Patent Examination Board

Final Diploma

FD3 Amendment of Specifications

Wednesday 26 October 2022

10:00 to 13:20 UK British Summer Time (GMT + 1 hour)

Examination time: 3 hours 20 minutes plus 10 minutes upload time

The 3 hours 20 minutes is allocated as follows:

10 minutes – Downloading and printing the question paper;
3 hours – Answering the questions;
10 minutes – Two screen breaks of 5 minutes each.

At 13.20 you MUST immediately stop answering the questions. You then have **10 minutes** in which to upload your Answer document to the PEBX system.

You MUST upload your Answer document to the PEBX system by 13.30. After 13.30 you will not be able to upload it and your examination will be void.

INSTRUCTIONS TO CANDIDATES

1. The whole assessment task is to be attempted.
2. The marks to be awarded are given at the end of the assessment task.
3. The total number of marks available for this paper is 100.
4. Start each part of your answer on a new sheet of paper.
5. You must use the Answer document for your answers.
6. Do not attempt to change the font style, font size, font colour, line spacing or any other preset formatting.
7. Start each part of your answer on a new page. Press the Control key and the Enter key simultaneously to begin a new page.
8. Do not state your name anywhere in the answers.
9. This question paper consists of **18 sheets**, including this sheet, and comprises:
   Assessment task (1 sheet)
   Client letter (1 sheet)
   Document A Examination Report (1 sheet)
   Document B Client application 1919191.9 (6 sheets, including 1 sheet of drawings)
   Document C Prior art reference D1 – GB 2020202 (4 sheets, including 1 sheet of drawings)
   Document D Prior art reference D2 – GB 1,111,111 (3 sheets, including 1 sheet of drawings)
   A spare set of Claims of the patent application 1919191.9 for you to annotate and include in your answer if you wish.
10. A spare set of Claims is also provided in your Answer Document for you to use if you wish.

AT THE END OF THE EXAMINATION

11. Save your Answer document to your computer as a Word document. Convert the Answer document to a PDF. Check the Answer document to make sure that amended Claims are shown as you want in the Answer document. Upload the PDF-ed Answer document to the PEBX system.

Assessment task

You have received the letter and documents listed on the Instructions to Candidate sheet regarding United Kingdom patent application number GB 1919191.9, which has been filed at the UK Intellectual Property Office with no claim to priority, and was published in 2020.

Your task is to prepare:

1. **a letter to the UK Intellectual Property Office in response to the Examination Report;**

2. **a set of amended claims, if considered necessary;**

3. **notes on which you would base advice to your client in which you:**

    i. **explain the actions you have taken;**

    ii. **provide full reasoning for your actions;**

    iii. **outline future actions, if any, that your client could take to secure full protection of its commercial interests.**

Your advice should take into account that further information may be required.

Your notes should only relate to the invention(s) outlined in the client's correspondence to you.

Your notes should be directed to patent matters only.

Note the following:

a) You are NOT required to make any amendments to the description of the client's patent application.

b) You should accept the facts given to you and base your answer on those facts.

c) You should not make use of any other special knowledge that you may have of the subject matter concerned.

d) You should assume that the prior art referred to is complete.

e) You should identify clearly any amended claim set and/or divisional claim(s).

Allocation of Marks

Letter: 31 marks
Claims: 35 marks
Notes: 34 marks
Total: 100 marks

Client letter

On Your Bike Ltd
Cycles and accessories

Mudd Patent Attorneys

Dear Mr Mudd,

Thank you for sending the Examiner's verdict on my application, and the two documents D1 and D2. He seems to have found some similar ideas but I hope we can steer our way through.

As you know, my business is mainly selling cycles and parts, but I like to tinker and improve things. I have tried quite a few designs for what you might call cut-down mudguards, to be fitted to modern bicycles, which tend not to have full-size guards. The one I am hoping to patent here seemed the best design for a premium part, but I am still working on simpler, cheaper styles with not so many rows of bristles.

One thing that occurs to me about the design is that it is more robust than both those shown in the documents. Flexi-Guard's design, shown in D1, seems very flimsy and I doubt that it would last long in practice. The body of my spray-suppressing device is quite solid, and its channels ensure that water swept by the bristles is not flicked up again, as I suspect can happen with the D1 arrangement. As for D2 by Doors Cycles Ltd, I don't see how it can be very relevant, since it is used in addition to a mudguard – I don't think any bicycles were sold without mudguards at that time. It does have a kind of deflector, but I think it would still cause considerable spray in use, some of which would still hit the rider. I find that the channels in my device have the effect of collecting the water and slowing it down so that it drips off harmlessly.

You have probably noticed that my L-shaped reflector works in both positions of the unit, unlike that shown in D1. I quite like this idea; maybe we could make something of it? Also, there could be a light as well as (or instead of) a reflector, so I would quite like to include that.

Another modification I am working on is a design where the device stays in its (circumferential) location and is pulled away from (and pushed towards) the wheel rather than swinging up and down. This can be used even for bikes with a mudguard (which is useful because mudguards tend to drop water and muck down on to the chain etc.) and/or a pannier rack. I will let you know how I get on.

I hope these comments are useful and help you to overcome all the objections; please send me a draft to check before sending it to the Examiner.

Yours sincerely,

Claudia Butlin (Ms)

Intellectual
Property
Office

Your ref:		Examiner:	W Biggins
Application no.	1919191.9	Tel:	01633 819191
Applicant	On Your Bike Ltd	Date of report:	25 July 2022
Latest date for reply:	25 November 2022	Page	1/1

Patents Act 1977
Examination report under Section 18(3)

Basis of the examination

1. The examination has been carried out on the basis of the application as filed.

Novelty

2. The invention as claimed in claim 1 is not new in view of D1 (GB 2020202A), which has a spray remover unit having a body (shield 44) holding a group of bristles 50 inclined to the wheel (Figure 3). There is one stay 28 holding the shield 44 but the possibility of using two is mentioned, and the unit can be rotated between engaged and lifted positions.

3. Claim 1 is also arguably not novel with respect to D2 (GB 1,111,111, cited in the description), which shows a body 1, 5 with bristles 9, which at least in use will be inclined to the surface of the tyre; it seems also that the unit is attached indirectly to the frame of the bicycle by two stays, because the mudguard to which the unit is attached will itself be held on the frame by stays, though these are not illustrated. The unit also pivots out of the way of the tyre as claimed.

4. Claims 3–5 also appear not to be novel in view of D1.

Inventive Step

5. Since the arm 28 in D1 rests near the brake mount in D1, as can be seen from Figure 1, it would be straightforward for the skilled person to use a clip arrangement to hold it there instead of, or in addition to, shaping the clamp 25 as described. Claim 2 is therefore not inventive.

Conciseness, Clarity and Support

6. There is no antecedent for ‘the wheel’ in claim 1, since a bicycle by definition has two wheels. Also, it is not clear whether the ‘wheel’ and the ‘frame’ are part of the claimed apparatus, so reference to them in the claim as worded is not clear. This also applies to the references to these parts in claims 3 and 4.

7. It is not clear what is meant by a ‘large’ reflector in claim 5.

Client application

GB 1919191.9

ROAD-SPRAY REMOVER FOR BICYCLE

This invention relates to a replacement for the mudguards on a bicycle.

Mudguards have been around almost as long as the bicycle itself, but in recent years, for technical (weight and air-resistance) and fashion reasons, their use is in decline. Most new sports bicycles, and all-terrain bicycles, are no longer fitted with mudguards of any description.

The present invention approaches the problem of road spray, not by catching it after it leaves the tyres but by brushing it directly off the tyres. This has been done before – see GB 1,111,111 – but here the brush is in addition to the mudguards, so no weight is saved.

The invention in a preferred embodiment is directed to a spray-removal unit for a bicycle that consists of a body which contains a number, typically two to four, of circumferentially spaced groups or banks of bristles. The bristles are inclined at an angle of about 25-50° away from the radial direction in the direction of rotation of the wheel, which helps to reduce the friction on the tyre and assists the removal of water. The body is preferably attached to the frame near the axle by two stays, one either side. These are allowed to pivot freely at the frame connection so as to allow the unit to swing towards the seat (in the case of a unit mounted on the rear axle, as would be the usual case) when the unit is not needed, and down to the working position, slightly higher than the axle, limited by a suitable stop.

The body of the unit, which will generally be a solid plastic piece, contains drain-slots or channels below and between the four banks or sets of bristles, to ensure that the water is

expelled rearwards of the bicycle. Other flexible wiping arrangements could be used, replacing the rows of bristles.

The invention also covers bicycles using such units.

Reference is now made to the accompanying drawings, wherein:

Figure 1 shows a unit in accordance with the invention, mounted on a rear wheel in the on (solid line) and off (dotted line) position; and

Figure 2 shows details of the unit: bristles, drain-holes and stays.

Referring to the drawings, the unit consists of the main body 12, which holds flexible wipers in the form of rows of bristles 17. The body is of a robust plastics material, such as nylon or PP, while the bristles would be of a hardwearing flexible material, such as nylon or rubber. They are set at an angle of about 40 degrees in the direction of the rotation of the wheel.

There are, in this embodiment, four rows or banks of bristles, spaced circumferentially around the wheel by, say, 2-4 cm. Theoretically, only one row of bristles would do, but having two or more increases the sweeping action, at the cost of complexity and weight. Three or four rows seems optimal, according to trials. The end of each row may be straight, or it may be somewhat rounded to conform to the profile of the tyre; the latter arrangement affords a more comprehensive sweep action. The bristles are moulded in the body 12 at an angle of about 40° to the surface of the tyre, which helps maintain a constant contact with the tyre when the device is applied.

Between and slightly below the upper rows, and below the bottom row, there is a corresponding number of drain-slots or channels 18, i.e. passages through the otherwise solid body of the unit. These channels allow and assist the water swept off the tyre to be expelled rearwards, rather than perhaps on

to the row of bristles below or back on to the tyre. They extend through the body 12 at about the same angle as the bristles. Particularly when there is more than one row of bristles, the channels seem to be essential for avoiding clogging.

The unit could also be used to mount a rear reflector 14 as illustrated; the reflector is preferably L-shaped, with two perpendicular reflecting surfaces, so that a reflector is presented rearwards in both positions of the unit. Such a reflector can in fact be applied, according to the invention, to any spray guard that has a body with bristles or a flexible edge ('squeegee') sweeping the tyre that can be pivoted up towards the seat.

The unit is connected to the frame by radial struts or stays 10 in the form of thin metal rods, much as a mudguard would be. The stays pivot at the fastening to the frame 16, the pivot point being above the axle. In principle, a stay on only one side of the wheel would be adequate, but the arrangement will tend to be less stable; thus a stay arrangement with two stays, one either side of the frame, is preferred.

In the on position, the unit drops rearwards under its own weight, so that the rows of bristles engage with the wheel tyre and perform a brushing action. It is thought that, in use, the rows of bristles, preferably at least two, guide the moisture downwardly and outwardly, to be conducted away by the channels, from where it drops to the ground.

The unit can be disengaged by lifting it and pivoting it upwards and forward, so that the bristles lift off the wheel, and attaching it to a clip 15 mounted on the frame near the brake (the off position). Since the pivot point on the frame 16 is above the axle, the effective radius of the assembly is greater than when the unit is in the on position, and thus the bristles are lifted clear of the wheel.

The bicycle can have a similar unit on the front wheel (not shown), which is in essence identical, but it will probably not be able to pivot by 90° like the rear unit, because of the angle of the front forks.

CLAIMS

1. A road-spray remover unit for a bicycle, consisting of a body with at least one group of bristles, the bristles being inclined at an angle towards the rotation of the wheel to reduce the friction on the wheel and assist in the removal of water, wherein the unit is attached to the frame of the bicycle by two stays and is movable between an engaged position, where the bristles are in contact with the wheel, and a disengaged position, where they are lifted from the wheel.

2. A road-spray remover unit as claimed in claim 1 that has an attachment which allows it to be clipped to the bicycle frame on or near the brake-mount, thereby holding the unit in the disengaged position.

3. A road-spray remover unit as claimed in claim 1 or 2, where the stays are configured to pivot at the point where they are attached to the frame.

4. A road-spray remover unit according to claim 3, where the stays are attached to the frame at a point above the axle but level with it in the front-rear direction, so that rotation of the unit to the disengaged position lifts the bristles from the wheel.

5. A road-spray remover unit as claimed in any preceding claim and having a large red rear reflector mounted on it.

Application drawings

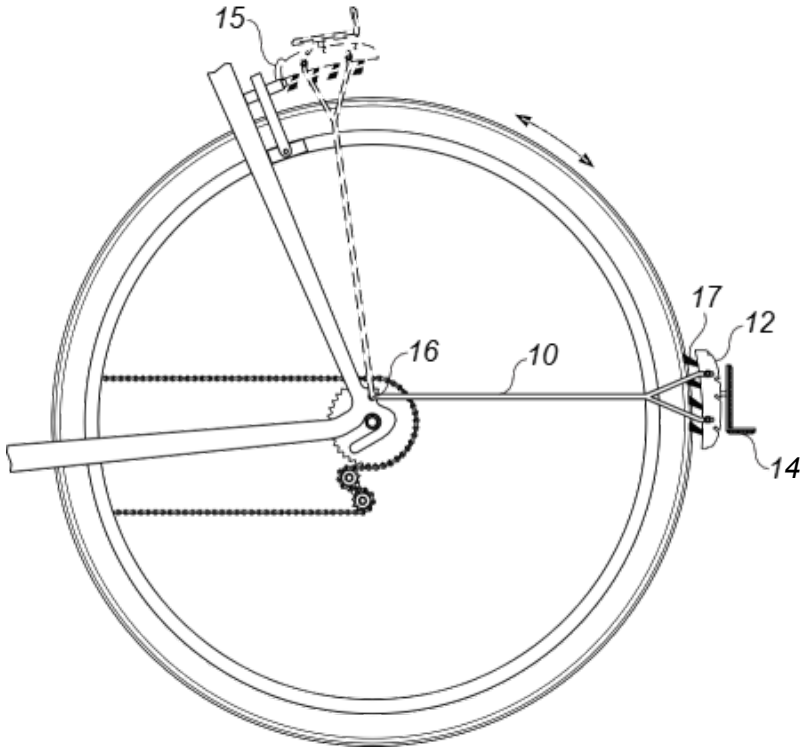

FIG. 1

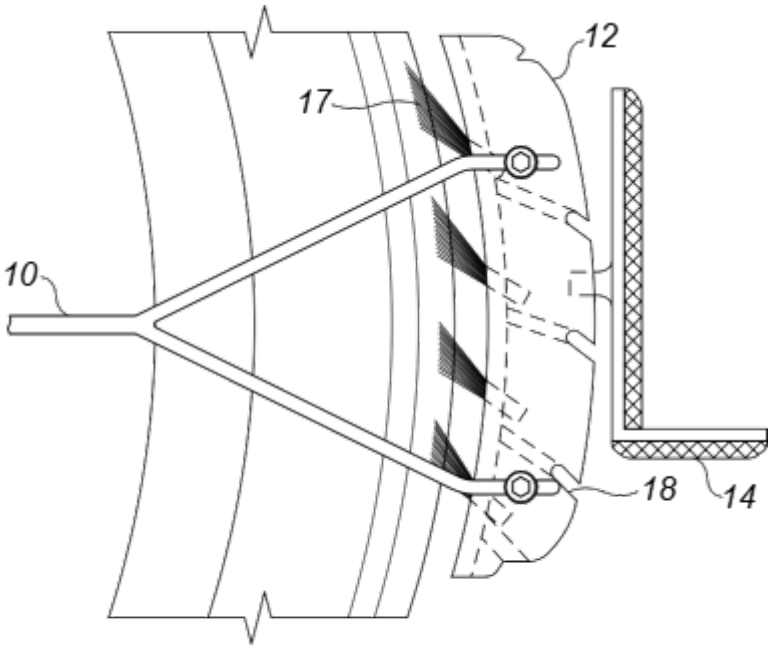

FIG. 2

Document C

Prior art reference D1

GB 2020202

Granted 14 September 1988

Flexi-Guard Ltd.

Present bicycles, particularly racing bicycles, are lightweight and it is desirable to remove all unnecessary weight to increase the efficiency of the bicycle. Such bicycles seldom have mudguards or other wheel coverings to protect the rider from the bicycle wheel. Ordinarily, in good weather, debris thrown by an uncovered bicycle wheel is quite tolerable and does not interfere with the bicyclist's operation of the bicycle; however, when the road becomes wet, the dirt and debris thrown upwardly by an uncovered bicycle wheel, particularly the rear wheel, can become quite unpleasant to the cyclist.

Other than to include ordinary mudguards, prior-art attempts have flexible mudguards incorporating a roll of tape or ribbon that extends horizontally over the top of the rear wheel of a bicycle. When such guards are not in use, the ribbon or flexible material is rolled up and stored. Such splash guards are relatively heavy and complicated, and hence expensive. Further, they are of limited effectiveness since the tapes or ribbons are not wide enough to interrupt debris or moisture being thrown from the rotating wheel at an angle to the plane of the wheel.

It is therefore an object of the present invention to provide a splash guard for a bicycle that is light, uncomplicated, less expensive and more effective than guards of the prior art. Preferably, it can be stored unobtrusively and conveniently when not in use.

In accordance with the invention, a splash guard is provided having a clamp for securing the guard to the frame of a bicycle adjacent to an uncovered wheel. An arm is pivotally secured to the clamp and is positionable between a guard position and a storage position. The arm extends from the clamp to the periphery of the uncovered wheel; the arm also forms the framework for a shield. The arm extends over the wheel in a plane substantially transverse to the plane of the wheel.

A flexible material, such as commonly available vinyl material, is moulded on that portion of the arm extending over the wheel; the shield thus formed by the flexible material is cut into strips to form a cutout closely conforming to the cross-section of the perimeter of the wheel, having within it a plurality of flexible fingers extending in the

cutout area. The shield is positioned on the arm such that the outer periphery of the uncovered wheel passes through the cutout in contact with the flexible fingers. The arm may be pivoted to a storage position, in which the shield is moved to an unobtrusive location beneath the bicycle seat, and is elevated out of contact with the wheel to ensure non-interference with the operation of the bicycle when not in use. An integrally moulded reflector is positioned facing the rear of the bicycle.

The present invention may more readily be described by reference to the accompanying drawings, in which:

FIG. 1 shows a bicycle having the splash guard of the present invention mounted thereon;

FIG. 2 is a front elevational view of the splash guard; and

FIG. 3 is a perspective view of a portion of an uncovered bicycle wheel showing the splash guard in position.

Referring now to Fig. 1, a bicycle 10 is shown having a conventional frame 12 and wheels 14 and 15. A sprocket 17, chain 18 and seat 19 are also provided, together with conventional handlebars 20, hand-operated brake lever 21 and brake mechanism 22 and 23 for the front and rear wheels, respectively. The bicycle is typical of lightweight bicycles with no mudguards. Instead, the wheels, and particularly the rear wheel 15, have a deflector according to the present invention, operative when placed in its guard position.

A clamp 25 (Fig. 2) is mounted on a suitable portion 26 of the bicycle frame adjacent to the rear wheel 15. The clamp 25 has an arm 28 pivotally secured to it; the arm thus may extend in the lower position shown in FIG. 1 to its guard (operative) position or may extend, as shown in the fainter lines in FIG. 1, to its storage position. The clamp is shaped to hold the arm in the guard position and the storage position, whichever is chosen by the user.

The arm 28 extends in a plane substantially parallel to the plane of the uncovered wheel 15 and terminates near the outer periphery of the uncovered wheel 15. An extension 42 is formed in a hook-shape extending in a plane perpendicular to the plane of the wheel. The arm 28 and the hook-shaped extension 42 are formed of a single metal rod. In an alternative version, the arm could extend all the way round to be fastened to the other side of the frame.

A shield 44, formed of a suitable plastic material, such as flexible vinyl plastic, is moulded over the hook-shaped extension 42 and therefore extends in a plane substantially perpendicular to the wheel 15. A flexible region or cutout 46 is formed in the shield 44 closely conforming to the cross-section of the perimeter of the wheel 15; that is, the curvature of the cutout 46 generally conforms to the cross-sectional shape of the tyre mounted on the wheel 15.

The cutout 46 is formed by cutting a plurality of slits 48 in the shield 44, with each slit having a different length such that a set of flexible fingers 50 is formed extending into the cutout area.

The flexible fingers therefore extend into contact with the outer periphery of the uncovered wheel 15 and drag or rub against the tyre on the wheel as shown in FIG. 3. While the cutout 46 may closely conform to the cross-section of the perimeter of the wheel, moisture and debris may nevertheless still escape between the shield and the tyre to be thrown on to the back of the cyclist. The flexible fingers 50 extending into the cutout and into contact with the wheel effectively intercept such debris.

The pivot for the arm 28 is positioned above the axle or the axis of rotation of the wheel 15; therefore, when the arm 28 is moved from its guard position, as shown in solid lines in FIG. 1, to its stored position, as shown in fainter lines in FIG. 1, the shield 44 is automatically moved upwardly away from the outer periphery of the wheel 15 so as not to interfere with the normal operation of the bicycle. Further, in the storage position, the splash guard of the present invention is unobtrusive since the shield portion thereof is positioned closely beneath the seat 19, near to the rear brake, and the arm 28 lies close to the frame member 26.

A reflector, not shown, is moulded integrally into the rear of the shield 44 so that it faces rearwardly of the bicycle when the arm 28 is in the storage position.

The splash guard of the present invention may thus be left in its storage position until it rains; at that time, the cyclist need only reach below and behind him and ‘flip’ the splash guard backwards so that the arm assumes the position shown in the bolder lines and the shield 44 descends toward the periphery of the wheel 15. The cutout 46 thus assumes its position in close proximity to the outer periphery of the wheel and the flexible fingers 50 contact the wheel to prevent the passage of water or debris between the shield and the wheel, and to deflect the water and debris that is thrown from the wheel.

(*Claims omitted*)

D1 drawings

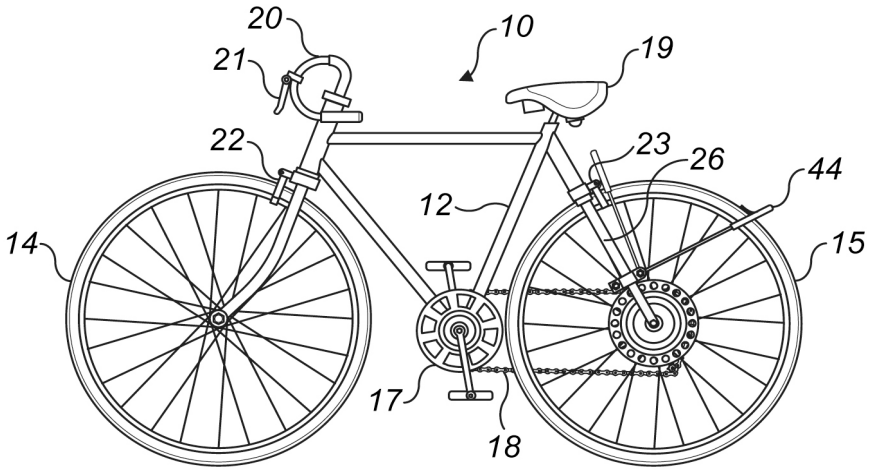

FIG. 1

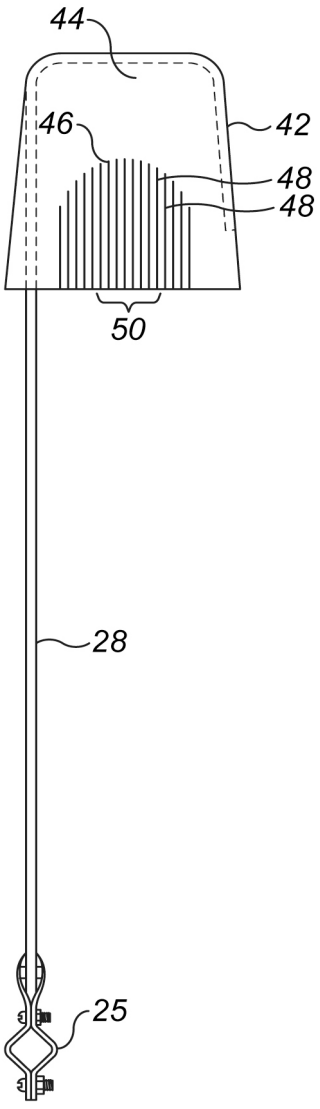

FIG. 2

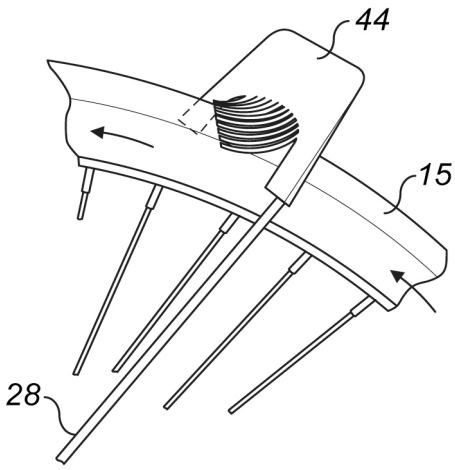

FIG. 3

Prior art reference D2

GB 1,111,111
Granted 22 May 1948
Doors Cycles Ltd.

Mudguards for Cycles and Other Vehicles

The present invention deals with an improved device for removing mud or the like from the tyres of bicycles or other vehicles. The device is of the kind which can be attached to the mudguard of the vehicle so as to function automatically while the vehicle is in motion and minimise the accumulation of mud or the like on the undersurface of the mudguard and/or other parts of the vehicle, such as the driving chain and gears.

The present invention provides an improved device which is easily attached to or detached from the mudguard and which comprises a rigid backing and a flexible yielding wiper or squeegee which is adjustable for wear relative to the backing, which is spaced clear of the tyre and is itself adjustable to regulate the setting of the device with respect to the tyre.

The device is sharply distinguished from known scraping devices by its squeegee action on the wheel tyre, and it has the advantage that in addition to the adjustment by which the squeegee is permitted to be set with respect to the tyre, adjustment is made for compensating for wear of the wiping or squeegeeing element itself so that the maximum service can be obtained from it and, at the same time, the desired flexibility of the element is maintained by permitting adjustment to resecure the desired extent of projection of the squeegeeing element beyond its rigid backing.

The device can be arranged so as to be readily folded into an out-of-action position.

It is convenient to clamp the squeegee element between a pair of plates, one of which may form a mudguard or deflector to prevent or minimise mud being thrown on to other parts of the device.

In order that the invention may be the more readily understood, reference is made to the accompanying drawing, which shows a perspective view of the device fitted to the end of a cycle mudguard.

The appliance consists of a first plate 1 having a slot 2, and a second plate 5. Between these plates, a wiping or squeegeeing element, e.g. a flexible, yielding brush 9, is clamped by two bolts 7, which pass through the plate 1, the brush itself and the plate 5, the bolts being secured by nuts.

The appliance is fitted to the mudguard 10 by means of a screw passing partially through split stem 11, to which is hinged, by a pin 13, a carrier 12 for the backing plate 1.

The distance the brush projects beyond the lower edge of the plates 1 and 5 can be increased or decreased so as to vary the wiping effect on the tyre. Furthermore, the adjustment of the whole appliance can be obtained by adjusting its fastening on the mudguard by means of the slot 2.

The parts 11 and 12 are preferably hinged, as noted above, so that the appliance can be easily lifted away from the tyre in dry weather without disturbing the setting of the device. Thus, when it is set back again, it is automatically in the working position. A stiff hinge connection between the stem 11 and carrier 12 serves to keep the appliance in its raised position until needed.

The curved or turned edge 6 of the plate 5 avoids mud being thrown through the slot 2 onto the hinge pin 13 of the parts 11 and 12, and also on to other parts of the vehicle.

Although a squeegee or wiper in the form of a brush has been depicted, a squeegee of rubber sheet has been found to work in practice.

(*Claims omitted*)

D2 drawings

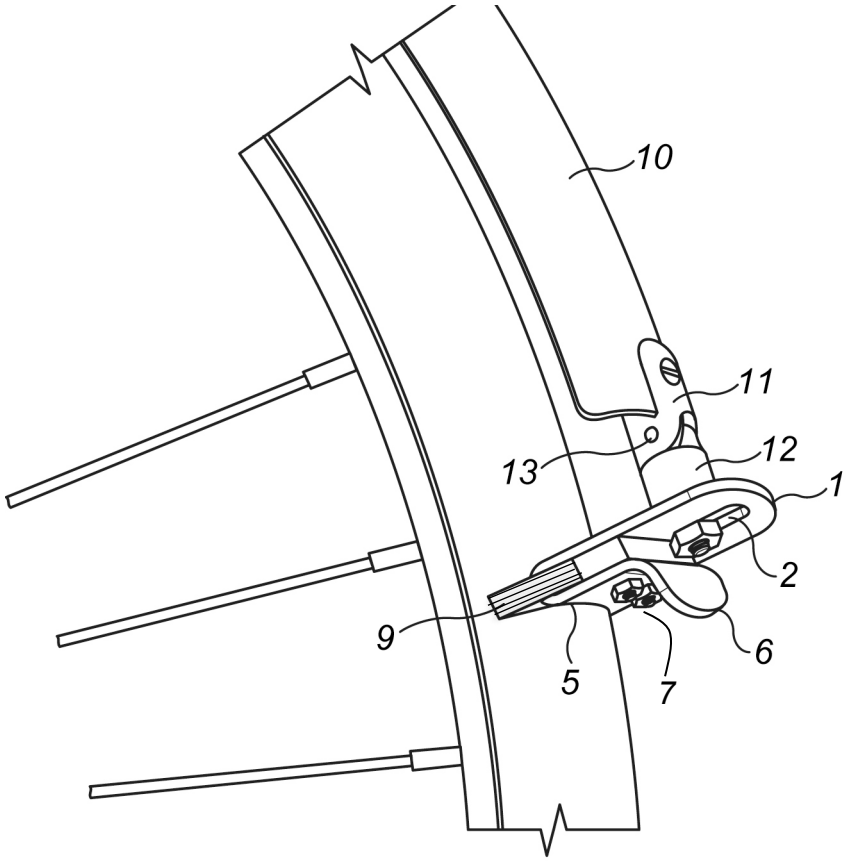

FIG. 1

Spare Set of Claims

CLAIMS

1. A road-spray remover unit for a bicycle, consisting of a body with at least one group of bristles, the bristles being inclined at an angle towards the rotation of the wheel to reduce the friction on the wheel and assist in the removal of water, wherein the unit is attached to the frame of the bicycle by two stays and is movable between an engaged position, where the bristles are in contact with the wheel, and a disengaged position, where they are lifted from the wheel.

2. A road-spray remover unit as claimed in claim 1 that has an attachment which allows it to be clipped to the bicycle frame on or near the brake-mount, thereby holding the unit in the disengaged position.

3. A road-spray remover unit as claimed in claim 1 or 2, where the stays are configured to pivot at the point where they are attached to the frame.

4. A road-spray remover unit according to claim 3, where the stays are attached to the frame at a point above the axle but level with it in the front-rear direction, so that rotation of the unit to the disengaged position lifts the bristles from the wheel.

5. A road-spray remover unit as claimed in any preceding claim and having a large red rear reflector mounted on it.