

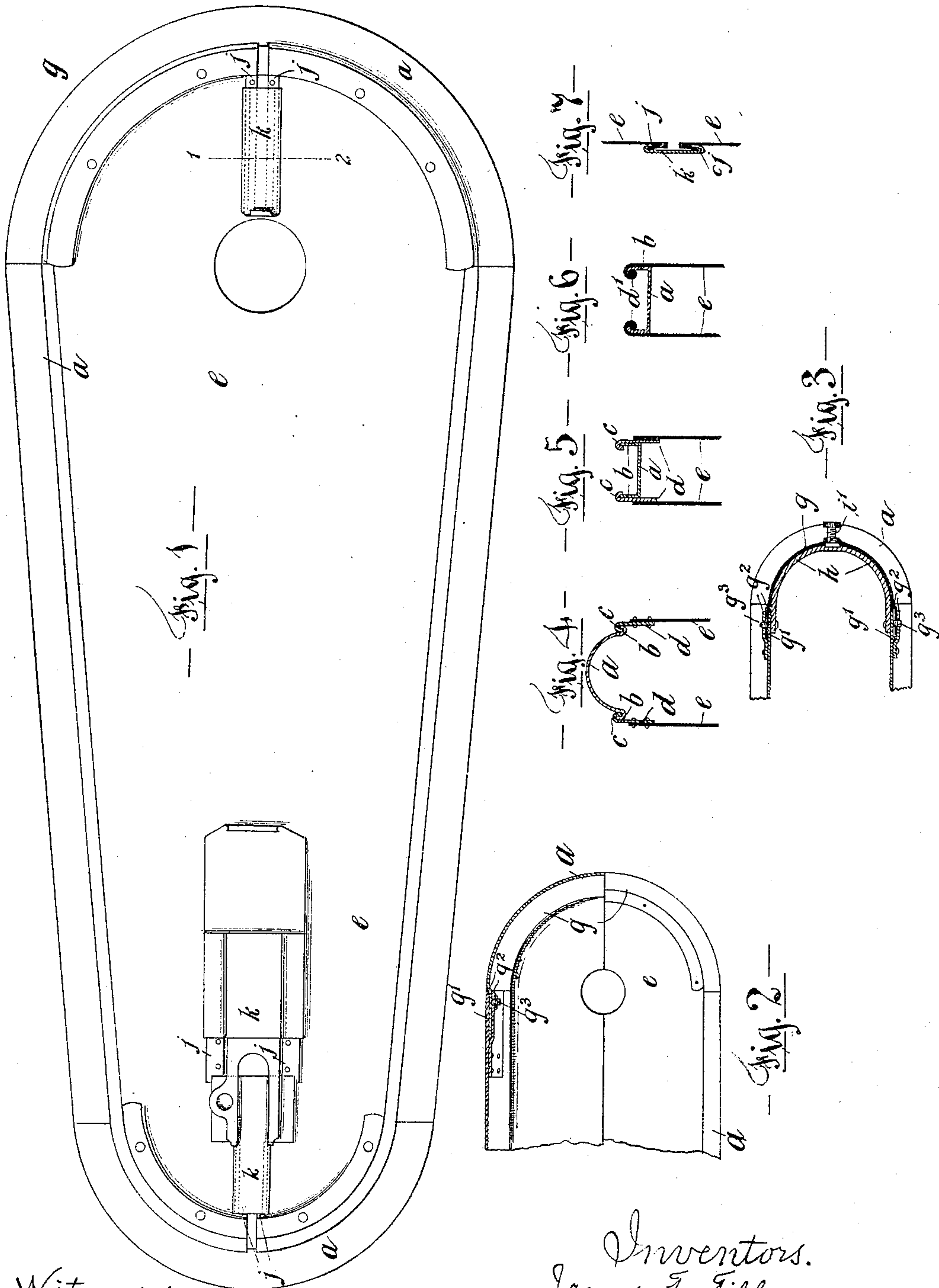
No. 611,824.

Patented Oct. 4, 1898.

J. T. TILBY & J. H. BLACKMORE.
GEAR CASE FOR VELOCIPEDES.

(Application filed Dec. 14, 1896.)

(No Model.)



Witnesses.
J. C. Hebert.
O. Block.

Inventors.
James T. Tilby,
John H. Blackmore,
By W. H. de Vries,
Attorney.

UNITED STATES PATENT OFFICE.

JAMES THOMAS TILBY AND JOHN HENRY BLACKMORE, OF LONDON,
ENGLAND.

GEAR-CASE FOR VELOCIPEDES.

SPECIFICATION forming part of Letters Patent No. 611,824, dated October 4, 1898.

Application filed December 14, 1896. Serial No. 615,687. (No model.) Patented in England September 26, 1896, No. 21,360.

To all whom it may concern:

Be it known that we, JAMES THOMAS TILBY, engineer, residing at 48 Detmold road, Clapton, and JOHN HENRY BLACKMORE, enameler, residing at 69 Peckwater street, Kentish Town, London, England, subjects of the Queen of Great Britain and Ireland, have invented certain new and useful Improvements in Gear-Cases for Velocipedes and the Like, (for which we have obtained a patent in Great Britain, No. 21,360, bearing date September 26, 1896,) of which the following is a specification.

This invention refers to gear-cases for ladies' cycles or velocipedes and like purposes.

We construct the gear-case in such a manner that each side or half of the case can be put together separately, thereby enabling the operator to get at the chain on either side in a much easier manner than by the old style of gear-case. The framework or rim to which the sides or covers are attached is made in channeled form, the edges being either raised, curved, or inclined so that the edges will form a clench or detachable fastening to the sides or outer covers that are to be attached thereto. The ordinary gear-case frame is usually made with a loose end at the back. We make our frame with a loose end in front as well as at the back. Our front loose end is strong enough to form a straining bow or arc which when drawn out can be fixed by means of set-screws at the side where the ends lap and slide out from the frame. If preferred, we fix inside the loose end a curved metal bar, the ends of which are attached to the sides of the rim, and in the front end of the rim we fix a set-screw and nut, the screw of which engages with the curved metal bar inside in such a way as to allow of the end being adjustable and drawn in or out to effect the straining up of the textile or other cover which is stretched on the said frame. It will therefore be seen that in our improved frame both ends are constructed to slide out for a short distance, and the adjustable movement of the front end, as above described, enables us to avoid and remove any slackness or bagginess in the cover. This result is also aided by the form of the frame itself, which has straight rigid sides, gradually widening to the large or front end in the form or out-

line of a true cone, thereby insuring that the said cover shall be uniformly stretched as it is drawn forward upon the frame.

In making the outer or side covers, which protect the rider's dress from contact with the chain or cogs, we use, by preference, either a metal clip or turn-over edge or a rubber or elastic band which is shaped to fit into or engages with the flanges of the rim, the rubber having sufficient tension to enable it to grip on the flanges of the rim, as in the case of pneumatic tires, thereby dispensing with laces or other fastenings. Attached to the elastic band is a piece of leather, vulcanite, metal, or other suitable material, which completely covers the chain, thereby protecting the rider's dress from dirt or injury.

We do not confine ourselves to the elastic band only. Another way of carrying out our invention is by making the edges of the covers in such a manner that the said edges are thickened, piped, or grooved, or with holes running through them, so that a cord can pass through, the cord ends being fastened to a tightening handle or lever which can be pulled up tight, or a wire or metallic band can be used either inside or outside, the said wire or metallic band being endless, if preferred, or any other suitable devices as generally used on pneumatic tires. It will therefore be seen that to take either of the sides or half-covers off all that is necessary is to stretch the elastic band and spring it over the edge of the rim or frame or to remove the lever or wire from the cover, thereby enabling the operator to get at the chain. Similarly the modes of attaching the sides, above described, may be reversed, if preferred, and the elastic band or sensitive part attached to the rim, while the sides may be introduced within it; but this method is not preferred to the foregoing. Slides or plates with curved edges connectable by clips or top-plates with suitable edges to connect with the said plates are placed around the axle and tube, which project through the said cover.

We will now describe the invention with reference to the accompanying drawings, in which—

Figure 1 shows a side elevation of our improved gear case or cover. Fig. 2 shows, on

a reduced scale, a half-sectional elevation of one end of a gear-case and exhibits a method of adjusting the movable ends of the case lengthwise—namely, by a lapping piece g' , left
 5 projecting from either end of the semicircular end piece, which lapping piece engages or slides to and fro inside of a socket formed at the end of the upper and lower straight sides of the case. The travel of the lapping
 10 piece is regulated by a set-screw g . Fig. 3 shows, on a further reduced scale, a sectional elevation of another method of adjusting the movable ends of the gear-case lengthwise. Figs. 4, 5, and 6 show cross-sections of three
 15 different rims which can be employed to form the outside frame of our gear-case. Other similar outlines having double flanges can be used. Fig. 7 shows a cross-section, on line 1 2, Fig. 1, of the sliding tension-clip k for
 20 tightening the leather or other cover of the gear-case.

a is the rim or outside frame of the gear-case, which may be of any similar suitable section to those shown in Figs. 4, 5, and 6,
 25 and is secured to the frame of the machine in any desired manner. The rim shown in Fig. 1 is of the form shown in Fig. 4. The edges of the rim, as shown, are turned up to form flanges b , which engage with a corresponding clip or bead c , formed on a metal
 30 or other edge d , attached to the side cover e , of leather or other suitable material. In Fig. 6 we show an india-rubber bead d' turned inward over the flange b to hold the cover e in
 35 place. Various sections of this bead can be employed.

Referring to Fig. 2, g is the semicircular loose end of the doubly-flanged rim a and is provided with a projecting lapping piece g' ,
 40 which slides in and out of a socket or groove g^2 , formed on the end of the straight sides of the frame. g^3 is a set-screw to fix the lapping piece g' .

In Fig. 3 we show another method of adjusting the semicircular end piece g . h is a
 45 semicircular bar the ends of which are firmly fastened to the ends of the straight sides of the frame. Over this bar h is placed the loose semicircular end piece g , the ends of
 50 which are provided with a similar lapping piece g' , fitting into a groove g^2 , similar to that above described. v is a set-screw which passes through a small boss in the rim a , and the point of this screw presses on the bar h .
 55 The rim is thus pushed outward when the screw is turned to strain the cover e .

Referring to Figs. 1 and 7, the ends of the cover e are cut in the center down to the hole to receive the axle and tube, so that by
 60 the means described below the cover may be strained tightly in place. jj are metal edge pieces secured on either side of the aperture in the cover e . The edges of jj project from the surface, so that they engage with the
 65 curved edges of the tension sliding clip k , as shown in Fig. 7.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a gear-case for cycles, the rim having
 70 straight top and bottom sides and curved ends and formed at opposite sides with outturned edges, and the flexible divided side covers separable from the rim and formed with clips or flanges adapted to detachably engage the
 75 outturned flanges of the rim to secure the rim and side covers together the rim and sides constituting a housing for the gear to exclude dust and dirt therefrom and admitting of ready access to the gear when necessary, sub-
 80 stantially as and for the purposes described.

2. In a gear-case for cycles, the rim having straight top and bottom sides and curved ends and formed at opposite sides with outturned
 85 flanges, and the flexible side covers separable from the rim and provided with clips or flanges to detachably engage the outturned edges of the rim to secure the rim and side covers together said flexible side covers being of a material that will exclude dust and
 90 dirt from the gear, substantially as and for the purposes described.

3. In a gear-case for cycles, the rim having straight top and bottom sides and curved ends
 95 and formed at opposite sides with outturned flanges, the flexible side covers provided with clips or flanges to detachably engage the outturned flanges of the rim to secure the side covers and rim together, an adjustable part to the frame having the side covers secured
 100 thereto, and means for drawing taut the side covers, substantially as and for the purposes described.

4. In a gear-case for cycles, the elongated frame consisting of the rim having straight
 105 top and bottom sides and curved ends and tapering uniformly from one end toward the other and having its opposite sides formed with outturned flanges, and the detachable flexible side covers tapering from one end to
 110 the other and provided with clips or flanges to detachably engage the outturned flanges of the rim or frame to secure it and the side covers together whereby as the side covers are drawn forward over the frame they will
 115 be uniformly stretched, substantially as and for the purposes described.

5. In a gear-case for cycles, a supporting-frame, a side or cover secured to said frame, an adjustable end section secured to the side
 120 or cover, and means carried by said end section and bearing on said frame to adjust and hold said end sections so as to stretch said cover, substantially as described.

Signed at London, in the county of London,
 125 England, this 13th day of November, A. D. 1896.

JAMES THOMAS TILBY.
 JOHN HENRY BLACKMORE.

Witnesses:

SAMUEL S. BROMHEAD,
 HENRY FAIRBROTHER.