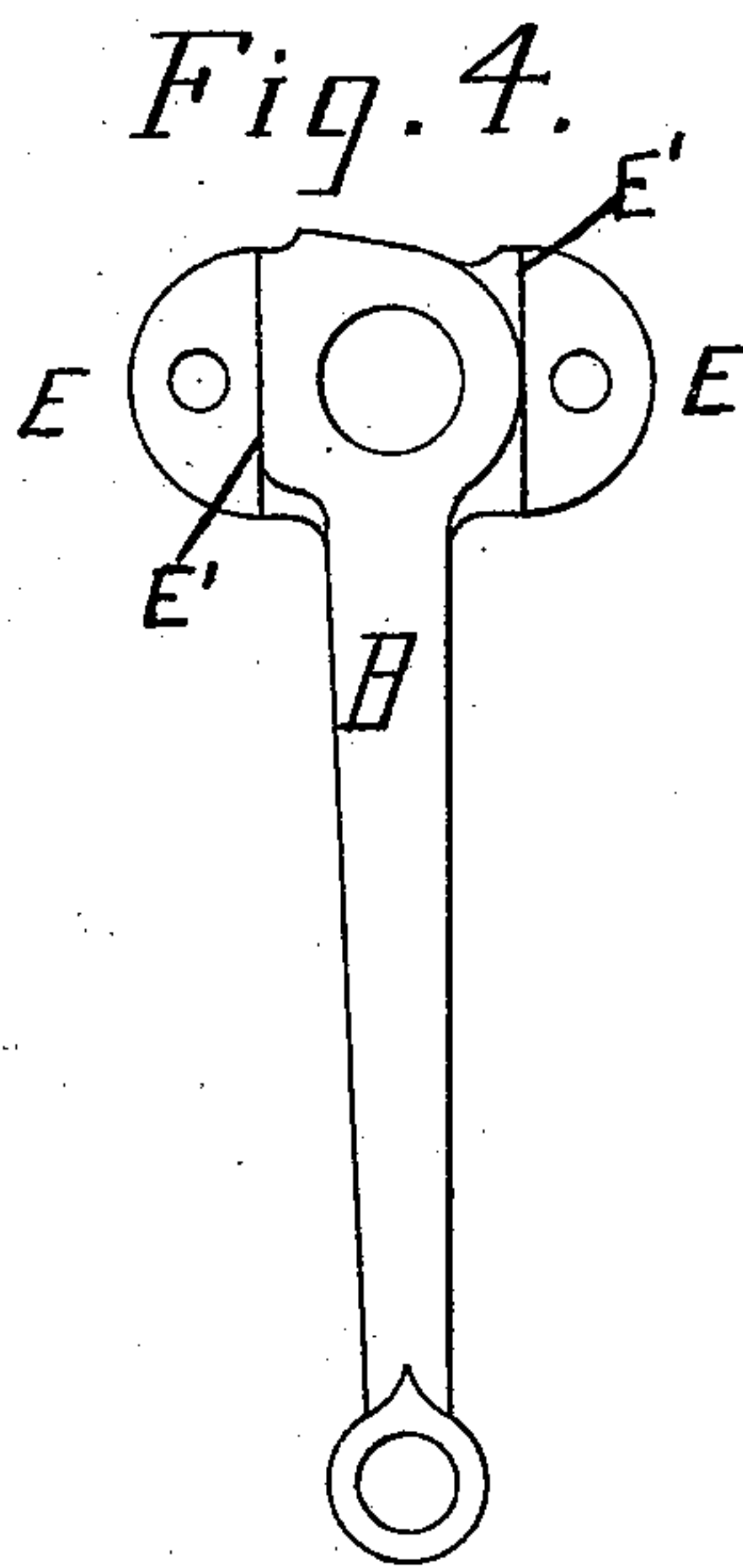
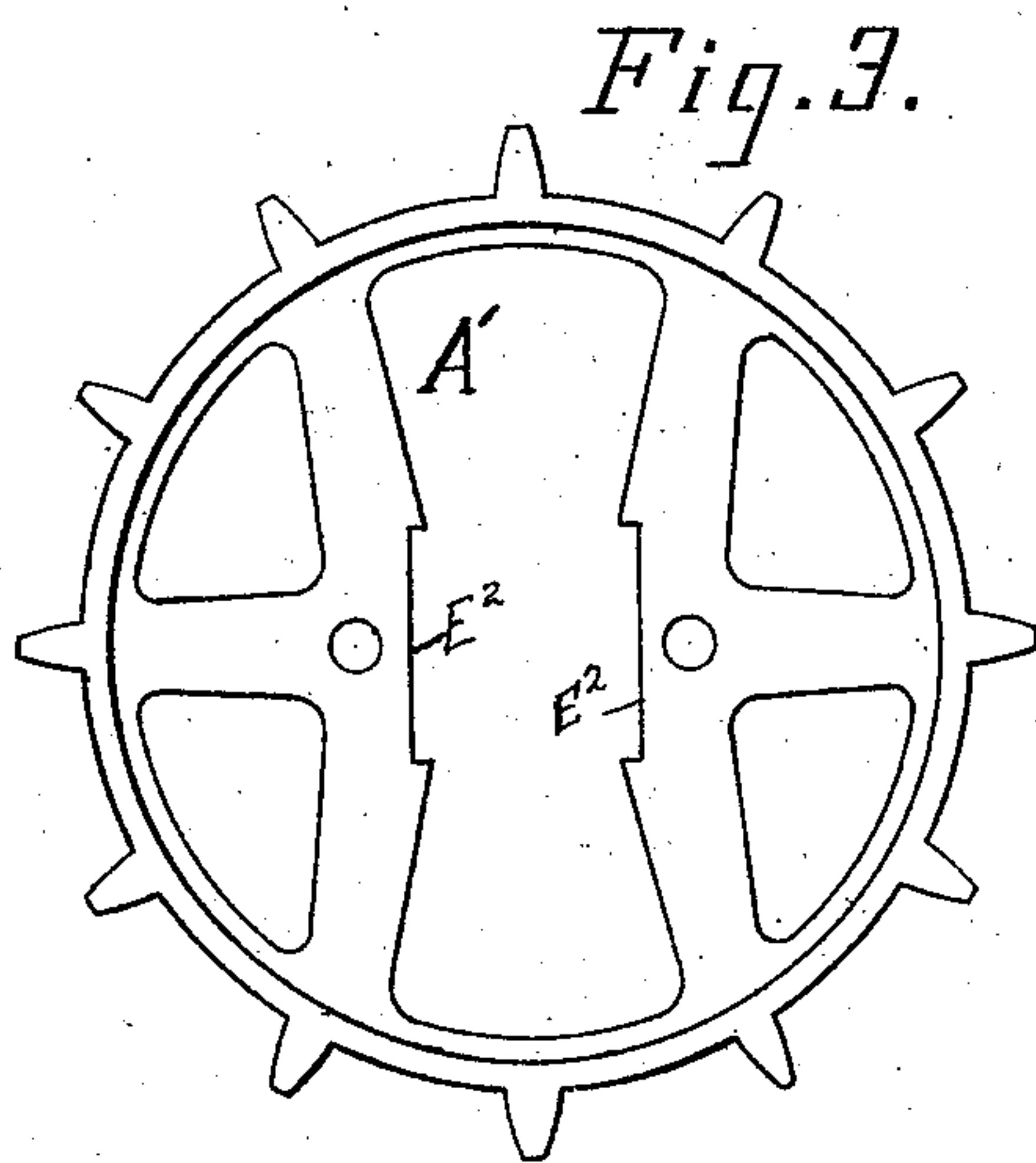
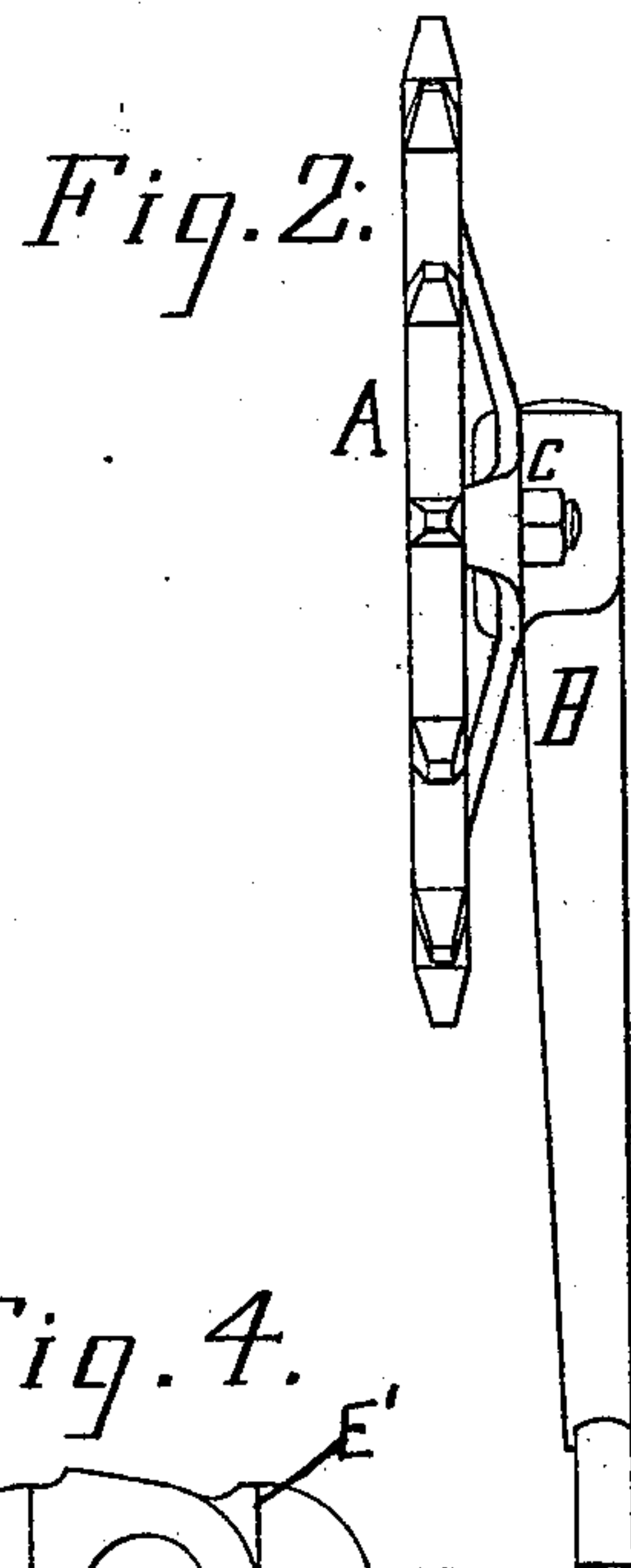
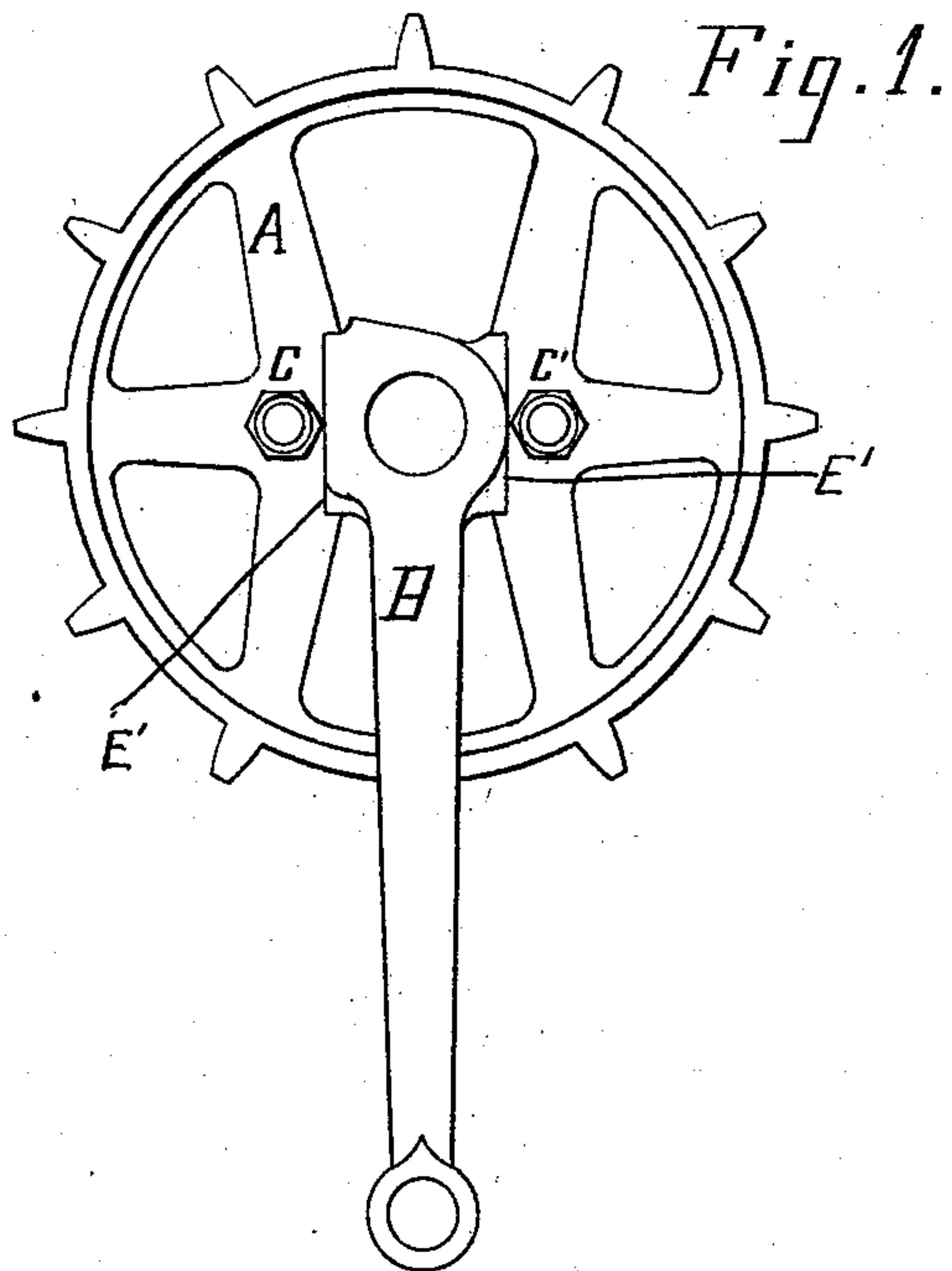


(No Model.)

C. W. DAKE.  
SPROCKET WHEEL.

No. 556,254.

Patented Mar. 10, 1896.



WITNESSES:

*C. Hondelink*  
*W. Louise Wright*

INVENTOR

*Charles W. Dake*

BY

*Edward Tugger*

ATTORNEY.

# UNITED STATES PATENT OFFICE.

CHARLES W. DAKE, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE  
GRAND RAPIDS CYCLE COMPANY, OF SAME PLACE.

## SPROCKET-WHEEL.

SPECIFICATION forming part of Letters Patent No. 556,254, dated March 10, 1896.

Application filed June 29, 1895. Serial No. 554,496. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. DAKE, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Sprocket-Wheels, of which the following is a specification.

This invention relates to certain new and useful improvements in sprocket-wheels especially adapted for bicycles; and the invention consists in the combination, with a sprocket-wheel having a diametrical opening and bolt-holes at opposite sides of said opening, of a crank having lateral shoulders fitting between and bearing against the edges of the diametrical opening, projecting ears formed with the crank and having bolt-holes registering with the bolt-holes in the wheel, and bolts passing through the bolt-holes of the ears of the crank and the wheel.

The invention is illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation of a sprocket-wheel and crank. Fig. 2 is an edge elevation of the sprocket-wheel and crank, showing the sprocket-wheel in position on the crank. Fig. 3 is the sprocket-wheel detached. Fig. 4 is an end view of the crank and shaft without the sprocket-wheel.

Similar letters refer to similar parts throughout the several views.

It has been found desirable in the case of bicycles to change the sprocket-wheel so as to give a more rapid or less rapid movement to the bicycle driving-wheel, and in order to make the change it is necessary to take off the sprocket-wheel and replace the same with one of a different diameter.

By my invention the sprocket-wheel can be conveniently and quickly removed and replaced without removing the crank.

A represents the sprocket-wheel, which is provided with an opening extending substantially from one side to the other side of the sprocket-wheel, as shown in Fig. 3 by A'.

B is the crank which is provided with ears E E and holes through which bolts may be passed. When the sprocket-wheel is placed in position upon the crank the holes in the sprocket-wheel register with the holes in the

ears E E and the sprocket-wheel is attached to said ears by means of the bolts C and C'. The central portion of the opening A' is preferably rectangular to form the opposite edges E<sup>2</sup>, as shown in Fig. 3, said rectangular portion adapted to fit upon lateral square shoulders E' on the crank, so that when the sprocket-wheel is placed upon the crank the square shoulders of the crank will fit into the rectangular portion of the opening and bear against the opposite edges E<sup>2</sup> in such manner that when the crank is operated the entire strain is thrown upon the shoulders E' of the crank and the opposite edges E<sup>2</sup> of the wheel, thereby relieving the bolts C and C', so that the latter can be made very small and be used simply to retain the sprocket-wheel upon the lateral shoulders of the crank.

I have shown the opening A extending nearly across the sprocket-wheel. This form might be varied without departing from the spirit of my invention, provided that the opening was sufficiently large to allow the sprocket-wheel to be turned when the bolts had been loosened and taken off over the crank and to be replaced thereon.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

The combination of a sprocket-wheel having a diametrical opening and constructed with the central opposite side edges E<sup>2</sup> and bolt-holes adjacent to said edges, a crank B having the lateral square shoulders E' fitting between and bearing against said central edges of the diametrical opening, and projecting ears E formed with the crank and having bolt-holes registering with the bolt-holes in the wheel, and bolts C C' passing through the bolt-holes of the ears of the crank and the wheel, said wheel having its diametrical opening of such size as to permit the wheel to pass over the crank and pedal in attaching and detaching said wheel, substantially as described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

CHARLES W. DAKE. [L. S.]

Witnesses:

EDWARD TAGGART,

CHRISTOPHER HOUELINK.