

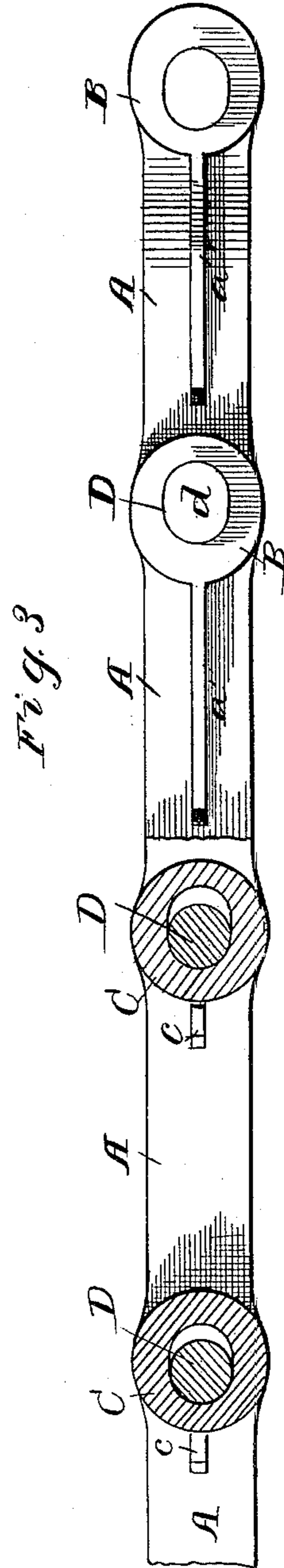
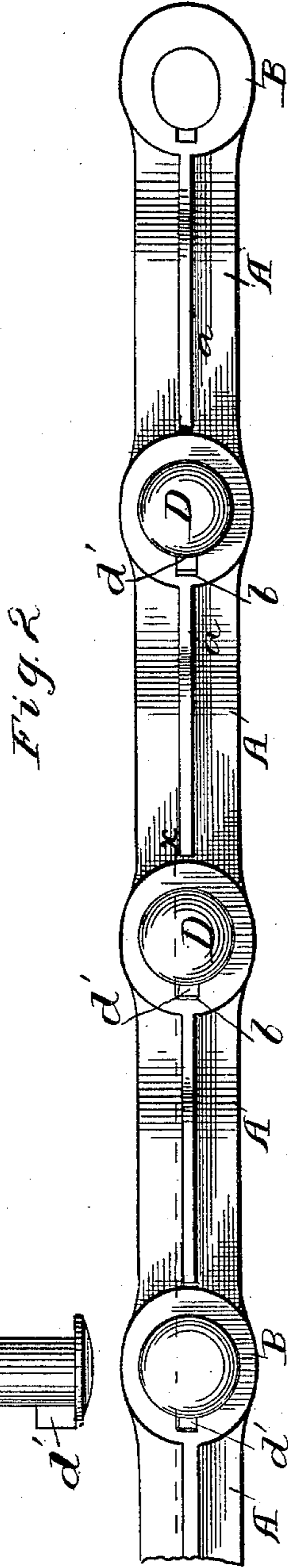
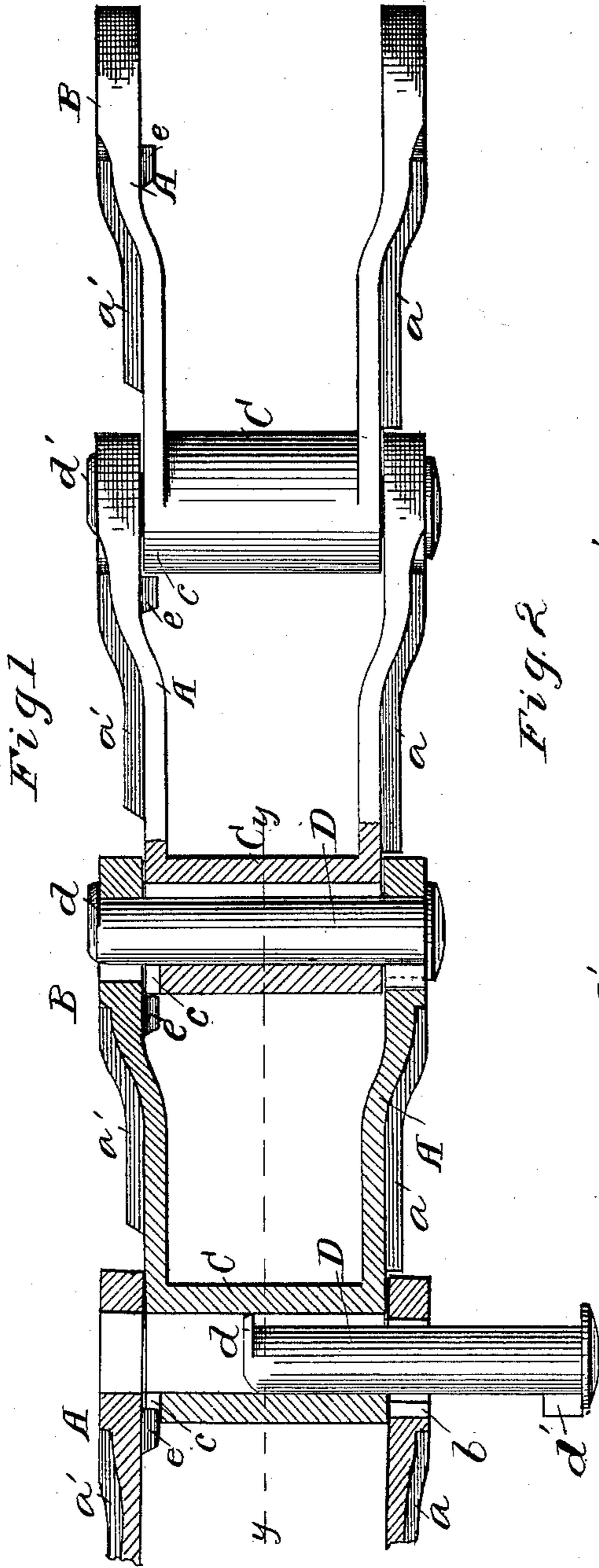
(Model.)

B. A. LEGG.

DRIVE CHAIN.

No. 387,081

Patented July 31, 1888.



Witnesses:

J. C. Turner

B. H. Fommere.

Inventor:

Benjamin A. Legg.  
by Doubleday & Bliss attys.

# UNITED STATES PATENT OFFICE.

BENJAMIN A. LEGG, OF COLUMBUS, OHIO, ASSIGNOR TO THE JEFFREY MANUFACTURING COMPANY, OF SAME PLACE.

## DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 387,081, dated July 31, 1888.

Application filed March 29, 1888. Serial No. 268,881. (Model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN A. LEGG, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Drive Chains, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a top or plan view of my chain, partly broken away to the dotted line *xx* of Fig. 2. Fig. 2 is an edge view looking in the direction of the arrow, Fig. 1. Fig. 3 is an edge view looking in the opposite direction, partly broken away to the dotted line *yy*, Fig. 1.

Like reference-letters indicate like parts in all the figures.

Under many conditions it is desirable to couple and uncouple chains while the links are practically in a line with each other, the links being in nearly the same position as that which they occupy when at work and under tension, and to facilitate thus coupling or uncoupling when the links are straightened out, but are moved endwise toward one another a very short distance, I have invented this construction, in which the pintles can be taken out and put in by merely sliding two links within the adjacent ends of the next link a distance equal to the width of the flange, which projects from one side of one end of the pintle, the pintle-seats in the side bars and in the tubular end bar being enlarged only in the direction of the length of the link to an extent equal to the distance which the flange projects from the body of the pintle.

A A B B are the side bars, of which the ends B B are provided with pintle seats, which are laterally elongated, as plainly shown in Fig. 3. One of the pintle seats has a notch, *b*.

C is a tubular end bar connecting the side bars, and also provided with a pintle-seat which is slightly oval or laterally elongated in cross section. (See, also, Fig. 3.)

*c* is a notch or throat formed in one end of tubular end bar, for a purpose which will be explained.

D *d* is the pintle, preferably round in cross-section, except at one end, where it has a projecting lug, *d'*, adapted to fit into the notch *b*,

and thus prevent the pintle from rotating in its seats in the ends of the side bars. At the opposite end of the pintle there is a laterally-projecting lip or flange, *d*, which when the links are straightened out in ordinary working relation or position overlaps the adjacent face of one of the side bars in such manner as to prevent withdrawal endwise of the pintle.

*a* is a web or rib projecting from the outer face of one of the side bars, and of such length that it abuts against the adjacent end of the side bar which has the notch *b* in its pintle-seat. The corresponding rib on the outer face of the other side bar of the link is shorter, so that it does not touch the end of the adjacent side bar.

*e* is a spur projecting from the inner face of one of the side bars in such position that it can enter the throat *c* when the links are substantially in a straight line, as indicated in the drawings.

At the extreme left of Fig. 1 the links are shown in position for coupling or uncoupling, and it will be noticed that the spur *e* is seated in the throat *c*, and that the pintle is in such position that its flange is withdrawn from overlapping the outer face of the side bar, so that it can be thrust endwise entirely out of its pintle-seats and the chain uncoupled at that point, whereas in the rest of the chain the parts are shown in working position, as when the chain is under tension, with the flange *d* overlapping the outer face of the side bar, and of course prevented from being displaced.

It will be readily understood from an examination of the two above-described positions of parts that there is no liability of displacement of the pintle when the links are under tension, and it will be also seen that the engagement of the rib or web *a* with the end of the adjacent side bar prevents any inward or endwise movement of one link bodily toward or into the open end of an adjacent link, the shifting of the links from working position into coupling or uncoupling position being effected by a sort of swinging or vibrating movement of one or both links about the end of the pintle, which has the projecting lug or spur *d'* upon it; and it will be further seen that such movement can take place only when

the spur *e* is exactly in front of the throat *c*, so that it can enter therein.

Were it not for the pintle being locked to the end of the side bar to prevent the pintle from rotating relative to the side bar, there would be liability of the pintle getting turned around, so that its flange or lip *d* could move inward against the adjacent end of the tubular end bar, so as to release the lug *d'* from the notch *b*, when the movement of the articulating parts, as the chain traverses the sprocket-wheel, might move the pintle endwise and uncouple the chain, or at least break it, because of all the pull being exerted upon one of the side bars.

Of course the spur *e* might be omitted and the rib *a'* made of the same length as the rib *a*, with a throat in one of the side bars to receive the end of the rib *a'*, and other modifications made in the details of structure.

I am aware that it is common to make chain-links with elongated pintle-seats, the elongations being at right angles to each other in opposite ends of each link, with pintles which have projections or spurs or lugs arranged at an angle of about ninety degrees apart, the relations of these structures being such that the pintles can be thrust through the seats when the links are placed at about a right angle to each other, so that when the links are straightened out the projections on the pintles will be turned around and caused to overlap the adjacent part of the link; but my invention differs radically from such earlier chains, in that, among other things, all of the pintle-seats are elongated laterally—that is to say, in the direction of the length of the link—the overlapping of the flange or projection of the pintle being effected by the moving of that end of the pintle bodily in the direction of the length of the link without any rotation of the link or pintle relative to one another.

I am aware of the patent to Paine, No. 237,771; but in the chain therein described the throats or openings in which the pintles are seated are expanded transversely in order to permit the heads of the pintles to pass when the links are placed in an unusual relative position to permit uncoupling; but in my chain there are no such transverse enlargement of the pintle-seats, nor are they required, from the fact that the ends of my pintles which are thrust through the side bars have lips or flanges projecting upon one side only, so that these flanged ends are adapted to pass through pintle-seats the throats of which may be formed

with lines which are straight or perfectly parallel with the edges of the side bars and at uniform distances apart from end to end—a construction which would be wholly inoperative with pintles like those of Paine, which have flanges or heads projecting upon all sides of the pintle ends in planes which are at right angles thereto, and which could not be passed through the pintle-seats in my chain provided the pintles be circular, as mine are, and of the same diameter as mine are relatively to the pintle-seats; nor has Paine any projecting lug on the pintle with a corresponding recess or notch in the side bar, whereby the pintle is locked in its seat in such manner that its projecting flange cannot be turned around away from its overlapping position, as mine could be were it not for the lug *d'*.

What I claim is—

1. The combination, with the side bar and the tubular end bars having pintle-seats which are enlarged laterally and not transversely, of the pintles, each having at one end a flange adapted to pass through the pintle-seat when the links are in line with each other and to overlap the outer face of the adjacent side bar near one end when the links are in working position, and locking devices, substantially as described, adapted to prevent rotation of the pintles relatively to the seats in which their ends are supported, substantially as set forth.

2. The combination, with the side bars and the tubular end bars, both having pintle-seats which are laterally elongated in cross-section, of the pintles having at their ends lateral projections adapted to pass through the pintle-seats when the seats are in line with each other, and to overlap the faces of the adjacent side bars when the links are moved laterally one to the other, the links being provided with stops, substantially as described, projecting from the side bars and engaging with the adjacent links and with the recesses to receive the stops and permit movement of the seats into line with each other, substantially as set forth.

3. The combination, with the side bars and the pintles having the laterally-projecting lips, of the spurs upon the inner faces of the side bars and the throats in the tubular end bars, substantially as set forth.

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

BENJAMIN A. LEGG.

Witnesses:

T. P. LINN,

W. M. HACKETT.