

(No Model)

F. W. WOOD.  
DRIVE CHAIN.

No. 583,854

Patented June 1, 1897.

Fig. 1.

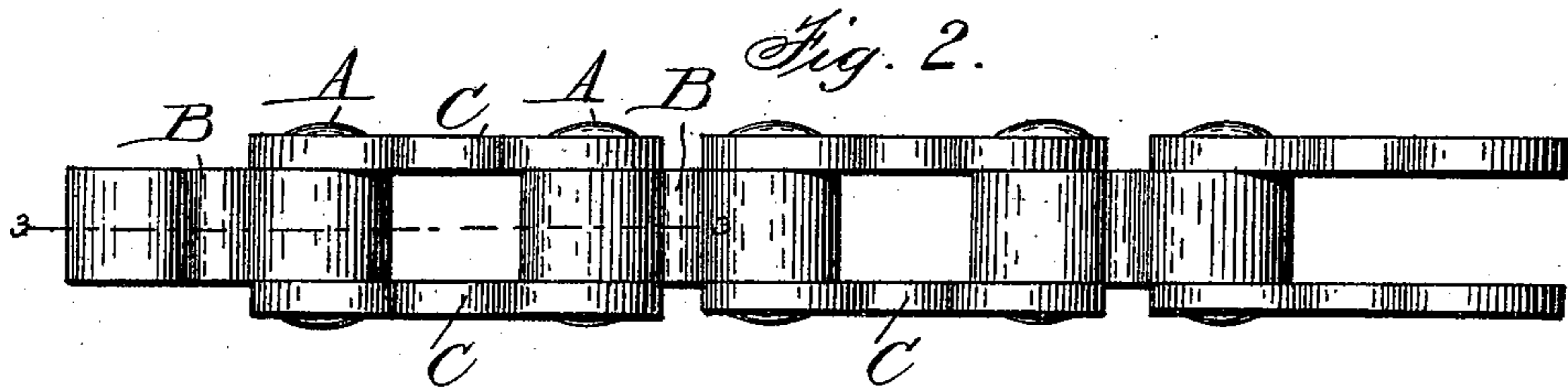
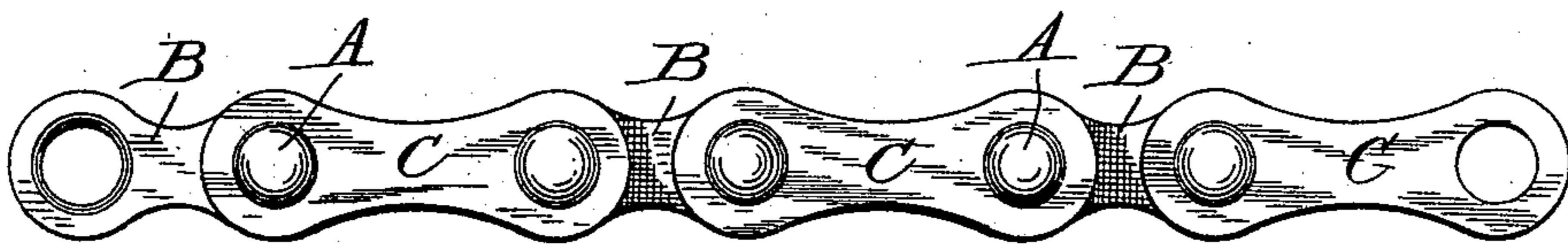


Fig. 3.

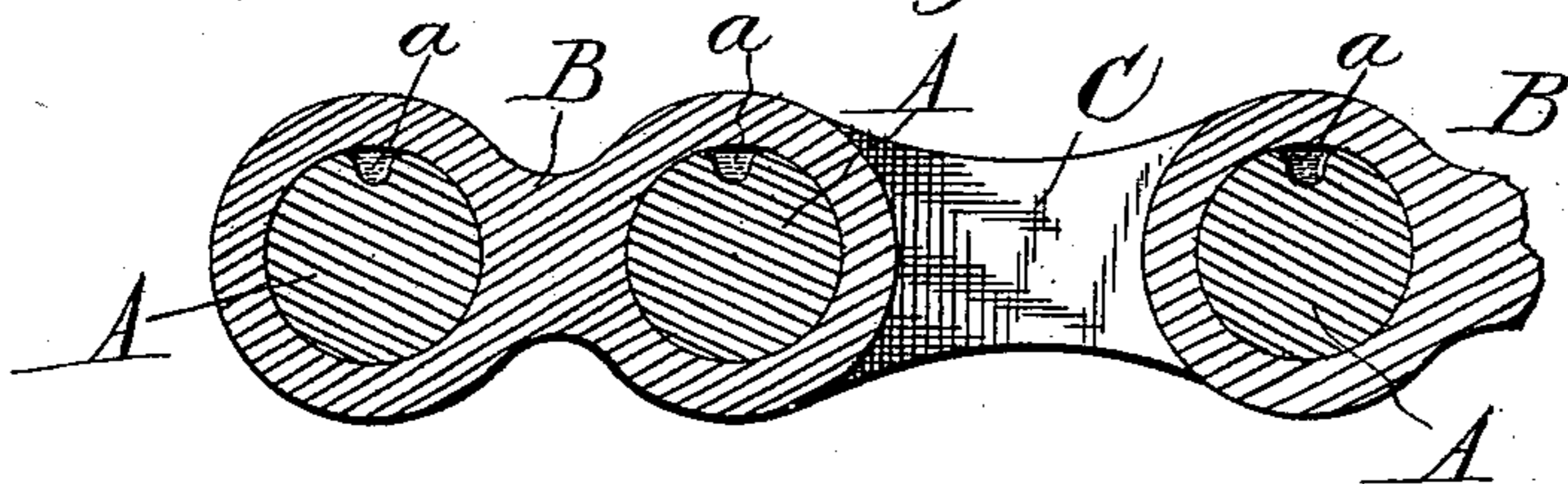


Fig. 4.

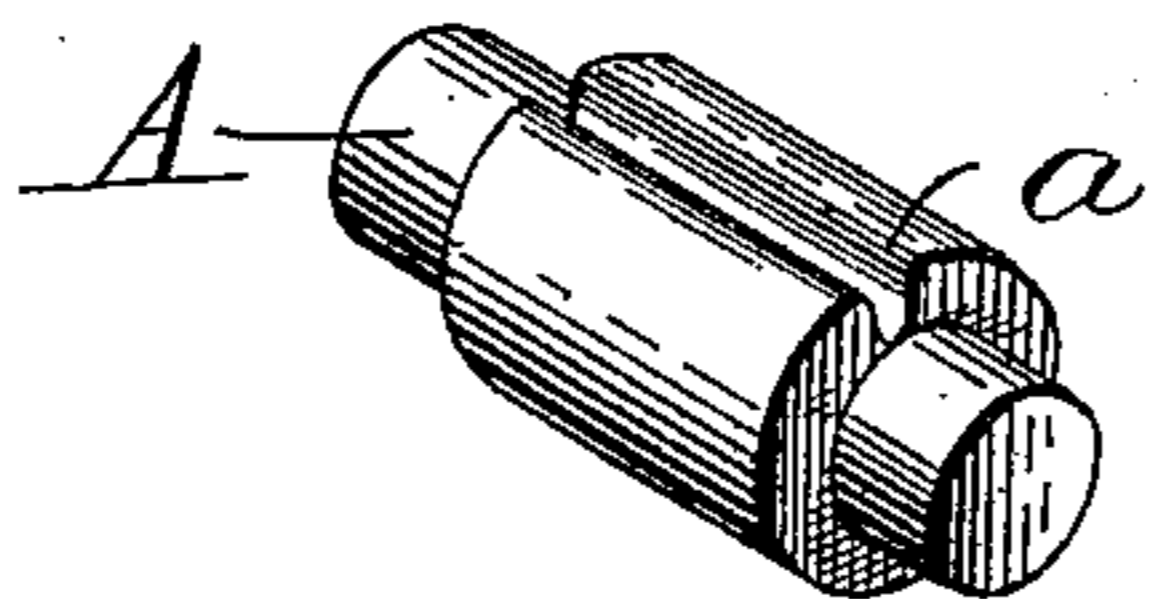
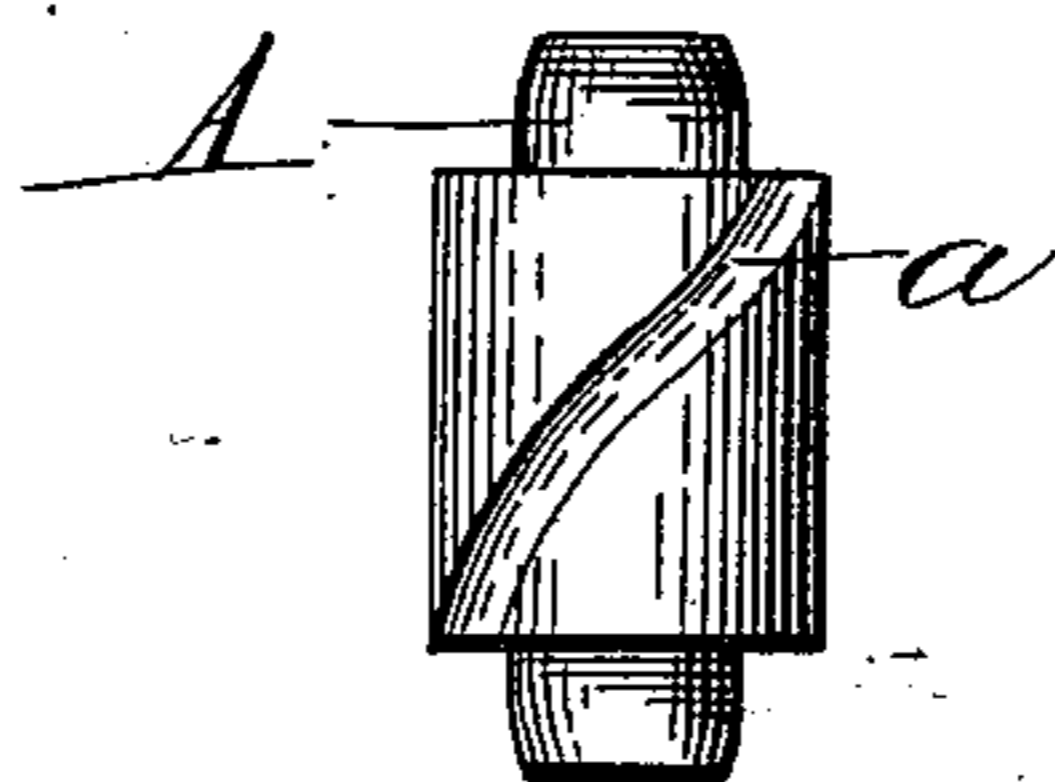


Fig. 5.



Witnesses  
Frank L. Ormand  
A. H. Williams

Inventor  
Frank W. Wood,  
per, E. W. Bradford  
Attorney

# UNITED STATES PATENT OFFICE.

FRANK W. WOOD, OF INDIANAPOLIS, INDIANA.

## DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 583,854, dated June 1, 1897.

Application filed July 1, 1896. Serial No. 597,756. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK W. WOOD, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Drive-Chains, of which the following is a specification.

The object of my said invention is to provide a self-lubricating drive-chain, the character of chain particularly designed being such as is ordinarily used on bicycles, but is or may be adapted for use in other situations without any material changes except as to size, which will be regulated by the character of work to be done and strength required.

It consists in providing a chamber for containing the lubricant in the face of the rivets, which chamber is preferably in the form of a groove extending from end to end of the central part of said rivet, on which the solid center link rocks, and it may extend either in a curved, spiral, or straight line, or be of any other form found suitable without departing from my said invention.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of a section of chain of the character designated; Fig. 2, a top or plan view of the same; Fig. 3, a longitudinal central section on the dotted line 3 3 in Fig. 2; and Figs. 4 and 5, views showing two different forms of grooves in the rivet, that shown in Fig. 4 being straight and that in Fig. 5 being spiral, which I regard as the preferable form inasmuch as it distributes the lubricant over a greater portion of the surface to be lubricated, as will be presently more fully described.

In said drawings the portions marked A represent the rivets, B the center links, and C the side links, which several parts compose the chain.

While I do not desire to be understood as specifying any particular size as best adapted for the purposes of the chain, as different uses will require different sizes, yet the drawings show the parts on a scale much larger than ordinarily used on bicycles, Figs. 3, 4, and 5 being several times enlarged in order to show more clearly the particular feature which constitutes the invention.

The several parts are made and assembled in the usual or any preferred manner and are of the ordinary form, except the rivets, which differ from the ordinary only in the matter of forming the lubricant-chambers, which, as before stated, preferably consist of a groove *a*, extending from end to end of the central part of each rivet, on which the links rock. Said groove is of a depth equal to the width of the shoulder between said center and the smaller ends, on which ends the sides *C* are riveted. The top corners of said groove are preferably rounded, as shown clearly in Figs. 3 and 4, to avoid any cutting or undue wear between the parts. As before stated, I prefer the spiral form of groove shown in Fig. 5, as it extends for a considerable distance around the body of the rivet and thus distributes the lubricant over a greater portion of the surface, but the form shown in Fig. 4 is also very efficient and may be considered more desirable for some purposes, being of a simpler and less expensive construction.

When the parts are assembled, the rivets being taken out of a vessel of lubricant, as usual, the grooves retain a considerable amount thereof, the lubricant used being of the character which congeals quickly, such as lard-oil, and said grooves or chambers are thus substantially filled therewith. As the eyes of the center links and the rivets are formed of a size as nearly the same as is possible and permit the one to rock on the other to give the required flexibility to the chain, and as the motion between the two parts is only a rocking motion, neither part rotating, it will be seen that the lubricant must escape very slowly, and the quantity contained in each chamber will be sufficient to keep the joint lubricated for a long time. The invention is also of advantage when the chain is cleaned. The coal-oil or other cleaning agent used will work down in the joint between the center and side links and into said grooves and serve to remove all the gum and restore the chain to its original flexible condition very quickly. A chain is thus provided for transmitting power and motion which is not only very pliable and flexible when new, but one which can be easily and conveniently kept in such condition, and this without adding materially to the expense of its manufacture, as

the grooves can be formed in the bar or wire from which the rivets are made before being cut into rivet lengths.

5 While I have referred to the part A as a "rivet" throughout the specification, it will be understood, of course, that it includes well-known devices capable of performing the same office, such as bolts, screws, &c.

10 Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

15 1. A drive-chain composed of rivets and links part of which links are mounted to rock on said rivets which are provided with grooves in their bearing-faces for containing lubricant, substantially as set forth.

20 2. A drive-chain composed of the rivets with shouldered ends, center links mounted on the middle portion thereof to rock, and side links riveted to said ends, said rivets being formed with a lubricant-containing chamber in the outside or bearing face of said middle portion, substantially as described and for the purpose specified.

25 3. A drive-chain composed of the shouldered rivets, the center links mounted on the middle thereof and the side links mounted against said shoulders, and said rivets being formed with grooves in their outer sides which extend across their faces from one shoulder to the other, substantially as described and for the purpose specified.

30 4. A drive-chain composed of rivets and links, part of which rock on said rivets, said rivets being formed with grooves extending in spiral directions across their outer bearing-faces, substantially as described and for the purpose specified.

35 5. A drive-chain composed of links and rivets arranged to rock where connected, the rivets being each provided with a groove in its face the top edges of which are rounded, substantially as set forth.

40 In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 27th day of June, A. D. 1896.

FRANK W. WOOD. [L. S.]

Witnesses:

E. W. BRADFORD,  
JAMES A. WALSH.