

No. 844,869.

PATENTED FEB. 19, 1907.

H. A. HOUSE.
SOLID LINK KNIFE JOINTED CHAIN.
APPLICATION FILED OCT. 24, 1905.

Fig. 1.

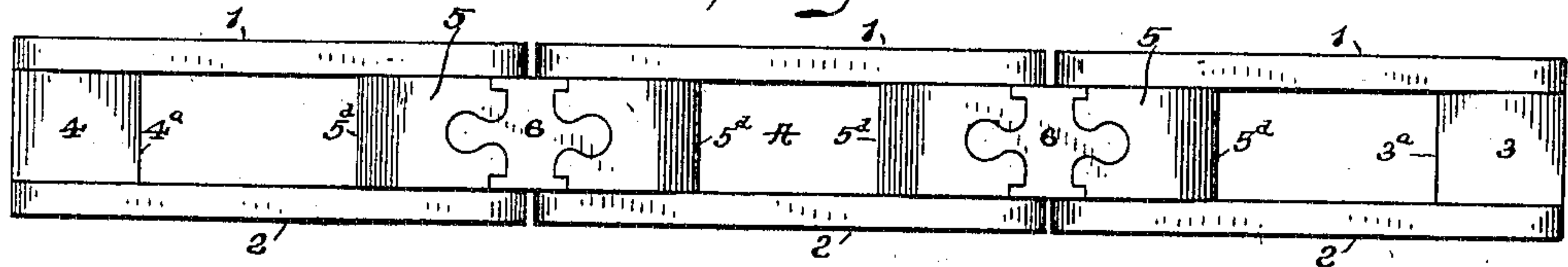


Fig. 2.

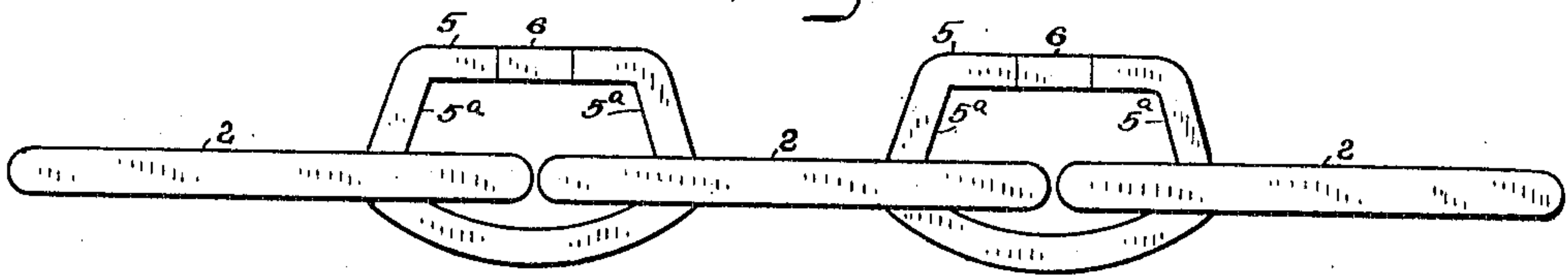


Fig. 3.

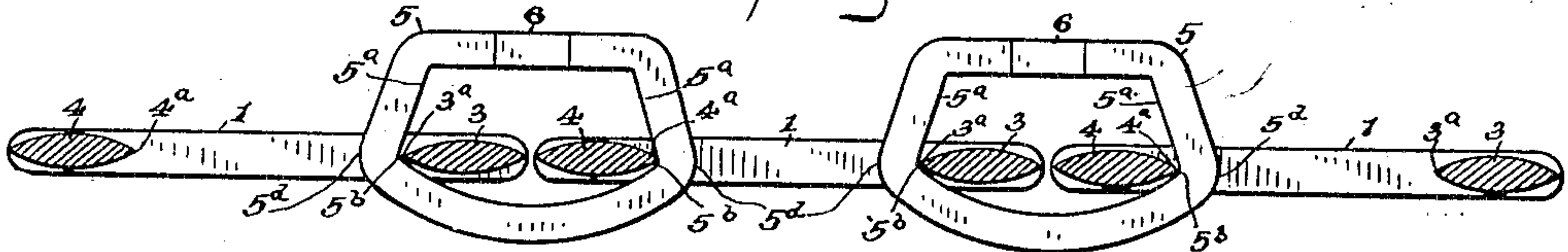


Fig. 4.

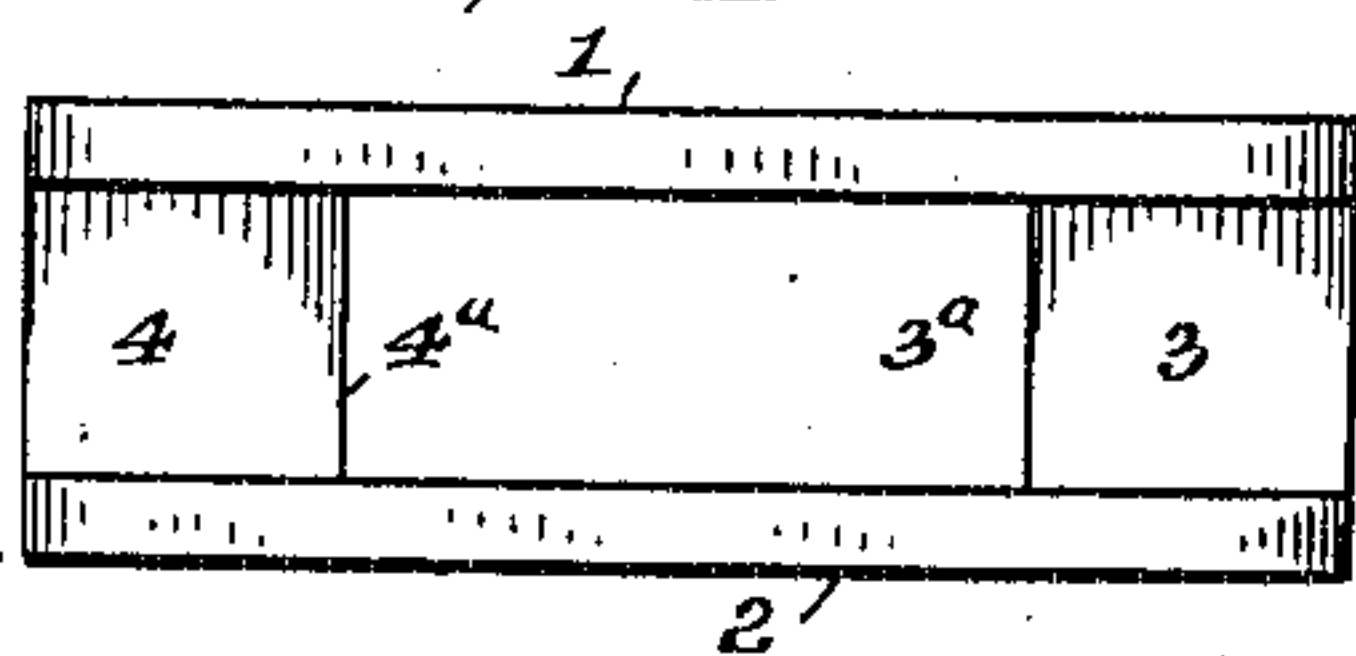


Fig. 6.

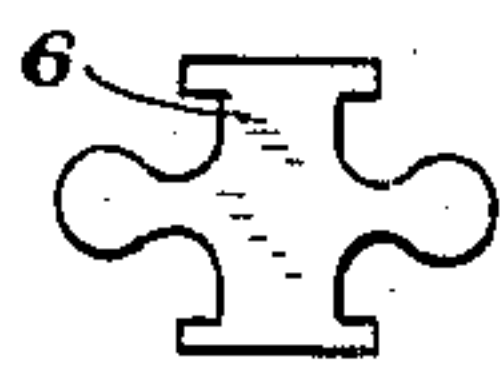


Fig. 5.

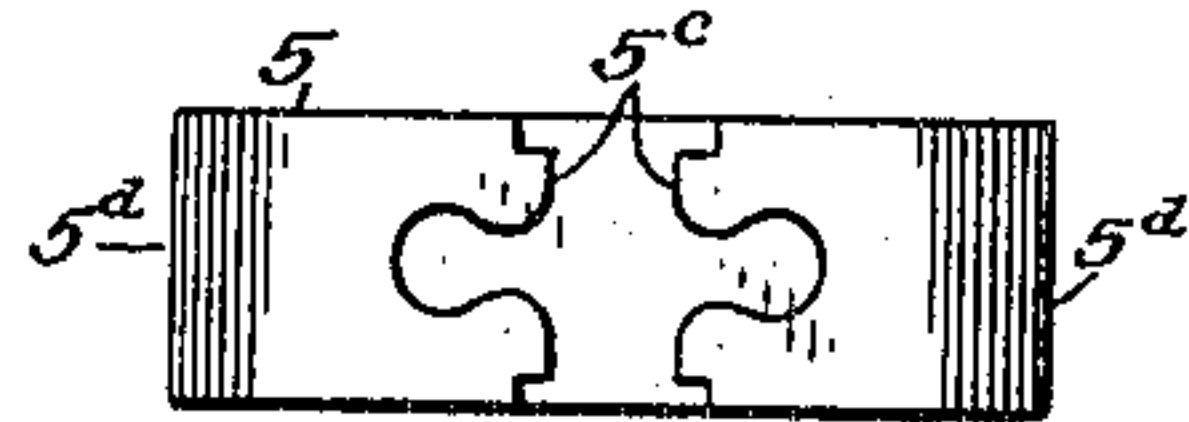


Fig. 7.

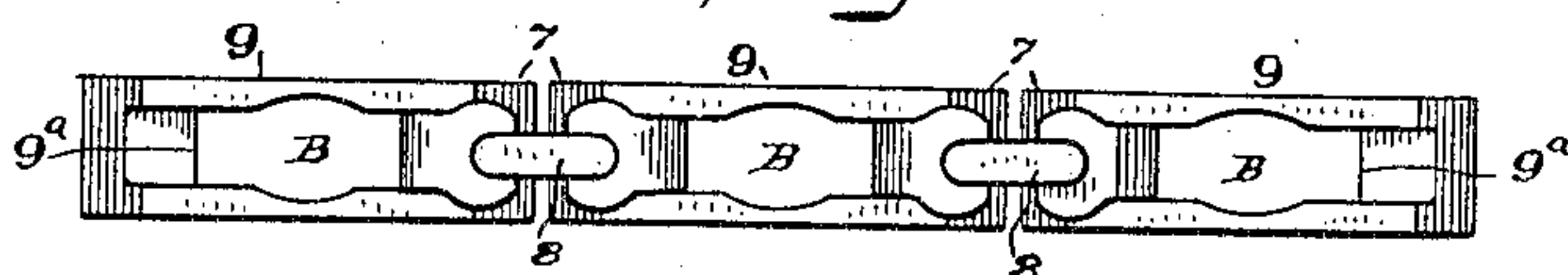


Fig. 8.

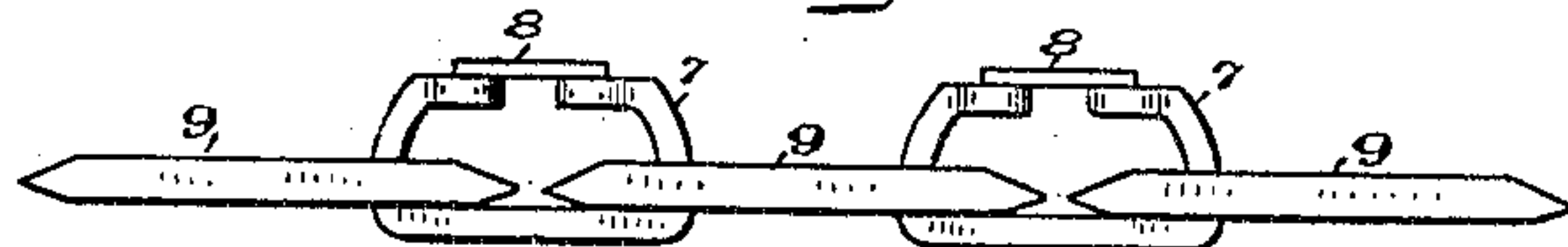


Fig. 9.

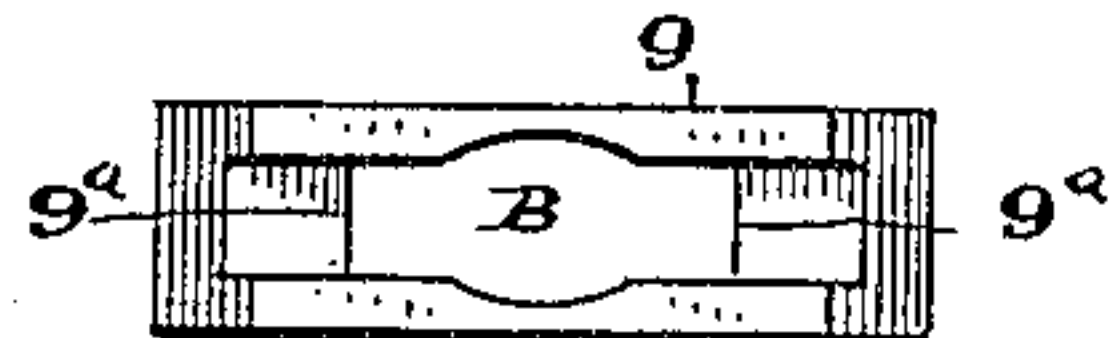
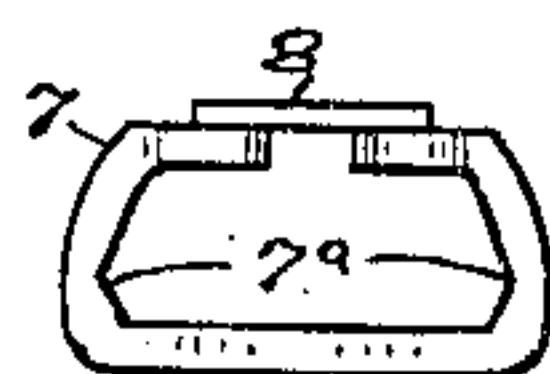


Fig. 10.



WITNESSES

H. A. Lamb.
W. J. Tanner

INVENTOR
Henry A. House.
BY Geo. D. Phillips.
his ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY A. HOUSE, OF BRIDGEPORT, CONNECTICUT.

SOLID-LINK KNIFE-JOINTED CHAIN.

No. 844,869.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed October 24, 1905. Serial No. 284,188.

To all whom it may concern:

Be it known that I, HENRY A. HOUSE, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Solid-Link Knife-Jointed Chains, of which the following is a specification.

My invention relates to chains; and it consists, essentially, in a chain having a solid drag-link coupled to a loop-link by knife-edge connections and adapted to be used as an ordinary drive-chain or a sprocket-chain.

To enable others to understand my invention, reference is had to the following drawings, in which—

Figure 1 represents an upper plan view of a section of my improved chain. Fig. 2 is a side elevation of the chain-section shown at Fig. 1. Fig. 3 is a central sectional view of two drag-links and side elevation of two loop-links. Fig. 4 is a detail plan view of one of the solid drag-links. Fig. 5 is a detail upper plan view of one of the loop-links with the connecting-piece removed. Fig. 6 is a detail plan view of the connecting-piece. Fig. 7 is an upper plan view of a section of a bicycle-chain, showing a modified construction of the chain shown at Fig. 1. Fig. 8 is a side elevation of the bicycle-chain shown at Fig. 7. Fig. 9 is a detail side elevation of one of the loop-links of the bicycle-chain. Fig. 10 is a detail plan view of one of the solid links of the bicycle-chain.

Its construction and operation are as follows: The solid drag-links of my improved chain consists of the side bars 1 and 2, Fig. 4, and the stay-blades or cross-bars 3 and 4, integral with and connecting said side bars to make a solid link. These stay-blades or cross-bars (see also Fig. 3) are provided with the knife-edge bearing-points 3^a and 4^a, adapted to engage a knife-edge seat of the loop-links 5, presently to be described. These loop-links are provided with the angular ends 5^a with the V-shaped seat 5^b to form a bearing point or seat for the knife-edge stay-links or cross-bars of the drag-links. These V-shaped seats are preferably located below the center of the loop-links, so as to bring the line of strain or center of pull as near as possible to the bottom or strongest part of the link, it being understood, however, that sufficient space must be left to give perfect freedom of action to the chain in passing over a small sprocket-wheel or other body.

As the drag-links are solid, I have provided a novel method of threading them to the loop-links. In the construction shown at Figs. 1, 2, 3, and 5 the loop-links can, in the first instance, be made solid and separated at the top by punching out the stock to form the irregularly-shaped opening 5^c, Fig. 5, the piece removed or punched out being shown as 6, Fig. 6. The drag-links and loop-links are then threaded together by passing one end of each of said drag-links through the opening 5^c in the top of the loop-links, and the punching 6 is replaced in the opening 5^c to form a connecting or locking piece for the free ends of the loop-links. When these locking-pieces are reinserted, the edges can be riveted over slightly to prevent them accidentally dropping out, or they can be secured in position in any other suitable and convenient manner. I may, however, prefer to make these locking-pieces of an irregular shape, so as to thoroughly and effectually brace the free ends of the loop-links against side displacement, so that, in effect, the loop-links when the locking-pieces are secured in place are, practically speaking, solid links. In using the chain just described for a sprocket-chain the sprocket-tooth (not shown) will enter the space A, Fig. 1, between the ends 5^d of the loop-links. These ends being rounded will serve the same purpose as rollers in passing over the sprocket-teeth. The drag-links being made solid—that is, made of a single piece of metal—is much stronger than the ordinary built-up drag-link or link composed of several parts, for some of these separable parts must necessarily be weak, which would leave the chain no stronger than its weakest part. There being practically no movement at the extreme bearing-points of the knife-edge connections between the drag and loop-links of my improved chain, there will be no perceptible wear at these points, and therefore there can be no undue stretching or lengthening of the chain. Further, there being no wear on these knife-edges, no oil will be required.

In the modified construction shown at Figs. 7, 8, 9, and 10 the same general construction of the solid drag-link and loop-link is shown as in the views just described, except that the loop-links 7 have the bridges 8 spanning the openings between the free ends of said links. The drag-links 9 also have the knife-edges 9^a at their ends to engage with the V-shaped seats 7^a of the loop-links. When

used as a sprocket-chain, the sprocket-wheel (not shown) will enter the opening B of the drag-links.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a chain of the character described, solid drag-links having a central opening, and knife-edge bearing-points facing said opening, loop-links having V-shaped seats for the knife-edge bearing-points of the drag-links, the upper portion of the loop-links provided with a temporary opening to admit the drag-links, a locking-piece to close said opening and support the free ends of the loop-links, for the purpose set forth.

2. In a chain of the character described, drag-links made of a single piece of metal, having knife-edge bearing-points thereon, loop-links having a temporary opening to admit the drag-links, a locking-piece to close

said opening, said loop-links having V-shaped seats for the knife-edge bearing-points of the drag-links, for the purpose set forth.

3. In a chain of the character described, drag-links made of a single piece of metal having knife-edge bearing-points thereon, loop-links having an irregular-shaped temporary opening therein to admit the drag-links, an irregular-shaped locking-piece for said opening, said loop-links having V-shaped seats for the knife-edge bearing-points of the drag-links, for the purpose set forth.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 2d day of October, A. D. 1905.

HENRY A. HOUSE.

Witnesses:

J. W. RANGE,
GEORGE W. FINN.