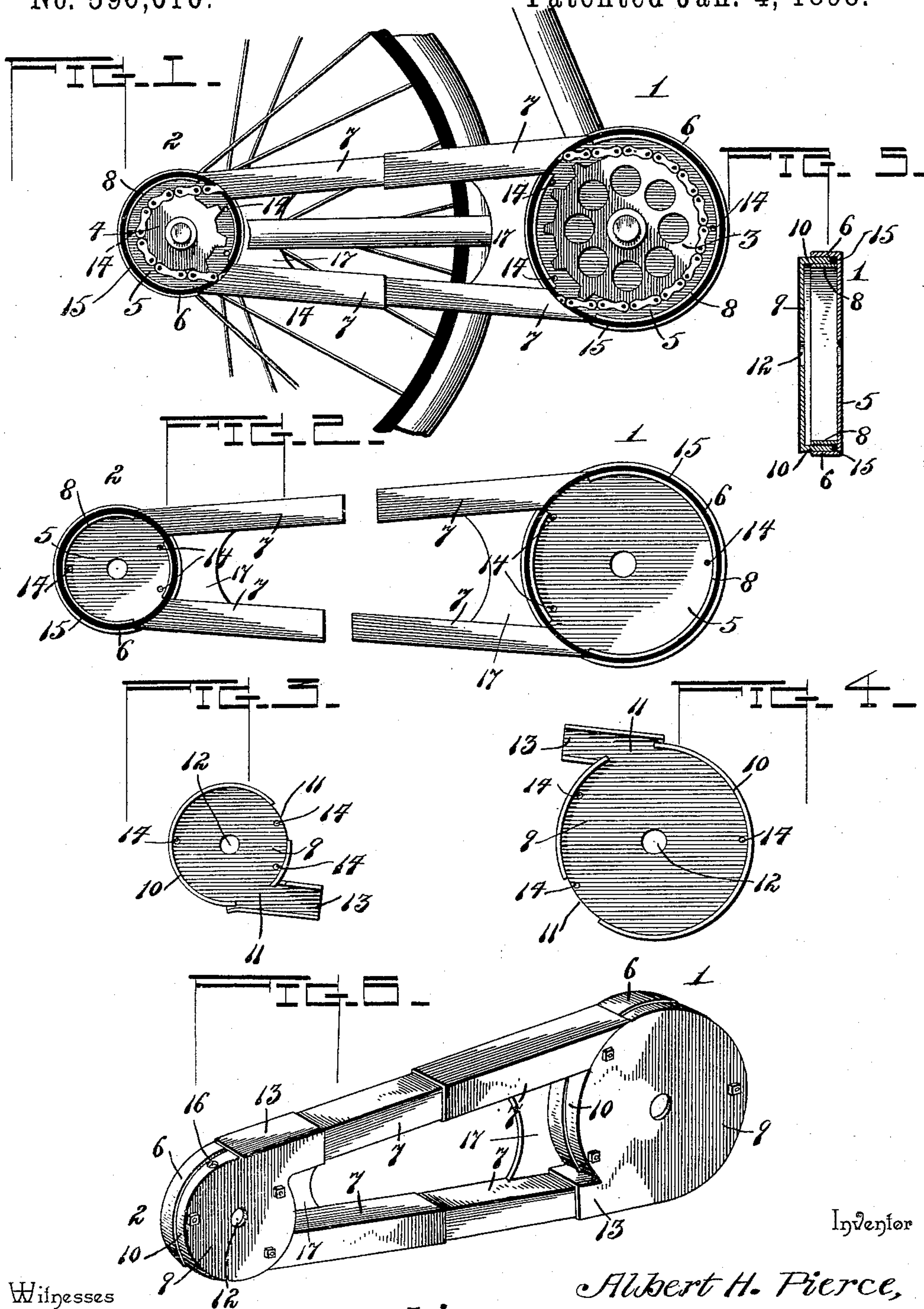


(No Model.)

A. H. PIERCE.  
GEAR CASE.

No. 596,616.

Patented Jan. 4, 1898.



Witnesses

Milton O'Connell,  
R. M. Smith

By *his* Attorneys,

Albert H. Pierce,  
C. A. Snow & Co.



# UNITED STATES PATENT OFFICE.

ALBERT H. PIERCE, OF HILLSDALE, MICHIGAN.

## GEAR-CASE.

SPECIFICATION forming part of Letters Patent No. 596,616, dated January 4, 1898.

Application filed June 25, 1896. Serial No. 596,893. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT H. PIERCE, a citizen of the United States, residing at Hillsdale, in the county of Hillsdale and State of Michigan, have invented a new and useful Gear-Case, of which the following is a specification.

This invention relates to gear-cases; and the object in view is to provide an improved inclosing case particularly designed for covering the sprocket wheels and chain of an ordinary safety-bicycle in order to protect the same from moisture, dirt, mud, &c., and at the same time protect the rider's clothing from injury.

The principal aim of the invention is to provide a gear-case which is adjustable to fit different bicycles which vary in the distance between the crank - axle and the rear - wheel axle, and also to provide the end portions of the case with laterally-removable covers for affording access to the sprocket-wheels.

With the above objects in view the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and embodied in the claim.

In the accompanying drawings, Figure 1 is a side elevation of the improved gear-case shown applied to a bicycle. Fig. 2 is a detail side elevation of the gear-case, showing the end portions thereof moved apart and the covers detached. Fig. 3 is an inside elevation of one of the end covers. Fig. 4 is a similar view of the other cover. Fig. 5 is a cross-section through one end of the case. Fig. 6 is a perspective view of the gear-case complete.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

The improved gear-case is preferably made in four parts and comprises two end hoods 1 and 2, both of cylindrical shape, the front hood, which incloses the front sprocket 3, being of larger diameter than the rear hood 2, which incloses the rear sprocket 4. Each hood comprises a disk-shaped inner plate 5, having a central opening for its respective axle and a surrounding rim or flange 6, extending outwardly therefrom.

Each of the end hoods is provided with two tangentially-disposed tubular extensions 7, and these extensions are of a length about equal to one-half the distance between the hoods 1 and 2, the contiguous ends of said extensions being of such relative gage that they will telescope within each other, thus providing for increasing or diminishing the distance between the hoods by sliding said extensions upon each other. Each of the hoods is also provided with an inner concentric flange 8, between which and the outer rim 6 the rim of the cover is adapted to be received. Between the flange 8 and the outer rim 6 is placed an annular cushion or packing 15, of rubber or other suitable material, which forms a seat for the inner edge of the rim of the cover when the latter is applied, said cushion or packing preventing rattling of the parts.

The covers each comprise a disk-shaped outer plate 9, having a surrounding rim 10 of a size adapted to fit between the flange 8 and the rim 6 of its respective hood. The rim 10 is cut away at suitable points 11 to allow for the passage of the chain into and out of the same, and also has a central opening 12 for its respective axle. Each cover is also provided with a tangential extension 13, which is substantially U-shaped in cross-section and adapted to clasp over or embrace one of the tubular extensions 7, as shown. Alining perforations 14 are formed in the inner plate of each hood and the outer plate of each cover for the reception of bolts or other fasteners, by which the parts may be secured together. The extension 13 serves the double purpose of a guide to bring the bolt-holes 14 in the hood and cover in alinement and of a handhold for detaching the cover from the hood when the bolts have been withdrawn.

It will be observed that only one of the hood-covers need be removed when it is desired to have access to the chain for the purpose of inspection or such repair as may be accomplished without removing it from the sprocket-wheels, since by turning the pedal-shaft the entire length of the chain may be inspected.

16 designates an oil-hole through which the nozzle of an oil-can may be inserted for oiling the sprocket and chain when desired.



The hoods have at their adjacent sides webs 17, with which suitable straps may connect for attaching the device to the adjacent rear-fork side of the machine-frame.

5 From the foregoing description it will be seen that both sprocket-wheels and the chain are entirely inclosed and protected from the dust, dirt, moisture, &c., while at the same time the clothes of the rider are prevented  
10 from being injured, and dispense with separate pants-guards. It will also be seen that the gear-case is extensible in length to fit different bicycles and to compensate for the chain adjustment and that the end hoods are  
15 provided with detachable covers, so that ready access may be had to the interior of the case and to the sprocket wheels and chain.

Changes in the form, proportion, and minor details of construction may be resorted to  
20 without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

A gear-case comprising a pair of spaced cir-

cular hoods adapted to respectively incase 25 therein the front and rear sprockets of a bicycle, and each provided with a pair of tangential tubular extensions having a telescopic engagement with the similar extensions of the other hood to provide upper and lower cas- 30 ings for the sprocket-chain, each of said hoods being further provided with an inner flange disposed inside of and parallel with the outer rim, a detachable cover for each hood having a rim registering in the pocket formed be- 35 tween the flange and rim of the hood and also having a tangential flanged extension 13 adapted to embrace one of the tubular extensions of the hood, and bolts detachably clamping each cover in place, substantially as set 40 forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALBERT H. PIERCE.

Witnesses:

GEO. A. KNICKERBOCKER,  
LESTER A. GOODRICH.