(Model.)

B. F. ORTON.

DRIVE CHAIN.

No. 387,006. Patented July 31, 1888.

Fig. 1.

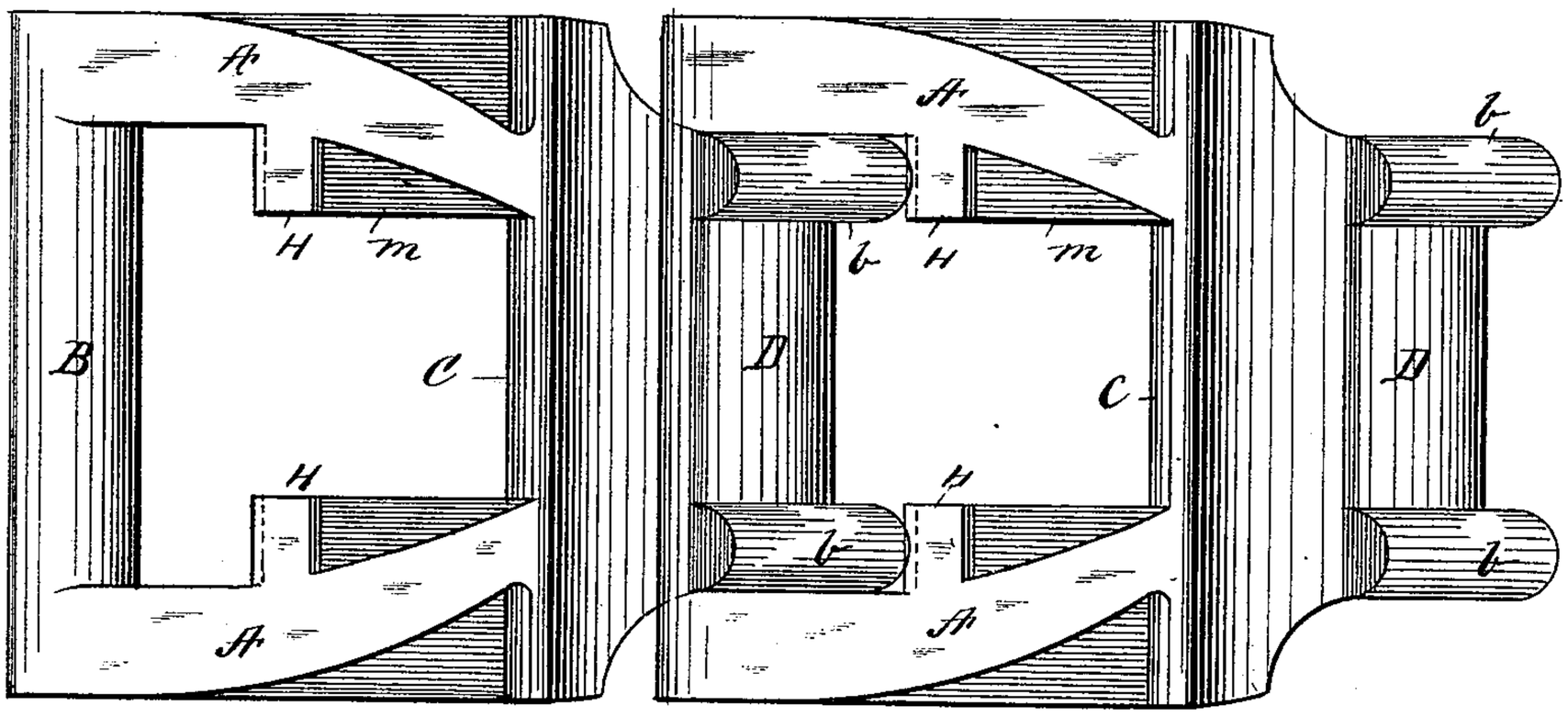


Fig. 2.

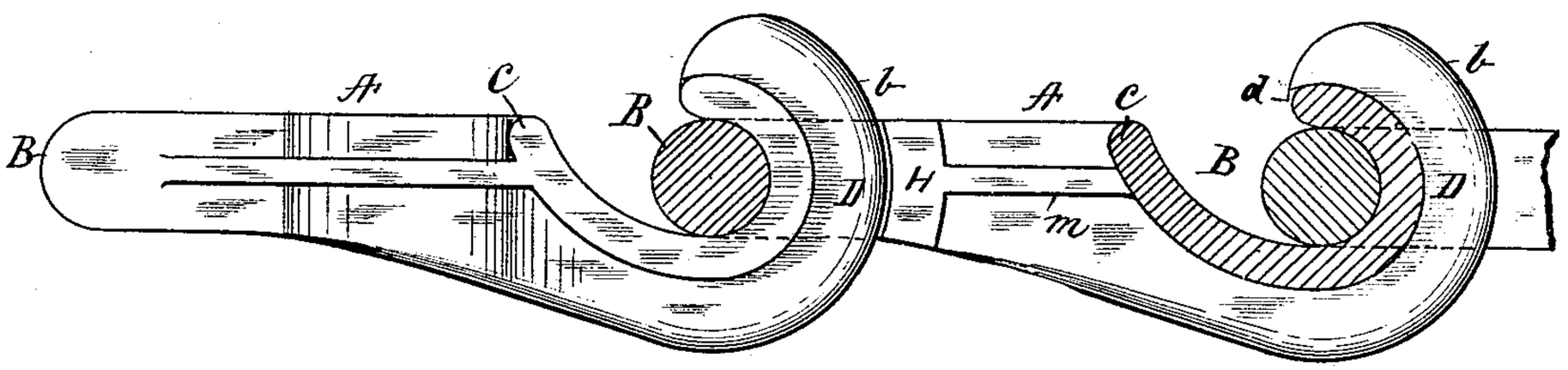
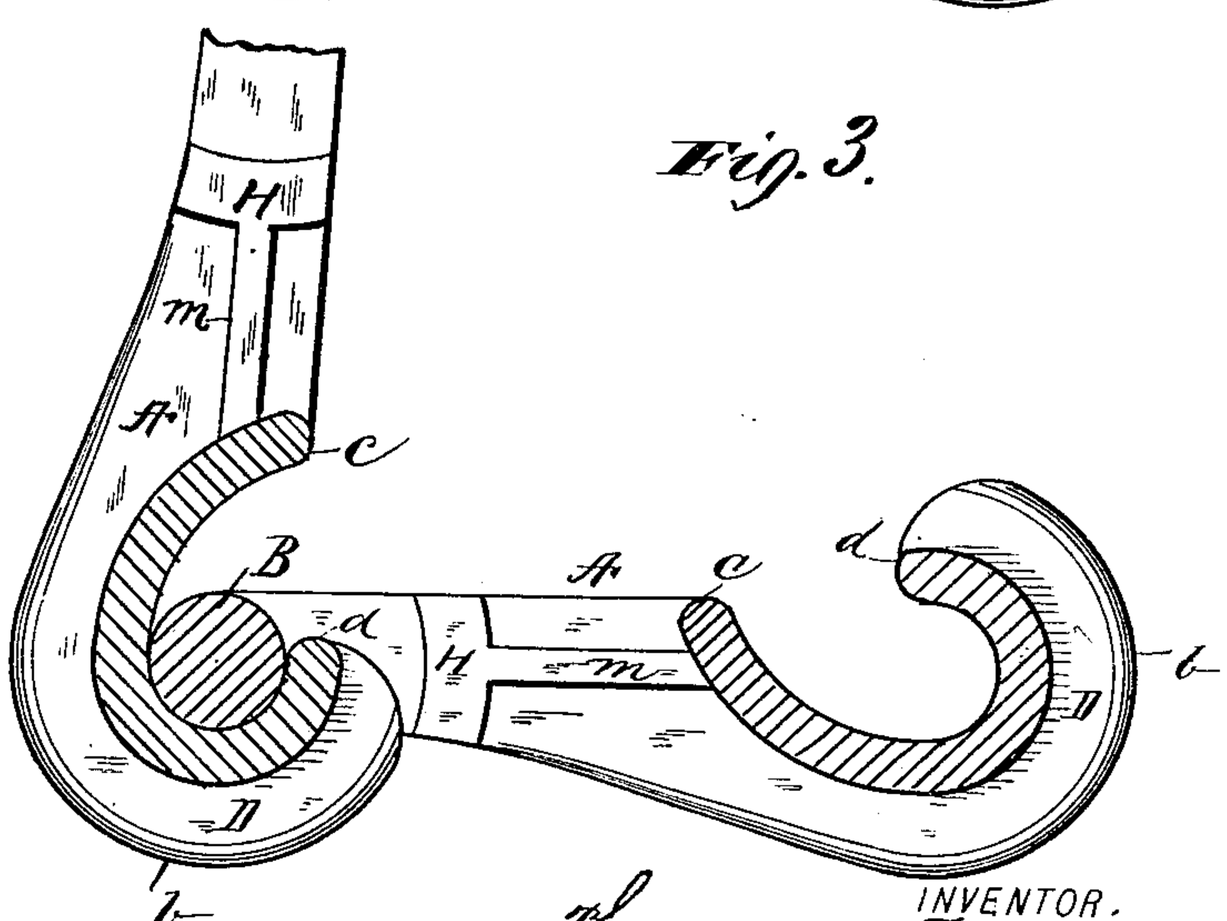


Fig. 3.



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DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 387,006, dated July 31, 1888.

Application filed April 16, 1887. Renewed June 30, 1888. Serial No. 278,709. (Model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. ORTON, a citizen of the United States, and a resident of East Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improved Drive-Chains, of which the following is a specification.

My invention relates to drive-chains or chain belts of that type where the chain or belt is made of duplicate metallic links so constructed and put together that they are held securely in place in all working positions of the chain, but which may be individually detached by moving the link into some unusual position with relation to the chain. The approved form of these links and the one which has best stood the test of use consists of two side bars, two end bars, and a coupling-hook centrally located upon one of the end bars and adapted to receive the end bar of a corresponding link. These links have been heretofore made detachable by providing one or more of these parts with a nick, depression, or other irregularity of contour, so that the links may slide into and out of operative connection when placed in some unusual position with relation to each other. This construction has been found to be objectionable for the reason that the nick or depression determines a point of weakness which eventually destroys the link and temporarily interrupts the operation of the machine, while any projecting knob or other elevation, whether on the side bars, ends bars, or coupling hook, presents difficulties in casting, and eventually wears away, impairing to that extent the efficiency of the chain.

The object of my invention is to furnish a detachable link of the approved form as described and adapted for use upon the existing machines, which shall be simple in construction and strong and durable in use.

To this end my invention consists in constructing a link with plain side bars, plain end bars, and a plain coupling-hook—that is to say, all these parts being of full size and strength unweakened by any nick, depression, or irregularity of contour, and the side bars being provided with retaining-lugs which engage the outer periphery of the coupling-hook of a corresponding link in all positions but one, in which position the links may be readily put together or detached.

My invention further consists in certain details of construction, which will be hereinafter described in connection with the accompanying drawings, and more particularly pointed out in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of two links, embodying my invention, placed together in their working positions. Fig. 2 is a side view, partly in section, of Fig. 1. Fig. 3 illustrates the manner of attaching and detaching the links to and from each other.

Referring to the drawings, A A are two plain side bars of the link—that is to say, they are of the full size and the usual contour and unweakened by any depression or nick.

B is a plain end bar of full size and strength and of the usual shape. From the opposite end bar, C, projects the coupling-hook D, which is in the form of a lip or projection of metal extending from the end bar downwardly, forwardly, and upwardly, so as to leave a half-round cavity adapted to receive the end bar of the corresponding link. It is of the usual form—that is to say, it is of the full size and strength and presents no irregularity of contour. It is centrally located upon the end bar C and is of sufficient width to substantially fill the space between the two side bars of the corresponding link, thereby preventing undue lateral movement of the links in the chain. The outer periphery of the ribs *b* are formed on the circumference of a circle, as indicated in Fig. 2, for a purpose which will presently appear.

The opening between the end bar C and the tip of the coupling-hook *d* is sufficiently wide to admit the end bar B of a corresponding link.

On the side bars, A, are located the retaining-lugs H, which are adapted to engage the outer periphery of the webs *b* of the coupling-hook. These lugs are situated some distance from the junction of the side bars and the end bars equal to the thickness of the ribs *b*, so that the entire mass of the coupling-hook throughout its width may enter the space between the end bar D and the retaining-lugs H.

To increase the retaining-surface of the lugs, their working-faces are carried out at right angles from the side bars, as indicated in Fig. 1, extending over the full width of the ribs *b*

of the coupling-hook. The working-faces of these lugs are curved, as indicated in Fig. 2, to conform with the outer periphery of the ribs which, as before described, are formed upon the circumference of a circle, whereby the face of the retaining-lug is in operative relation with the coupling hook in all the working positions of the chain. These retaining lugs are braced against the endwise pressure of the joining-links due to the lateral swaying of the chain by a strengthening-web of metal, indicated at *m*, formed integral with the link and extending from the back face of the lug, as shown, to the body of the link.

The operation of the devices now described is as follows: To join the links together, the corresponding—that is to say, the dissimilar—ends of two links are brought together at right angles, as will be readily understood by reference to Fig. 3, with the plain end bar of one link in proximity to the coupling-hook of an adjoining link. In this position the end bar may be readily passed into the mouth of the coupling-hook, which, as described, is of sufficient size to admit the same. Upon then straightening out the links the coupling-hook passes into the space between the end bar and the retaining-lugs, as indicated in Fig. 2. In this position the parts are securely held in place without any danger of accidental displacement.

Any particular link may be readily detached from the chain by reversing the operation just described.

What I claim as my invention is—

1. A detachable chain-link composed of side bars, end bars, and coupling-hook, all of substantially uniform size, the coupling-hook being centrally located upon one of the end bars and the side bars being provided with retaining-lugs located at a distance from the junction of the side bars and end bars equal to the thickness of the ribs on the coupling-hook.

2. A detachable chain-link composed of side bars, end bars, and coupling-hook, all of substantially uniform size, the coupling-hook being centrally located upon one of the end bars and having the outer periphery of its ribs formed on the circumference of a circle, the side bars being provided with retaining-lugs whose faces are correspondingly rounded.

3. A detachable chain-link composed of side bars, end bars, and coupling-hook, all of substantially uniform size, the coupling-hook being centrally located upon one of the end bars, the side bars being provided with retaining-lugs located at some distance from the junction of the side bars and end bars, and whose working-faces are perpendicular to said bars.

4. A detachable chain-link composed of side bars, end bars, and coupling-hook, all of substantially uniform size, the side bars being provided with retaining-lugs adapted to engage the outer periphery of the coupling-hook of a corresponding link, and internal strengthening-webs for said retaining-lugs, as and for the purpose described.

Signed at Massillon, in the county of Stark and State of Ohio, this 12th day of April, A. D. 1887.

BENJAMIN F. ORTON.

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