

(No Model.)

J. B. SINCLAIR, Jr.  
DRIVING MECHANISM FOR BICYCLES.

No. 572,729.

Patented Dec. 8, 1896.

Fig. 1.

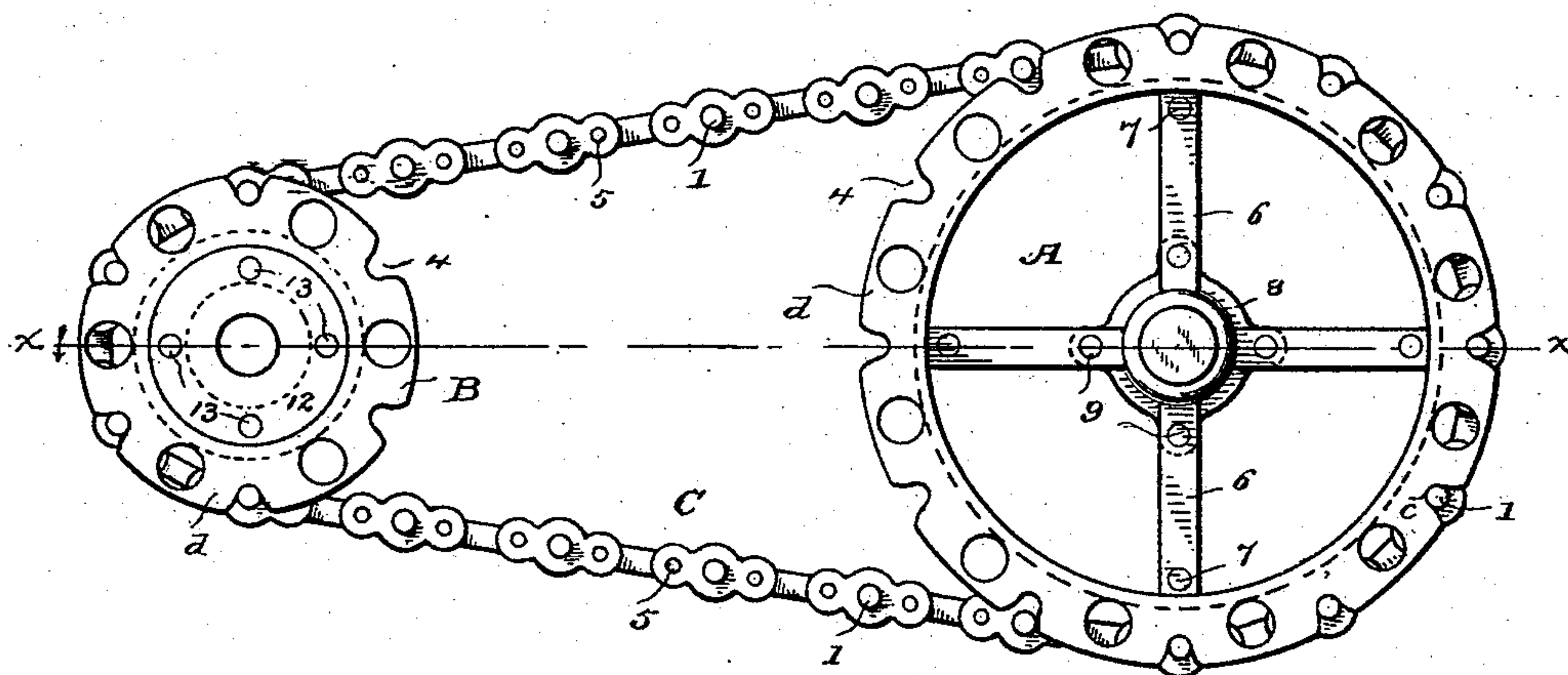


Fig. 2.

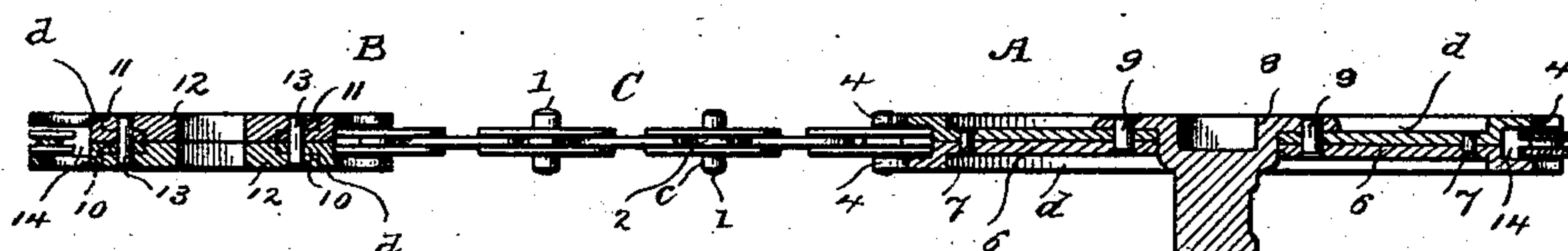
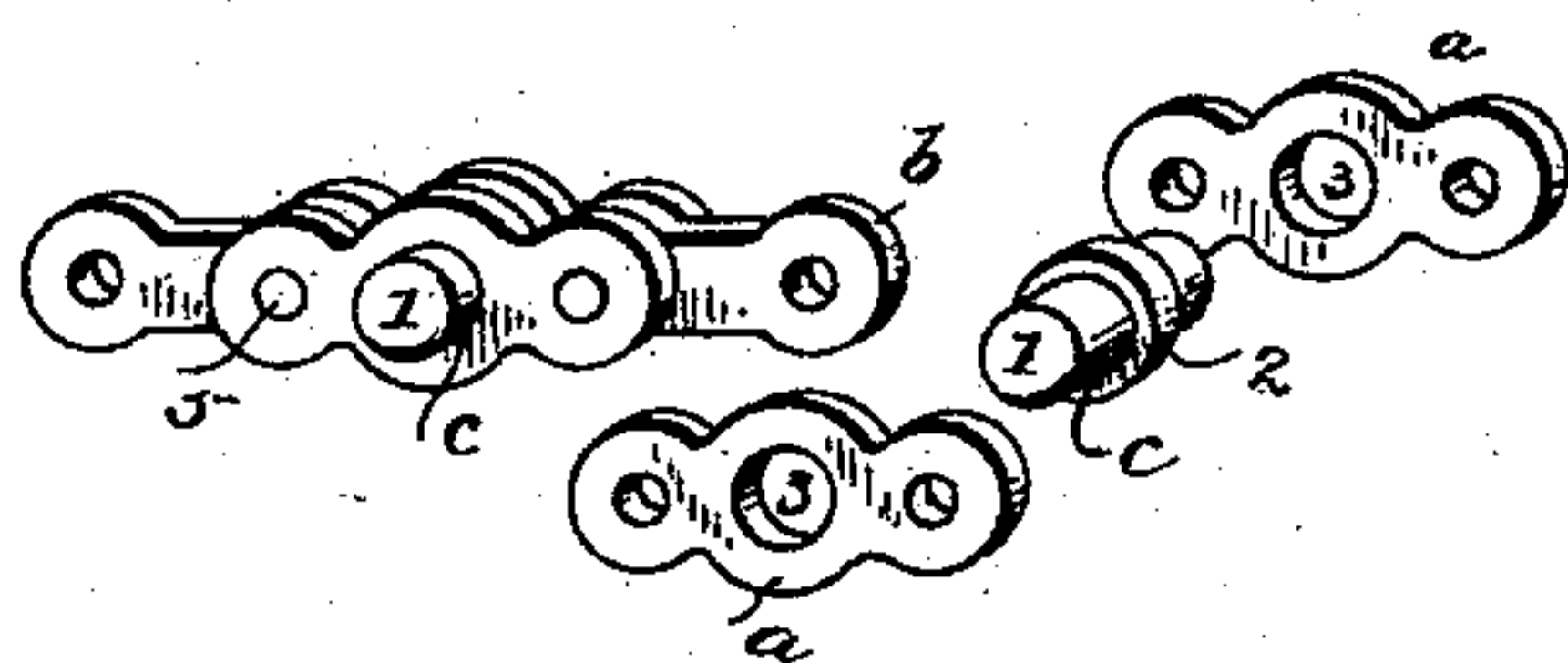


Fig. 3.



WITNESSES

H. F. Lamb  
S. V. Richardson.

INVENTOR

John B. Sinclair  
By A. M. Wooster  
Atty.



# UNITED STATES PATENT OFFICE.

JOHN B. SINCLAIR, JR., OF SEYMOUR, CONNECTICUT, ASSIGNOR OF TWO-THIRDS TO EDWARD N. CARRINGTON AND ARTHUR H. CARRINGTON, OF DERBY, CONNECTICUT.

## DRIVING MECHANISM FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 572,729, dated December 8, 1896.

Application filed March 19, 1896. Serial No. 583,950. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. SINCLAIR, Jr., a citizen of the United States, residing at Seymour, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Driving Mechanism for Bicycles and Similar Uses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to produce driving mechanism for bicycles and similar uses in which the means for transmitting power shall be a chain of novel construction used in connection with driving and driven wheels, which may or may not be made on the principle illustrated in the drawings, the special objects in view in the development of my improved driving mechanism having been to produce a construction which shall be simple and inexpensive to make, durable, and practically impossible to get out of repair, in which the number of parts shall be reduced to the minimum, in which the links of the chain shall be relatively long, thereby reducing the number of points of contact and consequently reducing the wear and the friction, and in which there shall be two outer points of engagement between the chain and the wheels instead of one central point of engagement, thereby doing away with any tendency toward lateral movement of the chain and insuring direct and evenly-distributed strain upon the parts.

With these ends in view I have devised the novel construction of which the following description, in connection with the accompanying drawings, is a specification, letters and numbers being used to designate the several parts.

Figure 1 is an elevation illustrating the application of my novel driving-chain to the driving and driven wheels of a bicycle; Fig. 2, a section on the line  $x x$  in Fig. 1; and Fig. 3 is a perspective illustrating, both assembled and detached, the three independent parts which are comprised in the chain.

A denotes a driving-wheel, B a driven wheel, and C the chain. The chain consists

of side pieces  $a$ , center pieces  $b$ , and bearing-pieces  $c$ . The bearing-pieces consist of trunnions 1 and a central collar 2, which may or may not be formed integral with the trunnions but is rigid therewith. The trunnions pass through holes 3 at the mid-length of the side pieces and extend outward far enough to engage depressions 4 in the side plates  $d$  of the wheels, as is clearly shown in the drawings, the bearing-pieces being free to turn in holes 3 and also of course in the depressions in the side plates of the wheels. The center pieces lie between the ends of the side pieces, and said side pieces and center pieces are secured together by rivets 5, each of which passes through two side pieces and a center piece, said rivets being free to turn either in the side pieces or the center piece, or, if preferred, of course, in both side pieces and center pieces. In practice I make the three parts of the chain of a high grade of steel hardened, although the special material used is not of the essence of my invention nor is the special shape of the links a matter of importance. The length of the center pieces and side pieces—i. e., the length of the links—is likewise not of the essence of my invention, although I preferably give to my novel chain a pitch of one and one-half inches—that is, a length of one and one-half inches—from bearing-point to bearing-point, which I found perfectly feasible with my improved chain.

The essential feature of the driving and driven wheels is that each wheel is provided with side plates which I have designated by  $d$ , and that said side plates are provided with depressions 4 to receive the trunnions of the bearing-pieces of the chain. In Figs. 1 and 2 I have shown the side plates of the driving-wheel as having formed integral therewith radial arms 6, which register with each other and are riveted together, as at 7, and are also riveted to a central hub 8, as at 9, and have shown the side plates of the driven wheel as provided with flanges 10, which lie between the flanges 11 of the parts 12 of a two-part hub, said flanges 10 and 11 being riveted together, as at 13. It is essential that the outer edges of the side plates of my novel wheels



lie at sufficient distance apart to form a peripheral channel 14 wide enough to receive the links—i. e., the side plates—freely, as clearly shown in the drawings. It will of course be understood that depressions 4 in the driving and driven wheels are placed at just sufficient distance apart to receive the trunnions of the chain as the chain passes over them, the side pieces of the chain dropping freely between the side plates of the wheels, but the only bearings of the chain upon the wheels being the bearings of the trunnions in depressions 4.

Having thus described my invention, I claim—

1. A chain for bicycles and similar uses consisting of side pieces having holes at their mid-length, bearing-pieces consisting of trunnions which pass through the holes in the side pieces and extend outward therefrom and collars which lie between the side pieces and center

pieces which lie between the ends of the side pieces and are loosely riveted thereto.

2. The combination with a driving and driven wheel each of which is provided with side plates having peripheral depressions which register with each other said side plates being separated by a peripheral channel, of a chain comprising side pieces having holes midway of their lengths, bearing-pieces having trunnions which pass through said holes and engage the depressions in the side plates of the wheels and collars lying between the side pieces of the chain and center pieces the ends of which lie between the ends of the side pieces and are loosely riveted thereto.

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

JOHN B. SINCLAIR, JR.

Witnesses:

HELEN E. BAILEY,  
THOS. E. ATWATER.