

E. C. OLIVER.
FLEXIBLE SHAFT.
APPLICATION FILED NOV. 18, 1912.

1,069,283.

Patented Aug. 5, 1913.

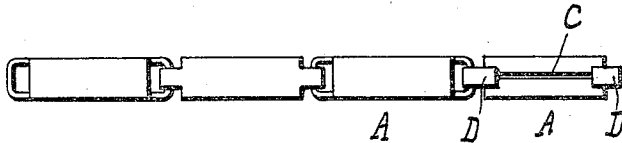


Fig. 1.

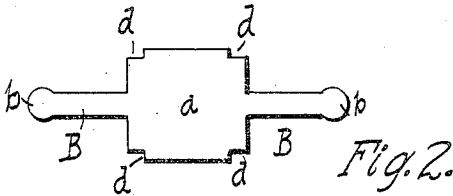


Fig. 2.

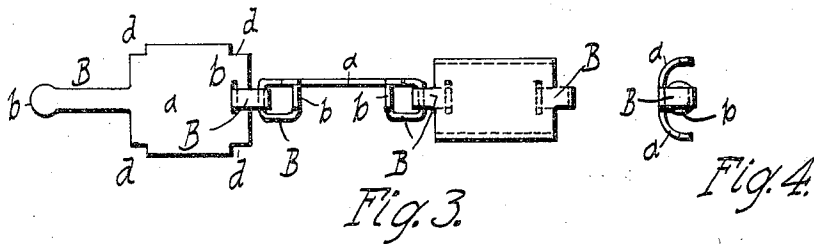


Fig. 3.

Fig. 4.

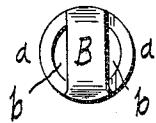


Fig. 5.

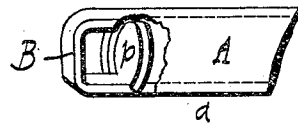


Fig. 6.

WITNESSES:
Paul A. R. Kroesing, Jr.
Virginia C. Spratt

INVENTOR
Edd C. Oliver
BY
Raymond A. Parker
ATTORNEY

UNITED STATES PATENT OFFICE.

EDD C. OLIVER, OF DETROIT, MICHIGAN.

FLEXIBLE SHAFT.

1,069,283.

Specification of Letters Patent.

Patented Aug. 5, 1913.

Application filed November 18, 1912. Serial No. 731,920.

To all whom it may concern:

Be it known that I, EDD C. OLIVER, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Flexible Shafts, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to flexible shafts and consists in the improvements hereinafter described and pointed out in the claims.

In the accompanying drawings:—Figure 1, is a side elevation of two adjacent links of a shaft embodying my invention. Fig. 2, shows the blank out of which the link is formed. Fig. 3, shows the links partly formed and interlocked. Fig. 4, is an elevation looking from the right of Fig. 3. Fig. 5, is an end view of one link. Fig. 6, is a perspective view of a portion of one link.

The shaft embodying my invention is formed of a series of interlocked links A, each of which is constructed from a blank stamped out of thin malleable metal. The thin metal is first stamped out in the form shown in Fig. 2 in which the body *a* is nearly square, but the edges at each corner are cut in as shown at *d d d d* and from the center of each side there extends a tongue B, the end *b* of which is formed in the arc of a circle of larger diameter than the width of the tongue. These tongues are then bent to form the sides of a parallelogram as shown in the middle link in Fig. 3, the enlarged portion *b* touching and extending at right angles to the body *a*. After the second bend the tongues of adjacent links are interlocked as indicated in Fig. 3 and then the end of the tongue is

again bent downward touching the main body *a* of the blank. The body *a* of the blank is then bent over into a cylindrical form, its inner surface lying against the peripheries of the parts *b* and its edges coming together as shown at C in Fig. 1. The cut portions *d d* upon each side of the body *a* of the blank come opposite each other and form a slot or indentation into and through which the tongue B extends. This is indicated at D D Fig. 1. By this construction the tongue B is inclosed and held from deformation by the body *a* of the link A. The slot C acting to prevent lateral motion of the tongue and the enlarged portion *b* inclosed by the turned-up metal of the body *a* prevents the tongue from being drawn out of such inclosure or being bent in the other direction.

What I claim is:—

1. In a flexible shaft, a link A having a tongue B extending from one side thereof, said tongue having an enlargement at its outer end, said tongue being bent over upon itself and the body of said link being bent over to inclose the enlarged end of said tongue.

2. In a flexible shaft, a link formed of a body of thin metal having its corners cut out, said body being bent over upon itself to an approximately cylindrical form so that the cut out portions form a slot in the end of said link, a tongue extending from one side of the body of said link being bent over passing through said slot, said tongue being provided with an enlarged end inclosed by the body of the link.

In testimony whereof, I sign this specification in the presence of two witnesses.

EDD C. OLIVER.

Witnesses:

VIRGINIA C. SPRATT,
ELLIOTT J. STODDARD.