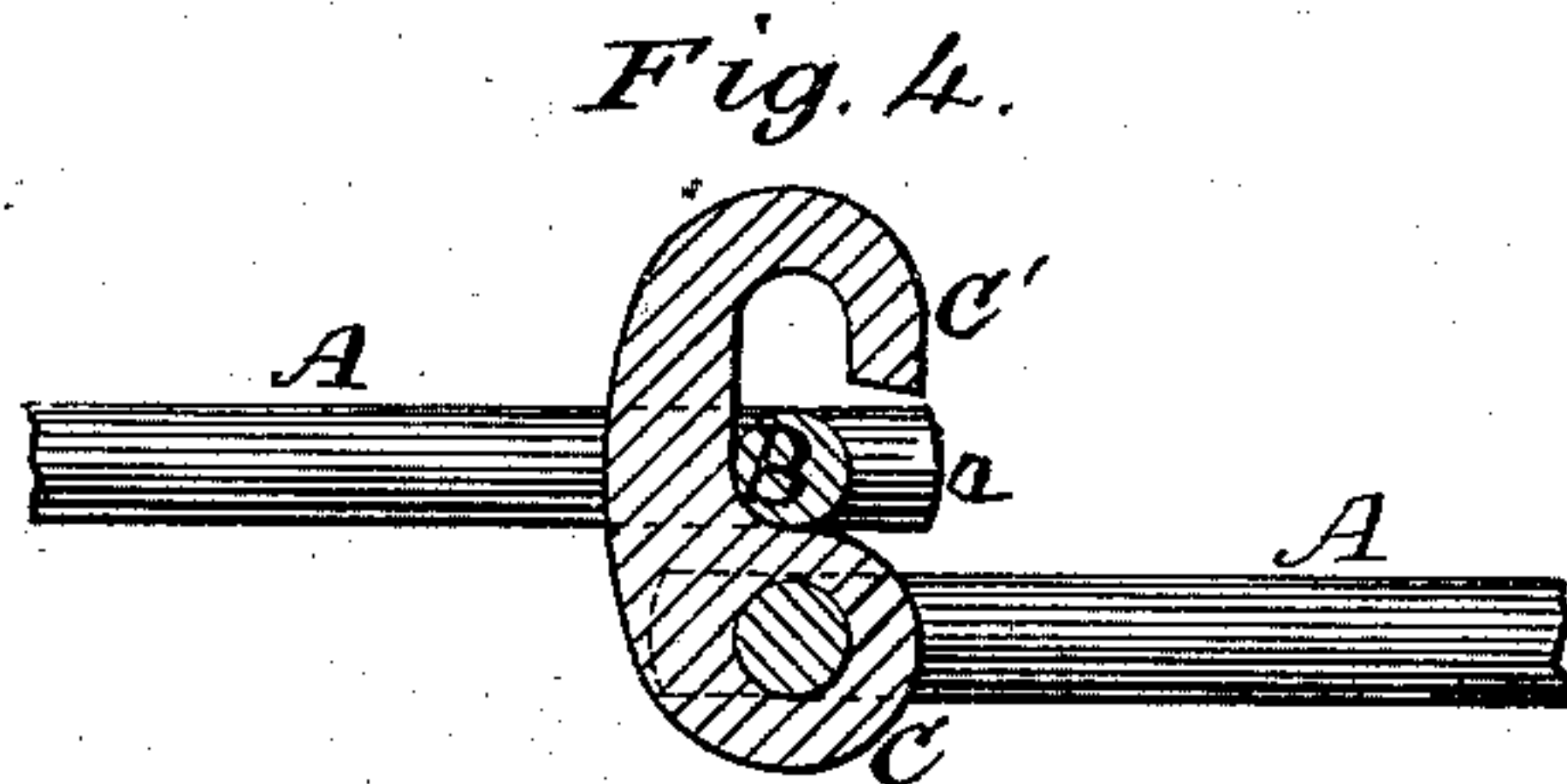
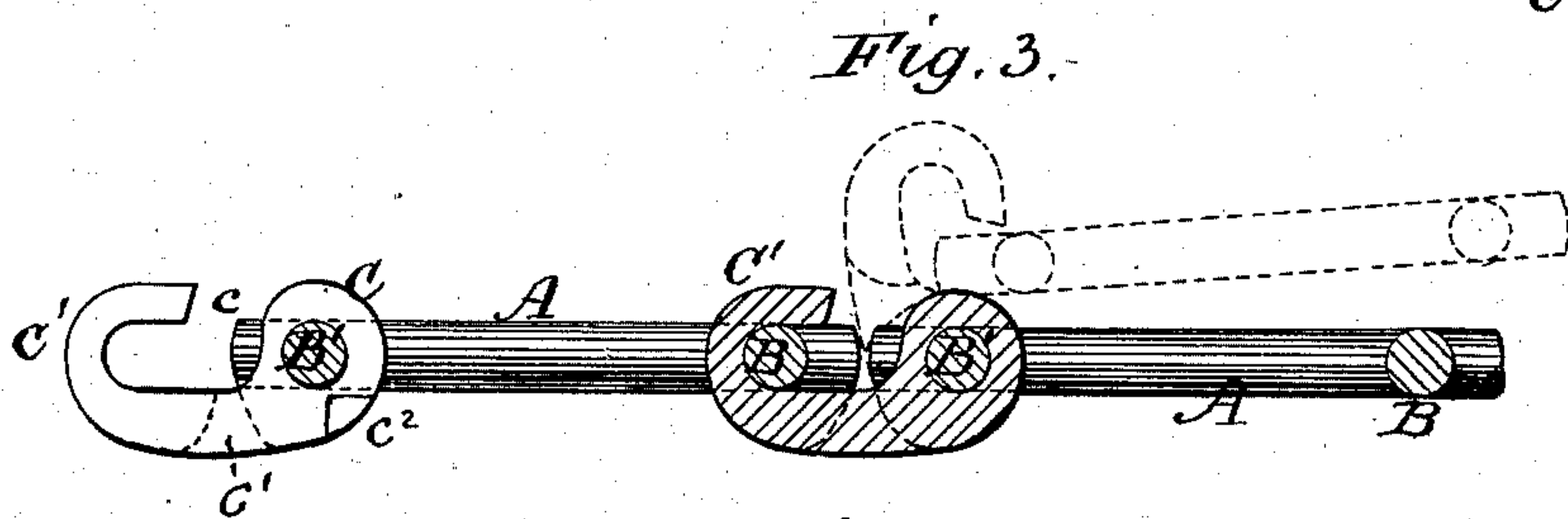
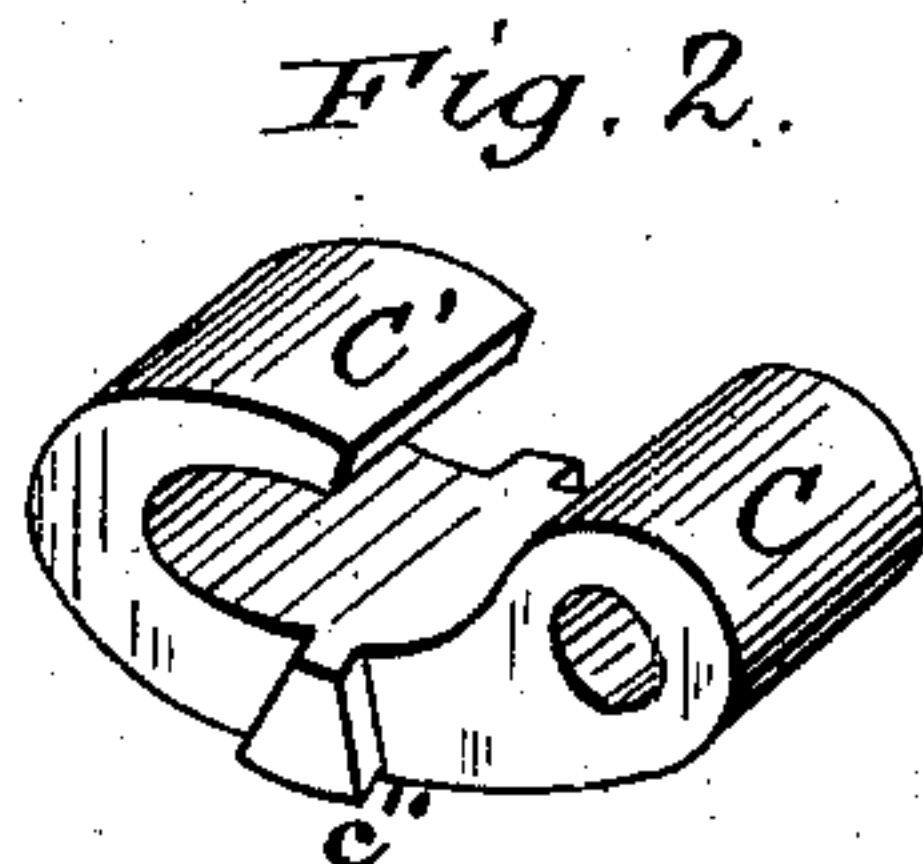
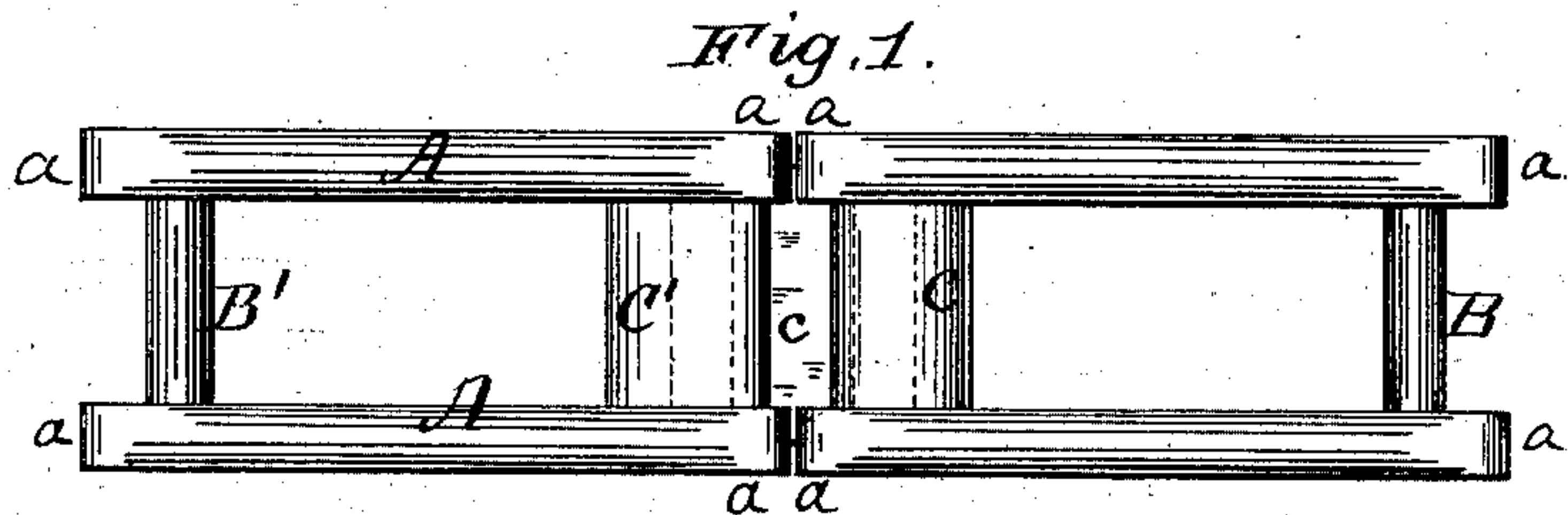


W. H. DICKEY.
CHAIN.

No. 282,177.

Patented July 31, 1883.



Witnesses
W. B. Mason
J. S. Barker.

Inventor
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by W. H. Doubleday
att'y

UNITED STATES PATENT OFFICE.

WILLIAM H. DICKEY, OF JACKSON, MICHIGAN, ASSIGNOR OF ONE-HALF TO
GEORGE S. BENNETT, OF SAME PLACE.

CHAIN.

SPECIFICATION forming part of Letters Patent No. 282,177, dated July 31, 1883.

Application filed December 19, 1879.

To all whom it may concern:

Be it known that I, WILLIAM H. DICKEY, of Jackson, in the county of Jackson and State of Michigan, have invented certain new and
5 useful Improvements in Chains; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertain to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a plan view of my chain having the links connected ready for use. Fig. 2 is a
15 detached view of the hook, the link having been removed therefrom. Fig. 3 is a longitudinal section of the chain with the links and hooks straightened out. Fig. 4 is a longitudinal section, showing the hook turned in-
20 to the proper position for connecting or disconnecting the links.

Referring to the figures, A A are the side bars of the link, and B B' the end bars thereof, each link being constructed alike at both ends,
25 the ends of the side bars projecting beyond the end bars, as at *a*, for a purpose which will be explained.

The hook C C' is formed by molding in the sand a properly-formed pattern provided with
30 a core-print adapted to receive one of the links, which is substantially rectangular in plan view, the links being so placed in the sand that one of the end bars, B', shall serve as a core, around which the end C of the hook-shank is cast, said
35 end bar serving as a pivot, about which the hook can vibrate freely, for a purpose which will be explained. The end C' of the hook terminates at such distance from the adjacent portion of the part C as to leave a throat, *c*,
40 equal in width to the diameter of the end bar of an adjacent link, in order that the parts of the chain may be conveniently connected with and disconnected from each other. Under
45 some circumstances I cast the hook with a triangular projection or stop, *c'*, upon one or both sides, for a purpose which will be explained.

It will be readily understood that a chain-link having a centrally-open rectangular por-
50 tion, consisting of two side bars and two end

bars arranged at substantially right angles to each other, and having a hook cast upon one end bar, possesses many advantages over any other construction of drive-chain link having a pivoted hook, from the fact that
55 while the hook may be freely moved from a position in line with the side bars, as in Figs. 1, 3, 5, to a position at right angles thereto, as shown in Fig. 4, for the purpose of uncoupling the links, yet there is no danger of
60 spreading the ends of the side bars at that end of the link to which the hook is applied, and all weakness consequent upon a liability to spread is therefore avoided.

Referring to the construction shown in Fig. 65 4, which is the same as that shown in Fig. 3, except that the hook of Fig. 4 is formed without the triangular stop *c'*, it will be readily understood that when the chain is straightened out the ends of the side bars abut against
70 each other, so as to prevent end-play, the interior length of the hook being such that when the ends of the side bars are in close contact the inner face of the end bar, B, is in close con-
75 tact with the adjacent portion of the inner surface of the hook, thus preventing end motion of the links relative to each other, the ends *a a* of the side bars being formed upon circles the centers of which are the centers of
80 the end bars, to insure a proper engagement of these ends in the various positions in which the links will be placed during the ordinary work which will be required of them.

When it is desired to disconnect the links from each other, the hooks may be turned into
85 the position shown in Fig. 4, when the end bar, B, can be moved out through the throat *c* by thrusting the ends of the links past each other, as will be readily understood; and it will be seen that this can be accomplished
90 with but very little slackening or shortening of the chain, while at the same time, on account of the flexibility of the hooks, there is very little danger of accidental detaching of the
95 links.

It will be seen that notwithstanding the facility with which the links may be coupled and uncoupled, the end bars may be made round and of the same size in cross-section as
100 the side bars. Thus there are no weak spots

in the chain, and from the fact of the end bars being round in cross-section they will fit accurately the semicircular inner surface of the hook with which they engage when in operation, whereby the durability of the chain is much improved. So, also, the fact that the hook is cast upon the end bar, and consequently fits it accurately throughout its entire bearing-surface, increases the durability of the chain at that point.

When, however, it is desired to so construct the chain as to render it impossible to disconnect the links, except by doubling them together, thus requiring much more slack to permit this operation, I propose to provide the hooks with the angular stops c' , which will necessitate placing two adjacent links in the position indicated in dotted lines, Fig. 3, it being apparent from an examination of the drawings that this is the only position in which they can be disconnected.

If, from any cause, it be found desirable to prevent the hooks from swinging downward relative to the links beyond the point shown in Fig. 3, this may be accomplished by casting the hook with a shoulder, as at c'' , Fig. 3, upon one or both sides of said hook, which will engage with the lower face of the side bar for that purpose.

I am aware that chains have been constructed of rectangular links open in their centers and connected by means of intermediate hook-shaped links formed of flat strips of metal bent into proper shape, having their ends clasped upon the links by bending after the links have been inserted in the hooks; but these chains are not well adapted to run over sprocket-wheels because of the differences in their lengths, which grow out of bending the hooks, and also because it is generally necessary to open the hooks to disconnect them;

and if the hooks are left open, they are very liable to become accidentally detached; whereas in my construction each link and its pivoted hook is of the same length as every other link in the chain, and the hooks must be shifted into an arbitrarily-selected position for the purpose of disconnecting them.

Having described my invention, what I claim is—

1. A chain-link having two end bars and two side bars arranged at right angles to each other, the side bars projecting beyond the end bars, and having also the vibrating hook at one end of the link, adapted to retain the end bar of an adjacent link when the parts of the chain are in line, or thereabout, with each other, and to permit the links to be disengaged when the hook portion is turned into a position at right angles, or thereabout, to the side bars, substantially as set forth.

2. The chain-link having two side bars and two end bars arranged at right angles to each other, and having also a hook cast upon one of the end bars, so as to vibrate thereon, and adapted to retain an end bar of an adjacent link when the hook and the side bars are in line, or thereabout, with each other, and to permit an adjacent link to be disengaged when the hook portion is turned into a position at right angles, or thereabout, to the side bar, substantially as set forth.

3. A chain-link having the hook $C C'$, pivoted to the end bar, and provided with stops c'' , substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

WILLIAM H. DICKEY.

Witnesses:

JAS. F. YEATS,

GEORGE DANIELS.