

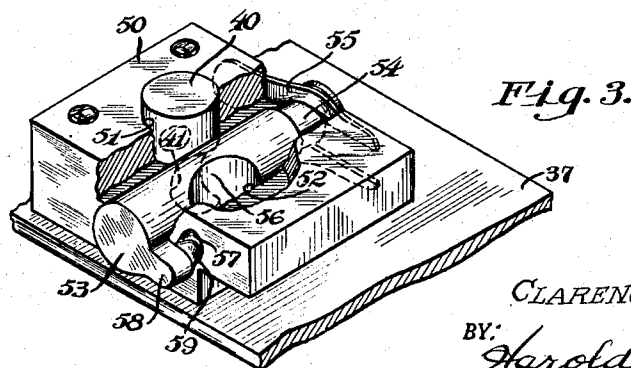
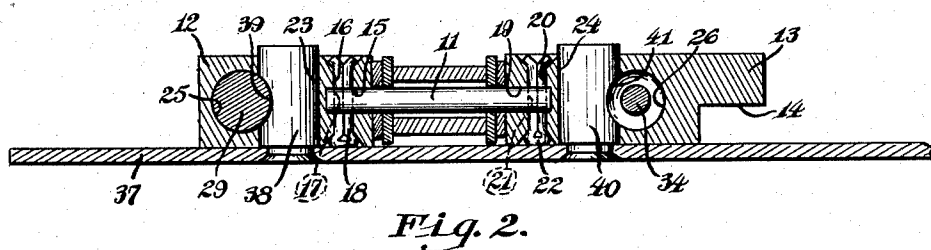
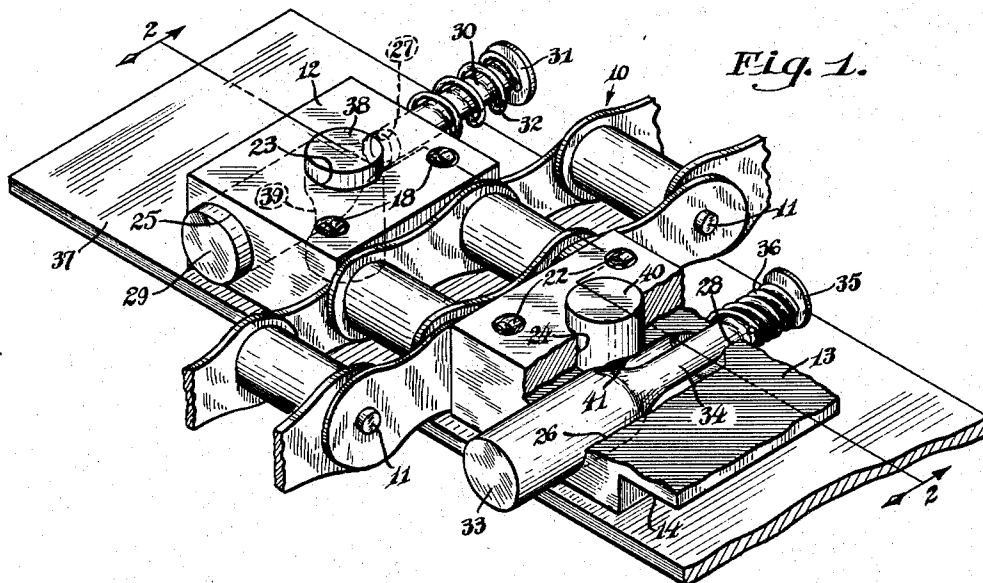
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REMOVABLE CONVEYER SLAT AND LATCH THEREFOR

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REMOVABLE CONVEYER SLAT AND
LATCH THEREFOR

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The present invention relates to a removable conveyor slat and latch therefor, and is particularly concerned with the provision of means whereby supporting elements of a continuous conveyor may be readily attached to, or removed from, the continuous flexible elements of such a conveyor.

A preferred embodiment of my invention is designed for association with a chain type continuous conveyor, and that embodiment has been illustrated and will be described; but it will be obvious that the invention is adaptable to conveyors having other types of continuous flexible elements.

The primary object of the invention is to provide means whereby transverse supporting elements may be readily attached to, and removed from, continuous flexible elements of a conveyor; but more properly stated, an object of the invention is to provide an improved latch. Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the forms illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific constructions illustrated and described, so long as the scope of the appended claims is not violated.

Fig. 1 is an isometric view of a fragment of a supporting element associated with a fragment of a continuous chain, the view being taken from the bottom of the conveyor, and parts being broken away for clarity of illustration;

Fig. 2 is a transverse sectional view taken substantially on the line 2—2 of Fig. 1; and

Fig. 3 is a view similar to Fig. 1, but showing a modified form of latch structure.

Referring more particularly to Figs. 1 and 2, it will be seen that I have illustrated a fragment of a chain, indicated generally by the reference numeral 10. The links of said chain are hinged together by pintles 11; and certain of said pintles are extended, as illustrated in Fig. 2; beyond the lateral limits of the chain.

Two blocks 12 and 13 are secured to opposite sides of the chain, and it will be understood that pairs of such blocks are secured to the chain at suitably spaced points in its length. Preferably, the block 13 will be formed with an overhanging portion 14 adapted to be associated with a trackway for guiding the conveyor.

The block 12 is formed, in its edge adjacent the chain, with a pair of parallel sockets 15

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adapted to receive the projecting ends of two adjacent pintles 11. The said block is further formed with a bore 16 intersecting each of said sockets 15; and the pintle end is formed with a transverse bore 17 adapted to register with the socket 16, so that a cotter pin 18 may be passed through said bore 17, being received in the bore 16, whereby the block 12 is fixedly secured to the chain 10.

Similarly, the block 13 is formed with a pair of sockets 19 intersected by bores 20, said sockets 19 receiving the projecting ends of the pintles 11, which are formed with transverse bores 21 registering with the bores 20 to receive cotter pins 22.

The block 12 is further formed with an opening 23 substantially parallel with the bores 16; and the block 13 is formed with a similar opening 24 therethrough. A retainer socket 25 intersects the opening 23 in the block 12, and a similar socket 26 intersects the opening 24 in the block 13. One end of each socket 25 and 26 is reduced as at 27 and 28.

Reciprocally mounted in the socket 25 is a retainer plunger 29 having a reduced stem 30 projecting outside the block 12 and carrying at its end a removable abutment 31, between which and the block 12 is confined a coiled spring 32 sleeved on said stem. Obviously, this arrangement resiliently retains the main body portion of the plunger 29 seated in the socket 25, and the stem portion 30 withdrawn from said socket.

Similarly, a plunger 33 having a reduced stem 34 is received in the socket 26 and projects therefrom, a removable abutment 35 being mounted upon the projecting end of said stem and confining a coiled spring 36 sleeved on said stem 34.

A supporting element, which may take the form of a slat 37, carries a pair of parallel posts 38 and 40 spaced to register with the openings 23 and 24. In its outside, the post 38 is formed with a transverse notch 39; and the post 40 is formed with a similar notch 41. As the said posts are received in the openings 23 and 24, their notches 39 and 41 register, respectively, with the sockets 25 and 26. The plungers 29 and 33 are so proportioned and designed that, when they are depressed, against the tendencies of the springs 32 and 36, to the position of plunger 33 illustrated, the reduced stems 30 and 34 register with the openings 23 and 24, so that the plungers clear the posts 38 and 40 to permit entry of said posts in the openings 23 and 24, or removal thereof from said openings. When the posts 38 and 40 have been

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properly seated in the openings 23 and 24, the springs 32 and 36 return the plungers to the position of the plunger 29 illustrated, whereby body portions of said plungers enter the notches 39 and 41 to retain said posts firmly against removal from their openings.

Thus, the slat 37 is solidly held in position upon the chain 10; but is readily removable by the mere depression of the plungers 29 and 33.

In Fig. 3, I have shown a modified form of latch. As in the above described embodiment, the slat 37 carries one or more posts, only one of which, 40, is illustrated, said posts being notched, as at 41. A block 50, having an opening 51 like the opening 24, and a retainer socket 52, similar to the socket 26, is secured to the chain 10. Mounted for oscillation in said socket 52 is a retainer 53 having a reduced portion 54 projecting from the socket. Said portion 54 is straddled by the furcations of an arched spring leaf 55 which bears against the adjacent surface of the block 50 and resiliently resists axial movement of the retainer 53 in one direction.

Said retainer 53 is formed to provide a portion receivable in the post notch 41, and is further formed with a transverse notch 56 which, in one position of the retainer, registers with said post. When said notch 56 registers with the post 40, the post 40 is removable from the block 50; but when the retainer is in its illustrated position, it is engaged in the post notch 41 to hold said post firmly against removal.

In that surface of the block opposite the surface engaged by the spring 55 there is formed a seat 57; and the retainer 53 is provided with a radially projecting arm 58 carrying a button 59 engageable in said seat 57. The spring 55 resists such movement of the retainer as will permit removal of the button 59 from the seat 57. When said button is received in the seat 57, the body portion of the retainer is engaged in the post notch 41; and thereby accidental oscillation of the retainer 53 is prevented.

I claim as my invention:

1. For use with a conveyor including a continuous flexible element, a supporting member and means for removably attaching said member to said element comprising a post fixed to said member and formed with a notch therein, a block fixed to said element and formed with an opening therein adapted to receive said post, said block further being formed with a socket intersecting said opening, and a retainer shiftably received in said socket, said retainer having a portion entering said notch in said post to retain said block against separation from said post, at times, and having a cut-away portion registrable with said post, at other times, to permit separation of said block from said post.

2. For use with a conveyor including a continuous flexible element, a supporting member and means for removably attaching said member to said element comprising a post fixed to said member and formed with a notch therein, a block fixed to said element and formed with an opening therein adapted to receive said post, said block further being formed with a socket intersecting said opening, and a retainer reciprocally received in said socket, said retainer having a portion engageable in said notch in said post to retain said block against separation from said post, and further having a portion of reduced cross-section longitudinally spaced from said first-named portion, said last-named portion clearing said post, said retainer being shiftable axially be-

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tween a position in which its first-named portion registers with said post and a position in which its last-named portion registers with said post, and spring means resiliently holding said retainer in its first-named position.

3. For use with a conveyor including a continuous flexible element, a supporting member and means for removably attaching said member to said element comprising a post fixed to said member and formed with a notch therein, a block fixed to said element and formed with an opening therein adapted to receive said post, said block further being formed with a socket intersecting said opening, and a retainer oscillably received in said socket, said retainer being formed with a notch registrable with said post notch, and being oscillable between a position in which said notches are in registry and a position in which a portion of said retainer engages in said post notch.

4. For use with a conveyor including a continuous flexible element, a supporting member and means for removably attaching said member to said element comprising a post fixed to said member and formed with a notch therein, a block fixed to said element and formed with an opening therein adapted to receive said post, said block further being formed with a socket intersecting said opening, a retainer oscillably and reciprocally mounted in said socket and formed with a notch registrable with said post notch, means resiliently resisting reciprocation of said retainer, said retainer being oscillable between a position in which said notches are in registry and a position in which a portion of said retainer engages in said post notch, a seat formed on said block and a stop projecting in a direction paralleling the axis of oscillation of said retainer, on said retainer engaging in said seat when said retainer is in its last-named position and removable from said seat only upon reciprocatory movement of said retainer against the tendency of said resisting means.

5. The combination with a chain having hinge pintles, of a pair of blocks arranged on opposite sides of said chain, each block having a pair of sockets receiving the projecting ends of a pair of adjacent pintles, each block further being formed with bores perpendicularly intersecting its said sockets and said pintle ends being formed with transverse bores registrable with said block bores, pins traversing said bores to secure said blocks to said chain, an opening in each of said blocks parallel with said bores, a retainer socket intersecting said opening, a retainer shiftably mounted in each retainer socket, a slat, and two spaced parallel posts carried by said slat and receivable in said block openings, respectively, each post being formed with a notch receiving, at times, a portion of the retainer mounted in its associated block.

6. Latch means comprising a post formed with a transverse notch, a block formed with an opening for receiving said post, said block further being formed with a socket intersecting said opening, and a retainer received in said socket and having a portion enterable in said post notch and a cut-away portion clearing said post, said retainer being axially and oscillably shiftable in its socket between a position in which its first-named portion is engaged in said post notch and a position in which its cut-away portion registers with said post, resilient means resisting axial movement of said retainer in one direction, and catch means inhibiting oscillatory movement of

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said retainer from said first-named position until after said retainer has been axially shifted against the resistance of said resilient means.

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