

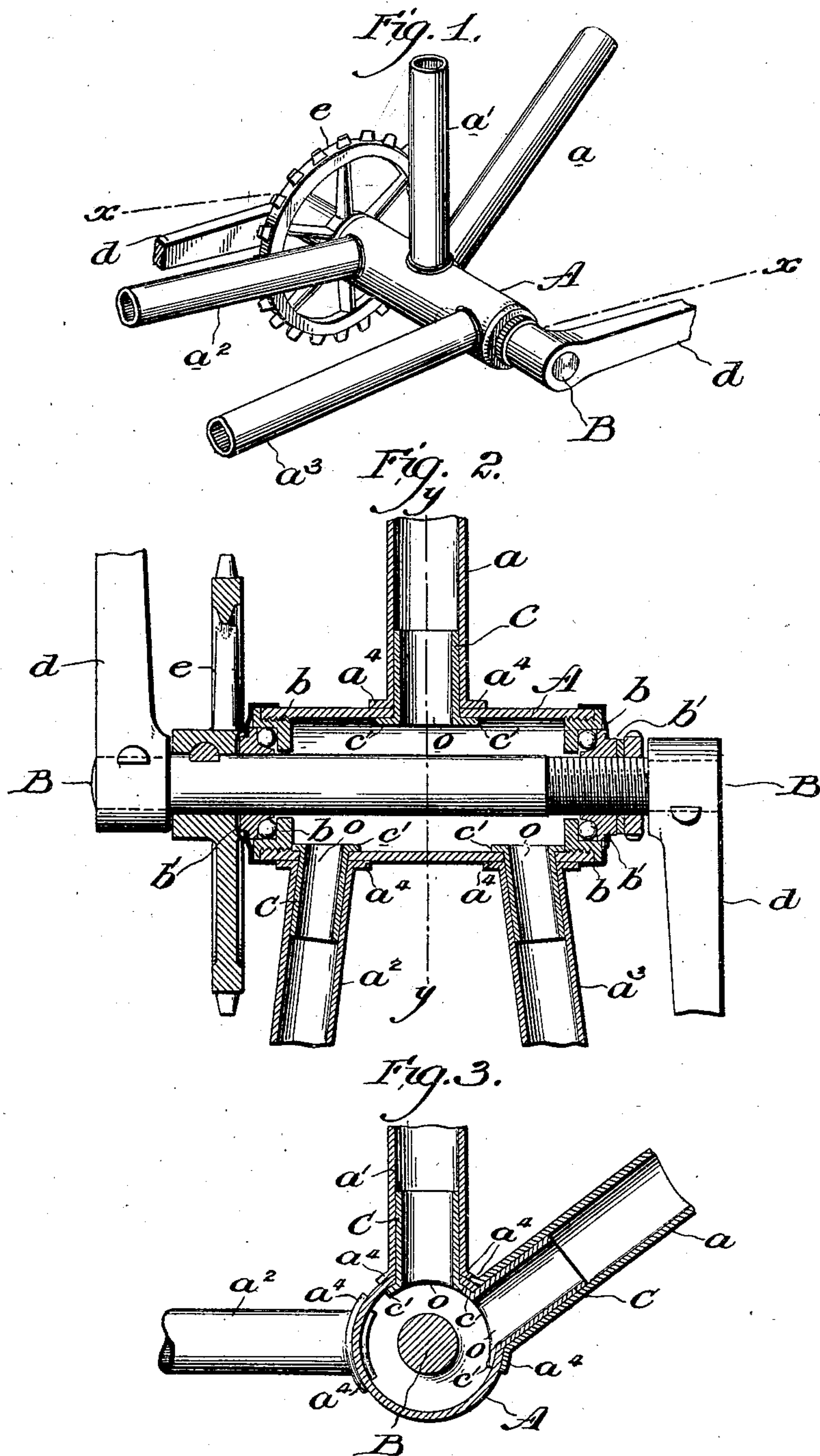
(No Model.)

R. PERKINS.

CRANK SHAFT BRACKET FOR BICYCLES, &c.

No. 496,132.

Patented Apr. 25, 1893.



WITNESSES:  
*David S. Williams.*  
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By his attorney,  
*Harold Pettit.*



# UNITED STATES PATENT OFFICE.

ROBERT PERKINS, OF ROCKAWAY, NEW JERSEY.

## CRANK-SHAFT BRACKET FOR BICYCLES, &c.

SPECIFICATION forming part of Letters Patent No. 496,132, dated April 25, 1893.

Application filed February 7, 1893. Serial No. 461,350. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT PERKINS, a subject of the Queen of Great Britain, residing at Rockaway, State of New Jersey, have invented a certain new and useful Improvement in Crank-Shaft Brackets for Bicycles and other Vehicles; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

My invention has relation to the frame structure of bicycles, &c., and consists in the novel construction of a crank shaft bracket or crank hanger hereinafter particularly described.

The object of my invention is to provide a construction of a crank-shaft bracket or crank hanger of great strength and durability which will at the same time be light in weight, easy of adjustment and of assembling of the parts, and of superior free running qualities. As is well known that portion of the machine to which the crank hanger is applied is subject to severe strain, occasioned principally by the weight of the rider, the application of the power to the pedals and occasional collision or fall. It is therefore requisite in the construction of a substantial, durable machine that the crank hanger and its connecting frame tubes should be constructed as rigidly as possible preventing the connecting frame tubes from being pulled out of the shaft casing, or telescoped into it, and to withstand the various lateral strains to which the machine is liable. Such a construction I accomplish in my invention, as hereinafter described.

In the accompanying drawings, in which similar letters of reference refer to similar parts throughout, Figure 1 is a perspective view of my improved crank shaft bracket, or crank hanger, showing the connecting parts in broken lines. Fig. 2 is a sectional view on the line  $x-x$  of Fig. 1. Fig. 3 is a sectional view on the line  $y-y$  of Fig. 2.

A is the main cylindrical shaft casing, horizontally disposed, carrying the crank axle, B, in the ball bearing surfaces, such as  $b, b'$ , provided within said casing, A, at either end, as shown in Fig. 2. The casing or tubing, A,

forms the lower junction of the frame tubes,  $a, a', a^2, a^3$ , of the machine. These tubes,  $a, a', a^2, a^3$ , are rigidly secured upon the outer walls of the main cross tube, A, through the medium of internally provided thimbles,  $c$ ; each thimble,  $c$  has an outwardly projecting flange,  $c'$ , adapted to engage against the interior surface of the tubing, A, while the main shaft or barrel of the thimble,  $c$ , snugly fits through the orifice,  $o$ , provided in the walls of the tubing, A, and against the interior surface of the walls of the frame tubes  $a, a', a^2, a^3$ ; a flange,  $a^4$ , is also preferably provided upon the lower end of the frame tubes abutting against the outer surface of the walls of the main tubing, A, to present a retaining surface of greater area, though these flanges may be dispensed with. The parts as a whole when assembled and adjusted into position are then brazed, soldered, or otherwise secured together by any well known means, forming one rigid structure capable of sustaining unusual weight and resisting great strain.

The main barrel of the thimble,  $c$ , may be of any desired length, though the proportionate length illustrated in the drawings is preferable. The axle, B, as before stated, is provided longitudinally through the main tubular casing A, in the ball bearings,  $b, b'$ , carrying the crank arms,  $d$ , and the sprocket wheel,  $e$ .

The structure described is preferably constructed of steel tubing, though other material may be employed.

My invention has special reference to bicycles, though it may be applied to other vehicle structures.

The main horizontal casing is illustrated in the drawings as having four frame tubings provided thereto. It is clear that other numbers of tubings may be provided without departing from the spirit of my invention.

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

1. A crank-shaft bracket having a main horizontally disposed shaft-casing for carrying the crank shaft and its bearings, frame tubes provided upon the outer walls of said main casing having their lower ends abutting against the same, orifices provided in the



main casing opposite the respective frame  
tubes of a diameter equal to the interior di-  
ameter of the frame tube, thimbles provided  
through the walls of the said main casing and  
5 into the interior of said frame tubes having  
the exterior surface of the walls of the barrel  
of the thimble snugly fitting and impinging  
against the interior surface of the walls of the  
frame tubes, and outwardly projecting flanges  
10 provided on the inner ends of the thimbles  
impinging against the interior surface of the  
walls of the main casing, the said parts brazed,  
or secured together by other like means, form-  
ing one rigid whole substantially as described.  
15 2. In a crank-shaft bracket a main horizon-  
tally disposed shaft casing having crank-shaft  
and bearings provided therein, frame tubes  
provided upon the exterior of the walls of said  
casing abutting against the same, orifices pro-  
20 vided in said casing registering with the inte-  
rior bore of the respective frame tubes, thim-  
bles provided in said frame tubes snugly im-  
pinging against the interior walls thereof and  
protruding through said axle casing, an inner

outwardly extending flange provided upon 25  
said thimbles in said axle casing and imping-  
ing against the inner walls thereof, the whole  
brazed or soldered together forming one rigid  
structure substantially as described.

3. In a crank hanger a main axle casing, A, 30  
for carrying the axle and its bearings, frame  
tubes,  $a$ ,  $a'$ ,  $a^2$ ,  $a^3$ , having circular outwardly  
extending flanges,  $a^4$ , provided upon the lower  
ends of the same impinging against the outer  
surface of the walls of the casing, A, thim- 35  
bles,  $c$ , protruding through said casing, A, in  
orifices  $o$ , provided therein into said frame  
tubes, circular flanges,  $c'$ , provided upon the  
inner ends of said thimbles impinging against  
the inner walls of the casing, A, the whole 40  
rigidly brazed together forming one rigid  
structure substantially as described.

In witness whereof I have hereunto set my  
hand this 14th day of January, A. D. 1893.

ROBERT PERKINS.

Witnesses:

J. BAYARD HENRY,  
HORACE PETTIT.