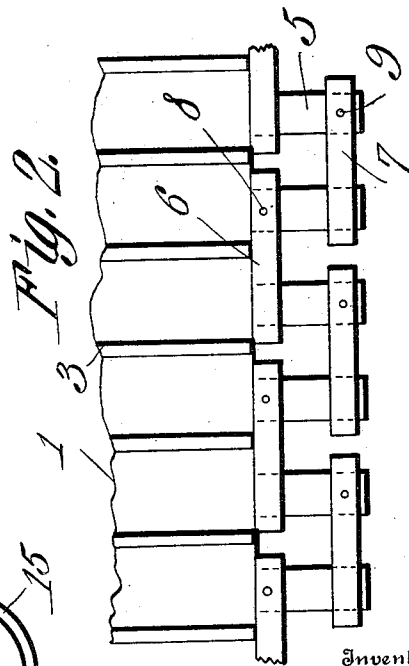
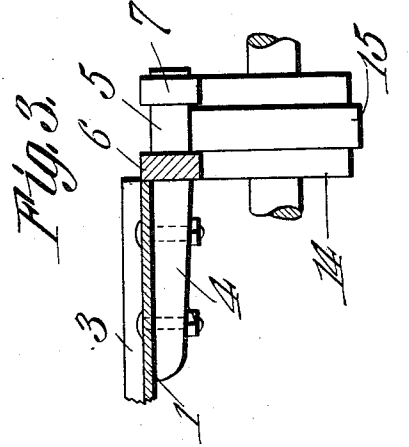
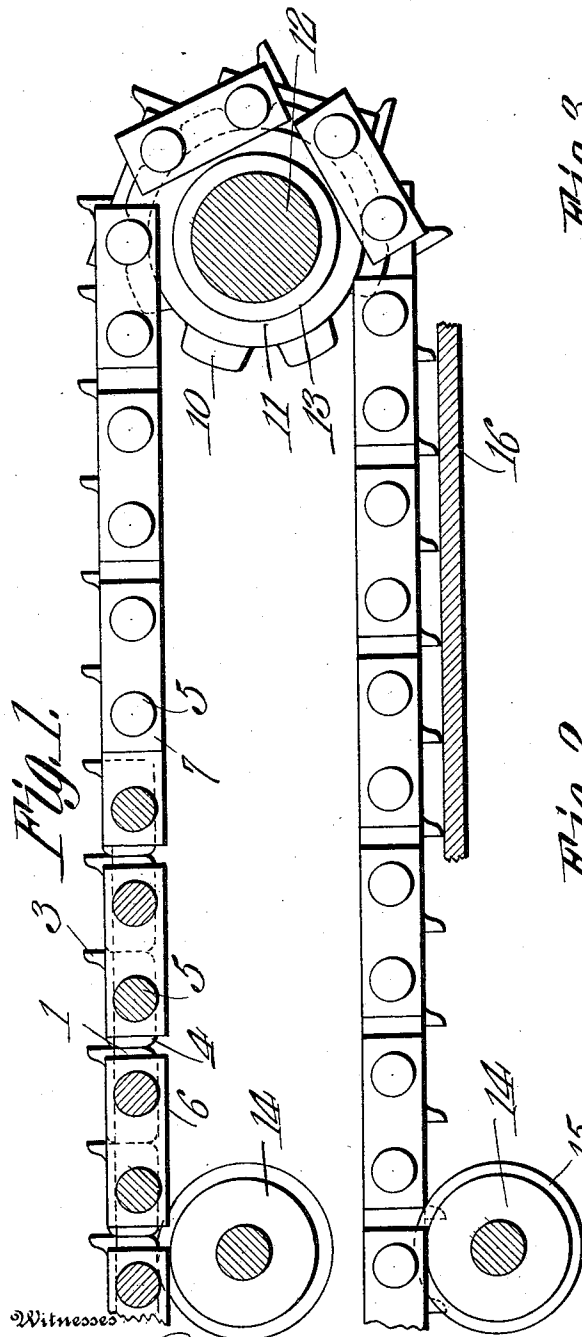


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COKE CONVEYER.
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1,033,713.

Patented July 23, 1912.



Witnesses
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DANIEL F. LEPLEY, OF CONNELLSVILLE, PENNSYLVANIA.

COKE-CONVEYER.

1,033,713.

Specification of Letters Patent.

Patented July 23, 1912.

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To all whom it may concern:

Be it known that I, DANIEL F. LEPLEY, a citizen of the United States, residing at Connellsville, in the county of Fayette and State of Pennsylvania, have invented a new and useful Coke-Conveyer, of which the following is a specification.

This invention has reference to improvements in coke conveyers and is designed to provide a conveyer for transporting coke from the discharge end of a coke oven to the cars or other conveyers into which the coke is to be deposited for transportation.

Conveyers as ordinarily constructed when used for moving coke, rapidly become worn on the bearing surfaces because of the high abrasive qualities of powdered coke, more or less of which finds its way to such bearing surfaces.

In accordance with the present invention, the structure is such that the abrasive effect of powdered coke is minimized by making it possible to support the runs of the conveyer belt or apron upon comparatively large slow speed rollers, the life of which is far in excess of the life of the small high speed rollers usually employed.

The conveyer belt or apron is sustained and actuated by sprocket chains and wheels but such sprocket chains are peculiarly constructed so as to adapt them to the use of large supporting rollers.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, in which drawings:

Figure 1 is a side elevation with parts in section of one end of a conveyer belt constructed in accordance with the present invention. Fig. 2 is a plan view of a portion of the structure shown in Fig. 1. Fig. 3 is a cross section of one of the conveyer chains and an adjacent portion of the belt, showing one of the supporting rollers in elevation.

It will be understood that the conveyer structure is customarily arranged at an angle to the horizontal so that coke falling upon the lower portion of the elevator structure will be progressively lifted until it is at a sufficient height to readily fall into a railway car or other suitable vehicle by which the coke is to be transported to a point of utilization or storage. The conveyer belt or apron is made up of an end-

less series of plates 1 having a flange 3 formed along one edge, the flanges 3 constituting the flights of the conveyer.

Fast to each end of each plate 1 on the side thereof remote from the flange 3 is a block 4 which may be of a width equal to the width of the plate 1 and has its edges slightly rounded so that when the conveyer belt passes around a curve the adjacent rounded edges of the blocks 4 will engage one with the other and so keep the belt in a taut condition. Projecting from each block 4 is a pin 5. Connecting the plates 1 together in pairs are links 6 applied to the pins or trunnions 5 close to the plates while the adjacent pins or trunnions 5 of the connected pairs of links are in turn connected together by other links 7 applied to the outer ends of the pins or trunnions 5. Each link 6 is connected to the trunnion 5 of one plate 1 of a pair by a pin 8 so that the link 6 is in fixed relation to the one trunnion of the pair of connected links. Each link 7 connecting two pairs of connected plates is in turn connected to the trunnion 5 of the plate 1 of a pair of connected plates other than the one connected to a link 6 by a pin 8, the said link 7 being connected to the respective trunnion by a pin 9 so as to remain in fixed relation thereto. The pins 8 and 9 are passed through the respective links 6 and 7 and into or through the respective trunnions 5. By this arrangement one plate 1 of a pair of plates is fixedly connected to a link 6 while the other plate 1 of the pair of plates is fixedly connected to a link 7. Furthermore the links 6 and 7 are in alternate or staggered relation and while each plate 1 may turn about the longitudinal axis of either the preceding or succeeding pin or trunnion 5 it is in fixed relation to a link 6 or 7 as the case may be.

The links 7 are in spaced relation to the links 6 in the direction of the length of the pins 5 so that the space between the links may be entered by the teeth 10 of a sprocket wheel 11 which latter may be mounted on a shaft 12 and on each side of the teeth is provided with a hub 13. In case the shaft 12 is a power shaft then it may extend across the conveyer belt or apron and beyond the same and there may be provided with suitable means for the application of power.

If the sprocket wheels 10 be simply idler sprockets then they may be mounted upon

a common supporting axle similar to the shaft 12 or upon short axles having individual journal bearings, these various plans being common in the mounting of conveyer belts or aprons. Both runs of the belt may be sustained at intervals by rollers 14, each provided with a central circumferential flange 15 adapted to enter between the links 6 and 7, the weight of the belt being sustained by ledges on each side of the flange. These flanged rollers prevent side motion of the belt or apron when traveling. By positively connecting the plates 1, each to one or the other of the links 6 and 7, these plates always remain in proper relation one to the other whether moving through the space between the end supports for the belt or whether passing around the terminal sprocket wheels. It will be observed that the teeth of the sprocket wheels engage directly with the pins or trunnions 5 and not with the connecting links which simply pass to each side of the teeth of the sprocket wheel. Abrasive coke dust finds little or no point of lodgment on the round surfaces presented and therefore the wear of contacting parts or bearings due to the presence of coke dust is practically negligible so that the life of the structure is much prolonged over conveyer belts or aprons as commonly constructed. It will be observed that when the conveyer belt or apron passes around a sprocket wheel the plates or slats 1 move positively with the pins or trunnions 5 and the links 6 or 7 are connected thereto by the respective pins 8 and 9, the pivotal action being about the pins or trunnions carrying the links but to which they are not in fixed relation.

The lower run of the belt may be over a plate 16 so that any coke dust or ashes which may find its way through the upper run of the belt and then through the lower run of the belt will be conveyed toward the receiving end of the apron by the flights 3 passing along the plate 16. This plate may be used in conjunction with the rollers 14 for sustaining the lower run of the belt or the plates alone may be used and the rollers be omitted, or the plate may be omitted and the rollers alone be used to sustain the lower run of the belt. The rollers 14 may be as large in diameter as the distance between the runs of the conveyer belt will permit and their bearings may also be made

comparatively large. Such rollers will have a slow speed of rotation as compared with the small rollers usually employed and consequently the wear of the journals and journal supports will be correspondingly lessened.

What is claimed is:

1. A conveyer apron composed of angle members each with a pin or trunnion projecting from opposite ends thereof, links connecting the angle members in pairs, each link being in fixed relation to one member of the pair and in free relation to the other, and other links connecting the adjacent trunnions of adjacent pairs and in spaced relation to the first named links, the second named links being each in fixed relation to the trunnion of an angle member unconnected with the links of the other series.

2. A conveyer apron composed of members each with a trunnion projecting from opposite ends thereof, links connecting said members in pairs, each link being in fixed relation to one member and in free relation with the other member, and links connecting the adjacent trunnions of adjacent pairs in spaced relation to the first named links, the second named links being in fixed relation to the trunnions of a member unconnected with the link of the other.

3. In a conveyer, a series of plates, the end portion of each plate being provided with a trunnion and a plurality of spaced links connecting said trunnions said links forming a continuous bearing surface and being disposed in staggered relation.

4. A conveyer belt composed of a series of members, trunnions arranged upon the end portions of each of said members, a series of links connecting the trunnions in pairs adjacent the plates, a second series of links connecting the trunnions in pairs adjacent their ends, the two series of links being disposed in parallel relation, each link having a loose connection with the trunnion of one member and a fixed connection with the trunnion of the adjacent member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

DANIEL F. LEPLEY.

Witnesses:

F. B. OCHSENREITER,
C. E. DOYLE.