

J. C. HOWE.

CHAIN.

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1,059,297.

Patented Apr. 15, 1913.

Fig. 1.

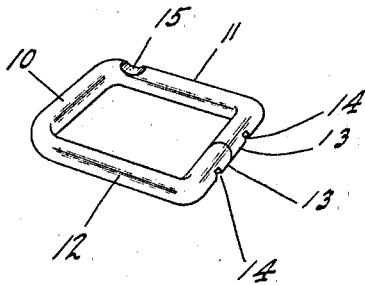


Fig. 2.

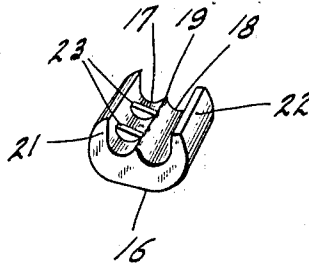


Fig. 3.

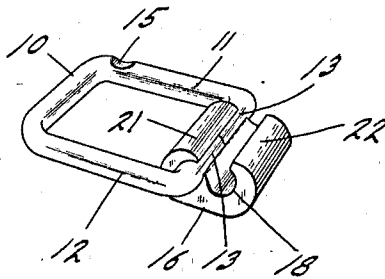
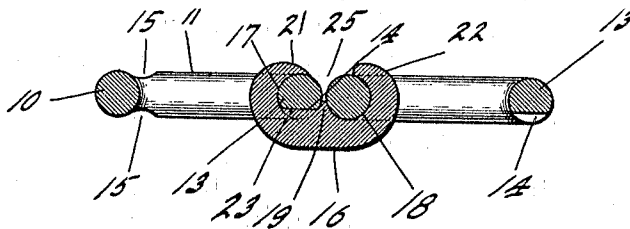


Fig. 4.



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CHAIN.

1,059,297.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN C. HOWE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Chain, of which the following is a specification.

A common form of link belt, many thousand feet of which have been marketed, is composed of a plurality of malleable iron links each comprising a pair of side bars, a cylindrical cross bar at one end, and a hook at the opposite end having a transverse cylindrical seat into which the cylindrical end bar of the adjacent link may be passed, one of the side bars having a notch or notches formed therein to permit insertion into the cylindrical hook. Such chains have been objectionable because of an apparently unavoidable lack of uniformity of the links owing to the fact that different molders wrap their patterns to different extents thus causing a difference in the dimensions of the resulting castings. Such links are also objectionable because of unavoidable flaws in the castings which weaken the links. On the other hand a belt of this general type is exceedingly useful and may be cheaply manufactured. In a modified type of link belt, links of the same general form have been produced by stamping from sheet metal the end bars being rolled one into a partial cylindrical form and the other into a hook but sheet metal has a distinct grain and when the links are made from stampings of sheet, the points of conjunction of the cross bars with the side bars will, either in the direction of length of the chain or transversely thereto, have a very short grain which thus produces four weak points in each link.

The object of my present invention is, therefore, to produce a belt link of the general type already described which however, while capable of being cheaply manufactured, will, nevertheless, be free from weak points and will be of such character that it may be very cheaply manufactured.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective view of the wire portion of my improved link; Fig. 2 a perspective of the coupling forging or hook in its initial condition; Fig. 3 a perspective view of the completed link, and Fig. 4 a

transverse section of two links on a larger scale.

My improved link consists of a main wire portion formed by bending a piece of wire of desired diameter so as to form a cylindrical cross bar 10, side bars 11, 12, and adjacent tips 13, 13 which are brought together and into alinement so as to produce a cross bar parallel with cross bar 10. Each of the tips 13 is provided with groove 14. Formed in each side bar 11 closely adjacent the cross bar 10 is a notch 15 which is like similar notches formed in the commercial Ewart chains and the purpose of which will appear. Grooves 14 and notch 15 may be readily formed by pressure without the removal of any material. These wire links may be readily automatically formed by ordinary wire working machinery and consequently may be made very uniform and, because the grain of the wire runs continuously around the corners of junction between the cross bars and side bars, there will be no points of weakness due to short grain. In order to provide each of these wire links with a coupling head, I form a forging 16 which is provided with a pair of transverse semicylindrical pockets 17 and 18 separated by a ridge 19. The pocket 17 is flanked at its outside with a lip 21 and the pocket 18 is flanked by a similar lip 22. In the bottom of the pocket 17 I form arc-shaped ribs which are adapted to enter the grooves 14. With the two parts of each link initially in condition shown in Figs. 1 and 2, I seat the tips 13 in pocket 17, the grooves 14 receiving the ribs 23, thus preventing the wire link from turning in the coupling and the tips 13 from being separated. The two parts when so assembled are then put in a press and lip 21 bent down tightly upon the tips 13 as clearly shown in Fig. 4 so as to thus firmly unite the coupling 16 with the wire link. At the same time lip 22 is curled down so as to increase the arc of the pocket 18 and produce a space 25 between the tip of the lip 22 and the ridge 19, which will be less than the diameter of the cross bar 10 of the wire link but slightly greater than the thickness of the side bar 11 at the notches 15. With a link so formed the cross bar 10 of one link may be readily slipped endwise into pocket 18 of the coupling of another link in the manner quite well known in connection with the standard Ewart chain.

It will be seen from the above that a link is produced which is very strong and yet of such character that it may be manufactured very cheaply and with a great degree of accuracy.

I claim as my invention:

1. A belt link comprising a wire bent to form a pair of side bars and a pair of end or cross bars, and a coupling member having a pair of transverse pockets each with an outward flanking lip, one of said lips being tightly clamped upon the cross bar of the wire, and the other curled to form a receiving pocket for the other cross bar of an adjacent link, the first mentioned pocket and associated cross bar having interengaging portions to prevent relative turning.

2. A belt link comprising a wire bent to form a cross bar, a pair of side bars, and a second cross bar, the said second cross bar being produced by the inwardly turned tips of the wire and having a recess formed therein, and a coupling member comprising a pair of transverse cross-bar receiving

pockets, one of said pockets having a projection adapted to project into the recess in the tip-formed cross bar and one of the pocket flanking lips of said coupling member being clamped upon the said tip-formed cross bar.

3. A belt link comprising a wire bent to form a loop having substantially straight cross bars, and a coupling member having a pair of transverse pockets each with an outward flanking lip, one of the cross bars of the loop being clamped in one of said pockets by the adjacent flanking lip and said cross bar and pocket being so shaped as to prevent relative rotation of the loop and coupling member on the cross bar.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this twelfth day of November, A. D. one thousand nine hundred and ten.

JOHN C. HOWE. [L. s.]

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."