

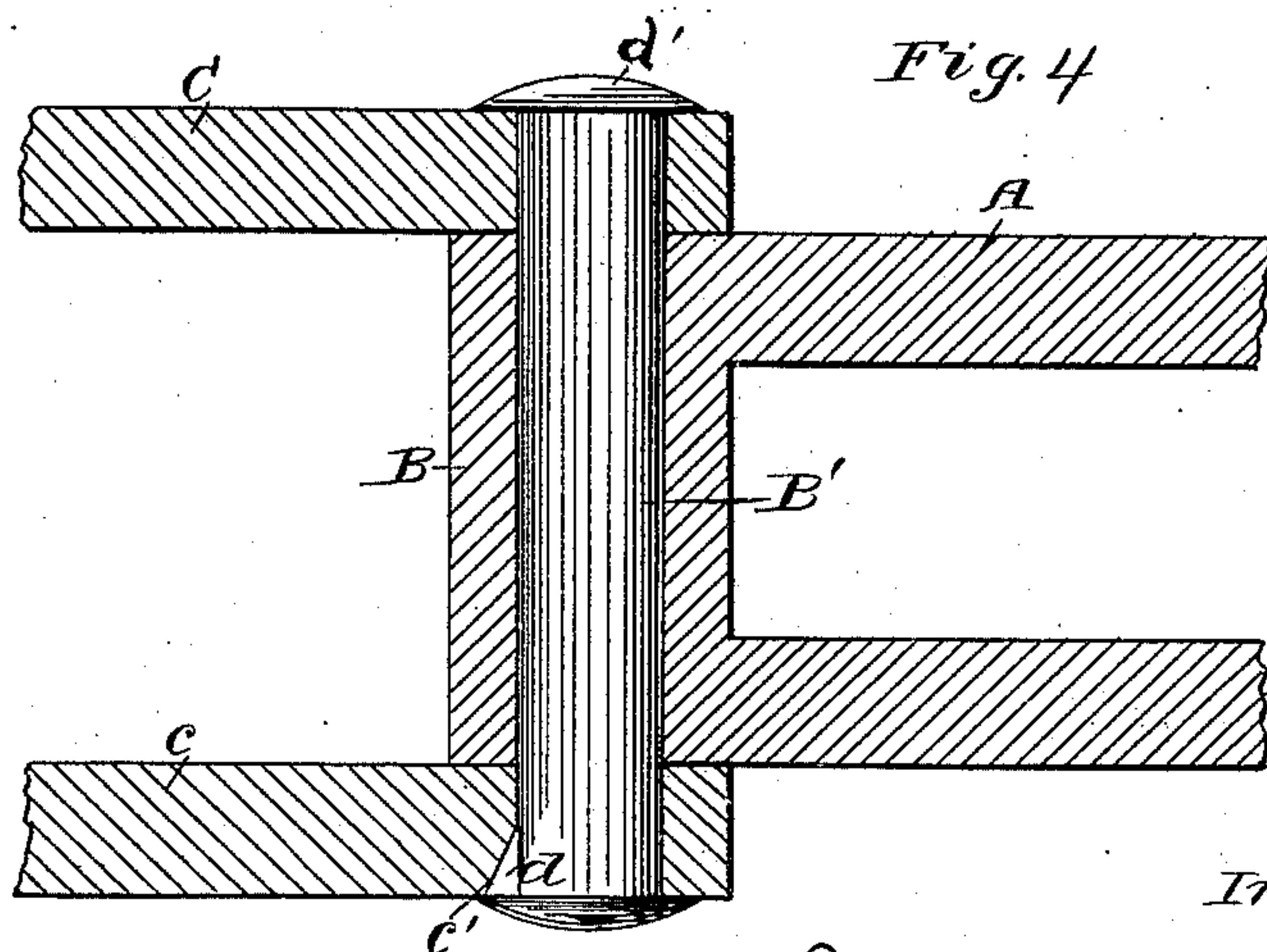
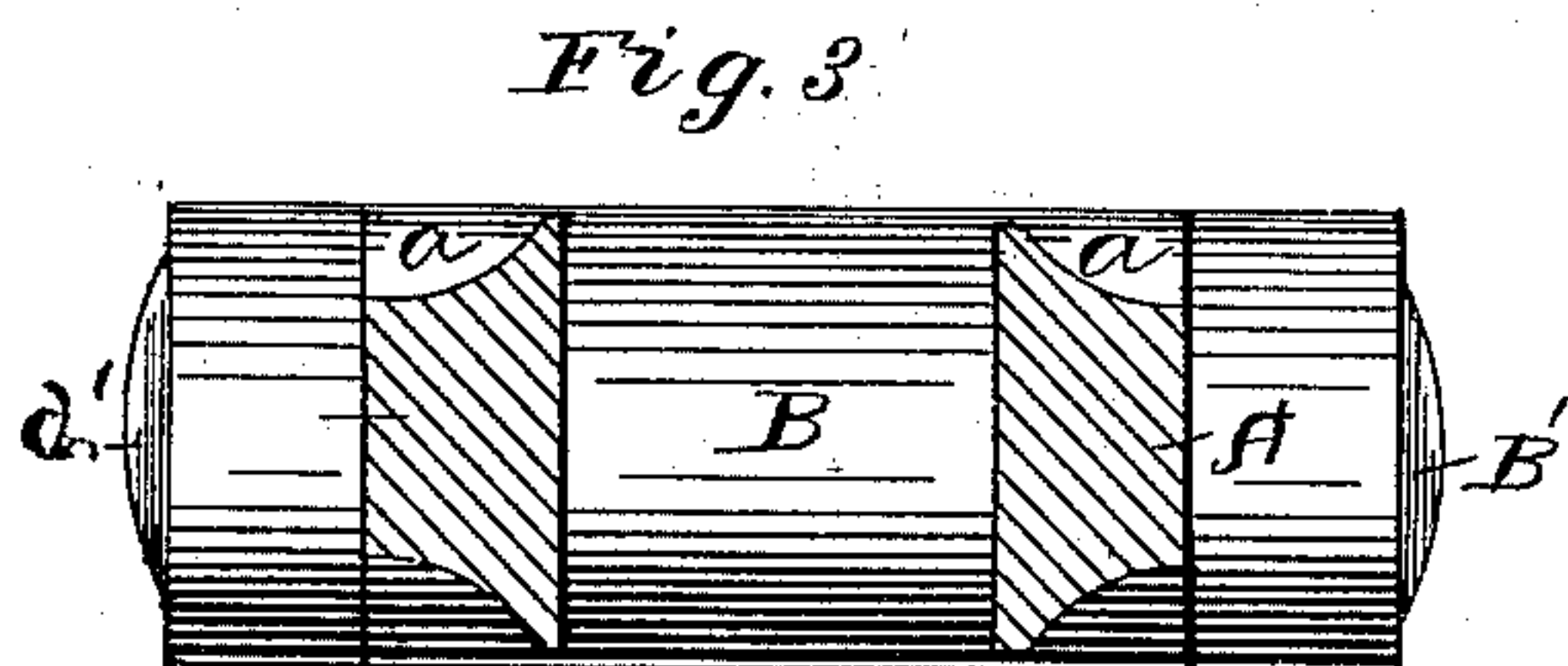
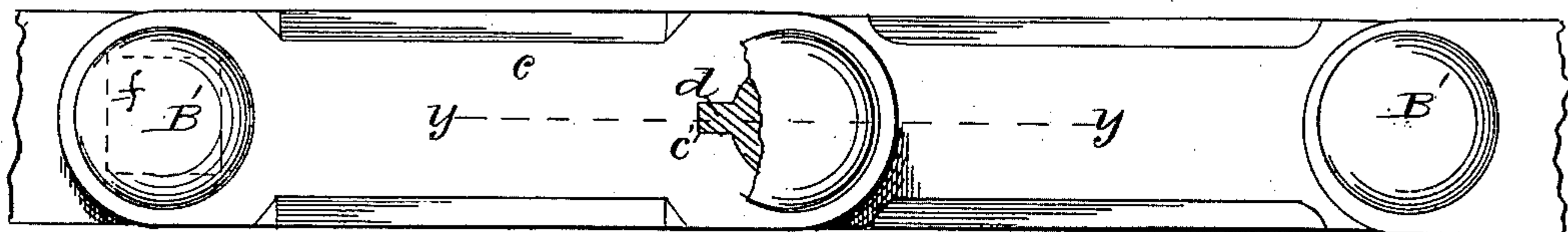
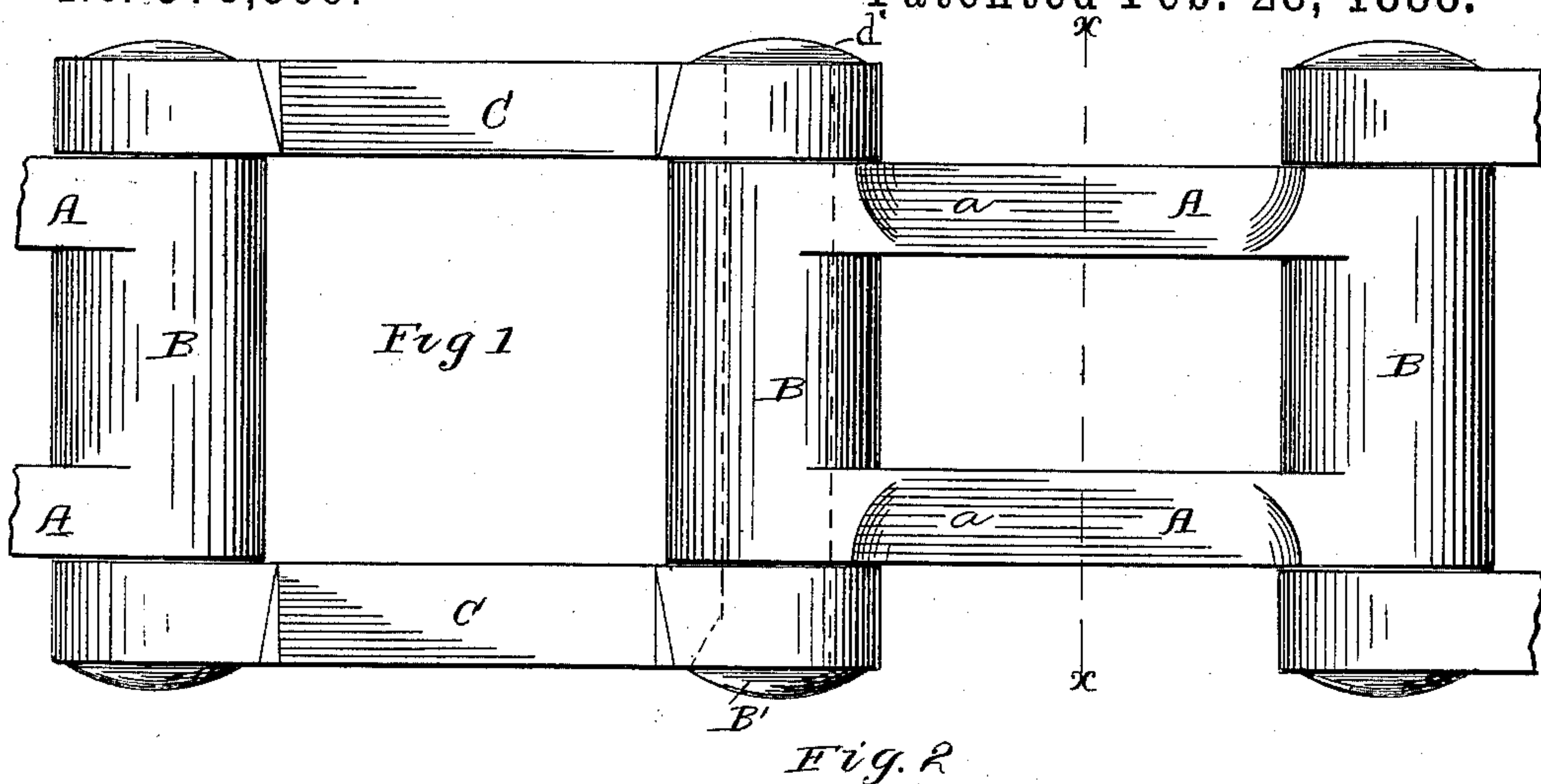
(No Model.)

B. A. LEGG.

DRIVE CHAIN.

No. 378,599.

Patented Feb. 28, 1888.



Witnesses:

J. H. Turner
J. B. Barker.

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UNITED STATES PATENT OFFICE.

BENJAMIN A. LEGG, OF COLUMBUS, OHIO, ASSIGNOR TO THE LECHNER
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DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 378,599, dated February 28, 1888.

Application filed July 10, 1886. Serial No. 207,697. (No 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 bottom view of my improved chain. Fig. 2 is an edge view, one of the pintles being broken away. Fig. 3 is a transverse section on line $x x$, Fig. 1. Fig. 4 is a transverse section on line $y y$, Fig. 2.

Similar letters indicate similar parts in all the figures.

A A B B are respectively the side bars and end bars of a centrally-open link. The lower edges of these side bars are beveled or chamfered to produce cutting-edges at $a a$, for a purpose which will be explained. Preferably these side bars are otherwise square or right-angled in cross-section, as indicated. The end bars, B B, are, by preference, round in cross-section, or at least are bounded by curved lines upon their opposite outer faces, to facilitate their traversing the sprocket-wheels over which they run. These end bars are provided with pintle-seats, which are round in cross-section and of uniform diameter throughout.

C C are intermediate links arranged in pairs and connected with the alternate links A B by means of pintles. Preferably the pintle-seats $c c$ are round, except that part of them have notches c' to assist in locking the pintles to these side bars, and for this purpose the pintles B' are provided, by preference, with short spurs or lugs d , which project inward from the pintle-head and take into the notch c' . The under edge of each side bar C is also beveled or chamfered to produce a cutting-edge like that at a .

It will be seen that a chain can be readily made up and the parts kept in proper working relation after they are put together by riveting over or upsetting the ends of the pintles, as at d' . It will also be understood that when thus put together, with the lugs or spurs d seated in the notches c' , the pintles are incapable of rotation relative to the side bars C, and consequently all the wear on the pintles will be within the end bars, B B. Thus there is a

large wearing-surface between the articulating parts of the chain, and the durability of the chain thereby greatly increased as compared with those chains in which the length of the pintle-seats is determined by the thickness of the side bars.

While I prefer to make the pintle-seats in the ends of the side bars round in cross-section, except where they are notched, yet they may be made angular in cross-section in whole or in part, as indicated by dotted lines at f , Fig. 2, in which case the ends of the pintles may be of corresponding shape or of such shape as will prevent them from rotating relative to the side bars when the chain is put together.

I am aware of Patent No. 169,955, and do not claim anything therein shown; but my construction differs materially from the one therein shown in that, among other things, in that patent the screw-bolts E do not serve as pintles, nor are they in direct combination with the tubular bars B. On the contrary, the pintles consist of tube-sections each formed integrally with its respective side bar and combined with and engaging with a tubular end bar. Hence it is wholly immaterial in such construction whether or not the screw-bolt is locked to one or more of the side bars, so as to be incapable of rotation relatively thereto, because such bolt forms no part of the articulation, whereas in my chain the locking of the pintles to the side bars is indispensable in order to insure the articulation which is aimed at and which is one of the essential features of my invention.

I am also aware of Patent No. 304,625, and do not claim anything therein shown. In that chain it is essential, in order to secure the desired articulation, that the ends of the side bars which surround the ends of the pintles should be capable of motion longitudinally of the pintles; otherwise the question whether the pintles shall rotate relatively to the inner and outer pairs of the side bars will depend upon the relative friction between the parts.

I am also aware of Patent No. 302,574; but that patent has no separable side bars and the pintle has a spline upon its central portion engaging with the central perforated lug, so that all of the wearing-friction occurs at the ends of the pintle. Further, the construc-

tion of the parts is such that in order to insert the pintle the lugs to be coupled must be placed at an angle to each other. In consequence of the end bars of my links A A B B being cast 5 integrally with their side bars and of the side bars A A being closer together than are the side bars C C, it is evident that when traversing the spurs of a sprocket-wheel all the side-wise spreading strain or thrust will be sustained by the side bars of these centrally-open 10 links, so that a very slight upsetting or riveting of the pintles is sufficient to hold the side bars C C in place, there being but a slight tendency to slide the side bars C C off from the 15 ends of the pintles.

In practice I prefer drilling, because it will secure more closely fitting and better-wearing articulations.

This chain is specially adapted for use upon 20 mining-machines and other machines which are used in situations where coal-dust and other cuttings—as, for instance, of slate—are liable to get in between the chain and the sprocket-wheel or

similar device which is traversed by the chain, and which would, if the lower faces of the links 25 were flat, be liable to pack upon the sprocket-wheel or bar, and thus increase its diameter to a very objectionable extent; but by making the links with the cutting-edges *a a* this objectionable feature or objection is obviated. 30

What I claim is—

1. In a drive-chain, the combination of the centrally-open lugs A A B B, the side bars, C C, and the pintles locked to and turning with the bars C C, substantially as set forth. 35

2. In a drive-chain, the combination, with the pintle and the side bars, of the centrally-open links A B, having their lower faces beveled to form cutting-edges *a a*, substantially as described. 40

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

BENJAMIN A. LEGG.

Witnesses:

KATE E. WILLIAMS,
T. M. LIVESAY.