(Model.) 2 Sheets—Sheet 1.

C. W. LEVALLEY.

DRIVING AND CARRYING CHAIN.

No. 246,021. Patented Aug. 23, 1881.

Fig. 5

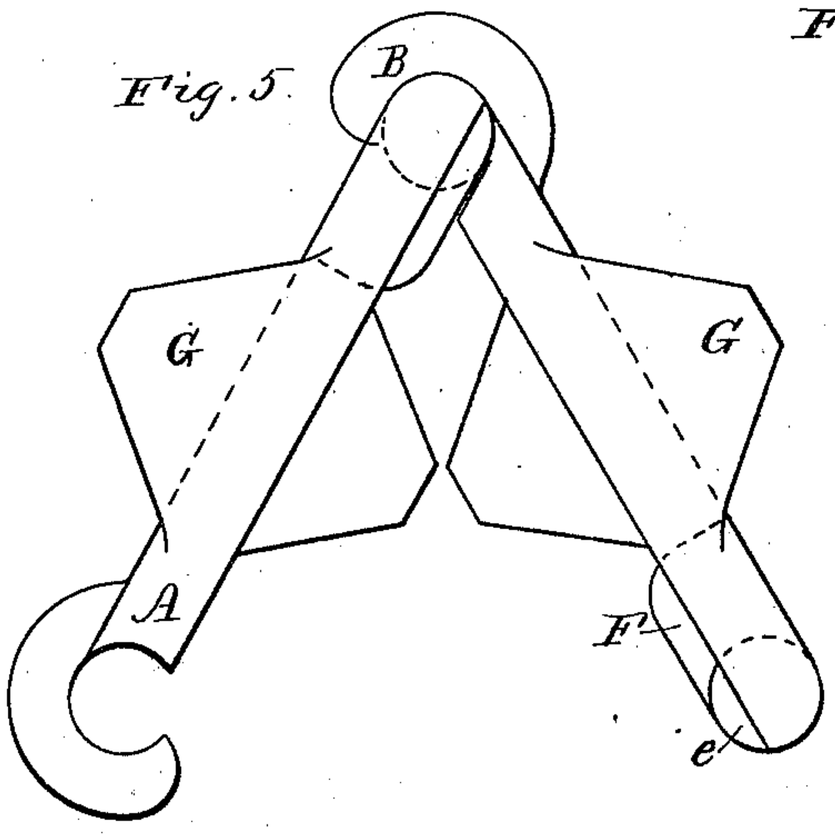


Fig. 2

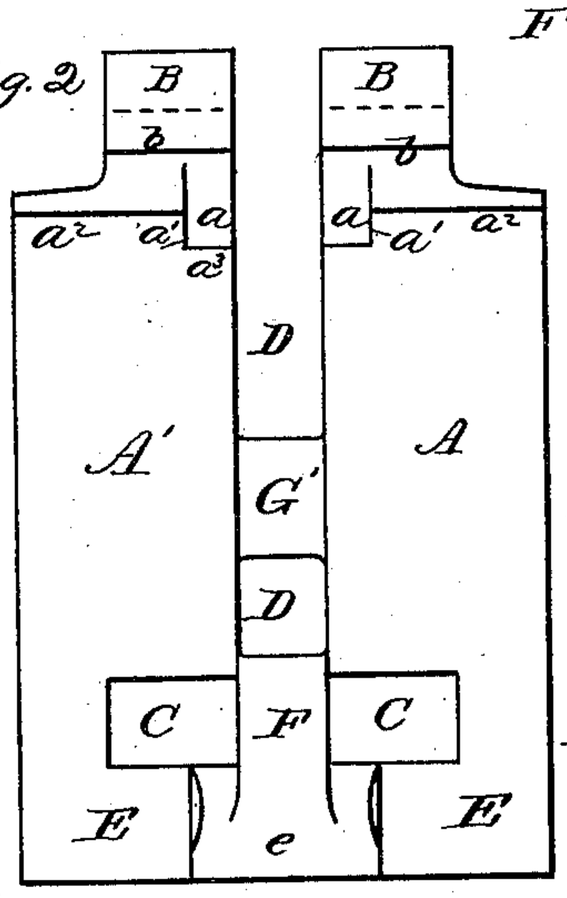


Fig. 1

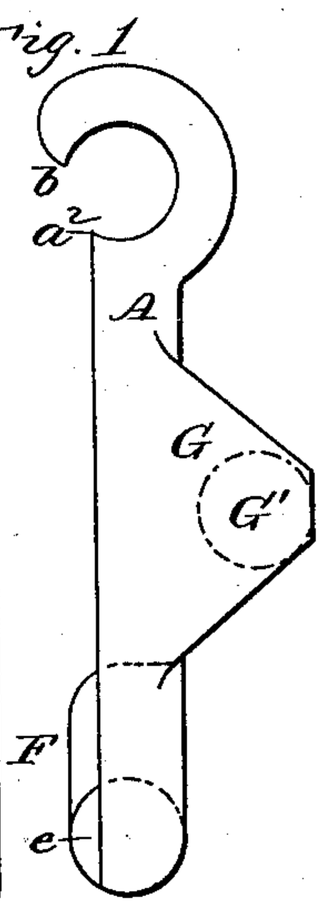


Fig. 3.

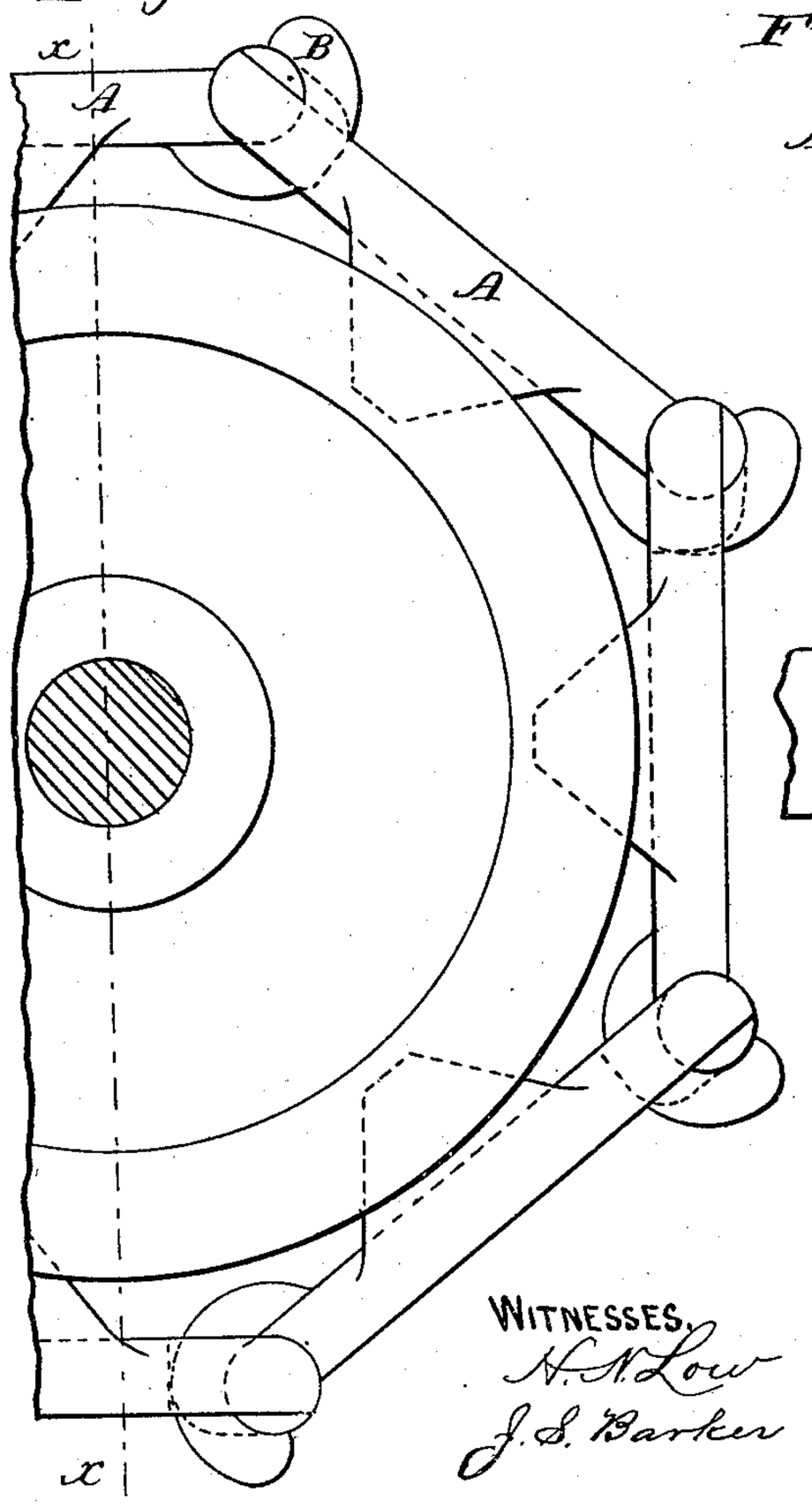
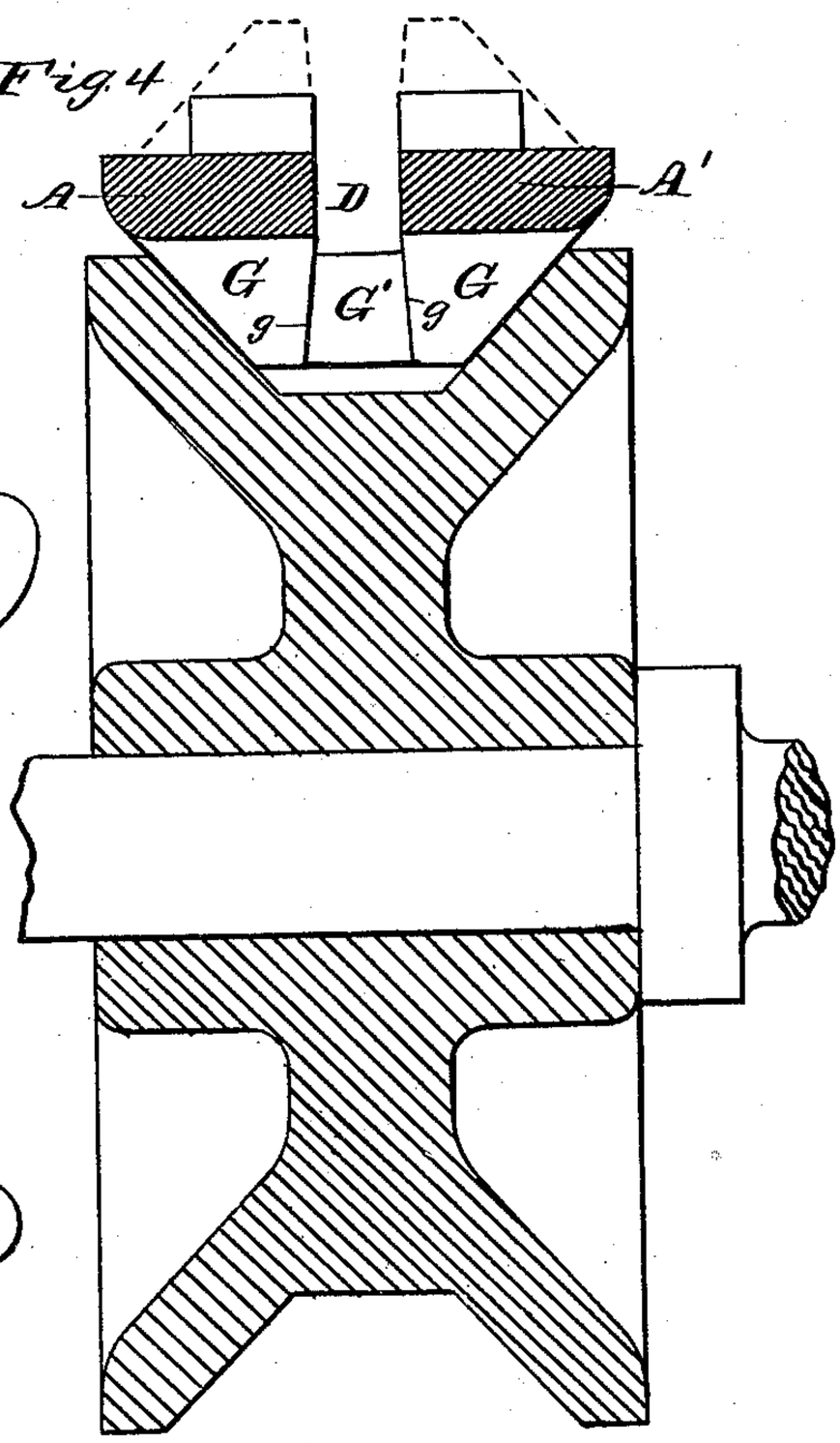


Fig. 4



WITNESSES,
N. S. Low
J. S. Barker

INVENTOR.
Christopher W. Levalley
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(Model.) 2 Sheets—Sheet 2.

C. W. LEVALLEY.

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Fig. 7.

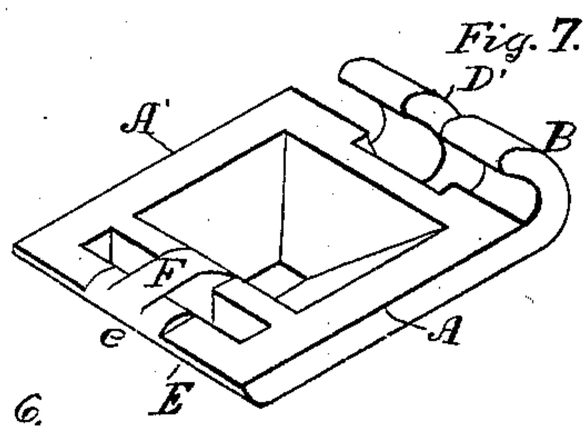


Fig. 6.

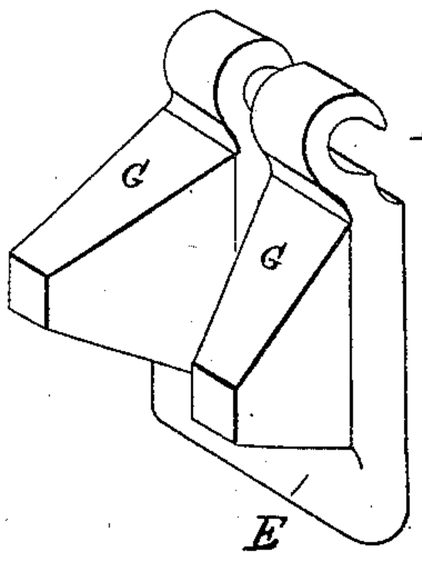


Fig. 9

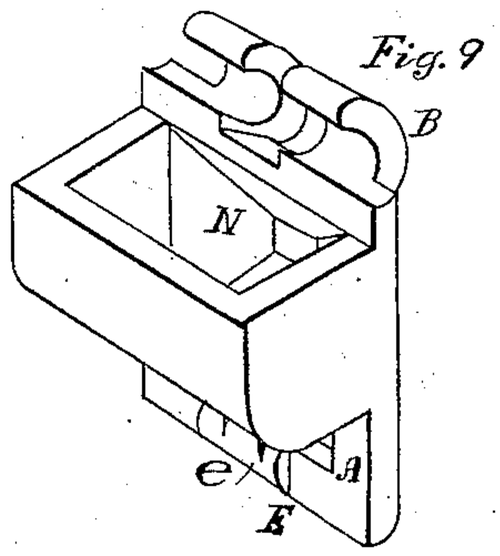


Fig. 11.

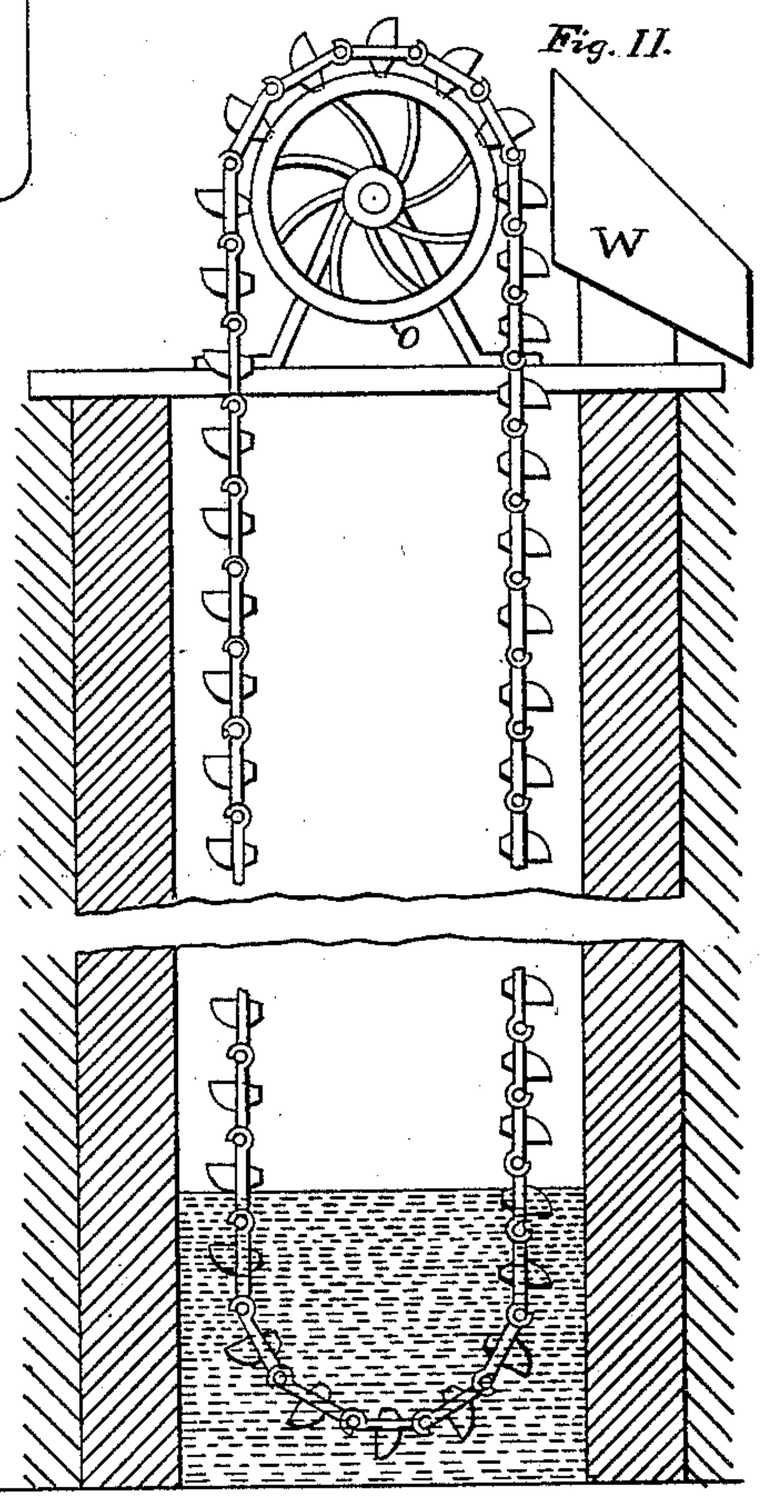


Fig. 10.

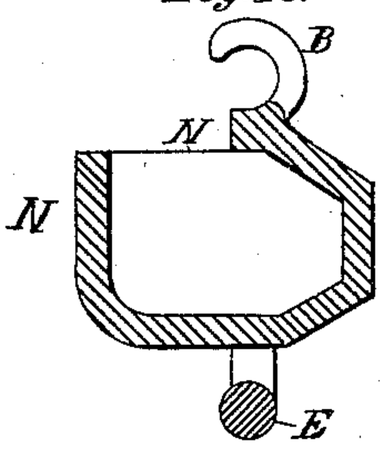
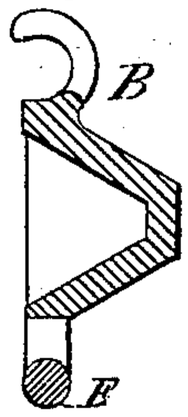


Fig. 8.



Attest

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attys.

UNITED STATES PATENT OFFICE.

CHRISTOPHER W. LEVALLEY, OF ST. PAUL, MINNESOTA.

DRIVING AND CARRYING CHAIN.

SPECIFICATION forming part of Letters Patent No. 246,021, dated August 23, 1881.

Application filed March 1, 1881. (Model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER W. LEVALLEY, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Driving and Carrying 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is an edge view of a chain-link embodying some of my improvements. Fig. 2 is a plan view of the same. Fig. 3 shows a chain applied to a wheel with which it engages. Fig. 4 is a transverse section on line *x x* of Fig. 3. Fig. 5 shows the position of two of the links when they are being coupled and uncoupled, the links in this figure having frictional projections upon both sides. Fig. 6 is a perspective view of a modification. Fig. 7 is a perspective of the link, showing the bucket for carrying material horizontally. Fig. 8 is a longitudinal section of the link shown in Fig. 7. Figs. 9 and 10 show a modified construction of the link, having a bucket, *n*, with a discharging-mouth, *n'*, adapted for elevating material. Fig. 11 shows a method for applying chains for the elevating of water.

Although the various links shown in the drawings differ somewhat in minor matters, yet they all have certain features in common. Each is provided with the following elements, namely: hooks B B at one end; a bar, E, at the end opposite to the hooks; connecting parts A A' at the sides of the links, which join the hooks to the end bar, E; one or more frictional projections, G, for engaging with a wheel; apertures C C, for the insertion of the hooks B B, and a web between said apertures C C. These parts are all cast in one piece of metal, the parts being so related in position that the links can be coupled together without liability of casual separation when in ordinary working position, but may be readily taken apart when placed in the position shown in Fig. 5.

The friction part G of the link (whether made in one piece or two) is substantially wedge-shaped, and is thereby adapted to engage with and drive by friction a pulley having in its periphery a V-shaped groove, (see Fig. 4;) but I do not claim, broadly, a chain provided with lugs of wedge or V form cast on the links.

In Figs. 1, 2, 3, 4, 5, 6, I have shown links adapted simply for driving. In Figs. 7, 8, 9, and 10, I have shown links adapted both for driving and for conveying material. In all of the constructions the friction part is cast with and extends from the side connecting parts, A A', said friction parts in Figs. 1, 2, 3, 4, and 6 being formed in two pieces; in Fig. 5 in four pieces; in Figs. 7, 8, 9, and 10 in one piece. When made in one piece it may be made hollow, to provide a cavity to hold and transport material.

In the links shown in Figs. 9 and 10 the cavity or bucket is formed with a supplemental portion, N, on the side of the link opposite to the frictional projection. This supplemental portion is also cast with and projects from the side connecting parts, A A', of the link. It has a wall, *n*, parallel to the link, and a mouth, N'.

By constructing the chain thus I am enabled to utilize for carrying purposes that portion, G, which is used to receive and transmit the propelling-power.

The web F assists in supporting the central portion of the buckets shown in Figs. 7, 8, 9, and 10, which web is cast integral with the bottom or end wall of the bucket.

In order to facilitate connecting the links with each other and disconnecting them from each other, I form the end bars, E, with flattened or cut-away portions adapted to readily pass through the throats of the hooks of an adjacent link when the links are placed in an unusual position, as indicated in Fig. 5.

What I claim is—

1. A chain-link cast with the hooks B B, the end bar, E, having reduced portions, the side connecting parts, A A', a wedge-shaped frictional projection, G, extending from and supported by said parts A A', the apertures C C, and the web F, integral with the end bar, E, and with the frictional projection G, all cast in one piece, as set forth.

2. A chain-link cast with the hooks B B, the end bar, E, having reduced portions, the side connecting parts, A A', and a bucket, N, pro-

jecting from said side connecting parts, all cast in one piece, as set forth.

3. A chain-link having hooks B B, the end bar, E, having reduced portions, the side parts, A A′, which connect the hooks to said end bar, and the hollow projection G, extending from the side connecting parts, A A′, all cast in one piece, as set forth.

4. A chain-link provided with the hooks B B, end bar, E, having reduced portions, side connecting parts, A A′, a bucket for transporting material, the recesses C C, and the web cast integral with the bucket, as set forth.

5. A chain-link having a portion, G, adapted to engage with a driving-wheel, and having said projection formed hollow or with a cavity therein to receive and transport material, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTOPHER W. LEVALLEY.

Witnesses:
J. H. RANDALL,
THOMAS BARCLAY.