(Model.)

J. M. DODGE.

Drive Chain.

No. 240,817. **Patented May 3, 1881.**

Fig. 1.

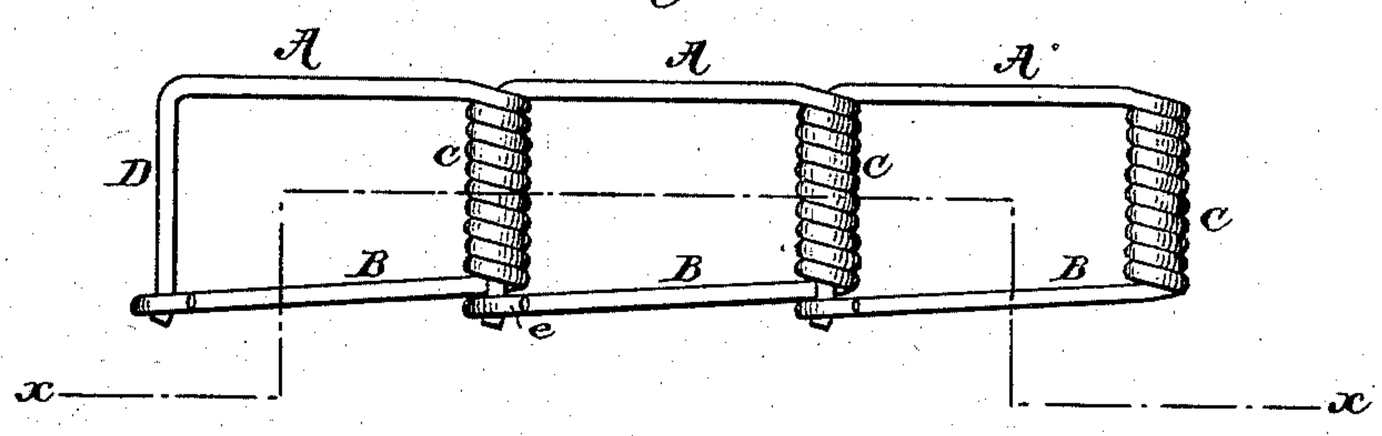


Fig. 2.

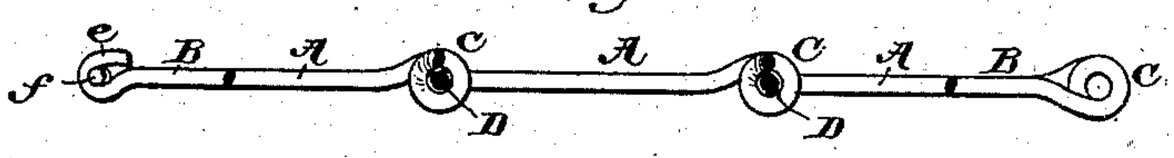


Fig. 3.

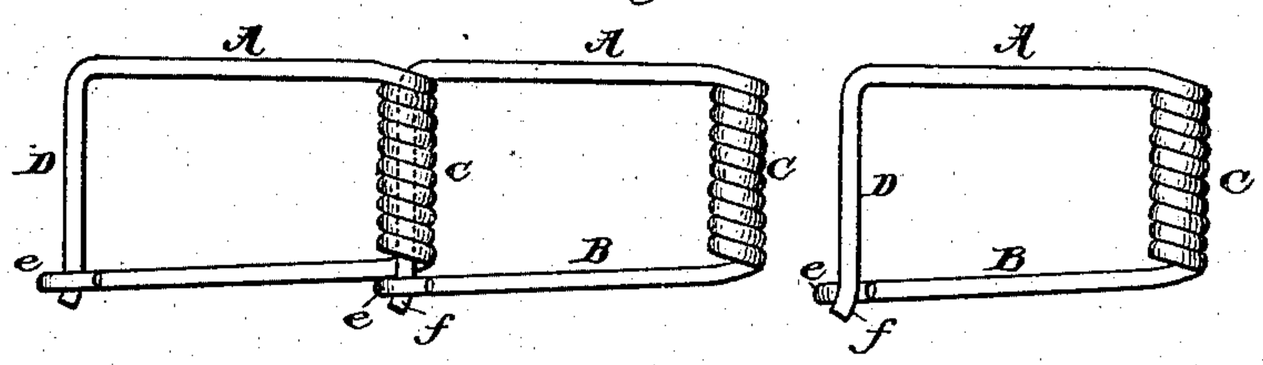


Fig. 4

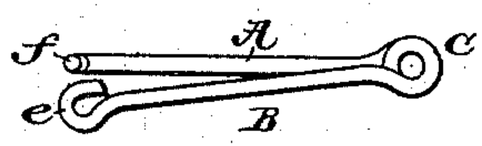
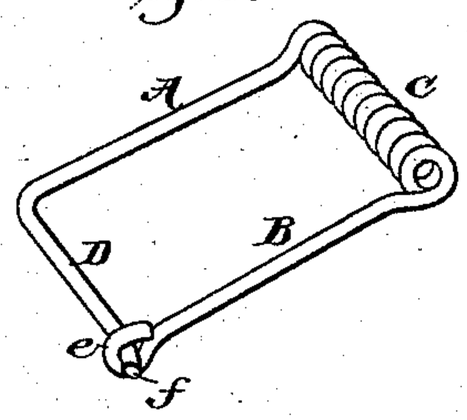


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES M. DODGE, OF CHICAGO, ILLINOIS.

DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 240,817, dated May 3, 1881.

Application filed February 17, 1881. (Model.)

To all whom it may concern:

Be it known that I, JAMES MAPES DODGE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Drive-Chains; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My invention relates to drive-chains made of wire, and has for its main objects to provide for use a chain of this class which, while it shall be simple of construction, shall be stronger than usual, shall possess a capacity to wear longer at the articulations, and shall present more enduring and better bearing-surfaces for the sprockets of the wheels (on which such chains are used) to act upon.

To these main ends and objects my invention consists in a chain-link composed of wire, and having one tubular end bar formed by spirally coiling the wire, and adapted to accommodate the solid end bar of a similar link, all as will be hereinafter more fully explained.

To enable those skilled in the art to make and use my invention, I will proceed to more fully describe it, referring by letters to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a plan view of my improved chain; Fig. 2, a vertical section of the same at the line *x x* of Fig. 1; Fig. 3, another plan view, but showing one of the links uncoupled; Fig. 4, an edge view of the uncoupled or detached link seen at Fig. 3, and Fig. 5 a detail perspective view of a single link.

In the several figures the same part will be found designated by the same letter of reference.

Each link of the chain is composed of a single piece of wire by bending it into the proper shape, and, by preference, is made so that by simply springing apart the connected ends of the piece of wire forming the link the latter may be detached from the next adjacent link, thus rendering the chain what is known as a "detachable" drive-chain. The contour of each link is shown as being, by preference, about rectangular, the two side bars, A and B, and the two end bars, C and D, being, respectively, parallel; but the contour of the link can, of course, be varied from the shape shown.

The end bar, C, it will be observed, is composed of a closely-wound coil of wire, which constitutes a hollow cylinder, the bore of which is of a size just sufficient to easily accommodate a piece of the wire used to make the link.

The end bar, D, is composed, as seen, of a single straight thickness of the wire, as is also each of the side bars, A and B, the free end of bar D and the similar end of bar B being united or coupled together, as shown, by means of an eye, *e*, formed on the latter, into which the slightly-crooked end *f* of the former is inserted.

By reference particularly to Fig. 5 of the drawings the conformation and structure of the link, as well as the method of connecting the ends of the piece of wire composing it, will be fully seen.

In a chain composed of such links as shown the solid end bars, D, are accommodated within the hollow end bars, C, so as to produce perfectly articulate joints or connections between the links.

Supposing a series of my improved wire links to have been properly made and put together in the manner shown in the drawings, it is only necessary, in order to uncouple any two of the parts, to spring out of its eye *e* the crooked end *f* of an end bar, D, of a link, thus separating the ends of the piece of wire composing the link, as shown at Fig. 4 and at the right-hand link of Fig. 3. The end bar, D, it will be seen, can then be easily slipped endwise out of the hollow or tubular end bar, C, with which it was combined. It will, however, be understood that the feature of detachability is not essential to the subject-matter of invention I seek to patent, it being immaterial to my invention whether the chain be made detachable as to its links, or non-detachable.

Of course, made as shown, the draft-strain on the chain tends to keep the ends of the piece of wire forming each link in an interlocked condition, and it will be seen that not only is the chain (be it made with these ends either permanently united or detachably connected) simple of structure and economic of

manufacture, but, for a wire chain, is exceedingly strong and durable, the draft-strain having no tendency to bend any portion of any link out of shape, and operating merely as a tensile strain on the straight side bars, A and B.

The tubular end bars, C, encircling the solid end bars, D, and being of a length about equal to the spaces between the side bars, operate, as plainly shown, to prevent any undue lateral play of the parts at the vicinity of the joint, while at the same time these tubular end bars not only afford a long and perfect bearing for the solid bars D to work in, (thus giving a perfect and durable hinge-joint,) but their exterior surfaces afford bearing and wearing surfaces for the action of the sprockets of greater extent and durability than those afforded by any wire link that I know of heretofore made.

Having so fully explained my new chain that any one skilled can make and use the same, what I claim as new, and desire to secure by Letters Patent, is—

A chain-link made of a single piece of wire and having a tubular end bar, substantially such as and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal this 13th day of November, 1880.

JAMES M. DODGE. [L. S.]

In presence of—
C. R. MATSON,
WILLIAM D. EWART.