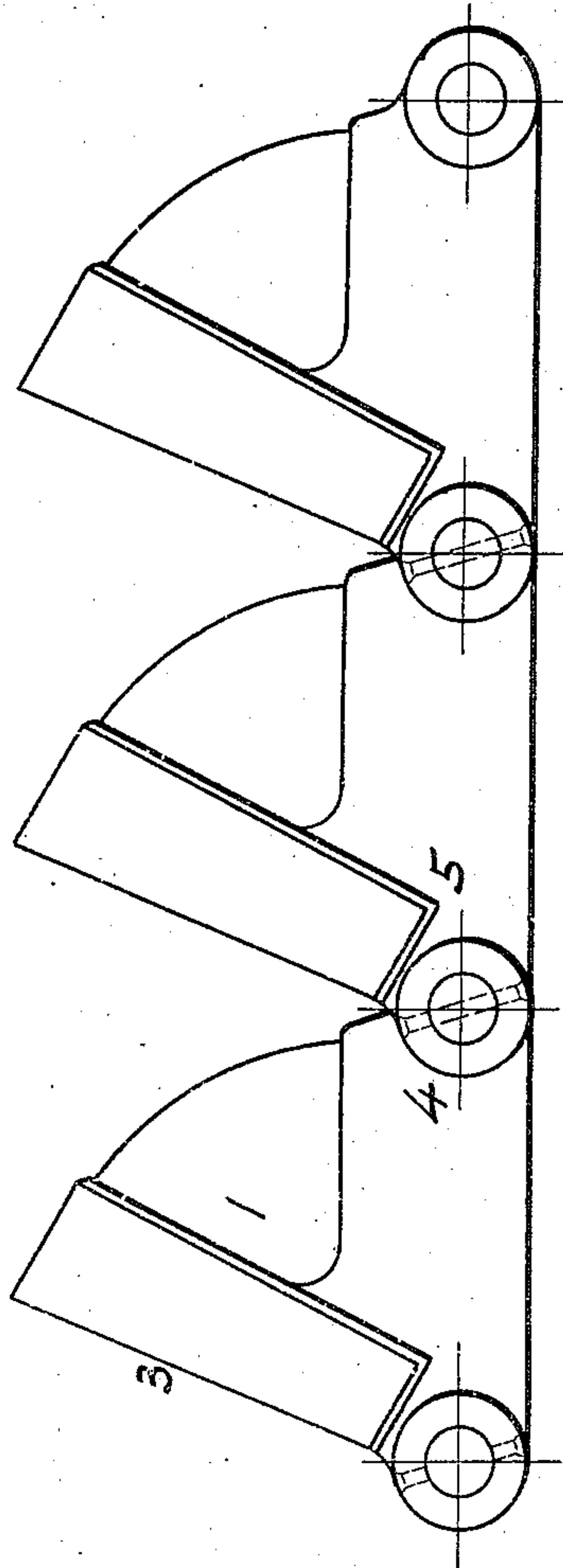
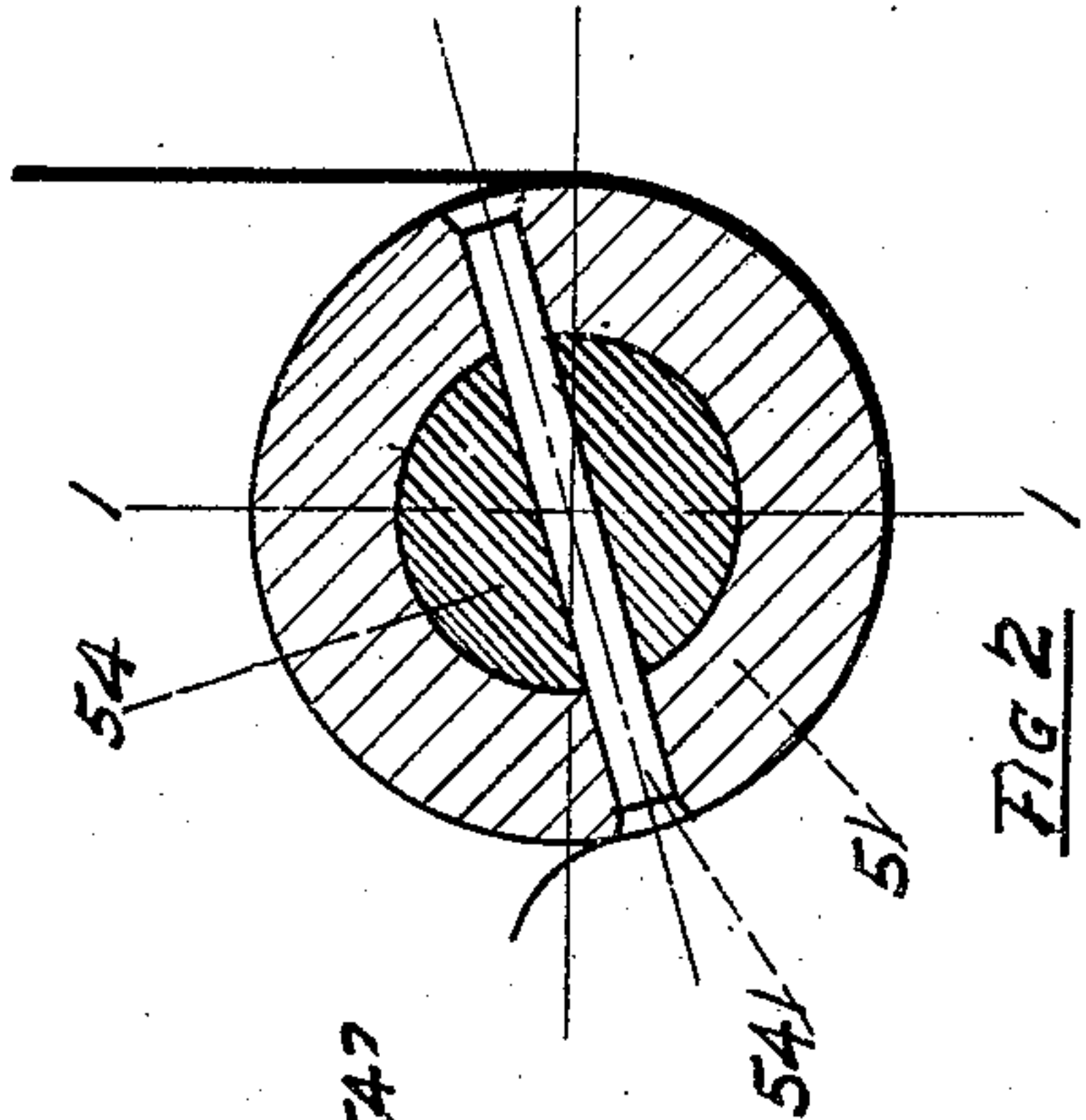
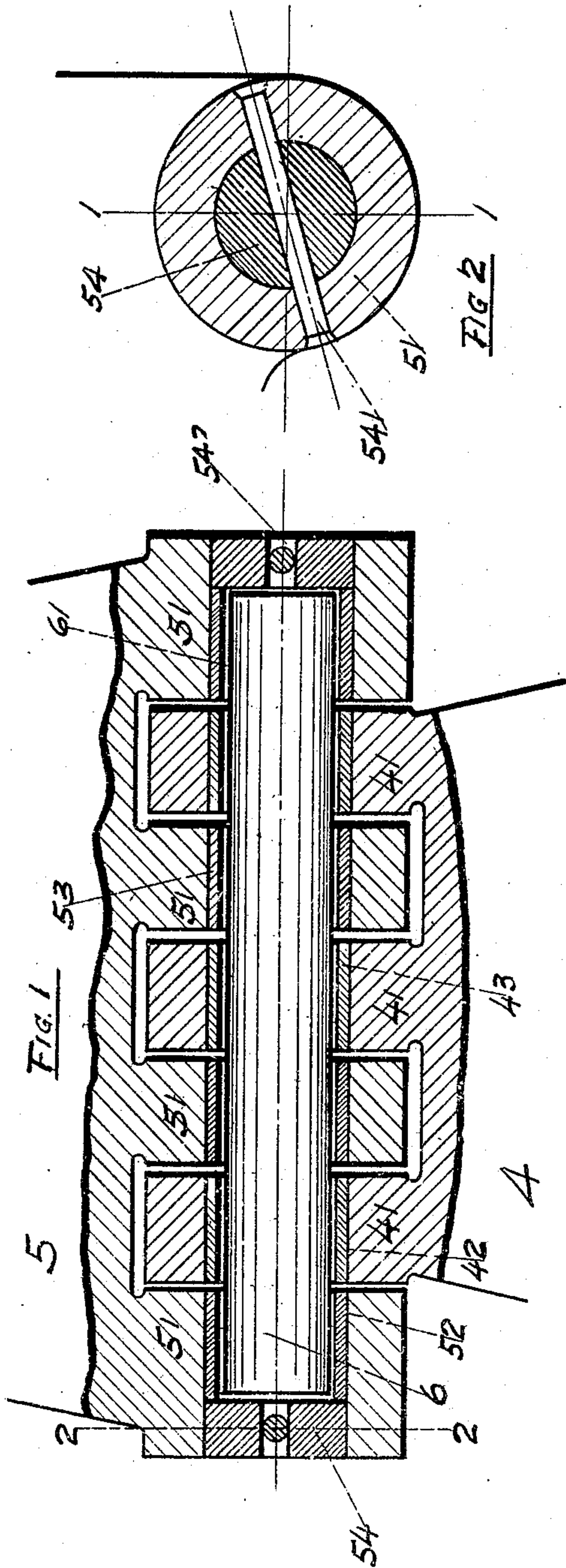


No. 845,014.

PATENTED FEB. 19, 1907.

G. B. SHIPLEY.  
DREDGE PIN AND JOINT.  
APPLICATION FILED JUNE 12, 1905.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## DREDGE PIN AND JOINT.

No. 845,014.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed June 12, 1905. Serial No. 264,804.

*To all whom it may concern:*

Be it known that I, GRANT B. SHIPLEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Dredge Pins and Joints, of which the following is a specification.

This invention relates to improvements in dredge pin and joint for the links of a dredge-chain, and has for its object the production of a link connection for a chain in which the pin is free to turn and wear evenly and still is constrained from endwise displacement by certain parts mounted on the links and unattached to the pin.

In the drawings, Figure 1 is a longitudinal sectional view through the chain through the center line of the pin on the line 1 1, Fig. 2. Fig. 2 is a transverse sectional view on the line 2 2, Fig. 1. Fig. 3 is a side elevation of a portion of the dredge-chain, showing the buckets.

This invention is specifically shown in the drawings in connection with a dredge-chain having buckets mounted upon the links thereof. Fig. 3 shows the relation of the bucket to the link, a bucket 1 being mounted upon each link or being integral therewith with its open end 3 at the left of each link, as shown in this figure. The links 4 5 are constructed with a plurality of eyes 41 41 51 51, which when the links are connected by the link-pin 6 have their bores 42 52 in alignment and themselves alternating across the width of the chain. As shown in Fig. 1, one link 4 is formed with three eyes 41, while the other link 5 is formed with four eyes 51. The purpose of this relative number of eyes in the consecutive links is to bring the locking means for the pin in the same link for each connection, although this is not absolutely necessary. The construction, as shown, provides the more symmetrical arrangement.

In each eye 41 51 is pressed by forced fit a bushing 43 53. These bushings are all of the same length, so as to be interchangeable, and they coincide in length with the bores 42 52 in the eyes 41 51, except in the case of the side eyes 51. These side eyes 51 are of slightly greater width than the length of the bushings, thus providing a short length of bore 52, into which is fitted a plug 54. The

plugs 54 are held in place by pins 541, which penetrate the plugs 54 and side eyes 51 and are riveted in position in the side eyes 51, as clearly shown in Fig. 2. There is thus provided, when the consecutive links 4 5 are in coaction, a cylindrical chamber 61 by the alined bores of the bushings, and this cylindrical chamber is limited at its ends by the plugs 54. Within the chamber 61 is positioned the link-pin 6, free to turn therein and prevented from end displacement by the plugs 54. The wear upon the pin is thus uniform.

The plugs 54 are each provided with an axial bore 542, preferably of the same size as pin 541. The purpose will hereinafter appear.

It has been stated hereinabove that the bushings are of equal length. This is merely for the purpose of interchangeability. Their length may be so proportioned that the total length of those mounted in the eyes 41 of one link 4 shall be equal to the total length of those mounted in the eyes 51 of the consecutive link 5. In such a proportioning of parts the tendency for the link-pin 6 to turn when the links 4 5 swing the one upon the other will be equal, the friction between the link-pin 6 and the one link 4 being equal to the friction between the link-pin and the other link 5.

In dismantling the link connections the pins 541 are first driven from their riveted position in the side eyes 51. The link-pin 6 and a plug 54 are then removed by inserting in bore 542 of the opposite plug 54 a suitable tool and simply driving them out, thus disconnecting the links. The bushings are then easily driven out and either replaced after slightly rotatably adjusting them or displaced by new substitute bushings. The connection is then ready to be remantled in an obvious manner.

It is to be understood that it is not desired to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

What I claim is—

1. Links, a link-pin between each pair of links, and removable plugging-disks preventing displacement of the pin.

2. Links, a link-pin between adjacent

links, plugging-disks preventing displacement of the pin, and means holding the disks in place.

3. Links, a link-pin between consecutive  
5 links, plugging-disks preventing displacement of the link-pin, and pins holding the disks in place.

4. A plugging-disk having two bores, and

a holding-pin through one bore and closing the other bore.

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

GRANT B. SHIPLEY.

Witnesses:

JOHN DAY, Jr.,

R. M. STONE.