Nov. 18, 1941. A. E. W. JOHNSON ET AL. 2,262,894

CONVEYER STRUCTURE

Filed Nov. 16, 1939

Fig. 1

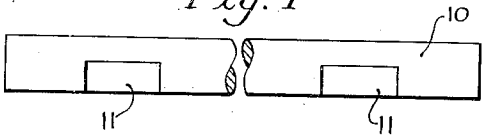


Fig. 2

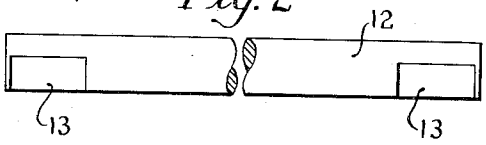


Fig. 3

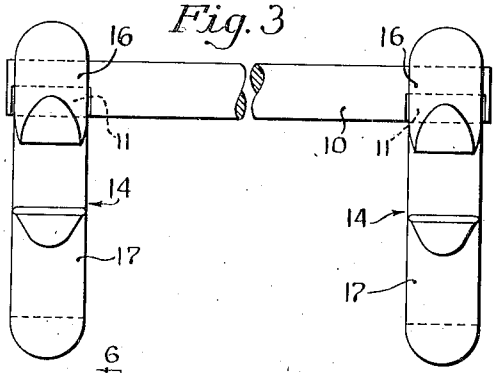


Fig. 5

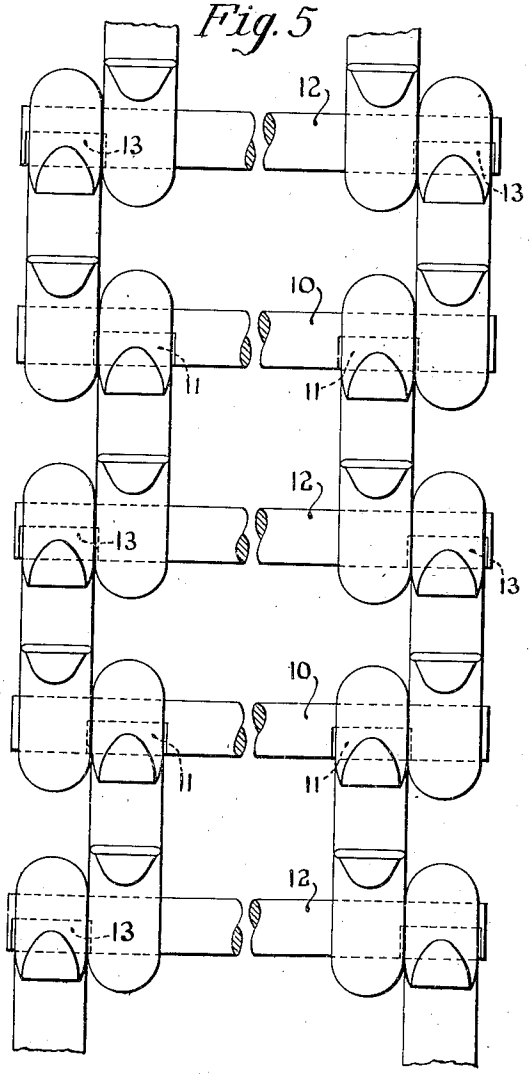


Fig. 4

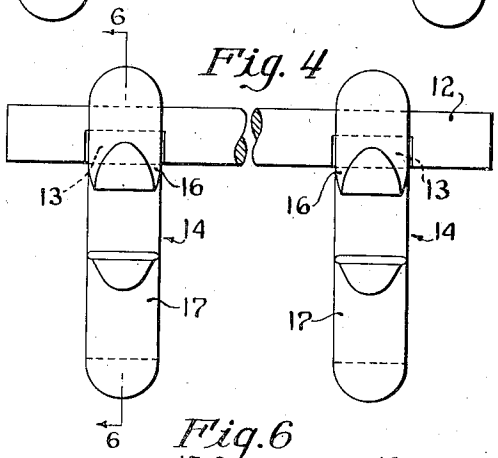


Fig. 6

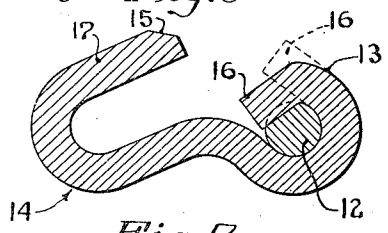


Fig. 7

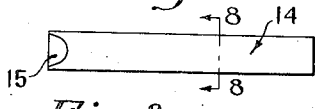
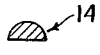


Fig. 8



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CONVEYER STRUCTURE

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Application November 16, 1939, Serial No. 304,690

10 Claims. (Cl. 198—195)

This invention relates to a conveyer structure. More particularly it relates to a conveyer for a potato digger.

The conveyer structure of a potato digger normally consists of a plurality of spaced, generally parallel elements. Heretofore, it has been considered difficult to connect the elements in a way economical to manufacture and yet allow the elements to stand up well during operation. In certain constructions, the elements have been provided with reversely bent ends which hook over adjacent elements. However, there has been excessive wear with this construction.

An object of the present invention is to provide an improved conveyer structure.

A further object is the provision of an improved conveyer structure for a potato digger which is cheap to manufacture and yet stands up well during operation.

According to the present invention a plurality of spaced parallel rods are provided. Connecting pieces extend between the ends of adjacent rods, one group of connecting pieces being secured against axial and rotational displacement with respect to alternate rods and connected to the remaining alternate rods in a way which permits rotational displacement and does not prevent axial displacement. The other group of connecting pieces is secured against axial and rotational displacement to the second mentioned group of alternate rods and connected to the first mentioned group of alternate rods in a way which permits rotational displacement and does not prevent axial displacement.

In the drawings—

Figure 1 is a view of one type of rod used for the conveyer structure of the present invention;

Figure 2 is a view of the other type of rod;

Figure 3 shows the first type of rod with connecting pieces secured thereto;

Figure 4 shows the second type with connecting pieces secured thereto;

Figure 5 is a plan view of a portion of the finished conveyer structure;

Figure 6 is a sectonal view along the line 6—6 of Figure 4;

Figure 7 shows a blank adapted to be used as a connecting piece for the conveyer structure; and,

Figure 8 is a section taken along the line 8—8 of Figure 7.

In Figure 1, there is shown a rod 10 having transverse notches 11 therein at points somewhat spaced from the ends of the rod. In Figure 2, there is shown a rod 12 similar in size to the rod 10 except that it has transverse notches 13 therein immediately adjacent its ends. As seen in Figure 5, the rods 10 comprise a group of alternate elements and the rods 12, another group of alternate elements in the finished conveyer structure.

A connecting piece 14 is formed of semicircular bar stock, as shown in Figures 7 and 8, and has one end chamfered, as at 15. The connecting pieces are bent to the shape shown in Figure 6, so as to have one hooked end 16 extending out straight, as shown in dotted lines, and the other hooked end 17 also extending out straight. As shown in this same figure, a rod 12 is assembled with respect to the connecting piece 14 so that it lies within the hooked portion adjacent the end 16. Then the end 16 is bent to its full line position of Figure 6, so as to extend into a transverse groove 13. Thus, the connecting piece 14 is secured to the rod 12 in such a way that there can be no axial or rotational displacement with respect to the rod. Another connecting piece 14 is similarly attached to the rod 12 in the notch 13 adjacent its other end. In the same way, connecting pieces 14 are attached to the rod 10 so as to extend into the notches 11 and thereby be locked against axial and rotational displacement with respect to the rod 10, as shown in Figure 3.

Next, the structures of Figures 3 and 4 are assembled. The rod 12 is placed within the hooked ends 17 of the elements 14 which are secured to the rod 10. The association of the connecting pieces 14 and the rod 12 permits rotational displacement of the rod 12 with respect to the connecting pieces 14 and does not prevent axial displacement. Another rod 10, which has connecting pieces 14 secured to it, as in Figure 3, is placed within the hooked end 17 of the connecting pieces 14 which extend from the rod 12. As in the case of the rod 12, the association of the connecting pieces 14 and the rod permits rotational displacement of the connecting pieces 14 with respect to the rod 10 and does not prevent axial displacement. In this way, an entire conveyer structure is assembled, a portion of which is shown in Figure 5. It will be seen from this figure that alternate rods 10 have transverse notches 11 somewhat spaced from their ends. Alternate rods 12 have transverse notches 13 immediately adjacent their ends. Connecting pieces extend between the adjacent rods 10 and 12. One group of connecting pieces 14 has the one end 16 wrapped around the rods 10 so as to extend into the notches 11, and the other end

17 hooked around the smooth portion of the rods 12. The other group of connecting pieces 14 is located outwardly of the first group of connecting pieces and has the one end 16 wrapped around the end of the rods 12 and extending into the notches 13 and the other end 17 hooked around the smooth portion of the rod 10. This arrangement of parts provides an improved structure which is simple and easy to manufacture and yet insures against wear of parts.

The intention is to limit the invention only within the scope of the appended claims.

What is claimed is:

1. A conveyer structure comprising a plurality of spaced parallel rods, alternate rods having transverse notches at their ends, the remaining alternate rods having transverse notches spaced inwardly from the ends, a first group of connecting pieces having one end extending around the ends of the first mentioned alternate rods and into the grooves therein in locking engagement and having their opposite end extending around the ends of the second mentioned alternate rods outwardly of the grooves therein, and a second group of connecting pieces having one end extending around the ends of the second mentioned rods in locking engagement with the grooves therein and inwardly of the first group of connecting pieces and having their opposite ends extending around the ends of the first mentioned alternate links inwardly of the notches therein and the first group of connecting links.

2. A conveyer structure comprising a plurality of spaced parallel rods, alternate rods having transverse notches adjacent one end, the remaining alternate rods having transverse notches spaced inwardly from one end, connecting pieces extending between the rods, alternate connecting pieces having one end extending around the end of the first mentioned alternate rods and into the grooves therein and the opposite end extending around the end of the second mentioned alternate rods, the remaining alternate connecting pieces having one end extending around the end of the second mentioned alternate rods and into the transverse grooves therein inwardly of the first mentioned alternate links and having the opposite end extending around the ends of the first mentioned alternate rods inwardly of the grooves therein and the first mentioned alternate connecting pieces.

3. A conveyer structure including first and second parallel spaced rods having transverse grooves adjacent their ends, a third rod positioned between the said pair of rods parallel thereto and having transverse grooves spaced inwardly from the ends, a fourth rod parallel to and spaced from the second rod on the opposite side therefrom of the third rod and having transverse grooves spaced inwardly from the ends, a first pair of connecting pieces having end portions extending around the ends of the first rod and into the grooves therein and end portions extending around the ends of the third rod, a second pair of connecting pieces having end portions extending around the third rod and into the grooves therein inwardly of the first pair of connecting pieces and end portions hooked around the second rod, and a third pair of connecting pieces having end portions extending around the ends of the second rod and into the grooves therein outwardly of the second pair of connecting pieces and end portions extending around the ends of the fourth rod.

4. A conveyer structure comprising a plurality of spaced parallel rods, alternate rods having a transverse notch at each end, the remaining alternate rods having a transverse notch spaced inwardly from each end, a first group of connecting pieces having one end connected to the ends of the first mentioned alternate rods and extending into the notches therein in locking engagement and having their opposite end connected to the ends of the second mentioned alternate rods outwardly of the notches therein, and a second group of connecting pieces having one end connected to the ends of the second mentioned rods and extending into the notches therein in locking engagement and inwardly of the first group of connecting pieces and having their other end connected to the end of the first mentioned alternate links inwardly of the notches therein and the first group of connecting links.

5. A conveyer structure comprising a plurality of spaced parallel rods having considerable length and adapted to have direct conveying contact with material to be conveyed, alternate rods having a recess adjacent each end, the remaining alternate rods having a recess spaced inwardly from each end, connecting pieces extending between the rods, alternate connecting pieces having one end connected against axial displacement to the ends of the first mentioned alternate rods by extending into the recesses therein and the other end connected for rotation to the ends of the second mentioned alternate rods, the remaining alternate connecting pieces having one end connected against axial displacement to the ends of the second mentioned alternate rods by extending into the recesses therein inwardly of the first mentioned alternate links and having the other end connected for rotation to the ends of the first mentioned alternate rods inwardly of the recesses therein and the first mentioned alternate connecting pieces.

6. A conveyer structure including a plurality of parallel spaced rods having considerable length and adapted to have direct conveying contact with material to be conveyed, a first group of connecting pieces having one end connected to each end of alternate rods against axial movement with respect to the rod and the other end connected to each end of the remaining alternate rods for rotation with respect thereto, and a second group of connecting pieces having an end connected against axial displacement to each end of the said remaining alternate rods inwardly of the first group of connecting pieces and the other end connected for rotation to each end of the first mentioned alternate rods inwardly of the first group of connecting pieces.

7. A conveyer structure comprising a plurality of spaced rods having considerable length and adapted to have direct conveying contact with material to be conveyed, a first group of connecting pieces having one end extending around each end of alternate rods so as to be connected against axial movement with respect to the rods and the other end extending around the remaining alternate rods for rotation with respect thereto, and a second group of connecting pieces having one end extending around each end of the said remaining alternate rods so as to be connected against axial displacement with respect thereto inwardly of the first group of connecting pieces and the other end extending around each end of the first mentioned alternate rods for rotation with respect thereto inwardly of the first group of connecting pieces.

8. A conveyer structure as specified in claim 1,

the connecting pieces being of semicircular section, the flat side being on the inside in contact with the rods.

9. A conveyer structure comprising a plurality of spaced rods having a transverse groove adjacent each end, each rod having considerable length and adapted to have direct conveying contact with material to be conveyed, a plurality of connecting pieces extending between adjacent rods, each of half of the connecting pieces having one end secured to one end of a rod and extending into the groove therein and the other end connected to the corresponding end of an adjacent rod but not extending into the groove therein, each of the other half of the connecting pieces having one end secured to the opposite end of a rod and extending into the groove therein and connected to the corresponding end of an adjacent rod but not extending into the groove therein.

10. A conveyer structure comprising a plurality of spaced members having considerable length and adapted to have direct conveying contact with material to be conveyed, and a plurality of connecting pieces, each of half of the connecting pieces having one end secured to an end of a rod against axial movement with respect to the rod and the other end secured to the corresponding end of an adjacent rod for rotation with respect to the rod, each of the other half of the connecting pieces having one end secured to the other end of a rod against axial movement with respect to the rod and the other end secured to the corresponding end of an adjacent rod for rotation with respect to the rod.

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