

1,058,038.

J. I. COLLEY.
CHAIN.
APPLICATION FILED NOV. 29, 1912.

Patented Apr. 8, 1913.

2 SHEETS—SHEET 1.

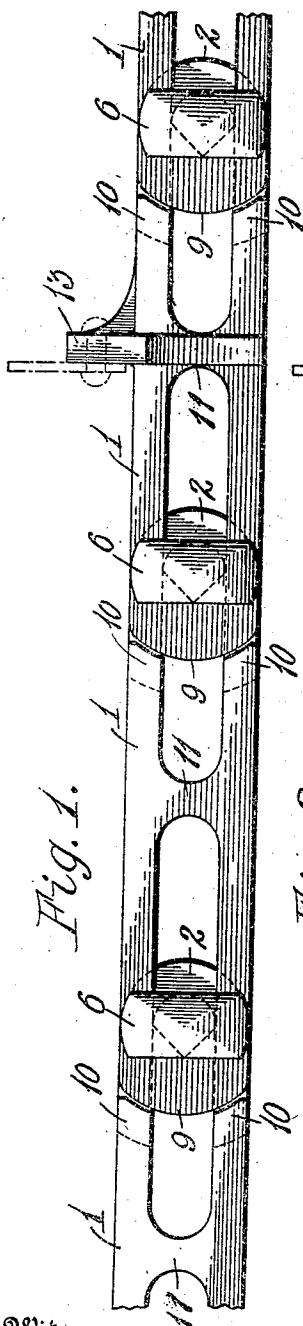


Fig. 1.

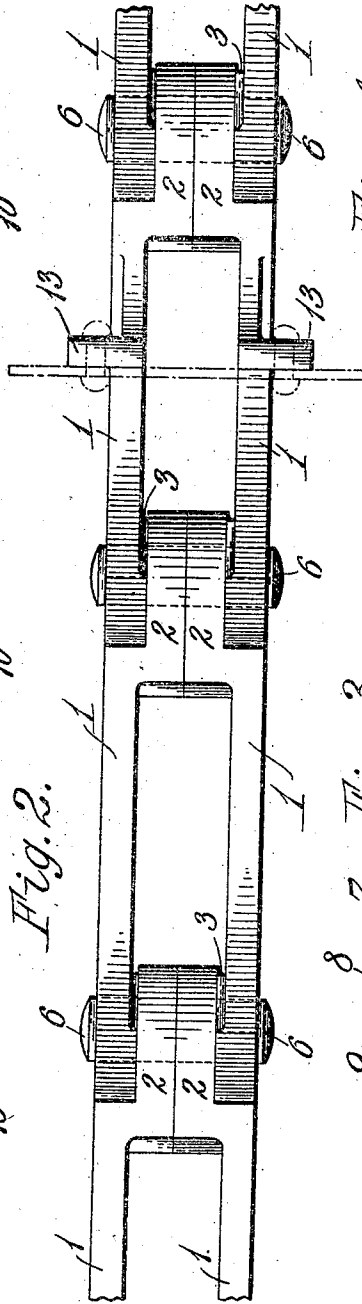


Fig. 2.

Fig. 4.

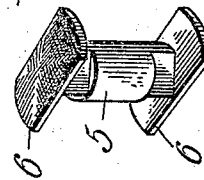
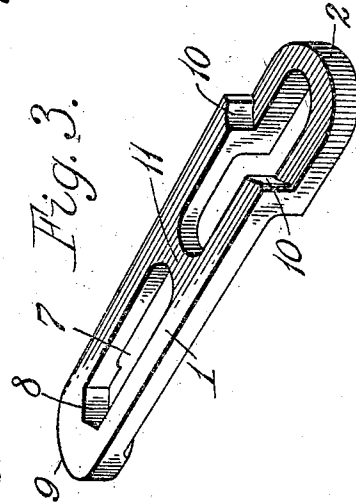


Fig. 3.



Witnesses

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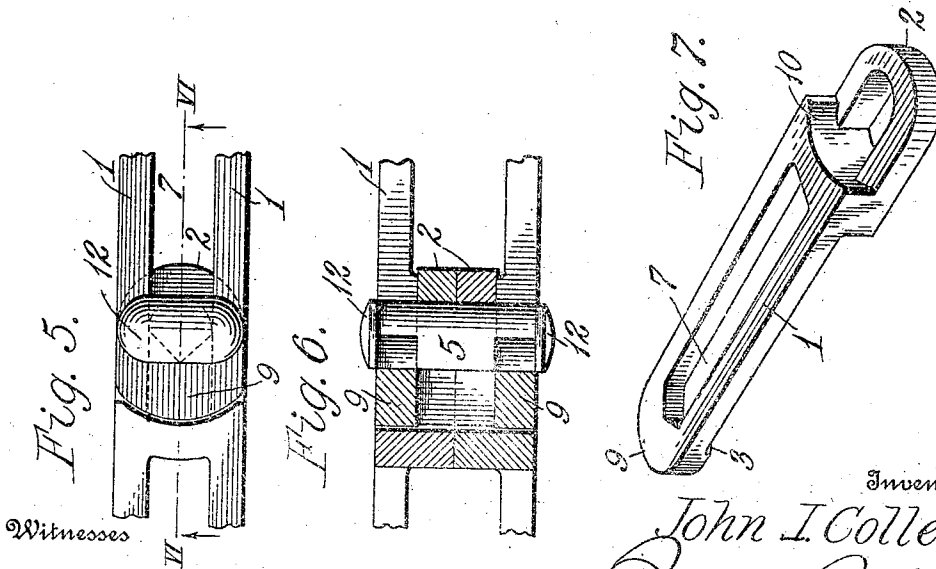
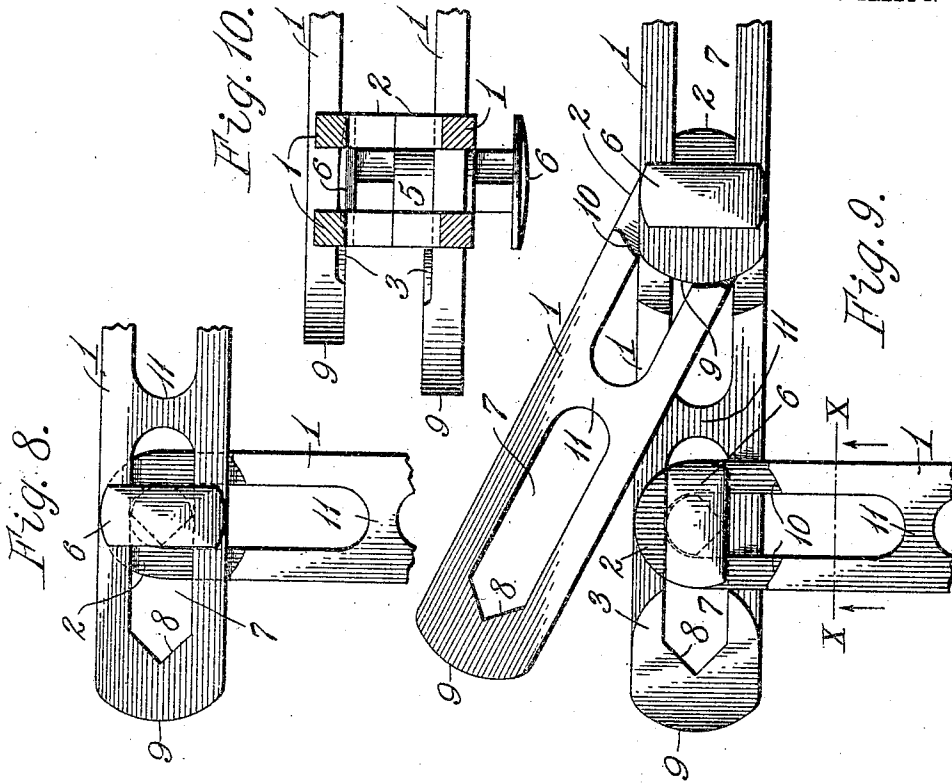
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN I. COLLEY, OF JACKSON, MICHIGAN, ASSIGNOR OF ONE-HALF TO AMSY L. WURSTER, OF PITTSBURGH, PENNSYLVANIA.

CHAIN.

1,058,038.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed November 29, 1912. Serial No. 733,992.

To all whom it may concern:

Be it known that I, JOHN I. COLLEY, a citizen of the United States of America, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Chains, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to conveyer and sprocket chains and to an arrangement thereof whereby the use of rivets or bolts is avoided and whereby the chain may be readily lengthened or shortened by the addition or removal of links without the use of tools.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the claims.

20 In the drawings, Figure 1 is a view in side elevation of a portion of a chain that embodies features of the invention; Fig. 2 is a plan view thereof; Fig. 3 is a view in detail of one section of a link; Fig. 4 is a view of a pivot member; Fig. 5 is a view in detail of a slight modification of a link and pivot member; Fig. 6 is a view in detail taken on line VI—VI of Fig. 5; Fig. 7 is a view in detail of a section of the modified form of link; Fig. 8 is a view illustrating the first step in one method of uncoupling the chain; Fig. 9 is a view showing the second step in uncoupling the chain; and Fig. 10 is a view in detail in section taken on or about line X—X of Fig. 9.

35 As herein shown in preferred form, a chain is made of links having complementary oppositely disposed sections 1 with end portions 2 whose inner faces bear against each other and are off-set inwardly from the main body of the links. At the other end each section has a bearing boss 3 on its inner face, the distance between the bosses 3 of each pair of sections being substantially equal to the distance between the outer faces of the off-set portions 2 when the latter are superposed, while the space between the main body of the sections is considerably wider than the interval between the proximate faces of the bosses 3.

50 The superposed sections 2 of one link are pivotally attached to the separated end portions of a companion link by a pivot member having a cylindrical body 5 and elongated heads 6 on each end. The heads when

properly turned can pass through longitudinal slots 7 in the section bodies. To prevent accidental displacement of the pivot members, the latter are formed near each head 6 to interlock with a V-shaped end face 8 of the slot 7 of each section, the head 6 being disposed transversely of the sections when the pivots are so interlocked. The outer end face 9 of each section that is adjacent the V-shaped slot face 8 is segmental, its center of curvature being substantially coincident with the axis of the pivot member when the latter is in locked position. Correspondingly curved shoulders 10 on the companion sections of the connected links are so disposed that they co-act with the faces 9 of the sections to prevent relative movement of the companion links lengthwise on each other, and are so arranged that the pivot members cannot be moved out of interlocking relation with the sections until the links are substantially at right angles as indicated in Figs. 8, 9 and 10.

The sections may be formed each with a cross member 11 that may be substantially central or may be as indicated in Figs. 5, 6 and 7 adjacent the bearing faces 10 of the section. In such instance the heads of the pivot members are preferably slightly modified as indicated at 12. The link sections may have lateral lugs 13 for the application of conveyer plates if desired.

When it is desired to remove a link from a chain, a pair of adjacent links are turned at substantially right angles to each other as indicated at Fig. 8 and one is moved on the other a sufficient distance to clear the boss 3 and remove the pivot member from interlocking relation with the annular end faces 8. The pivot member is then turned until its head 6 is in position to pass through the slot 7 of the companion link section, the latter being swung clear as indicated in Fig. 9 after the pin has passed through the slot.

100 As a result of this construction a conveyer or sprocket chain is obtained that is free from rivets, that cannot come apart when in ordinary service and that is readily lengthened or shortened by the addition or removal of links without the necessity of the use of tools. Furthermore the exterior of the chain presents a substantially unbroken and regular contour, the only projections being the rounded heads of the pins and such

conveyer lugs as may be added. In the modification the cross lug forms a substantial bearing for the use of the chain over a sprocket wheel, the cross ribs of the superposed sections presenting a substantially unbroken shoulder for contact with a sprocket tooth.

Obviously, changes in the details of construction may be made without departing from the spirit of my invention and I do not care to limit myself to any particular form or arrangement shown.

What I claim is:—

1. A chain comprising links each formed of oppositely disposed complementary sections with laterally inset end portions in contact and separated bearing bosses on the other end portions, the distance between the inner faces of the bodies of the sections being greater than the distance between the proximate faces of the bosses, and pivot members having cylindrical bodies passing through longitudinal slots in the link sections and heads on the ends that pass through said slots when turned into register therewith, the bodies of the pivot members being adapted to lock with the end faces of the slots of the sections when the pivot member heads are transverse to the sections, and the outer end faces of the separated end portions of the link sections having centers of curvatures co-incident with the axes of the adjacent pivot members when the latter are interlocked with said

sections and bearing against correspondingly concave shoulders on the embraced sections.

2. A chain comprising links each formed of oppositely disposed complementary sections with inset end portions in contact and bearing bosses on the other separated end portions, the distance between the bodies of the sections being greater than the distance between the faces of the boss, the pivot members having cylindrical bodies that pass through longitudinal slots in the sections and heads on the ends that are adapted to pass through said slots when turned into register therewith, the bodies of the pivot members having faces adjacent their heads whereby the pivots interlock against rotation with the end faces of the slots of the sections when the pivot member heads are transverse to the sections, and the outer end faces of the separated end portions of the link sections being adapted to bear against correspondingly concave shoulders on the embraced section, the center of curvature of the end faces and concave shoulders being substantially coincident with the axes of the adjacent pivot members when the latter are interlocked with the sections.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN I. COLLEY.

Witnesses:

AMSY L. WURSTER,
OTTO F. BARTHEL.