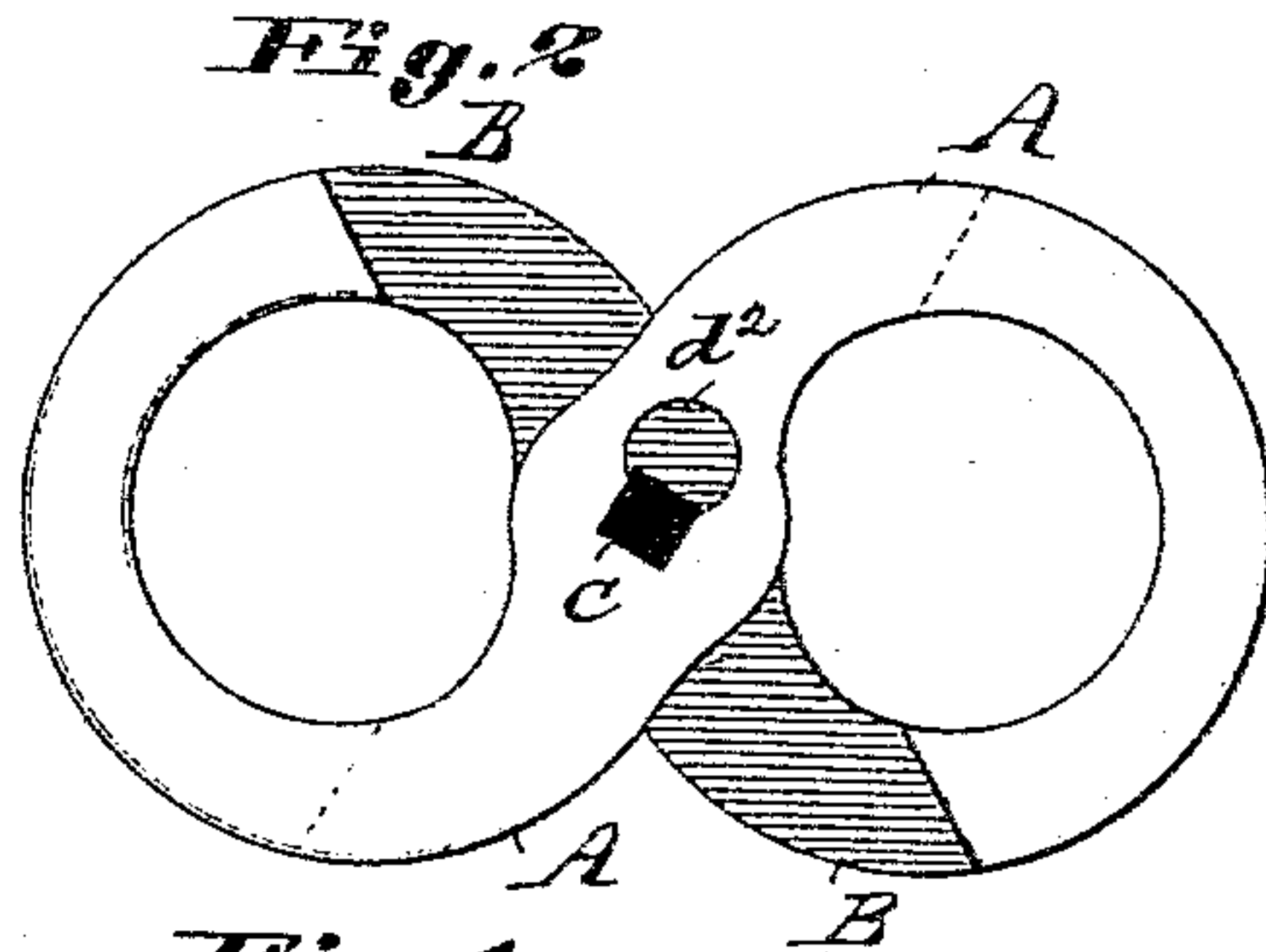
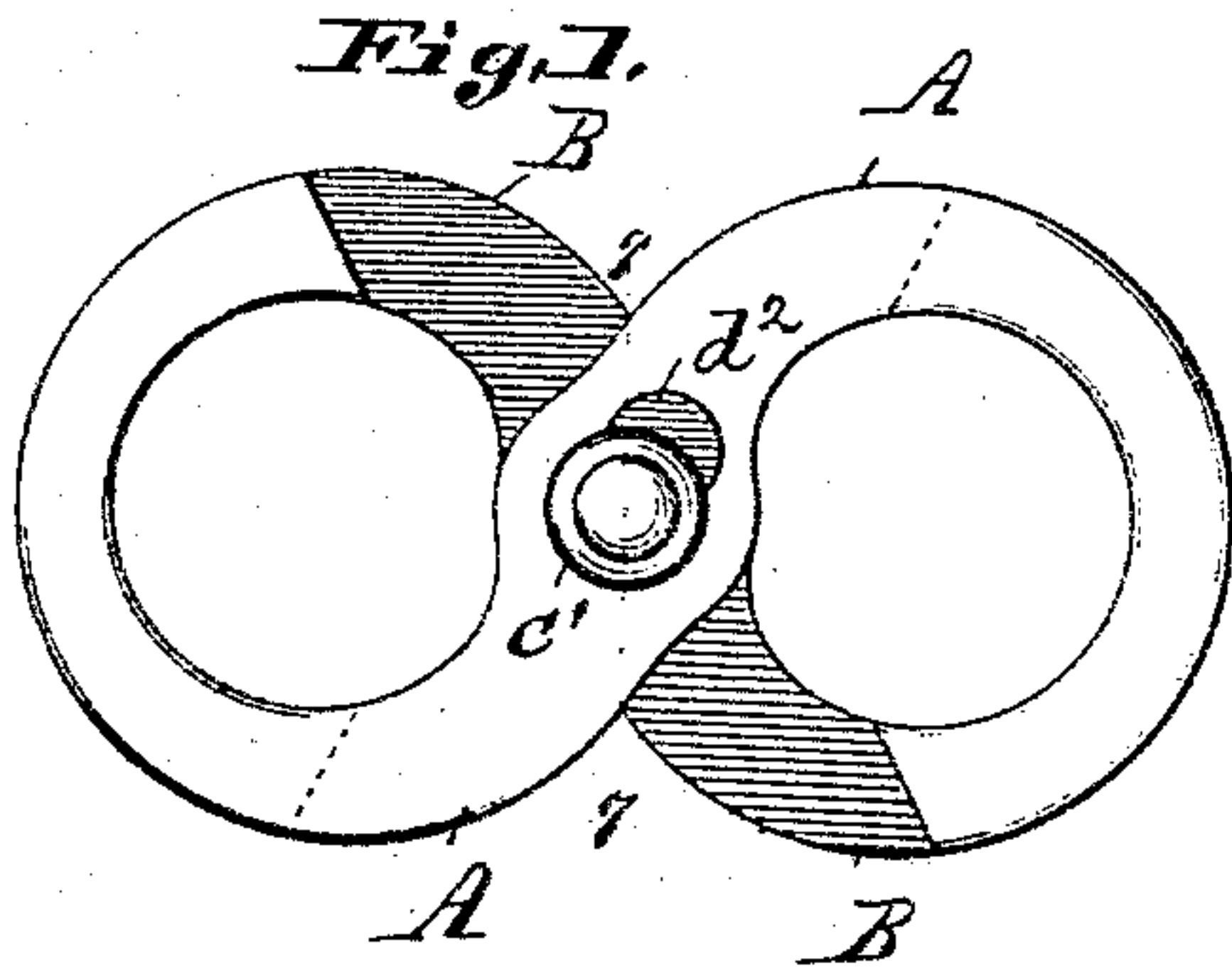


(No Model.)

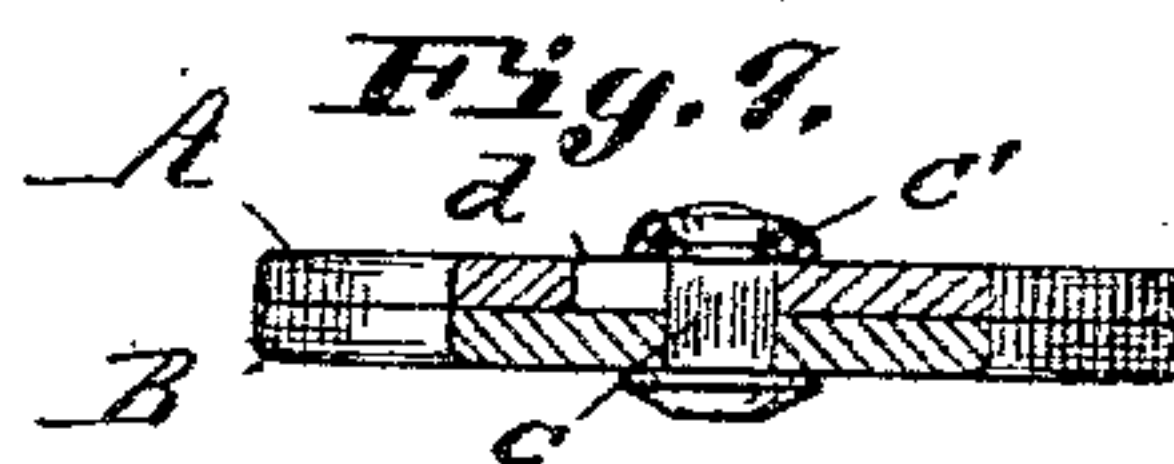
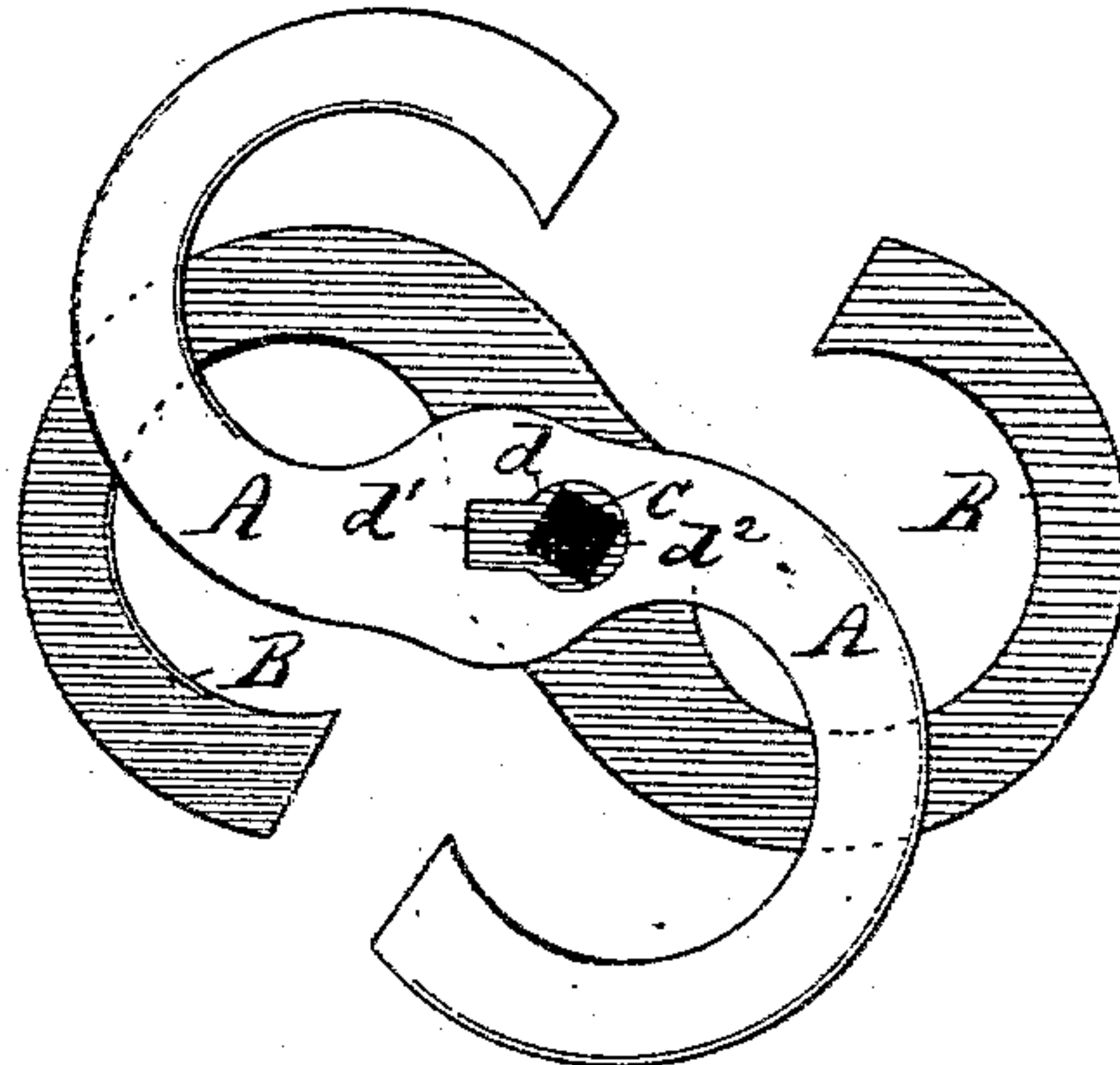
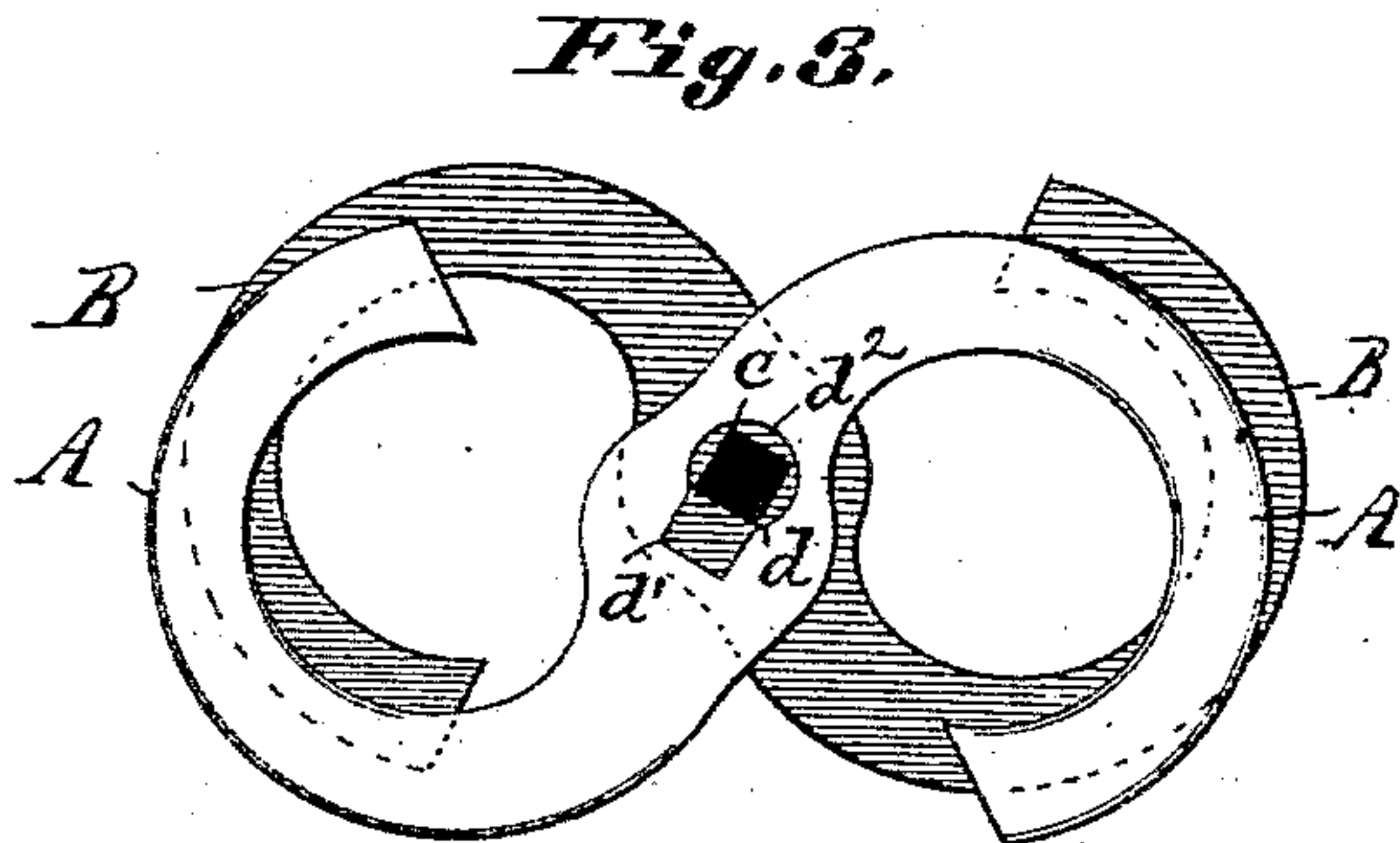
C. N. WATERHOUSE.  
CONNECTING LINK FOR CHAINS.

No. 321,554.

Patented July 7, 1885.



*Fig. 4.*



*Attest:*  
Charles Rickles  
John W. Herthel.

*Inventor:*  
Charles N. Waterhouse  
per  
Herthel & Co  
Atty's



# UNITED STATES PATENT OFFICE.

CHARLES N. WATERHOUSE, OF ST. LOUIS, MISSOURI.

## CONNECTING-LINK FOR CHAINS.

SPECIFICATION forming part of Letters Patent No. 321,554, dated July 7, 1885.

Application filed January 19, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES N. WATERHOUSE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improved Connecting-Link for Chains, &c., of which the following is a specification.

The objects of my improvements are to provide the centrally-crossing bars of an S-shaped link with a locking device to prevent self-disengagement; also, to remove all strain from the spindle when the chains are linked, to render the counterpart S-sections completely reversible, to adapt the device for large or smaller chains, and otherwise achieve the advantages as will hereinafter more fully appear. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figures 1 and 2 are respective plan views of my improved link when closed or in "locked" condition. In Fig. 2 the head of the rivet is shown removed to better illustrate the shape of the slot in the upper section and the square shape of the spindle or stem. Figs. 3 and 4 illustrate the two movements required to fully open the link to permit the ends of the chain or other connection to be added. Fig. 5 is an elevation of Fig. 1. Fig. 6 is an elevation of the link when the sections are made to assume the position shown in Fig. 3, and Fig. 7 is a vertical section taken on line 7 7 of Fig. 1.

Similar letters refer to similar parts throughout the several views.

A and B represent the two counterpart S-shaped sections that constitute the body portion of the link. As shown, each section has its central bars crossing each other, and it is in the center of these cross-bars that I provide the following features:

c represents a square-shaped spindle to pivot both S-sections together. The upper S-section I provide with an opening or slot, d—that is to say, consisting of the square-shaped portion of slot marked d' and the rounded portion of slot marked d'', (see Figs. 1, 2, 3, and 4,) both said square and round shaped portions of the slot being the means to enable the top S-section, A, to have the

two distinct movements necessary to open or close the link, and as will hereinafter appear. Both the S-sections A and B are put together, the one top of the other, the spindle c passing through the square-shaped centers in both sections, and finally the pivot-joint is completed by the head c', as indicated in Figs. 1, 5, 6, and 7. When the link is closed, the square spindle is in engagement with the square-shaped portion of slot d, preventing the upper S-section from turning, and thus virtually locking the link. (See Figs. 1, 2, 5, 7.)

In order to unlock or open the link, the first movement consists in sliding the upper S-section to one side, in order to bring its rounded portion of slot to surround the square-shaped spindle. (See Figs. 3 and 6.) The second movement, to open the link entirely, consists in turning the top S-section partially to one side with relation to the under section, and until both the ends of said S-sections are in the full open condition shown in Fig. 4. In this open condition the ends of the chain or the links can be inserted. This done, the joint is completed by the same movements to return the parts to their original closed condition. When so united to the chain and the draft of the latter is upon the ends of the link, self-disengagement is impossible, the locking device described, consisting of the square-shaped spindle in engagement with the square center of the upper S-section, effectually preventing the latter from turning, and the link can only be opened when the square spindle has been brought within the larger or rounded portion of the slot.

As special advantages, it can be stated that the central cross-bars of each S-section prevent the chains from coming together, each connection being kept at opposite ends, and divided from each other by said crossing bars; also, all strain is on the extreme ends of the S-sections and removed from the spindle, the latter being in the central and most strong portion of the whole device. The top section, when unlocked, can be completely turned round in either direction, so that the connection can be made at either or both ends and to open or close simultaneously.

What I claim is—

A connecting-link or lap-ring consisting of the counterpart **S**-shaped body-sections A B, having their bars crossing each other, and in  
5 the center thereof the lower **S**-section carrying a square-shaped spindle, *c*, the upper **S**-section provided with slot *d*, made partly square and rounded at *d'* *d''*, the rivet-head *c'*

attached to the spindle, all operating as and for the purposes set forth. 10

In testimony of said invention I have hereunto set my hand.

CHARLES N. WATERHOUSE.

Witnesses:

WILLIAM W. HERTHEL,  
JOHN W. HERTHEL.