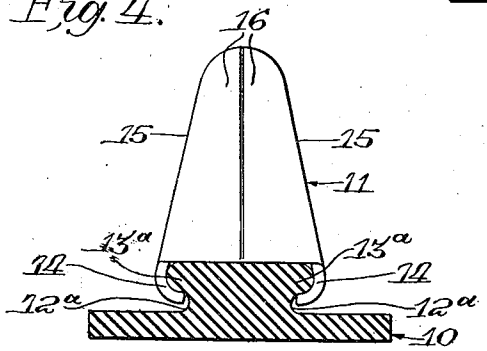


Fig. 3.

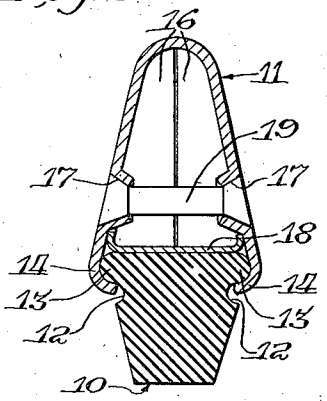
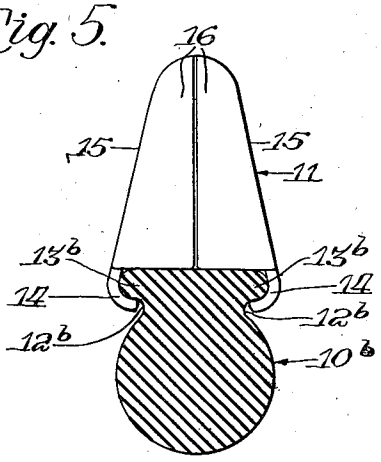


Fig. 5.



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Fig. 6.

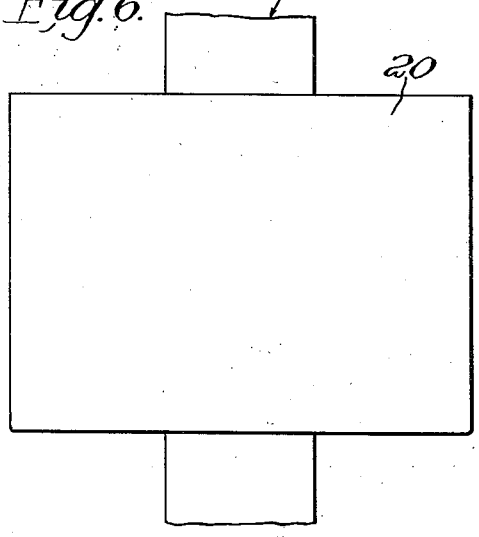


Fig. 7.

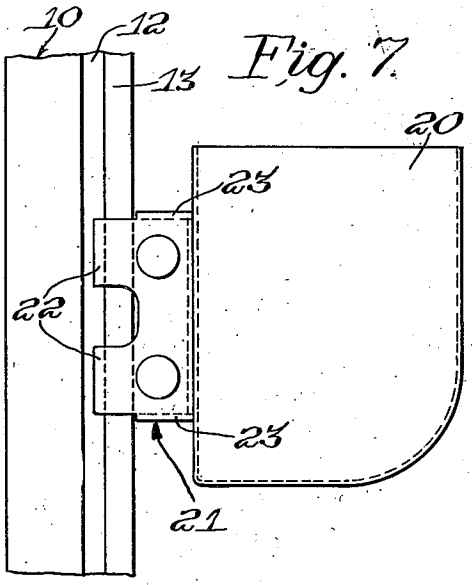


Fig. 8.

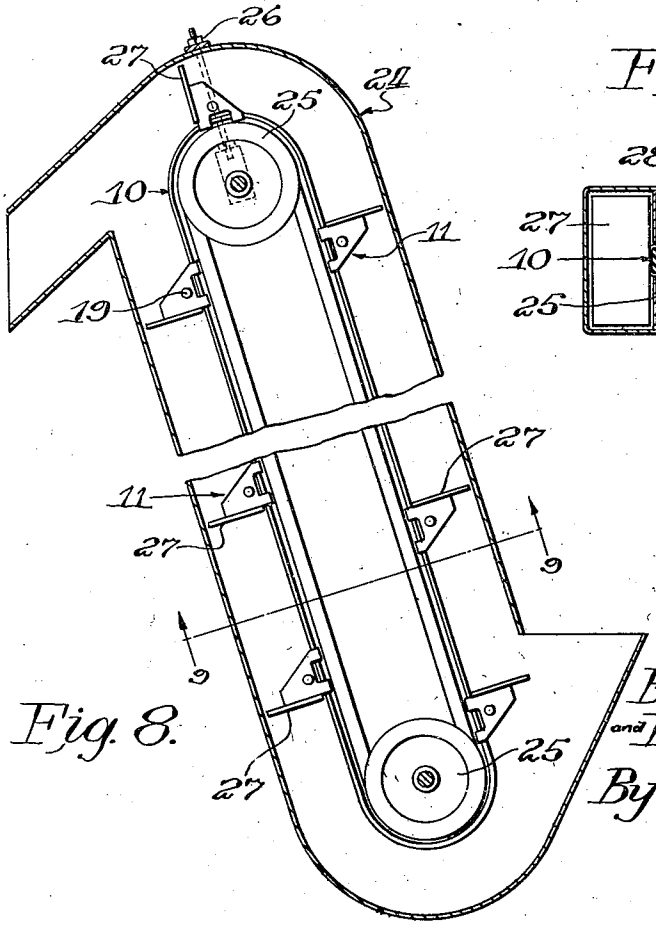
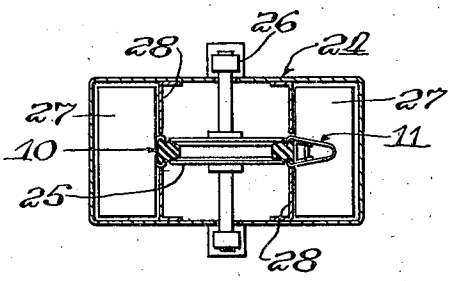


Fig. 9.



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UNITED STATES PATENT OFFICE

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CONVEYER

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Application June 27, 1940, Serial No. 342,789

8 Claims. (Cl. 198—176)

The present invention relates to belt conveyers. More specifically it relates to an arrangement for securing conveyer flights, pegs, and buckets to a V-belt, a flat belt, or a round belt.

The conveyers in use today are most generally of the chain type. These chain conveyers, when used on a mobile type of machine, add greatly to the weight of the machine, are noisy in operation, and require constant lubrication.

It is, therefore, an object of the present invention to provide a conveyer that is of light weight, and which will operate with a minimum of noise.

Another object of the invention is to provide a belt to which may be secured at any point thereon, conveyer flights, pegs, and buckets.

Other objects will become apparent to those skilled in the art after a consideration of the following description and explanation, reference being had to the drawings appended hereto, in which:

Figure 1 is a perspective view of the V-belt conveyer with a conveyer peg secured thereon;

Figure 2 is a longitudinal section of the structure shown in Figure 1;

Figure 3 is a sectional view taken along the line 3—3 of Figure 2;

Figure 4 is an end view of a conveyer peg applied to a flat belt;

Figure 5 is an end view of a conveyer peg applied to a round belt;

Figure 6 is a front view of a bucket type conveyer secured to a belt;

Figure 7 is a side view of the structure shown in Figure 6;

Figure 8 is a sectional view of a V-belt type elevator; and,

Figure 9 is a sectional view taken along the line 9—9 of Figure 8.

In the drawings and specification like numerals refer to like parts throughout.

Referring now to Figure 1, reference numeral 10 indicates a V-belt type of conveyer to which is secured a conveyer peg 11. The V-belt 10 is provided with a pair of grooves 12 formed in the upper portion of the converging sides thereof. The grooves 12 form laterally extending ribs or beads 13 and are provided on the V-belt 10 above that portion of the belt which normally engages a pulley.

The conveyer element shown is in the form of a peg 11 and is of U-shape and the ends thereof are provided with arcuate portions 14. The sides of the U-shape peg 11 are bent at 15 and the portions 16 thereof are bent inwardly closing the end of the peg 11. Aligned countersunk openings 17 are provided in the sides of the U-shaped peg 11. The peg 11 is placed on the belt 10, the arcuate portions 14 thereof engaging and gripping the ribs 13, and the portions 16 engaging the top of the V-belt 10. To prevent the peg 11 from moving on the belt 10, a retaining clip 18 is provided. The clip 18 contacts the top of the belt 10 and the countersunk portions of the openings 17. A rivet 19 is inserted in the openings and peened into the countersunk openings 17 which brings the arcuate portions 14 into engagement with the ribs 13 of the belt 10. The peg 11 is securely held on the belt 10, since the retaining clip 18 in conjunction with the arcuate portions 14 prevents the peg from moving vertically or fore and aft with respect to the belt 10.

Figure 4 illustrates an application of the invention to a flat belt. The flat belt 10*a* is provided with grooves or recesses 12*a* and ribs or beads 13*a* along the top surface thereof. The peg 11 is secured on the ribs 13*a* in the same manner as described above for the V-belt.

Figure 5 illustrates another application of the invention, in this case, to a round belt. The round belt 10*b* is provided with grooves 12*b* and ribs 13*b* along the top surface thereof. The peg 11 is secured on the round belt 10*b* in the same manner as described for its application to the V-belt. It is to be noted that in securing the peg 11 on the V-belt, flat belt and the round belt that the peg 11 in no way interferes with the operation of the belt. The peg 11 may also be secured at any desired point in the belt, as the groove extends the length of the belt.

In Figures 6 and 7 there is illustrated a bucket 20 which is secured on the V-belt 10 by a bracket 21. The bracket 21 is provided with arcuate portions 22, which straddle the ribs 13. The ends 23 of the bracket 21 are bent inwardly and contact the top of the belt 10 to prevent shifting of the bracket 21 with respect to the belt 10. The bucket 20 is spot-welded to the top surface of the bracket 21.

In applying the present invention to an elevator of the flight type the pegs 11 can be used by spot-welding flights to the end thereof. Referring to Figure 8 there is illustrated an elevator 24. Pulleys 25 are journaled at the ends of the elevator 24. An adjusting mechanism 26 is provided in connection with one of the pulleys 25 to effect movement of said pulley. A V-belt 10 is connected between the pulleys 25 on which is connected as previously described, the peg 11. The flights 27 are spot-welded to the portions 16 of the pegs. Plate members 28 are welded to the

insides of the elevator 24, and extend toward the belt 10 below the flight 27 and form a bottom for the elevator.

From the foregoing description it is obvious that a novel belt construction has been provided, and also a simple and inexpensive method of securing pegs, flights, and buckets on the belt. Other methods of carrying out the present invention may occur to those skilled in the art, however, I do not intend to limit the invention to the precise details shown and described except as set forth in the appended claims.

What is claimed is:

1. A belt for a conveyer having a first side, second and third sides extending in spaced relation from the first side and adapted to engage a pulley, and grooves formed in the second and third sides above the pulley-engaging portions of said second and third sides.

2. A belt conveyer comprising a belt having a first side, second and third sides extending in spaced relation from the first side and adapted to engage a pulley, grooves formed in the second and third sides above the pulley-engaging portions of said second and third sides, an element straddling the belt and engaging the grooves in the second and third sides of the belt, and means for securing said element on the belt.

3. A belt conveyer comprising a belt having a first side, second and third sides extending in spaced relation from the first side and adapted to engage a pulley, grooves formed in the second and third sides above the pulley-engaging portions of said second and third sides, a U-shaped member straddling the belt and engaging the grooves therein, and means connecting the sides of the U-shaped member for securing the member on the belt.

4. A belt conveyer comprising a belt having a first side, second and third sides extending in spaced relation from the first side and adapted to engage a pulley, grooves formed in the second and third sides above the pulley-engaging portions of said second and third sides, a U-shaped member straddling the belt and engaging the grooves therein, a securing element connecting the sides of the U-shaped member for securing said member on said belt, and a retaining clip disposed between one side of the belt and the securing element.

5. A conveyer comprising a V-belt having a first side, second and third pulley contacting sides extending in spaced relation from the first side and grooves formed in the second and third sides above the pulley-engaging portions thereof, an element straddling the belt and engaging the grooves formed therein and the first side of the belt, and means for securing said element in the grooves.

6. A conveyer belt having a surface adapted to contact a pulley, a second surface spaced from the first surface, and recesses formed in the belt between the first and second surfaces, an element straddling the belt and engaging the recesses, means for securing said element to said recesses, and retaining means disposed between the second surface of the belt and said element.

7. A belt type conveyer comprising a flexible belt having a pulley engaging inner portion and an outer portion formed with spaced longitudinally extending attaching beads, and a plurality of conveyer elements secured to said beads.

8. A belt type conveyer comprising a belt consisting of flexible material, said belt being provided with an inner pulley engaging portion adapted to engage a driving and a driven pulley and an outer portion including continuous recesses forming spaced laterally projecting attaching portions, and a plurality of conveyer elements having attaching portions fitted over the attaching portions on the belt.

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