(No Model.)

D. J. SHELDRICK.

DRIVE CHAIN.

No. 433,965. Patented Aug. 12, 1890.

Fig. 1.

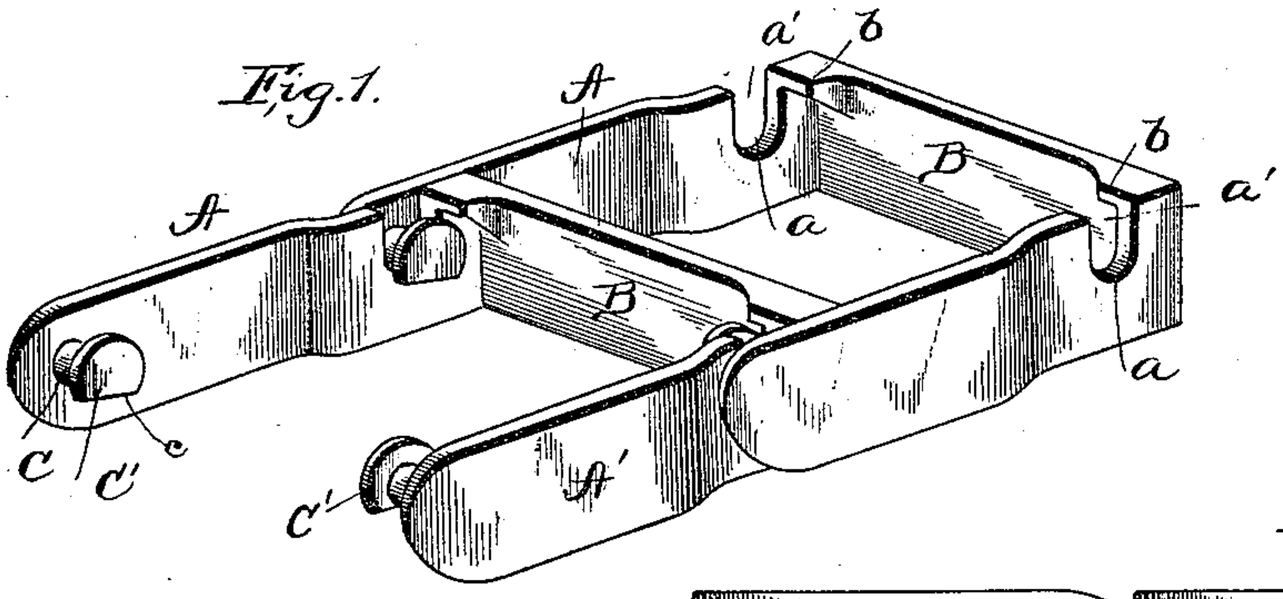


Fig. 2.

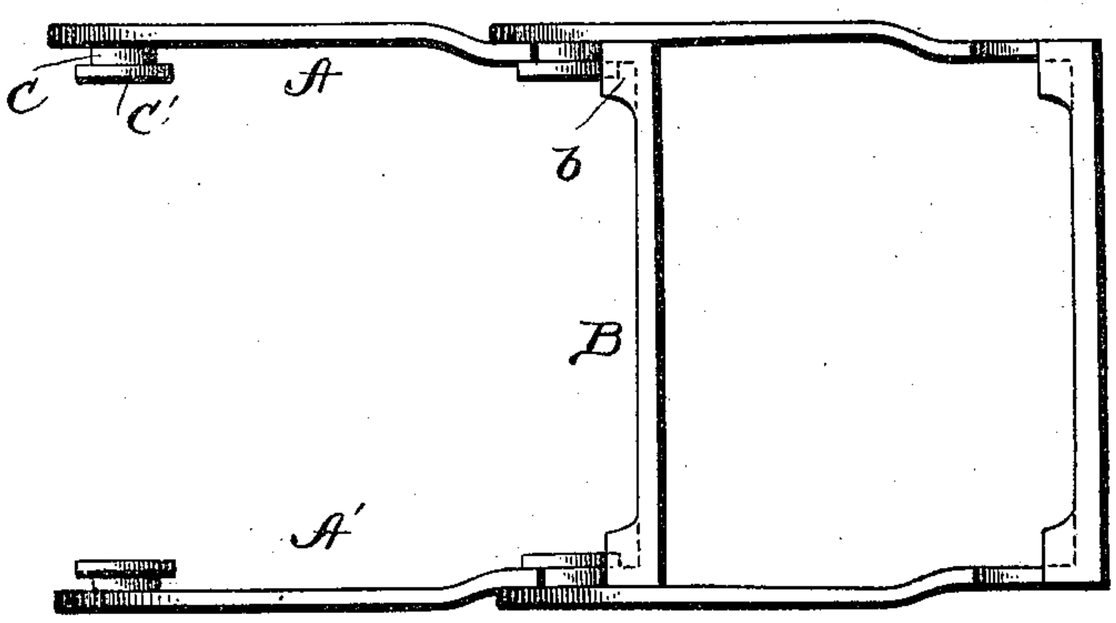


Fig. 3.

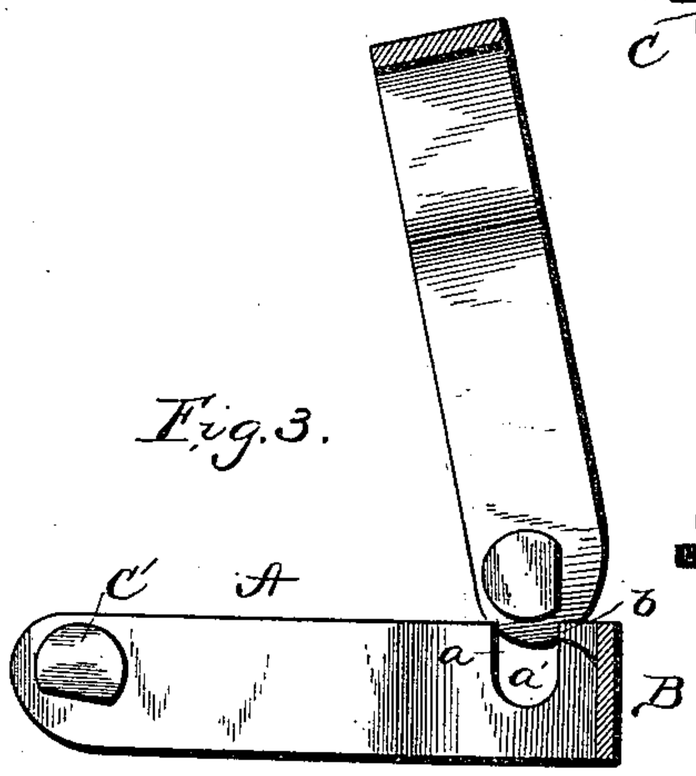


Fig. 4.

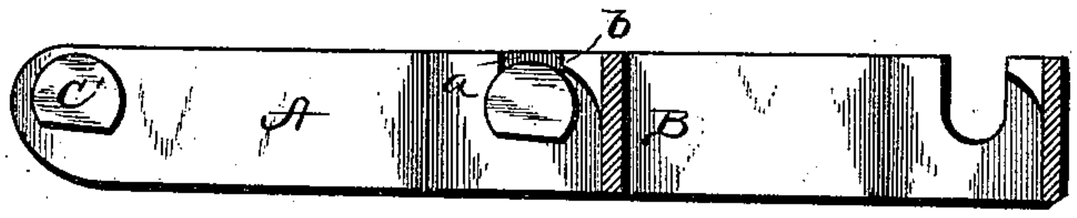


Fig. 7.

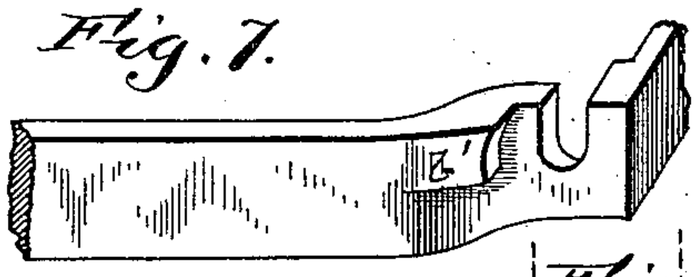


Fig. 5.

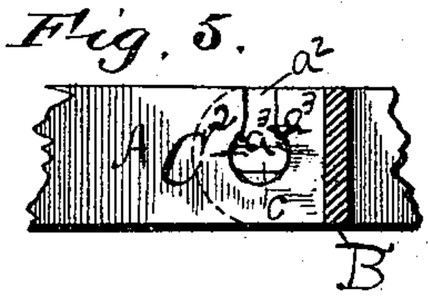


Fig. 6.

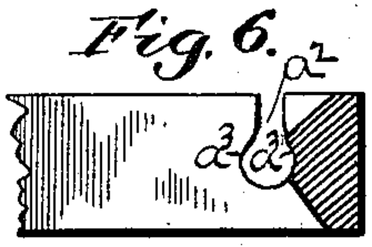
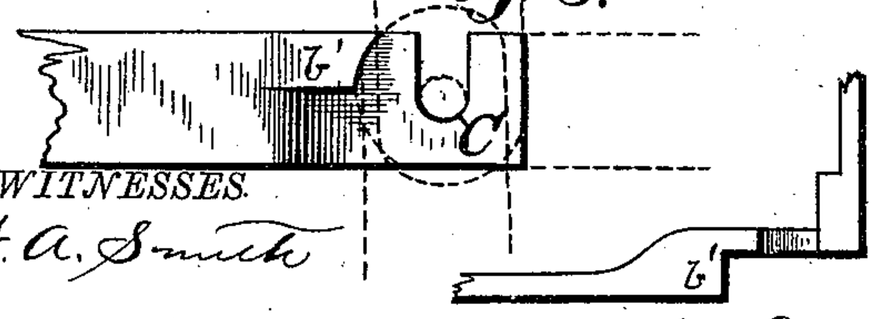


Fig. 8.



WITNESSES.

H. A. Smith

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Fig 9. by Doubleday & Bliss

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UNITED STATES PATENT OFFICE.

DAVID J. SHELDRICK, OF COLUMBUS, OHIO, ASSIGNOR TO JOSEPH A. JEFFREY, OF SAME PLACE.

DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 433,965, dated August 12, 1890.

Application filed April 23, 1890. Serial No. 349,147. (No model.)

To all whom it may concern:

Be it known that I, DAVID J. SHELDRICK, 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 Chains, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in chains comprising links, some or all of which are detachable from each other when put into an unusual position.

The improvements embodied in the links are particularly well adapted for chains which are used as conveyers or drag-chains; but chains for any of the ordinary purposes can be constructed in accordance with the said improvements.

Figure 1 is a perspective view of two links containing my improvements. Fig. 2 is a plan view of the same. Fig. 3 is a vertical section showing two of the links in their positions when being coupled or uncoupled. Fig. 4 is a longitudinal section of the links when in working position. Figs. 5 to 9 show modified forms of links which contain more or less of the invention.

The links are each made with side bars A A′ and cross-bar B. At points adjacent to the cross-bar B there are recesses A^2, formed in the side bars and extending in from the edges thereof, each recess preferably having a throat *a* and a curved pintle-seat *a′*. The cross-bar B is formed with stops of the form of shoulders or projections at *b b* between the pintle-seat and the end of the throat *a*. At their opposite ends the side bars are provided with inwardly-turned pintles C C, of a diameter such that they can snugly fit in the seats at *a′ a′*. Each pintle is formed or provided with a device for preventing the links from being uncoupled when in working position, and with a device for preventing the spreading of the ends of the link, both of which are preferably produced by casting a flange or disk-like projection C′ on the inner end of each pintle. It is so situated that when the links are in working position it bears against the aforesaid stops or shoulders at *b* to prevent the pintles from moving out of the seats *a′*, and bears against the inner sides of the side bars of the adjacent link to prevent the ends of its side bars A A′ from spreading. When constructed as in Figs. 1 to 4, it is cut away at *c*, so that if one link be turned so as to be at about right angles to its fellow link the pintles can be drawn from the seats or, vice versa, inserted thereinto. In this form of the link the pintle-seats of each link are between the pintles and the cross-bar B, and therefore the link is not weakened by the forming of the recesses to the same extent that it would be if said recesses were at a distance from the cross-bar. As the pintles are separated and short, not extending materially inside of the side bars, a large open space is left in comparison with a construction in which a pintle or hinge should be present extending across the link, and this is an important matter, in fact one of necessity in chains having large links such as are used for conveyers or carriers, as the carrying capacity is greatly increased and the weight of metal is largely reduced.

Some of the features of improvement can be preserved even though there be modification from the form of link shown in Figs. 1 to 4. In Figs. 5 and 6 I have illustrated one in which the expanded head or projection C′ is omitted from the pintle C^2, the latter being reduced on one side at *c* and the pintle-seat a^2 being key-hole shaped. A chain of this character can be used where the strain is not so great as to induce a spreading.

In Figs. 7, 8, and 9 a form is shown in which a circular pintle is used, the stops to prevent the displacement thereof being formed at *b′* upon the side bars. This form also shows that there can be modification in respect to the arrangement of the cross-bars and the side-bars without departing from all of the novel and peculiar features of the construction. It will be noticed that the side bars project beyond the pintles and engage at their outer ends and near their upper edges with stops carried by the adjacent links to prevent the pintles from moving upward out of their seats in the side bars when the links are straightened out into working position, this being true of all the forms shown. Again,

in all the links shown the cross-bars are flat and thin and extend practically the entire width of the side bars and vertical relatively thereto, whereby the chain is specially adapted to carry sawdust and similar material as it is traversing a flat surface. Neither of the cross-bars form any part of the articulations of the links, nor are they adapted to do so, either as regards their form or location, they being out of line with the pintles. This location of the pintle-seats between the cross-bars and the pintles of the links facilitates the arrangement or the location of the stops, which project inward from the upper faces or edges of the cross-bar to engage with the flanges C′ at the inner ends of the pintle, and the presence of these cross-bars in rather close proximity to the pintle-seats supports the projecting, but otherwise unconnected, ends of the side bars against a lateral or spreading strain.

By reason of the above-referred-to features of construction I am enabled to make my links substantially of the form known as U-shaped—that is to say, having but a single cross-bar with side bars projecting therefrom and provided at their free ends with articulating parts—whereby the carrying capacity of the chain is greatly increased relatively to the sizes of the links in plan, and also relatively to their weight, which is a matter of considerable importance, especially when the chains are operated to traverse an upper wooden surface or bed.

What I claim is—

1. A U-shaped chain-link having a cross-bar B, the side bars integral therewith and provided at their free ends with the inwardly-extending separated pintles C C, and having the pintle-seats formed of slots extending in from the edges of the side bars partly across the width thereof and situated adjacent to but out of line with the cross-bar, and stops which retain the pintles in their seats when the links are in working position, substantially as set forth.

2. A chain-link having the side bars A A′ with the pintle-seats at one end of the link and the cross-bar integral with the side bars and having the stops or shoulders *b*, and the pintles C at the other end of the link, provided with keepers adapted to engage with the said stops or shoulders of an adjacent link, substantially as set forth.

3. A chain-link having side bars and the end bar integral therewith, the side bars being formed with recesses extending inward from the edges of the side bars at one end of the link, and the pintles C C at the other end of the link, provided with a projection C′, adapted to bear outwardly against the inner sides of the side bars of an adjacent link to prevent spreading, substantially as set forth.

4. A chain-link having the side bars and the end bar integral, the side bars being formed with pintle-seats extending inward from the edges of said side bars at one end of the link, there being stops at *b* and inwardly-turned pintles at the other end of the link, with projections or keepers adapted to bear outwardly against the inner sides of the side bars of an adjacent link and also against the said stops *b*, substantially as set forth.

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

DAVID J. SHELDRICK.

Witnesses:
JOHN H. VERCOE,
JOHN C. PRICE.