W. F. BROWN.

DRIVE CHAIN.

APPLICATION FILED MAY 24, 1907.

902,205. Patented Oct. 27, 1908.

Fig. 1.

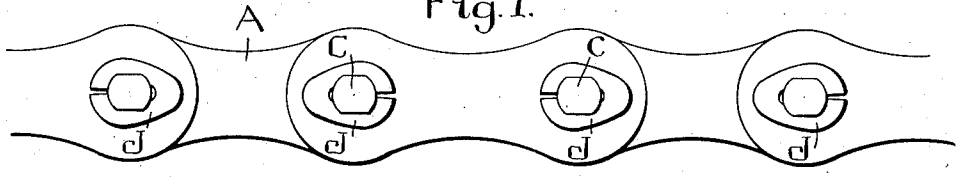


Fig. 2.

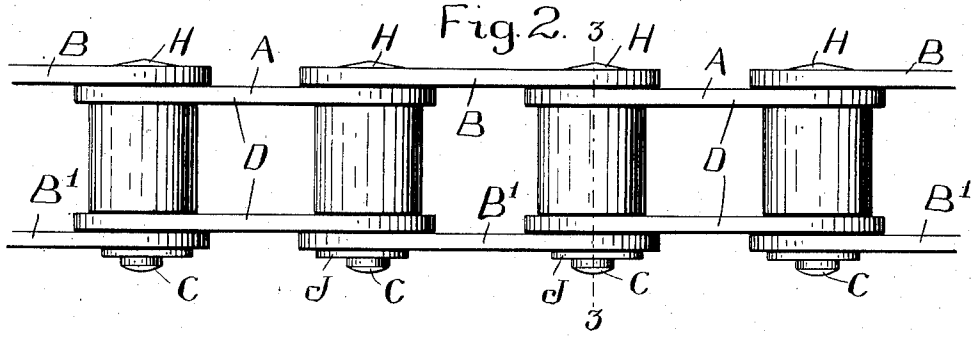


Fig. 3.

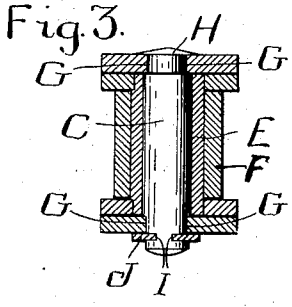


Fig. 4.

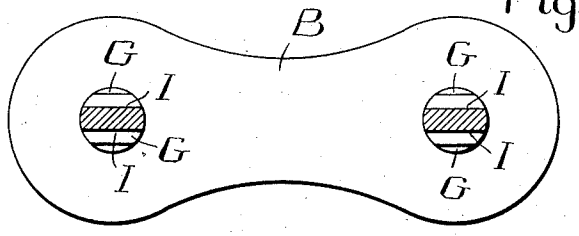


Fig. 5.

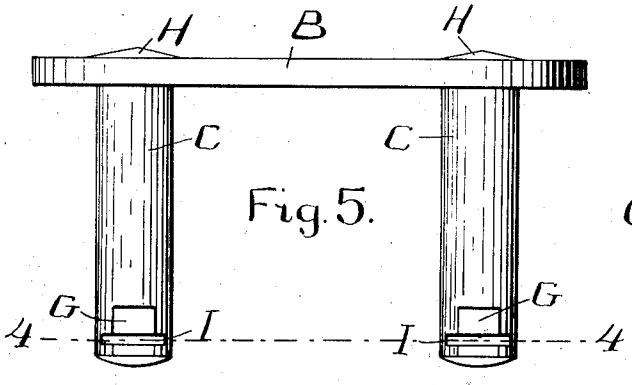


Fig. 7.

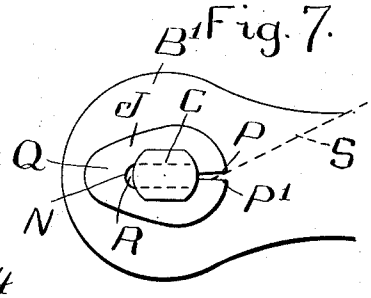
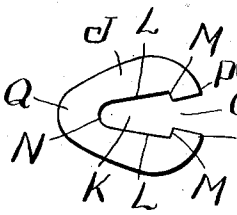


Fig. 6.



Witnesses

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DRIVE-CHAIN.

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To all whom it may concern:

Be it known that I, WALTER F. BROWN, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in a Drive-Chain, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a side view of a portion of a chain embodying my invention. Fig. 2 is a top or plan view of the same. Fig. 3 is a sectional view through one of the connecting joints, the section being taken on the plane of the broken line 3—3, Fig. 2. Fig. 4 is a side view, on a larger scale, of one of the links with the pivotal pins shown in section on the plane of the broken line 4—4, Fig. 5. Fig. 5 is a detached view of one of the side plates with a pair of pivotal pins attached thereto. Fig. 6 represents one of the locking plates, and Fig. 7 represents one of the locking plates closed upon the grooved end of one of the pivotal pins.

Similar reference letters and figures refer to similar parts in the different views.

My present invention relates to that class of drive chains in which one or more of the links are detachably connected, thereby allowing the chain to be separated.

In the embodiment of my invention I prefer to make all of the outer side links of the chain detachable, so that the chain may be separated at any one of its links. I accomplish this result by making all the pivotal pins removable end wise with means for locking the pins in position to prevent their accidental displacement.

My present invention relates particularly to the means for locking the pivotal pins in position and it consists in the employment of inelastic, bendable metallic washers engaging grooves or necks formed upon the pivotal pins outside the side links as hereinafter described and pointed out in the annexed claims.

The drive chain illustrated in the accompanying drawings to which my invention is applied comprises a series of links united by pivotal pins and comprising a series of center links A, A, pivotally connected by outer side plates B, B^1, and pivotal pins C.

The central links A in the present instance are each formed by a pair of plates D united by a tubular rivet E which is preferably provided with a roller F. The pivotal pins C are slabbed on diametrically opposite sides at G where they pass through the outer side plates B, B^1, in order to prevent the pins from turning in these plates. In assembling the chain a pair of pivotal pins are inserted in one of the outer side plates B, as shown in Fig. 6, and their ends riveted at H. The pins are then passed through the opposing ends of adjacent center links A, A, with the ends of the pins extending through the outer side plate B^1, said side plates B and B^1 having segmental holes corresponding to the slabbed portion of the pivotal pins. When thus assembled the ends of the pivotal pins project a short distance through the outer side plate B^1, and are provided on diametrically opposite sides with grooves I to receive the locking plates J by which the pins are held from being withdrawn.

The locking plates J, one of which is shown detached in Fig. 6, are oval in outline and are cut from bendable inelastic sheet metal with a central opening K having opposite straight sides L, L, connected by a curved end N and provided with curved shoulders M, M, with an opening O between the ends P, P^1, which are preferably beveled. The locking plate J, in the form shown at Fig. 6, is applied to the grooved end of the pivotal pin and the ends P, P^1, compressed, bringing the locking plate into the position shown in Fig. 7 with the straight sides L, L, in contact with the bottom of the grooves I, I, and the shoulders M, M, in contact with the curved sides of the pin C, and securely embracing the grooved end of the pivotal pin C. When thus applied to the pivotal pin the shoulders M, M, of the locking plate closely fit the curvature of the pivotal pin, and the straight sides L, L, which are brought parallel, are of the same length as the bottom of the grooves I, thereby holding the locking plate from longitudinal or rotative movement on the grooved end of the pin. The locking plate is readily removed by prying its open ends P, P^1, apart, the distortion of the plate occurring at its opposite end which is preferably made wider, as shown at Q, Fig. 6, in order to equalize the resistance to the bending strains. I also preferably make the curved end N of the opening of less radius than the curvature of the pin in order to leave a slight open space R to facilitate the insertion and compression of the locking plate and enable it to be brought into close contact with the pin. The

removal of the locking plate by prying its open ends apart is readily effected by the insertion of a sharp instrument, such as a screw driver, into the triangular opening, in the position shown by the broken line S, Fig. 7, and prying over the end P as a fulcrum and against the end P^1. By this prying action the pressure upon the end P holds the locking plate from turning upon the pin while the ends are being separated.

In the accompanying drawings I have shown the pivotal pins C as headed or riveted on one end and thereby permanently attached to one of the outer side plates, but removable from the other as I consider this construction preferable. Both ends of the pivotal pins may be grooved and supplied with the locking plates J.

I claim,

1. A detachable drive chain, comprising central links, a pivotal pin in each end of said central links, side plates uniting said pivotal pins, said pivotal pins provided with straight transverse grooves, and an elastic bendable locking plate for each of said pins, provided with a central slot open at one end with the sides of said slot parallel and fitting said transverse grooves.

2. A detachable drive chain, comprising central links, a pivotal pin in each end of said central links, side plates uniting said pivotal pins, said pivotal pins provided with straight transverse grooves, and an elastic bendable locking plate for each of said pins, provided with a central slot open at one end with the sides of said slot parallel and fitting said transverse grooves, said plate having means for preventing its longitudinal movement.

3. A detachable drive chain, comprising central links, a pivotal pin in each end of said central links, side plates uniting said pivotal pins, said pivotal pins provided with straight transverse grooves on opposite sides of said pins, and an elastic bendable locking plate provided with a central slot open at one end and having straight parallel sides fitting the transverse grooves in each of said pins, the sides of said slot provided with shoulders to prevent longitudinal movement of said locking plate in said slot.

4. A detachable drive chain, comprising central links, a pivotal pin in each end of said central links, side plates uniting said pivotal pins and held from turning thereon, said pivotal pins provided outside said side links with transverse grooves, and locking means for each of said pins, comprising an elastic bendable sheet metal plate having a central slot and an opening at one end communicating with said central slot, and with the sides of said slot inclosed in said transverse grooves.

5. As an article of manufacture, a locking plate for a detachable drive chain, consisting of a flat inelastic plate having a central opening or slot with divergent sides, said slot being open at one end, said plate being compressible against the pivotal pins of a drive chain.

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Witnesses:
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