May 16, 1944. J. A. SUDDUTH ET AL. 2,349,208

CONVEYER CHAIN LINK

Filed June 10, 1942

Fig. 1.

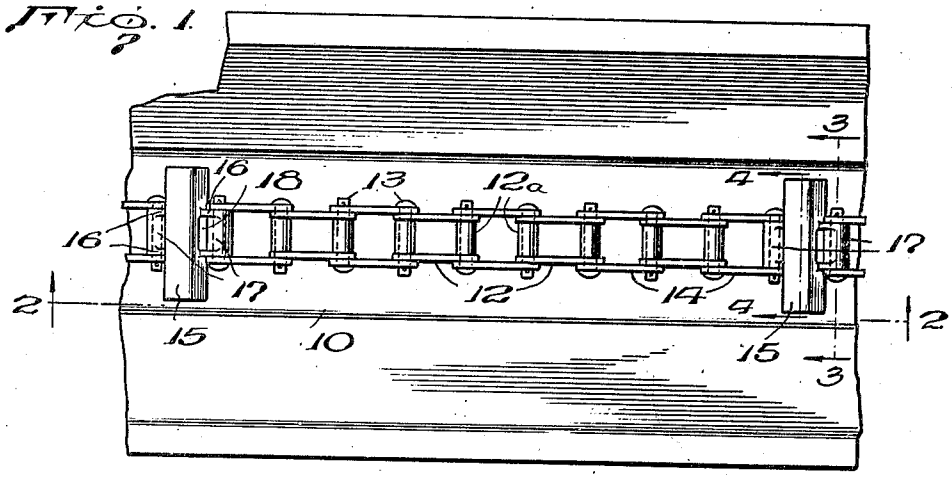


Fig. 3.

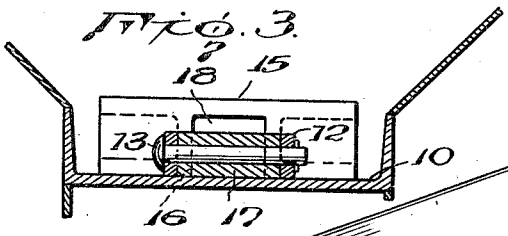


Fig. 4.

Fig. 2.

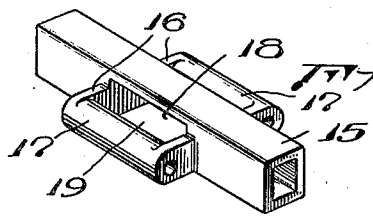


Fig. 5.

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CONVEYER CHAIN LINK

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3 Claims. (Cl. 198—176)

This invention relates to improvements in conveyer chains and particularly to a special form of link to be used in conveyer chains for holding or positioning articles or bodies on the chain while being transported.

The primary object of the invention is to provide a link of the character described which will materially prolong the life of the conveyer chain as a whole.

Another object of the invention is to provide a special form of link which, when a number of them are inserted in a conveyer chain at suitable intervals, will be subjected to the major portion, if not all, of the wear normally imposed on the chain, thus protecting the major portion of the chain against wear and increasing the life thereof.

A still further object of the invention is to provide a special holding or positioning link of the type described, which is of sturdy construction and is preferably made in an integral casting, thus eliminating the possibility of any part thereof working loose or being accidentally dislodged by the vibrations that are set up in the chain, and the individual links thereof, under normal operating conditions.

A further object is to provide a special form of conveyer chain link that will tend to insure complete cleaning of the conveyer trough.

With these and other objects in view, the invention consists in certain details of construction and combinations and arrangements of parts, all as will hereinafter be more fully described and the novel features thereof particularly pointed out in the appended claims.

In the accompanying drawing—

Figure 1 is a plan view of a section of a conveyer chain illustrating links of the present invention connected therein.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1;

Fig. 4 is a sectional view of the present link, this view being taken on the line 4—4 of Fig. 1; and

Fig. 5 is a perspective view, on a reduced scale, of the present link.

The present invention has been developed in connection with the transportation of pulp wood in the manufacture of paper and, in the present instance, the chain is illustrated as transporting logs on its upper reach which travels up an inclined trough 10. The lower or return reach of the chain traverses a suitable supporting surface, such as the channel member 11. As is understood, the chain is composed of an endless series of connected links which travel around suitable sprockets (not shown).

The links 12 may be of ordinary construction, each consisting of side bars connected by end members 12a having openings therein for pins 13 by which each two links 12 are connected by connector bars or links 14. A number of the special links of the present invention are interposed in this endless chain at suitably spaced points, the spacing depending upon the nature or size of the articles carried on the conveyer.

These so-called special links comprise a body portion 15 essentially rectangular in cross section and hollow which is disposed transversely of the chain, and, at each side, or front and rear with respect to the line of travel, said body 15 is formed with lugs or extensions 16 between which there is a hollow cross-piece 17 for reception of the coupling pins by which the link is secured to the next adjacent links.

As best shown in Fig. 4, the body 15 is a comparatively thick-walled casting, but its weight is materially reduced by reason of the fact that it is not only hollow, but, in addition, it has comparatively large openings 18 in its sides extending the full distance between lugs 16, and a similar opening 19 is also formed in its bottom wall. However, the link is of ample strength. In addition, its strength can be augmented by the provision of reinforce webs 20 in the interior thereof, these webs preferably extending transversely of the body in line with the lugs 16. In effect, the top or upper wall of the body portion 15 constitutes a platform on which, or against which, the article to be carried is supported and this platform bridges the space between the end sections of polygonal cross-section composed of the top, the side walls and the bottom, the spaced end sections being braced, so to speak, by the top wall and the cross-members 17 for the coupling pins. Thus, while the casting is of comparatively light weight, nevertheless, it is sufficiently strong to withstand loads and shocks imposed thereon in heavy duty work—for instance, heavy objects, such as pulpwood, dropping on it from a distance at transfer points or charging stations. Also, the entire link is a single casting, requiring no welding, riveting or other forms of connections between any of the parts thereof, and, consequently there is nothing to work loose through the shocks or vibrations to which the chain and link is continuously subjected. Operation of the chain may, therefore, be maintained at maximum efficiency.

It will also be observed that the lugs 16 are lo-

cated a considerable distance below what has been termed the top surface of body portion 15, reference being had to the upper reach of the chain. Also, the spacing of the lugs 16 from each other is such that they mate with the side bars of links 12. Thus, the ends of the special link project a considerable distance beyond the sides of the chain proper and, by having the top surface of the special link located above the lugs 16, the special links spaced throughout the chain will always maintain the trough, along which they travel, clean, and they will also take all wear caused by the frictional contact of the lower reach of the chain with the channel member or other support for said lower reach. Referring especially to Fig. 2 of the drawing, the special links assume an inverted position in the lower reach of the traveling conveyer, so that those faces which are normally the upper faces rest on the channel or other support 11 and, by having the lugs 16 spaced from those faces, as described, the other links, 12 and 14, do not contact the channel member. Thus, wear on the major portion of the chain is minimized, practically all wear being imposed on the special links which, because of their heavier construction, are more capable of withstanding such wear. Another advantage of this location of the lugs 16 on the special link is that the side bars of links 12 and the links 14, all of which are comparatively narrow, cannot score the surface of support 11 and ultimately cut grooves therein. Thus, the broad bearing surfaces of the special links materially increase the life of the conveyer apparatus.

While a conveyer for pulpwood is used for purposes of illustration, it will be readily appreciated that the present link is not limited to this specific class of conveyer chain.

What we claim is:

1. A conveyer chain link having an elongated, hollow body of rectangular cross-section having an unbroken, plane upper surface and openings formed in two opposite side walls, lugs projecting from the sides of the body at each end of each opening, said lugs being formed with their upper surfaces below the upper surface of the body, transverse reinforce webs in the interior of said body in registry with said lugs, and coupling pin bearings between the lugs at each side of said body.

2. A conveyer chain link having an elongated, hollow body of substantially rectangular cross-section having an unbroken flat upper surface, said body being open at its two sides and bottom midway its ends, a pair of projections at each side of said body, coupling pin bearings between each pair of projections, said projections being located below the upper surface of said body, and reinforce webs in said body at the ends of said openings in the side and bottom walls.

3. A conveyer chain link having hollow end portions of polygonal cross-section, an intermediate portion composed of a plate spanning the space between said end portions and rigidly connecting said end portions, the upper surfaces of said end portions and of said plate constituting an unbroken flat surface, means spaced vertically from said plate at the sides of said link for attaching said link in a conveyor chain, and transverse webs at the inner extremities of said hollow end portion.

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