J. N. RYLEN.

CHAIN.

APPLICATION FILED MAY 5, 1915.

1,181,170. Patented May 2, 1916.

Fig. 1.

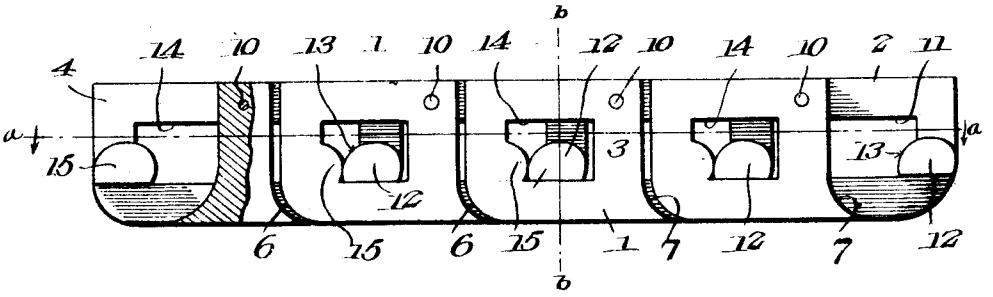



Fig. 2.

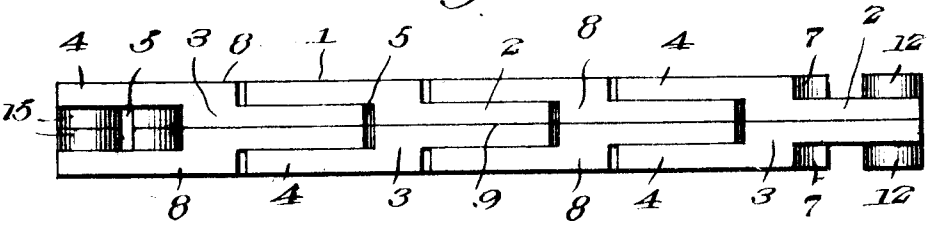



Fig. 3.

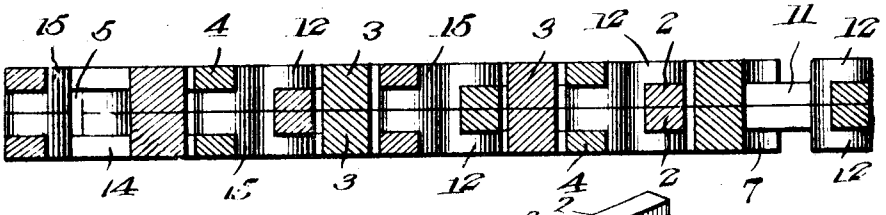
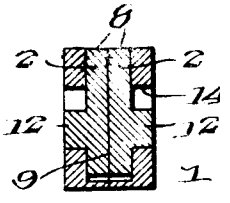



Fig. 4.



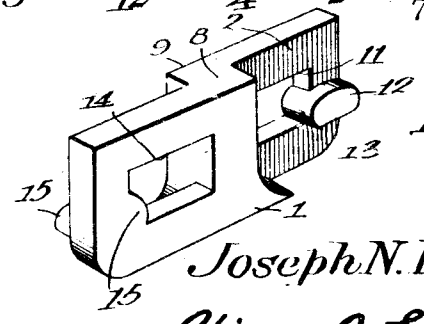




Fig. 5.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## CHAIN.

1,181,170. Specification of Letters Patent. Patented May 2, 1916.

Application filed May 5, 1915. Serial No. 26,050.

*To all whom it may concern:*

Be it known that I, JOSEPH N. RYLEN, a citizen of the United States of America, residing at Turlock, in the county of Stanislaus and State of California, have invented new and useful Improvements in Chains, of which the following is a specification.

This invention is an improved chain the links of which are arranged in partial overlapping relation and provided at their meeting ends with co-engaging abutments which effect rolling pivotal connection between the links so that the chain is rendered flexible to reduce and minimize friction and wear between the links, the object of the invention being to provide an improved chain which is cheap and simple in construction, is extremely strong and flexible, is durable and the links of which may be readily assembled and disassembled.

The invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an elevation of several links and a chain constructed in accordance with my invention. Fig. 2 is a plan of the same. Fig. 3 is a sectional view of the same on the plane indicated by the line *a*—*a* of Fig. 1. Fig. 4 is a transverse sectional view of the same on the plane indicated by the line *b*—*b* of Fig. 1. Fig. 5 is a detail perspective view of one member of one of the links.

In the embodiment of the invention here shown each link 1 of my improved chain is provided with a narrowed end 2 and a broadened end 3 such broadened end providing a pair of walls 4 which are spaced apart as at 5, the said spaces 5, or slots between the walls 4 being adapted to receive the narrowed end 2 of the next adjacent link, so that the links of the chain are arranged in partial overlapping relation. The walls 4 have rounded corners 6 at their outer ends and present flanges 7 at their inner ends which are shaped to conform to the opposing ends of the walls 4 of the next adjacent link.

Each link is here shown as comprising a pair of members 8, separable from the link 9 which extends longitudinally through the center of the narrowed end 2 and the said members are secured together as by means of pins or rivets 10.

The narrowed end 2 of each link has a longitudinal slot 11 and is formed at the front end of said slot with a pair of abutments 12 which project from opposite sides of said narrowed end 2 and present rounded ends 13 opposite and spaced from the shoulder 7, said rounded ends being here shown as substantially quarter circular.

Each wall 4 of each link is provided with a slot 14, said slots serving to receive the abutments 12 of the next adjacent link and each of said slots 14 has at its rear side an abutment 15 to bear against one of the abutments 12 of th next adjacent link, so that rolling pivotal connection is formed by the abutments 12, 15 between the links, which enables the links to dispose themselves either in line with or at an angle to each other. This renders the chain flexible and also reduces friction between the links to a minimum, so that the chain is rendered much more durable and is also rendered exceedingly strong.

While I have herein shown and described a preferred form of my invention I will have it understood that changes may be made in the form, proportion and construction of the several parts without departing from the spirit of my invention and within the scope of the appended claims.

Having thus described my invention, I claim:—

1. A chain comprising links arranged in partial overlapping relation and each provided with slots and with abutments at the ends of the slots, the abutments of each link extending into the slots of the next adjacent link and said abutments presenting rounded and opposing convex surfaces which permit rolling and pivotal connection within the links.

2. A chain comprising links each having a narrowed end provided with a slot and with abutments at the front end of said slot, and also having a widened opposite end forming spaced walls, said walls having slots and abutments at the outer ends of said slots, the narrowed end of each link being arranged in the space between the spaced walls of the next adjacent link and the abutments of said narrowed end being arranged in the slots of the spaced walls of the next adjacent link, the abutments of the several links comprising opposing rounded convex surfaces forming anti-friction rolling and pivotal connection between the links.

3. A chain comprising links each having

a narrowed end provided with a slot, and with abutments at the front end of each slot and also having a widened opposite end forming spaced walls, said walls having slots and abutments at the outer ends of said slots, the narrowed end of each link being arranged in the space between the spaced walls of the next adjacent link and the abutment at each narrowed end being arranged in the slots of the spaced walls of the next adjacent links, the abutment of the several links comprising oppositely rounded convex surfaces forming anti-friction rolling and pivotal connection between the links, each of said links comprising a pair of longitudinal separable members and the two members of each link being secured together.

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

JOSEPH N. RYLEN.

Witnesses:

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EVA LARSON.