

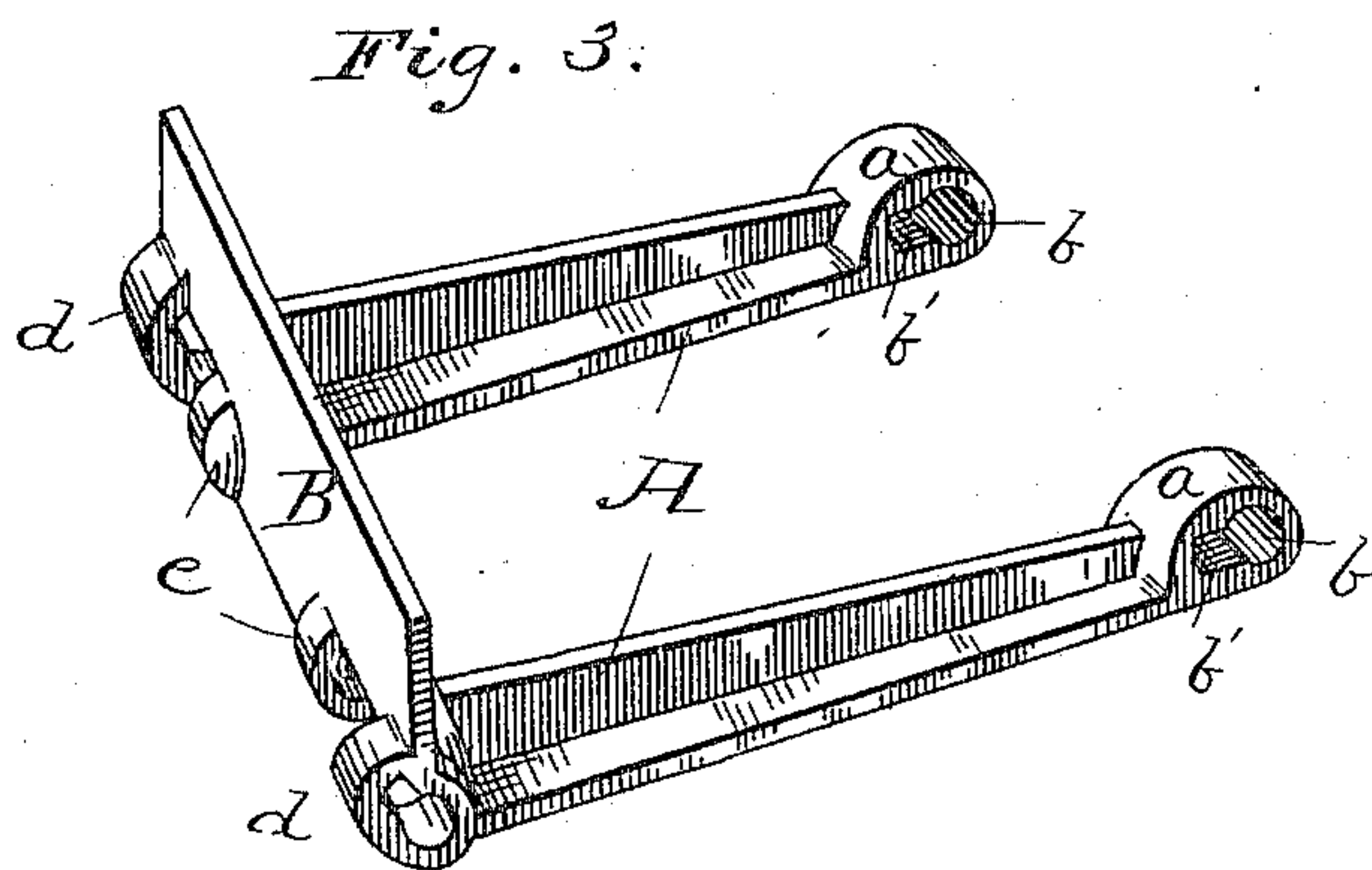
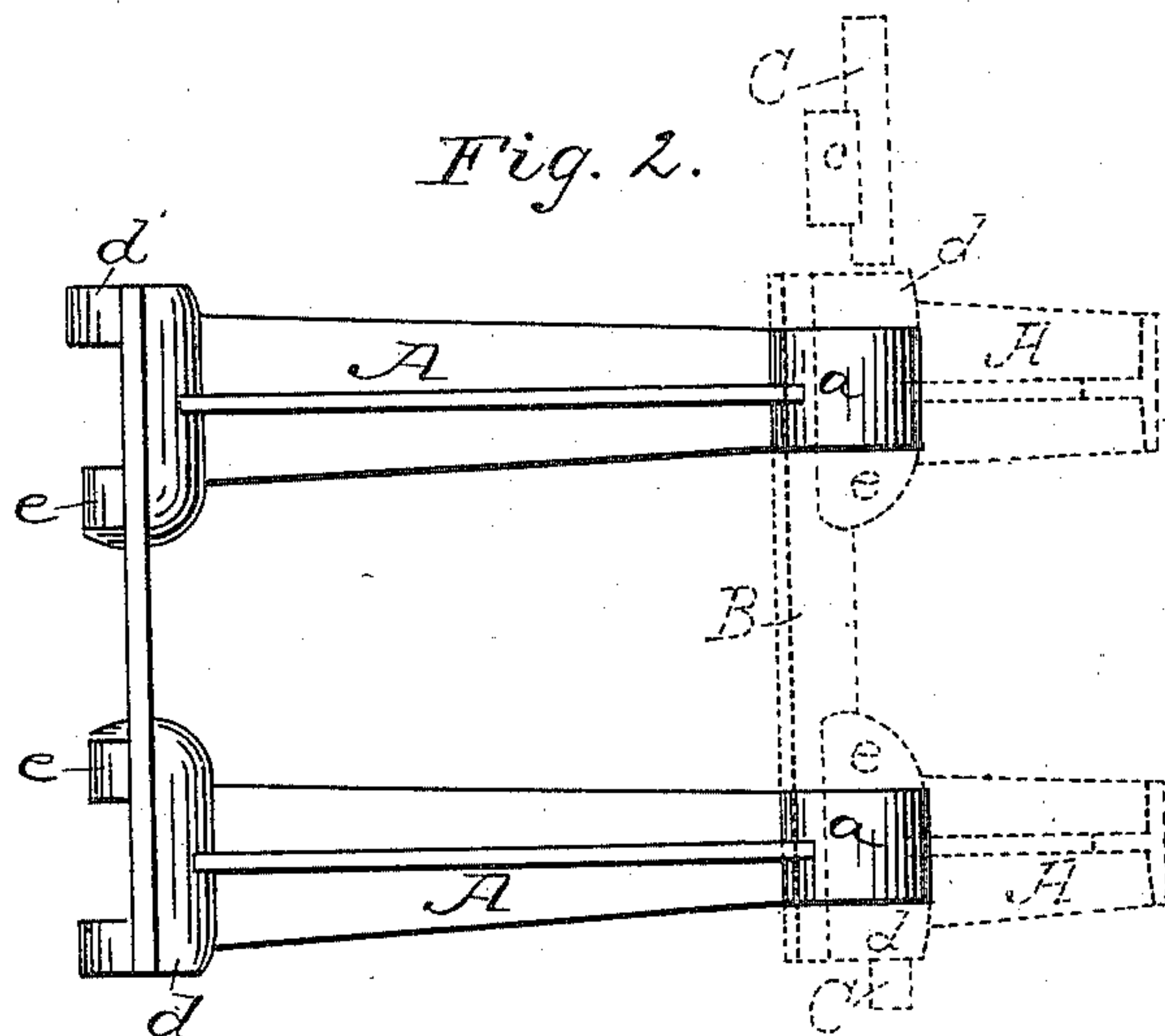
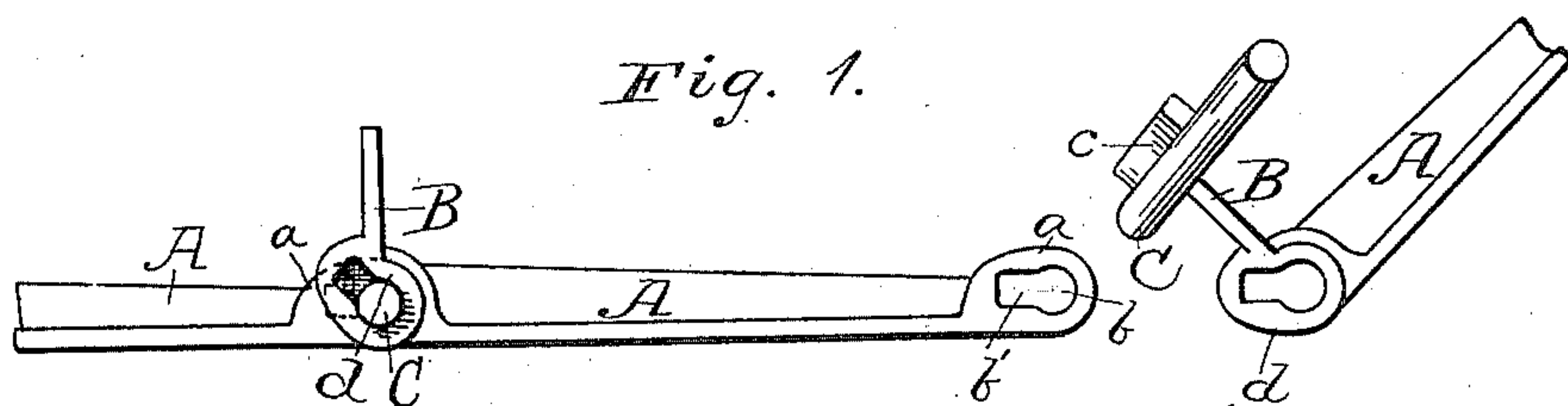
(Model.)

C. C. WATERS.

DRIVE CHAIN.

No. 299,187.

Patented May 27, 1884.



*Fig. 4.*

WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHESTER C. WATERS, OF MOLINE, ILLINOIS.

## DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 299,187, dated May 27, 1884.

Application filed April 28, 1883. (Model.)

*To all whom it may concern:*

Be it known that I, CHESTER C. WATERS, of Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Detachable Link-Chains; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a detachable link-chain, which may be driven either right or left, and which is not liable to have its shape distorted by continued strain or by heat.

In the drawings, Figure 1 is a side elevation, showing the manner of connecting the links. Fig. 2 is a plan view of one of my links. Fig. 3 is a perspective view of the same, and Fig. 4 is a detailed view.

The link is of a rectangular shape, open at one end; and it consists of the side bars, A A, and the connecting bar or plate B, connecting the corresponding ends of said side bars. The free ends of these side bars are provided with knuckles *a a*, the bore of which, when taken in cross-section, describes the transverse contour of the bit of a common door-key. In other words, the bore *b* is cylindrical, and has opening into the mortise *b'*. These bores are adapted to permit the insertion of and retain the splined pintle C, which is of a cylindrical form, and has extending laterally from that part which, when the key is in position, is within said bore *b* a tongue, *c*, fitting into the mortise *b'*. The connected ends of the side bars are provided with double knuckles *d* and *e*, the space between the two corresponding exactly to the width of the knuckles *a a* on the opposite ends of the side bars. The inner knuckle, *e*, has a circular bore, and is preferably closed at its inner end. The bore of the outer knuckle, *d*, corresponds with the bore *b* of the knuckle *a*, but with this distinction, viz., a straight line drawn through the bore and mortise of the knuckle *a* would be a horizontal left inclination, whereas a line simi-

larly drawn through the bore and mortise of the knuckle *d* would be at an angle of, say, forty-five degrees same inclination.

As hereinbefore mentioned, the length of the tongue *c* of the pintle C corresponds to the width of the knuckle *a* and projects from that portion which lies within the said knuckle when the pintle is in operative position. The remaining portions of said pintle, on either side of said tongue, are cylindrical, and the entire length of the same is a little greater than the distance from the outer opening of the bore of the knuckle *d* to the inner closed end of the bore of the knuckle *e*. Thus, when it is desired to articulate the links of my chain, I put the knuckles *a a* of the free ends of the side bars between the knuckles *d* and *e* of the next articulating link, and then place the links at such an angle (say one hundred and thirty-five degrees) to each other that the mortises and bores of the knuckles *a* and *d* will open into each other. I then insert the pintles laterally into said bores until the tongue *c* is wholly within the bore of the knuckle *a*, and then restore the links to their normal positions, securely locking them.

The angle at which the links of my chain are held to each other when being articulated is such as is seldom attained when in use, therefore there is little, if any, likelihood of the links accidentally separating.

It will be understood that the exact construction of the pintle, or the shape of the bores of the knuckles *a* and *d* and the angle at which they are placed to each other, is immaterial so long as they conform to the principle of my invention, as hereinbefore described.

The peculiar virtue of my chain is that the construction renders it impossible for the links to lengthen or separate laterally, as is the case in some chains known to exist.

What I claim as new is—

A detachable link for drive-chains having the side bars connected by a bar at one end and having the other ends free, the free ends being provided with knuckles in which are key-hole slots or apertures in a plane parallel with the side bars, the connected end being formed with duplex knuckles, the outer ones

of which are provided with key-hole slots or  
apertures at an angle to the horizontal plane  
of the side bars, and the inner ones with cir-  
cular apertures and adapted to receive splined  
5 pintles in the operation of coupling with ad-  
jacent links to form a chain, substantially as  
set forth.

In testimony that I claim the foregoing as  
my own I hereunto affix my signature in the  
presence of two witnesses.

CHESTER C. WATERS.

Witnesses:

JAMES H. COYNE,  
FRANK D. THOMASON.