

No. 617,683

Patented Jan. 10, 1899.

J. D. FARMER.

PROTECTING CASING FOR BICYCLE DRIVE CHAINS.

(Application filed Dec. 31, 1896.)

(No Model.)

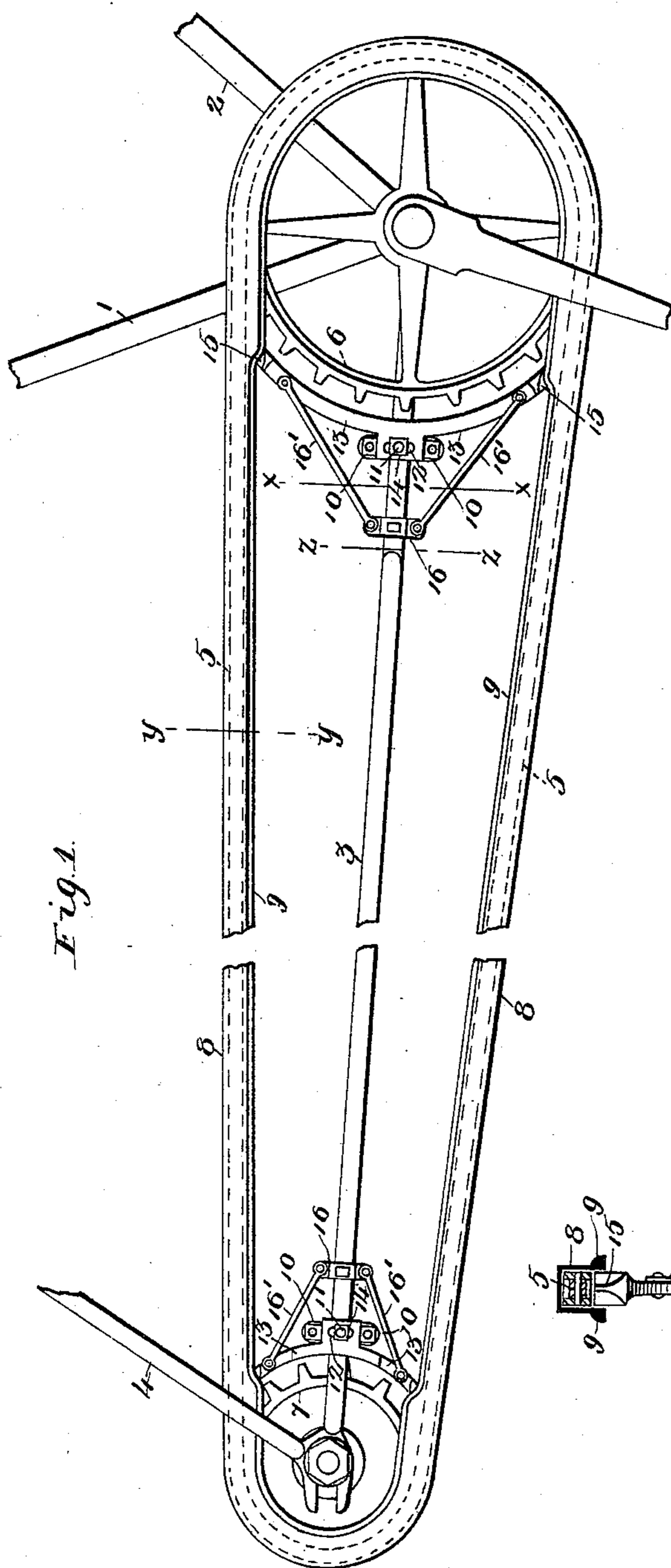


Fig. 1.

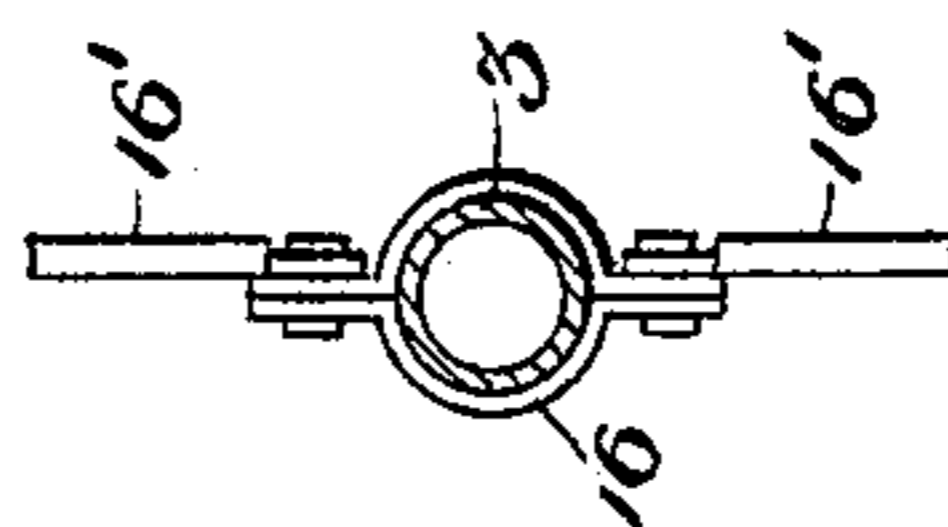


Fig. 4.

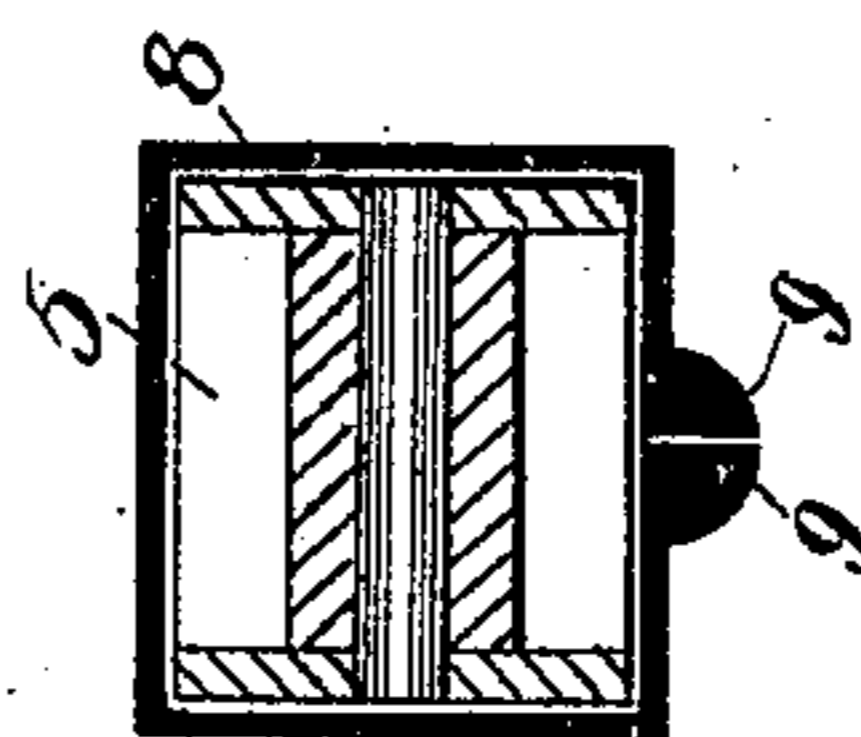


Fig. 5.

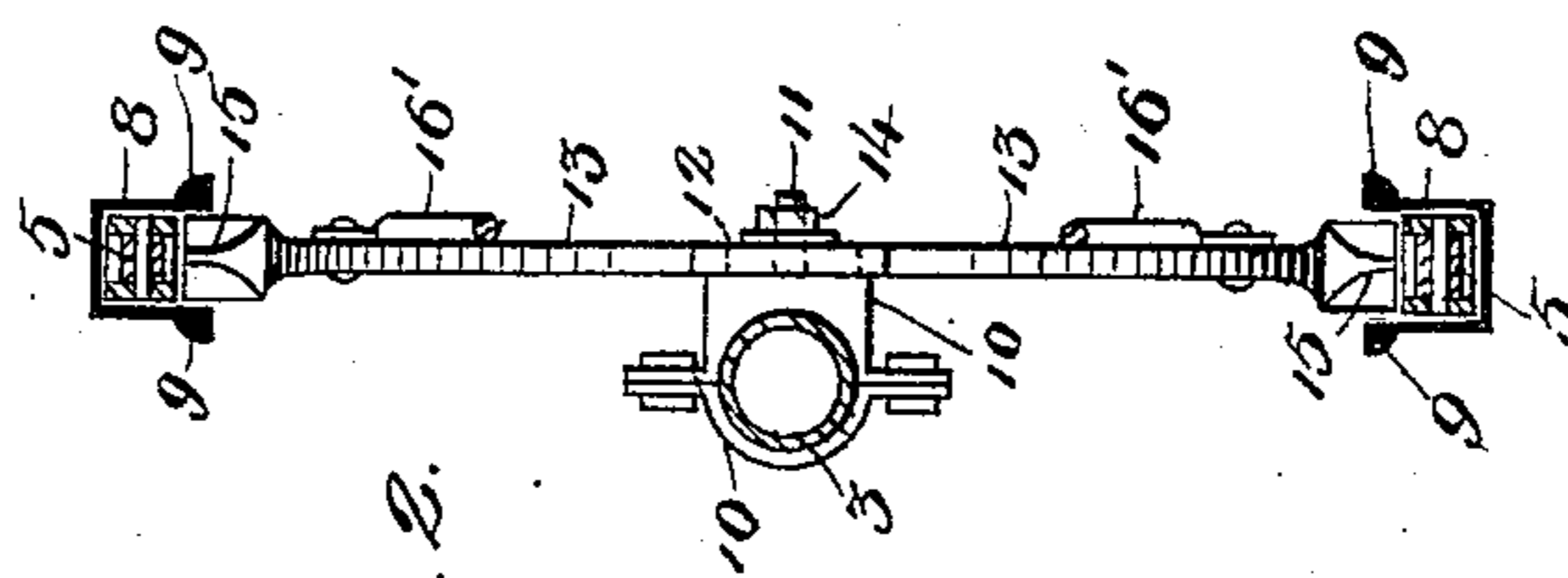


Fig. 2.

Witnesses  
Chris Ball  
H. B. Wells

Inventor  
James D. Farmer.  
By his Attorneys  
Keller & Storer

# UNITED STATES PATENT OFFICE.

JAMES D. FARMER, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO ROBERT L. HILL, OF SAME PLACE, AND W. W. STALL, OF BOSTON, MASSACHUSETTS.

## PROTECTING-CASING FOR BICYCLE DRIVE-CHAINS.

SPECIFICATION forming part of Letters Patent No. 617,683, dated January 10, 1899.

Application filed December 31, 1896. Serial No. 617,633. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES D. FARMER, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Protecting-Casings for Bicycle Drive-Chains, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention has relation to improvements in protecting casings or covers for bicycle drive-chains; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the rear bottom portion of a bicycle-frame with my invention attached thereto. Fig. 2 is a section on the line  $xx$  of Fig. 1. Fig. 3 is a section on the line  $yy$  of Fig. 1, showing in cross-section the drive-chain and the casing embracing the same, and Fig. 4 is a section on line  $zz$  of Fig. 1.

The object of my invention is to construct a protecting casing or cover for the drive-chain of bicycles and similar vehicles, the nature of the cover being such that it not only protects the chain against access of dirt, dust, and the like thereto, but renders noiseless the driving mechanism and prevents rattling of the chain during the travel of the machine. In the present device the cover directly envelops the laps of the chain, traveling with the latter during the motion of the machine.

In detail the invention may be described as follows:

Referring to the drawings, 1 represents the saddle-post, and 2 the member leading to the front post, at the juncture of which with the saddle-post the bearing for the pedal-shaft is located.

3 represents the lower or basal horizontal fork, and 4 the rear fork.

The sprocket-chain 5, the driving sprocket-wheel 6, and the rear sprocket-wheel 7 are well known and require no detailed description here.

Adapted to directly embrace the laps of the

drive-chain 5 is a yielding tubular open cover or casing 8, split lengthwise along the inner side thereof, the meeting edges of such open cover being preferably provided with stiffening-beads 9.

In making up the endless tube or casing the opposite ends of the original strip of rubber of which it is formed are cemented or vulcanized in a manner well known in the art. Of course the original properly-molded rubber strip of which the cover is made is or may be passed over the chain while the latter is on the machine, so that with the present improvement none of the parts of the bicycle need be removed for the purpose of attaching the cover.

Adjustable longitudinally at each end of one of the members of the basal fork 3 is a clamp 10, having a laterally-projecting screw-threaded pin or bolt 11, adapted to be received by the elongated slot 12 of the expanded medial portion of the arms 13, a suitable binding-nut 14 being adapted to hold said arms to the clamp when the parts are once adjusted. The free ends of the arms 13 are provided with tapering projecting teeth or projections 15, adapted at a point close to the periphery of each sprocket-wheel to separate the otherwise contacting edges or beads of the casing, whereby the teeth of the sprocket-wheels can better engage the links of the drive-chain 5 in the travel of the latter during the propulsion of the machine. Of course the moment the adjacent edges of the inclosing casing pass beyond or out of engagement with the separating projections 15 they are brought together by the elasticity of the strip of which the cover is made, thus completely incasing the chain at every point, as best shown in section in Fig. 3. In the present device the cover travels with the chain and can be made light and cheap, adding very little to either the weight or cost of the wheel. It is a perfect antirattler, deadening any sound which results from the engagement of the drive-chain with the sprocket-wheels and in a measure prevents the chain from sagging. When worn, the cover can be readily removed from the chain and a new one substituted. The pres-

ent cover is a cheap and effective substitute for the present prevailing forms of gear-casings. It may be made of any suitable yielding material, such as rubber and the like, 5 molded to the proper form. It prevents the chain from passing off the sprocket-wheels.

Pivotally connecting the ends of the arms 13 with a clamp 16, adjustable along the basal fork 3, are links 16', this arrangement not only 10 permitting accurate adjustment of the free ends of the arms (or rather the projections 15) with respect to the split side of the casing, but serving to hold the arms 13 rigidly on the frame of the wheel after said arms are once 15 adjusted.

Having described my invention, what I claim is—

1. In a bicycle, a suitable drive-chain, and a cover split longitudinally with the chain 20 embracing said chain and adapted to travel with the same, substantially as set forth.

2. In a bicycle, a suitable drive-chain, a

yielding open tube or cover split longitudinally, surrounding the laps of the chain and adapted to travel with the chain, suitable 25 arms adapted to be adjustably clamped to the basal fork of the frame, links pivoted to the arms and connected at their opposite ends to a suitable clamp adapted to be also adjustably secured to the basal fork, the free ends 30 of the arms having suitable projections adapted to separate the otherwise meeting edges of the cover at points adjacent to the peripheries of the sprocket-wheels over which the chain passes, whereby the teeth of the wheels 35 can engage the chain without material interference by the cover, substantially as set forth.

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

JAMES D. FARMER.

Witnesses:

EMIL STAREK,  
ALFRED A. MATHEY.