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The Journal of the Cyclemotor



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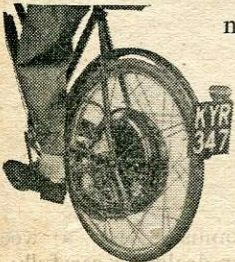
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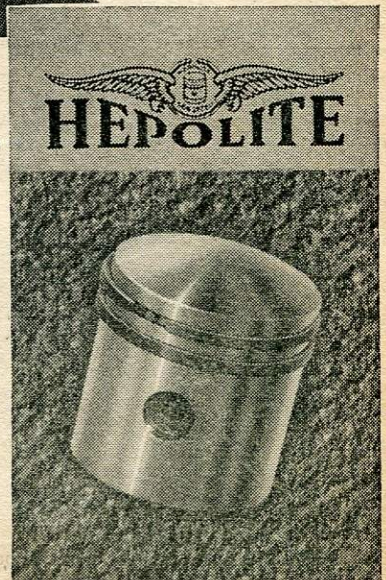
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POWER & PEDAL

THE JOURNAL OF THE CYCLEMOTOR

Editor: FRANK L. FARR

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SEASON FOR DECISIONS

THE SHOW is the shop window of the cycle and motor cycle industries and naturally enough many of the people who pay to gaze on the exhibits are window shoppers. The distributors and dealers may take the opportunity of placing orders for the coming season but the ordinary buyer in the main merely looks, then goes home and during the next three months or so studies the catalogues and consults with his friends before finally deciding what to buy and where to buy it.

The next three months, then, will provide opportunities for both manufacturers and traders not only to advertise their goods and services while the market is still open to influence, but also to organise to provide the sales and service facilities that the public will expect, especially the newcomers to cycle-motoring. There is much to be done in this direction if the potentialities of the market are to be taken up to the full.

In the first place there is such a range of units with wide differences in characteristics, performance and price, that the mere matter of first choice becomes a

problem in itself, and here much will depend on the ability and honesty of the trader as to the advice he offers. Then there is the fact that most of these buyers will not only not know how to maintain their engines but have not the slightest intention of ever trying to know. They will expect the engine to run tirelessly for some months and then to have such service as is needed available when it is required, *probably at the week end*, and at reasonable charges.

This presents a much greater responsibility for the Trade as a whole. In this field the sale is only one stage in the proceedings and the service that follows it is the thing that will decide whether that rider remains a cyclemotorist or not, sticks to his first choice of motor or gives it up in disgust, returns to that dealer for his next machine and for spares and accessories or finds another somewhere else.

The far-sighted manufacturer will select his agents with much more of an eye to the service they will give to his future customers than to the amount of space in the shop window they will devote to quick first sales, and it is on the manufacturer that the main responsibility

rests. A short term policy in the direction of bumping up sales without planning and equipping for service will only mean that within a few months disappointed ex-riders will be flooding the market with their secondhand units to the detriment of the prestige of that manufacturer and, unfortunately, of the cyclemotor movement as a whole.

At the other end of the chain, the customer can best safeguard his own interests, if he has no trustworthy friend to introduce him to a known dealer, by making most careful and specific enquiries *before placing his order* as to spares and service facilities offered and the times at which they are available.

The dealer who can offer, for instance, a service unit on loan while a repair is being carried out can save a lot of time and money to the man who wants to use his machine for business transport every day. A spare part costing a few pence bought over the counter may be ten shillings cheaper than one for which the machine has to wait, immobilised, for a week. Choose your dealer as carefully as you choose your engine—It will pay.

COMMENT

by

CLIP-ON

THE THING about the Show crowds I could not help noticing was the difference in dress between the people crowding round the cyclemotor stands and the motorcyclists. Admitting that most of the visitors had travelled to Earl's Court by courtesy (if that is the word for such service) of London Transport, there were enough vehicles of both kinds in the car park to form a fair idea of the numbers in each group and the stand that *Power and Pedal* has taken for reasonably smart and conventional dress for use on motor assisted cycles was evidently justified by the fact that these potential buyers in the main eschewed the neo-aeronautic garb of the motor cycling fraternity.

In particular I noticed a large number of women eyeing the cyclemotor exhibits with a purposeful mien which suggested an interest purely personal as distinct from the obvious pillionistes attached to male escorts. It was good to find one firm with a famous name in outdoor clothing taking a real and original interest in this demand, but there is room for a lot more initiative in the clothing of cyclemotorists yet.

Service

Most of the meetings and conversations at the Show were of a pleasant and cheerful character but inevitably there is also an opportunity there for folks to get their grievances unloaded as well, and I heard quite a number. Most of these were on the subject of service. One unfortunate sufferer from cardiac trouble had bought

his machine simply so that he could travel to work and was dependent on this means of transport to hold down his job. One day the machine failed to start so he ran it in to the local dealer and took a day off while it was fixed. That was forty-five days ago at the moment of writing and the machine has not come back yet!

Engine Design

How many times I have heard questions about design factors put in all innocence by people who honestly wanted and expected a simple answer to problems that needed vast knowledge and experience to cope with, I do not know, but it must run into hundreds.

It seems that many of the people born into this century so take the existence of the internal combustion engine for granted that they simply cannot understand that it has any limitations at all.

For instance, in our own field of cyclemotors, one engine can only do one job really well. Either it can slog at relatively low speeds or turn over fast and produce a higher maximum brake horse power figure *but it cannot do both*. The factors in design which govern the rate of gas flow in, and expansion after combustion are the ports, their shape size and position in the cylinder, and variable port timing is a thing that, while technically just possible, is out of the question in production engines. If you want speed on the level and fast climbing of moderate gradients when rushed, which are the requirements for main road riders in some

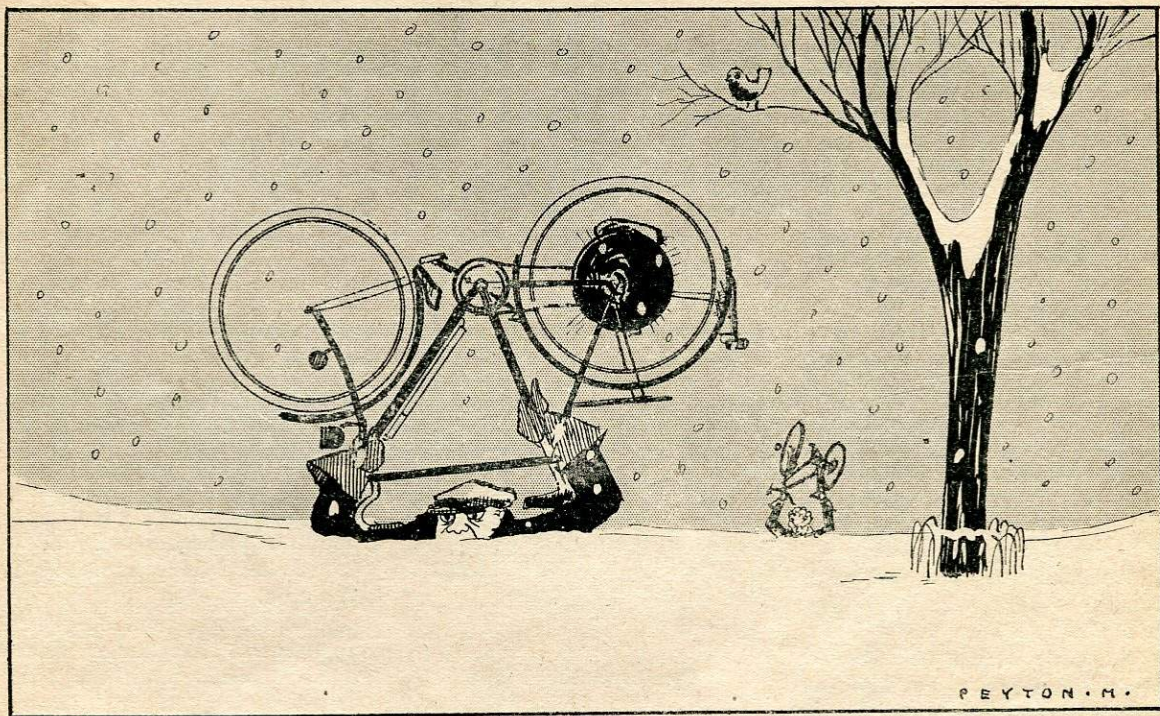
parts of some countries, then you go for the high revving engine with the high maximum output; but getting away from standstill on a real hill will be hard work. On the other hand the man whose riding calls for a lot of stops and starts with real hills and no great demand for speed will need an engine that slogs for him and he is not interested in top b.h.p. figures.

The modern under-50 c.c. engine gives a lot but it can't give everything at once.

Special Cases

Quite small factors in design can produce some queer results at times and I am wondering if the many puzzled readers who have raised the question of a certain very efficient unit demanding "cool" petrol on its maker's recommendation as well as heavier oiling than most other makes are not up against one such detail.

Keeness on precision building seems to have led the designer to grant unusually close tolerances for a deflector-head piston engine and I suspect that this may have led to a little tightening up on new engines thus demanding heavier lubrication which in turn would slow the flame rate and lose the value of high octane petrol. A couple of thous. off the piston would obviate this trouble but would allow some piston slap when cold. I would advise owners to realise that they have a precision built job in their hands, to run it in progressively for *1000 miles* and then revert to standard lubrication and good quality fuels. I hope



"The great advantage of the cyclemotor is that whatever the circumstances you can always get home with it somehow"

the manufacturers will not curse me for this but anyway I believe it to be sound advice to keep the performance up and the carbon down.

Geared Rollers

The obvious desirability of simplicity in design for such a utilitarian instrument as the cyclemotor has led a number of people both inside and outside the Trade to take a doubtful view of the use of the geared roller. From the starting point that one of the attractions of the roller drive is its low cost and weight factor, they argue that this is defeated by the use of gear reduction.

There is some substance in this point of view but it is on the verge of over-simplification nevertheless, and if carried to its logical conclusion simply means that the cycle

is better off without an engine at all. More than that the cycle itself would be the old "boneshaker" without chain and gearwheels, with the pedals mounted directly on the front spindle.

Actually the advantages of the geared roller are quite considerable in certain designs of unit. Gearing down enables a larger diameter roller to be used with consequent wider arc contact with the tyre and lighter transmission stresses there. It also enables the engine to be geared to the best advantage of its power curve for good road performance. Furthermore, although this has hardly reached the limited British market as yet, it makes it possible to place the engine itself in a better position on the machine instead of being jammed up against its wheel. This is particularly valuable with bracket located engines. The drive itself

may be by train of gears, chain or belt, not necessarily expensive or heavy and no less reliable than the direct roller drive. If so one would be pleased to see this idea taken further.

Tandems

As usual the publicity was bad, but those who noticed it particularly liked the simple adaptation of the attachment of the *Firefly* engine unit to a standard, solid-bottom-tube tandem on the Vincent stand.

There is a lively demand for units for use with this type of machine and there are some special problems involved in fitting and control. That unit certainly looked to be in the right place under the rear bracket of the "twicer" and I think that single exhibit may well have collected a few orders for the unit,

Correspondence

The Editor is not responsible for the views expressed by his correspondents. Letters should be typed or written on one side of the paper only and may be signed under a nom de plume for publication, but must be accompanied by the sender's name and address

Building the Paper

The *Power and Pedal* is a grand little paper and improves with each publication, but unfortunately it is hardly known to the cycling public—the potential cycle-motorist of to-morrow. Advertising is, therefore, most essential if the paper is to survive and its circulation built up, and I personally see no objection to swelling its pages with interesting adverts, well set out.

The price too, must be increased to at least sixpence and later on perhaps we can look forward to a bi-monthly edition after the circulation has been stepped up. I also think that a change of name would be advantageous to sales, and I suggest *The Cyclemotorist* incorporating *Power and Pedal*. Lastly, a competition may prove helpful in stimulating interest and helping circulation, whilst a prize could be offered for the best suggestion on how to increase sales.

What do other readers think?

W. O'DONNELL

Liverpool.

Not a "Hass"

In the September issue of your excellent journal "Clip-on" showed us a photograph of a *Berini* assisted cycle, with a veteran motorist's badge showing seventeen years accident free riding and an "L" plate because he has not passed his motor-cycle test. "Clip-on" remarks that this proves "The law is a hass". I consider that it proves the opposite. What similarity there is between driving a cycle-motor and driving a car is negligible,

so why should he not display a learner plate?

There have been a lot of letters in "Correspondence" praising the *Cucciolo* cyclemotor, but what is it like at slow-speed pulling. I have a 32 c.c. *Berini* cyclemotor and consider it the best slogger at slow speeds on the market.

F. V. HEATH

Guildford.

Cyclemaster Lights

I first discovered *Power and Pedal* in September, and consider it fills a long felt need. The Cyclemotor even now does not seem to be properly understood as having problems which are unique, and not just another sideline for the general retailer.

Your magazine is doing a good job in this respect, provided circulation keeps going up.

I was fortunate enough to be able to borrow all the back numbers recently, and there is a point I would like to take up.

It concerns the road test of the *Cyclemaster* 32 c.c. model in which there were some disparaging remarks concerning the lighting system.

These remarks I do not consider fair, since the *Cyclemaster* unit does not include any lamps, only the 9 watt lighting coil in the magneto assembly. A road test report should surely be confined to the unit as sold, and not coupled with accessories which can be chosen by the buyer independently.

If the maker's recommendation is followed, 6 watt head and 3 watt tail,

there is satisfactory lighting at all engine speeds.

I have found, however, that the replacement of the usual rear light with *M.E.S.* bulb as fitted on the majority of new number plates, by a *Lucas* 529 tail lamp with miniature hangover bulb, is a great improvement and the following motorist cannot help but see somebody is on the road.

The remark concerning parking light is also I feel unfair, since this again depends upon the type of headlamp bought. The *Lucas* type containing a 4.5 v. flat torch battery I have found perfectly meets the need, particularly as it has a 3.5 bulb fitted in addition to the main 6v. 6w. bulb. Normally the tail lamp is fed in parallel with this bulb on the "battery" position, but it is a very simple matter to re-connect the normal tail lamp so that this does not occur and to fit an ordinary cycle dynamo rear light with a 3.5 bulb built in to give the necessary red light.

"GRV 993"

Portsmouth.

Tandem Problems

Many readers of *Power and Pedal* are, as I am, owners of Tandems; cannot an article be devoted in one issue to most suitable engine for use with same. I have noticed that under-the-bracket engines will not attach to tandems, and engine wheel units are only 32 c.c.

My own choice at present is a *Power Pak* of 49 c.c., but driving

with L plates someone must engage or disengage hand lever, (how does the Law stand on this point?) only an L driver on a motor cycle is not allowed to carry a passenger.

Power and Pedal I have found is a monthly that cannot fail to be a constant source of information and idea to all owners of power-assisted cycles, and potential owners.

I would be pleased to read your comments, or other readers who have had experience with tandems.

F. W. WATERS

E.15.

(The makers do not intend the engaging lever to be operated while driving—ED.)

“Lohmann” Ideal

Surely the *Lohmann* is the answer to the cyclist's (not motor-cyclist's!) prayer. It is light in weight, snugly tucked out of the way where it should be, has excellent power for safe cycling speeds, and, best of all, the power is where it is wanted—on the hills. To this can be added its incredible m.p.g. and the lack of troublesome sparking plug with its associated electrical equipment. With some modifications, i.e., a large diameter roller to minimise tyre slip, synchronised

control of throttle and compression with a single lever, and handlebar control for engaging and disengaging the engine whilst mounted what more could possibly be wanted?

I would gladly scrap the noisy and messy little devil perched over my back wheel and power myself with a Lohmann if I could afford the outlay. (It is, of course far too expensive).

Can there be two opinions about this? If there *are* any snags I would be glad to hear of them.

E. BLYTHE

Southbourne

P.S.—Congratulations on your persistent campaign against noise. I tremble to think what a “club run” would sound like to every resident within a few miles of the route!

De-Carbonising

I saw a cycle leant against a wall the other day, so I stopped to look at it. It had an engine under-the-bracket. As I was looking at it the owner came up so we got chatting about it. I had never seen one like this before. He said he has had it nearly four years, and has done 6,000 miles on it, and he

has never had it decarbonised yet. He has cleaned the exhaust three times, but he has never had the cylinder head off. Can any reader claim anything like this? The name of the engine was “Mosquito”

W.G.L.

Leeds.

The Roller Works

With reference to Mr. Stracey's experiment (November issue) with his *Mini-motor*, I am the proud owner of a Mk. II *Mini* with the normal roller drive and I have no grumbles. In fact after fitting a new non-slip roller the performance is excellent with very little tyre wear. Myself I think Mr. Stracey's drawings of his conversion make the unit look very clumsy and out of place, and also the driving position looks as though if you are not careful you would burn your knees. Mr. Stracey in his article says the engine in its new position is easy to get at for decokes and adjustments. I find no difficulty in getting at my engine for those things in its original position. Incidentally, I have fitted new piston rings in my father's *Mini* without removing the tank.

you said it...

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(Power and Pedal Correspondent)

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Good luck to the staff of *Power and Pedal*; you are doing a fine job for the cyclist of to-day. My last word is asking you to start as soon as possible a "Power and Pedal Club". I am sure you would have a record membership from all over England.

E. J. GARFIELD.

Rotherham.

Also Pro-roller

One becomes a little tired of the superiority complex of advocates of gear or chain driven units and their sulks at tyre destroying rollers. Let us have it quite clear; the newer type of roller such as that incorporated in the *Mini* is most certainly *not* tyre destroying. One does not pretend that there is no additional tyre wear of course, but a good tyre will still last for very many thousands of miles properly treated. I would rather have a supremely simple roller drive any day than a heavy, dragging gear and clutch unit which detracts from the "pedalability" (forgive me!) of the bicycle, and provides a grand assembly of moving parts to cause additional maintenance troubles. It is also noticeable that the gear driven jobs are some £10 dearer than the roller driven ones—not, I think, a factor of no consequence these days.

Here are some of the features I would incorporate in my ideal unit:

1. Roller drive, for cheapness, lightness, simplicity and minimum interference with the bicycle.
2. Bottom bracket position ("Over-the-hub" units suffer from several disadvantages (a) I cannot carry luggage or my small son on the back of my *Minimotor*. (b) the roller sprays mud downward over the hub in wet weather)
3. Speed. I go $7\frac{1}{2}$ miles to

work each day and I think 25-30 is not an unreasonable speed to expect, combined with good pulling power down to about 10 m.p.h.—below this speed you can bring in the pedals. 50 c.c. should provide all this.

4. Low initial cost. I fail to see why the present bottom bracket engines all cost a lot more than the *Minimotor*, for example:
5. Robust Construction. In this respect the *Mini* is a wonder—a really solid job built to last.
6. Accessibility for maintenance—the *Mini* scores here too.
7. Large petrol tank—six pint would be ideal.

A word about *Power and Pedal* in conclusion. I look forward to every month and am never disappointed. Articles on camera-raft struck me as a bit out of place though, I'm glad you have dropped the subject this month.

A. E. SMITH

Scholes, Nr. Leeds

Likes and Dislikes

I would like to see *Power and Pedal* published at least fortnightly, many more pages, more space to "Clip-on" (a very readable writer;) and "Arquata", whose articles are spiced with a delightful humour. Readers' Correspondence *must* be expanded, it is the Magazine's hub—never, on pain of death, curtail it! More Advertisements, but please, cut down, or better still omit altogether, highly technical articles such as the Camera Section, and highly technical engine details which are of no interest to the *average* rider.

I don't think altering the Magazine's heading is really worth much attention, I think it is O.K. as it is the *inside* of a magazine that matters

—a striking frontpiece will only attract a person *once*—if the inside isn't to his taste no matter how striking the heading he won't buy it again. So please, more pages, weekly, or fortnightly issue and price: anything up to a bob.

P.T.J. 201

Ormston

Critic

May I join in the protests of your correspondent, Norman Corrigan, of Grimsby, re photographic articles. I too am of the opinion that this section should be cut out, and in it's place why not a section dealing with tours, or weekend runs, accompanied with a photo or two of well known, or unknown places in the locality being described?

Descriptive articles, together with an inspiring title, would I am sure, incite many of our readers to get their machines out, and visit the places mentioned, either at weekends, or holiday time.

Who could resist exploring Constable's Country, after reading about it in some future issue of *Power and Pedal*; discovering the Forty Shires, taking each one individually, or along the East, West, South, or the Welsh Coast as the case may be, would appeal far more to our readers than "photography and how it's done," and would be of greater interest too.

I am confident that the cyclist is, or should be possessed with sufficient intelligence to take a photograph of any subject he chooses, to his own satisfaction, and as for the keen enthusiast of photography, he will know what books to get, and where, for his hobby. You can add my name to Mr. Corrigan's, this IS a section for certain cancellation Mr. Editor.

Along with many more readers, I think the *Power and Pedal* journal is what we cyclist-motorists have wanted for a long time, but I can't help noticing in your correspondence Mr. Editor, the oft repeated

request for a fortnightly publication. Well why not? Don't keep us in the dark, let us know the prospects.

Wishing you continued success,
JKY 234

Bradford.

Photographer's Reply

As the perpetrator of the awful crime of writing photographic articles for a magazine written for Cycle-Motorists I feel that I must reply to Mr. Norman Corrigan.

There are now thousands of us on the road and of that number there are many who use their machines not only for purely utilitarian purposes such as going backwards and forwards to work but as a hobby particularly for getting out into the country for the sheer joy of being there. There are many of us who have been keen Cyclists for years but as we get older find our range

has been restored to us plus a good many more miles and without the effort of cycling.

It is surprising how many real Cyclists carry a camera with them, not because they are "Fiends" but to make a permanent record of their rides and the beautiful country through which they have passed. It was for these Cycle-Motorists and not the backwards and forwards to work brigade that these articles were written. I felt (and so did the Editor) that a few hints in non-technical language would be of use to them in their hobby, and could any two hobbies go together better?

I agree that we all want as many hints and tips on how to get the best out of our machines but I think that most of us will agree that so far the Editor has done us very well indeed, especially in regard to the test reports of the

various types which I feel are of the greatest value to anyone contemplating investing in a motor. I have read all the test reports in the two motor-cycling journals but feel that those written by our Editor are the best. The others are written from the Motor-Cyclists' angle but ours are written by a true Cycle-Motorist—a vastly different thing. The Editor has certainly not pulled any punches and has fairly stated the faults that he found. This is what we want, it is far better to know the faults of a motor before we purchase it than to find them out for ourselves by bitter and costly experience.

No Mr. Corrigan, because a man's hobby is photography it does not necessarily mean that he is a fiend; a man without a hobby is a very poor creature indeed.

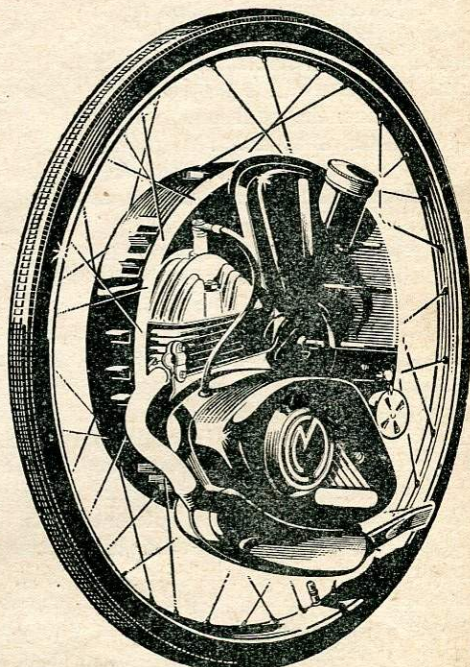
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SPRINGING THE FRONT END

by

By **B. Shipley**, M. Inst., Ex.E.,
P.Grad. I.Mech. E. (A.D.)

THE introduction of the auxiliary bicycle engine—or should one say the reintroduction—has brought in its train a succession of accessories all with the basic intention of improving the breed, and rendering the present day simple bicycle a more suitable vehicle for the additional role of power drive. Foremost amongst these fitments is the springing, in one way or another, of the front end of the machine.

The purist will say that the normal cycle fork, with its curved taper tubes, is in fact designed in just that way for the purpose of deflecting slightly when subjected to a sudden bump. This is of course, perfectly true, but the amount of deflection that a cycle fork can withstand is very severely limited, and the additional weight of a power unit, allied to higher speeds can, and indeed sometimes does produce a rapid rate of fatigue of the metal with disastrous results. The rider of a cyclemotor who encounters—for instance—a sunken manhole cover at a speed of 25 m.p.h. will imagine that his front fork, far from being destined as an inherently springy girder, is about as flexible as a bar of iron! And here we come to what I believe is a very important point. The true cyclist, who pedals for the joy of it, adopts the logical and most efficient pose. His seat is high, and his hands are low, for it is only in this attitude that he can exert the maximum thrust on the pedals. And as much as he pushes on the pedals, he pulls on the handlebars; in this position, there is a great tendency to lift the front of the machine

over the bumps, with the result that they are less noticeable.

Now most cyclemotorists adopt a more upright posture, where very little pull is being exerted on the handlebars, and I think that there can be no disputing the fact that in the otherwise comfortable position, we do notice the front wheel bumps very much more.

That some form of a spring is required between the wheel and the frame has induced an inventor to file in the Patent Office a device

side sway would be most noticeable to say the least and what happens to the brakes is not at all clear. To prevent the small pegs from shearing off at the first bad bump, the springs would need to be very stiff indeed, so stiff in fact that 90 per cent of the time they simply wouldn't be working.

It is not surprising therefore that serious minded manufacturers both at home and abroad should have turned their attentions to modelling a complete fork on the lines of the

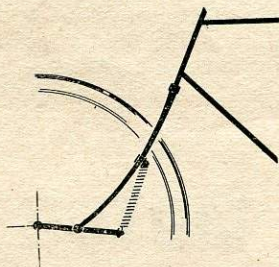


FIG 1

which is shown in diagram form in Figure 1. It is what I like to call the "classic" idea of cushioning the front forks, and its utter simplicity is at once apparent. Pivoted to each front fork eye is a lever, the forward end of which carries the wheel, and the rear end is attached to a tension spring, the other end of which is linked to a suitable clip at some point up the fork blade. The Inventor proposes small pegs fixed in the lever, and working within the confines of the slotted end of the original fork, to act as stops limiting the travel in both directions. I rather fear that the simplicity of this scheme is its sole merit, for with no connecting strut between both sides of the hub,

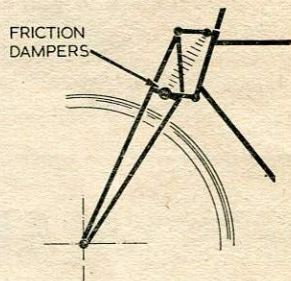


FIG 2

well established "parallel ruler" type almost universal until the advent of the telescopic variety on motorcycles. Figure 2 shows the layout of this arrangement. A complete girder, either of tubular or pressed construction is hinged to the steering head by means of links, and a single compression spring placed between the moving girder and the steering head carries the loads. Refinements found on examples of this fork imported into this country have friction type "shock absorbers" built into the linkage. These devices simply make the motion of the fork stiffer throughout the range, and effectively prevent bottoming.

An interesting variety of the

parallel ruler principle put into practice by a well established British firm is shown in figure 3. In this fork, the connecting links between the fixed and the moving blades are spaced widely apart and the upper link is situated below the fork crown. The load is borne on a compression spring concealed within the head stem and reacts on the upper link. With this scheme, a very long fork travel is not aimed at and for severe road conditions, where bottoming may be encountered, a flexible rubber buffer is incorporated which effectively cushions the shock when a bump is met causing the spring to compress to its limit.

that is to say, the last little bit of twist takes *proportionately* very much more effort than the same amount at the start.

Bearing in mind that all the foregoing systems imply the throwing away of the existing front fork, the designers of the "clip on" fork shown in figure 5 have utilised the normal cycle fork as a supporting member for their springing attachment. This device consists of a complete sub-fork, sliding in special lugs pivotted on the original fork ends, and hinged at the top end on a block clamped by bolts to the fork below the crown. The front part of the linkage contains two square members set at 45 degrees

ally, the fork is manufactured by a British firm.

I think I have shown that it is a long cry from the "drawing board" dream shown in the first diagram to the sound and practical devices pictured in the other sketches. What then is the Ideal Spring Fork. With forks as with engines, I say that there is no one ideal. Each has its merits, but if I were to be asked what I really would like for the front end of my cyclemotor I should say that a fully telescopic, hydraulically damped fork, in fact a miniature motorcycle type, but with less travel, would be my cup of tea. It would have to be light and cheap, but I am very much afraid

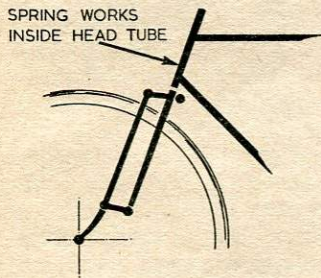


FIG. 3.

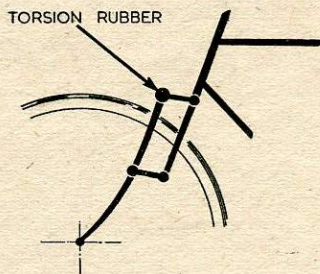


FIG 4

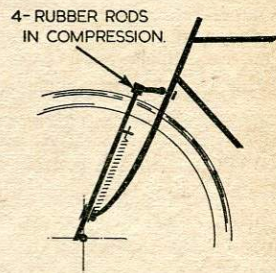


FIG. 5.

The use of rubber is coming to the fore in many branches of engineering, and a cycle spring fork, imported from the Continent, and shown in the fourth diagram possesses a somewhat similar layout to that of the previous example although the stub fork is noticeably shorter. However, no metallic springs at all are employed, the loading being carried by rubber in torsion, built into the top linkage. The springing is obtained by the tendency of the rubber to twist when the load is applied, just in the same manner as if a rubber ball were twisted. Now rubber has the advantage of increasing its resistance very much more as it is compressed or twisted,

to each other, and in each of the four corners so left, a rubber rod is fitted. As the fork moves, the square members turn and compress the rubber. An otherwise disadvantage of this scheme is overcome by employing auxiliary tension springs to carry the "static" load, as rubber used in this way tends to be so soft for the first part of the travel, that the weight of the seated rider might take up a third of the travel before any bumps were met! The rapidly increasing "rate" or stiffness, as the fork gets near the end of its travel is a very desirable characteristic with this type of springing. Whilst the rather novel use of rubber in this way was a Continental idea origin-

ally, the fork is manufactured by a British firm.

that this ideal will remain a pipe dream, as my call for telescopic motion, and hydraulic damping can rarely be very light and certainly not cheap.

No, we must not expect the impossible, but we do want forks that do their job, without wobble, or interfering with braking. I do not know whether we want the manufacturers to sell special machines fitted with a sprung fork or whether our individualism likes to assert itself and allow us to take our own choice. We need reliability and blending with the lines of the machine. Nothing that makes the front end stick up in the air because of a long fork travel, in fact, if the

Continued on page 53.

WITH THE EDITOR'S COMPLIMENTS

IN taking advantage of this opportunity of wishing all readers the compliments of the season and the best of luck and weather for the riding season of 1954, I propose to use the chance of writing direct to those of you who have written to me during the first year of the existence of *Power and Pedal*.

From your letters it is clear enough that the policy of Britain's only cyclemotor journal is broadly to the liking of its readers, which is as it should be in view of the fact that it is the declared objective of the paper to serve the users of cyclemotors first and foremost. You have criticised certain specific things, notably the idea of extending the range of articles outside the cyclemotor field; you have been generous with praise and thanks for services rendered; and you have made various suggestions for the development of the paper in the future.

By far the most consistent demand has been for the enlarge-

ment of the journal at a higher price, and this has often been coupled with the additional or alternative ideas of fortnightly or weekly publication. As a matter of policy the present low price was fixed as being logical for a journal serving people whose vehicles are selected primarily because they are economical. One of the reasons why I have such complete confidence in the future of the cyclemotor as a vehicle is that we have the cheapest modern form of transport in the world and it only makes sense that the journal devoted to it should be cheap too—if only in price. A rise in price would only add very little to the net income anyway.

Fortnightly periodicals are almost un-British in character, except for a few highly and abstractly intellectual literary institutions, and the effort of remembering which week was in the right fortnight would be too much for me if not for you.

The weekly is a very different story, demanding a large organisation and involving heavy expenditure of capital unless part of an existing publishing machine. Frankly, I have tried and am still trying to obtain the backing that will make the already justifiable expansion possible. I have found that the British Business Tycoon



"Gad, Sir!
It's a
Risk"

never gambles except on a "Heads I win—Tails you lose" basis and only then if he can raise an insurance policy against the penny standing on edge! But even if a publishing house were found without a Gilt-edged Complex, the time for the jump to weekly publication would still be way ahead.

The simple truth is that *Power and Pedal* will grow in size as the cyclemotor movement itself grows, as firms in the industry have faith enough in the future to advertise in our pages, and as you, dear readers, support the business that supports the paper. You have been quick to express your appreciation of what one of you called, our "Publish and be damned" reporting, and I believe that this standard of forthright journalism is not only for your pleasure and service but in the long term view for the good of the manufacturing industry as a whole. But to preserve the independence of the paper which makes this policy practicable it will be necessary to do without the extra pages and the glossy cover for a little while yet.

With your support for this attitude on my part, I believe that this time next year I will be able to write in a bigger and better *Power and Pedal*. Once again "Compliments of the Season"

"In our opinion the mere attachment of a small engine to a normal non-powered vehicle does not convert it into a menace to be hounded from the roads."



Received by a reader from a friend on learning to ride a cycle

THE CYCLOMESTIC INSTITUTE

Boggis Hill
Bumps.

the 23rd day of December, 1953



THIS IS TO CERTIFY THAT Mr Mrs Miss Pansy Pennyfarthing

HAVING undergone an exhaustive three-year Course of study in CYCLOMESTICS i.e. the Theory, Practice and Pedagogics of Pedalling, covering the art of blowing up tyres, Mounting, Dismounting and Falling from Pedal cycles, Puncture repairs Skidding, Swerving and Wobbling to an angle not exceeding 90 degrees to port or starboard. Bicycling over Bumps without losing seat or face, AND over Stones, Glass, Dogs, and Small Children; navigating through Flocks of Geese, Ducks, and other Bicyclists, DEALING with Drunk and abusive Pedestrians, is FIT to fill in forms dealing with Insurance and Claims for Damages and Slander, specialist in Riding with or without Brakes, Lamps and on Flat Tyres:

FURTHER more having been awarded the Diploma of Disregard for Personal Danger UPON production of a Doctor's Certificate certifying Bumps, Bruises, Contusions and Abrasions, Fractures and Common Breaks to Limbs, Thorax and Abdomen sustained in the pursuit of knowledge of Cyclomestiarics.

HAS AT LAST satisfied the Board of this Institute and the Department of Public Safety THAT she can with Safety Steer, Control and Guide any two or three-wheel Powered contraption or means of conveyance/Chariot/Carriage/Childs Tricycle that she so desires WITHOUT undue risk to the General Public, providing the aforesaid G. Public stand Well Clear and are Forewarned of her approach.



on this day signed stamped & sealed

H. F. Saddlebag F.C.I. Principal

applied, and so that more grip could be had, number six had its brake block serrated at the face that rubbed on the tyre.

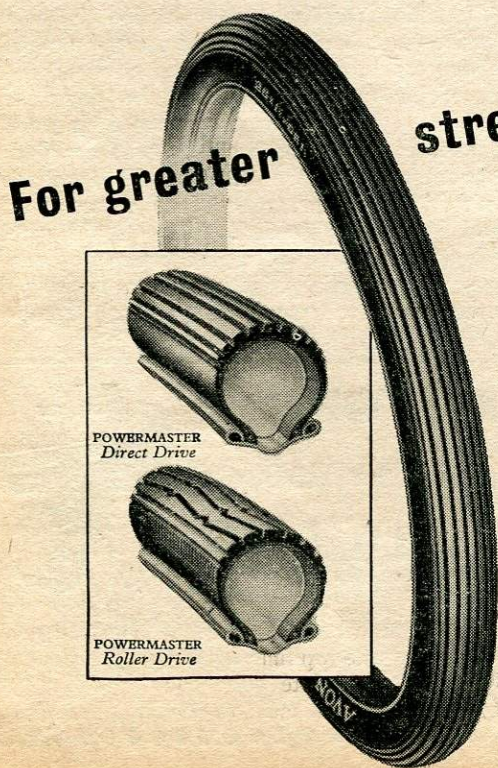
Foot brakes for velocipedes were also used, one sort being a cantilever arrangement which had two rollers contacting the sides of the tyres, whilst another similar type of brake utilised a long steel strip that ran "with" the tyre both in front and behind the bottom of the steering head above the wheel. Both leading and trailing faces of the steel strip bore down on the tyre. One specification says—"To prevent injury to destructible tyres a brake wheel . . .". In effect, a brake wheel at the end of a brake rod pressed down on the tyre and did away with scuffing of the tyre itself. But there is one unique brake of fifty odd years ago which deserves some mention here. It was a pneumatic pressure type complete with cylinder of water, oil, or the like (per specification, that) which operated a piston plunger connected eventually to

the brake itself, a strip of leather or other flexible material that hung suspended above the tyre itself. The rear strip of braking material also acted as a mudguard.

We now begin to see "progress" creeping along in the brake invention world in the shape of a v-groove pulley attached to the wheel. Needless to say, the v-pulley took the pressure of the brake blocks or shoes when the brake was actuated. In this specific instance, the brake blocks or shoes were connected to a wire rope one end of which was fixed and the other end coupled to the brake lever. It was this sort of brake that motor cycles had right up to about 1924 (but we won't argue about the exact year, my learned readers) before the internal expanding brake "took over". Perhaps this sort of brake was the precursor of the internal one? It was roughly as follows. A circular metal band was fixed to the wheel rim and a brake block or shoe pressed against it. In

fact, it amounts to the same thing in the most up to date of any internal expanding brake. But this idea was later incorporated with the v-pulley type of brake, it being claimed that the v-wedge brake block had, in theory, three faces pressing against the two sides and bottom of the v-groove. There was also a "safety wheel brake and support" operated by a winch on the handlebars! One cranked the winch and the little wheel behind the rear one, moved down on to the ground and slowed one down. When stationary the little wheels supported the velocipede. As a brake it made a very good stand.

As machines became faster, and possibly, roads better, with heavier traffic to boot, brakes on velocipedes also improved accordingly. They just had to. The era of the spoon brake upon the tyre lasted a considerable time, for all that. In fact, it still is a popular brake with many cycle makers in Germany to-day.



strength — maximum flexibility
and longer life—on every type
of motorised cycle

Enjoy the safety and comfort of the Avon 'Powermaster' whether yours is a direct or roller drive motor. 'Powermaster' is made in alternative tread patterns to give the utmost traction and longest life on any type of motorised cycle. It is an oversize tyre which has great strength and flexibility yet offers no increase in rolling resistance or drag.

Direct drive 26" x 1 1/2" for 1 1/2" 16/6. 26" x 2" for 1 1/2" 21/2.

Roller drive 26" x 1 1/2" for 1 1/2" 15/-.

Tube, with Schrader valve (recommended pressure 35 lbs.) 5/8.

Fit the **AVON**
POWERMASTER

In Quiet Dokkum

Translated from the late "Op de Solex" by Nel Clegg

PROBABLY you don't know Dokkum, for a foreigner doesn't pay this out-of-the way North East corner a visit if there is no need. That is a pity, for Dokkum is a charming little town, drenched in the peaceful atmosphere of a quiet village. The tyres of passing bicycles can be heard as they glide over the pebbles.

Children play in the street, and the market square seems to be the recreation ground of the schoolchildren during their "break". An oncoming car is not dangerous; it can be heard a long way off, and the people who are having a chat in the middle of the road just step on one side for a moment. There is no railway-station for travellers; the connection with Leeuwarden, 27 km away, is being maintained by a bus departing every second hour. Three times a week there is a cinema performance in a locality underneath the village school, but old, stylish mansions dating from the 17th and 18th century make it clear that Dokkum is an old little town, which lay enclosed within walls of which the grass-grown, sloping remainders can still be seen.

Here in Dokkum, where he was born, T. C. Stellema started 25 years ago a car and motor-cycle

business: the first in Northern Friesland. He was then 26 years old. The business was opened in the same house which now forms part of the four dwellings which, in the course of the years having steadily expanded, it now occupies. The car, up to then mainly a luxury vehicle, was increasingly beginning to be used for other purposes as well, and S. with the perspicacity of a keen business man, had foreseen this. He concentrated mainly not so much on selling new cars, as on keeping his clients. He specialised in giving Service to his clients at a time when this concept had not yet become a familiar one in the car and motor-cycle business. In this respect he was a pioneer in the car industry. So he was for instance one of the first in Friesland who acquired a breakdown-lorry to pick up stranded cars. To this sustained attention to Service S. ascribes in the first place the success and continuous expansion of his business in quiet Dokkum.

When in 1948 the cyclemotor made its entry into our country, the then 21-year old son of S., who in the meantime had been taken into the business, drew his father's attention to this new means of transport. At first the old

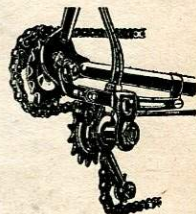
gentleman was a bit reluctant, but youthful enthusiasm gained the day. Next a choice of make had to be made, for there were already several kinds in use in our country. The Service-idea was the decisive factor in the end. A make with such a powerful organisation for a backing, of which Service had always been the guiding principle and had played such an important part in the setting up of various key points in the Netherlands, was found the more desirable, and in 1949 the first Solex-Service-Station in Dokkum was set up.

The results surpassed all expectations. Immediately the cyclemotor became a success in those Northern parts of Friesland. And no wonder. A flourishing area, but with bad communications: a cheap and easily manageable means of transport provided as the solution to many problems. Farmers, workers, commercial travellers—they have all become Solex-riders, there in the North of Friesland, and to all of them the S.'s, father and son, readily render Service the whole day long. In the early hours of the morning the farmers come; the travellers during the day; and in the evening when their work is over, the workers, who are glad to find the Station still open when minor reparations or accessories are needed. The cost of getting these does not press too heavily on a budget which has nothing else to spend on personal transport.

CYCLE MOTORISTS

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TWO-SPEED CYCLO GEAR



For hill climbing and easy starting there's nothing better—Readily adaptable to your machine

For full particulars apply to: **CYCLO GEAR CO. LTD.** *The Derailleur Specialist*

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Flashes

FRIENDS OF ALL OF US. The Cyclemaster Company are to produce a really cheap clip attachment that will take the standard quart oil can, attach to any machine and solve the reserve tank problem. The attachment was on show at Earl's Court.

AS a result of the recent case in the Glasgow courts in which the police claimed and the magistrates ruled that aluminium number plates were illegal, the Law has now been amended to certify that aluminium is white within the meaning of the Act.

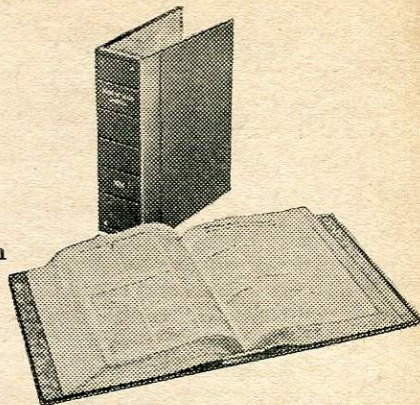
NEXT year's Show has been provisionally arranged for November 13th—20th., inclusive (excluding the Sunday, of course). Everyone in the Trade seems happy with the record attendance figure of 187,096 this year.

Power and Pedal has made application for stand space.

A new French machine, the *Horsy* has made its appearance here and is to be marketed almost immediately. We have one on test and will be giving a full report in our next issue.

Road casualties are still rising against last year's figures, the rise during Road Safety Week being 1 per cent. The Royal Society for the prevention of Accidents claims that this figure as against 51 per cent for the whole month of October shows the value of the Week, but the Ministry of Transport points out that the second half of the week included the London petrol strike which reduced traffic.

This is the new
"POWER & PEDAL"
 Binding Case which
 holds (24) copies.
 It is now available from
 the Editorial Office at
 5/9d. plus 8d. for
 postage and packing.



INSTRUCTIONS

THE "POWER & PEDAL" BINDING CASE

OPEN the binder flat and taking one of the thick rods (two thick rods are supplied with each packet of wires) place it in the centre of the first journal to be bound.

Next insert one end of the same rod into the end hole in the slot of the metal fitting, and the other end in the corresponding hole in the opposite fitting.

The second and all succeeding journals are bound by placing one of the thin wires in the centre of each, inserting these wires into the slots of the metal fittings. Where there are two slots to each fitting, use them alternately.

Should the binder be filled only partially, press the bound journal down firmly after the 1st copy has been inserted and hold in position by inserting the second thick rod in the nearest available holes.

When sufficient copies of the journal are available completely to fill the binder, insert the second thick rod in the centre of the last copy and in the holes at the ends of the slots. If these instructions have been accurately followed, the first and last copies will be secured in their appropriate holes by means of a thick rod; the ones between being held in the slots by thin wire. *DON'T put thin wires in the row of holes. These holes are for the top thick wire holding partially filled binders firm ONLY.*

The binding case holds 24 copies of *Power and Pedal* and is of green fibre with the title in gold letters on the spine. The price of 6/5 includes postage, packing and a printed index for the first volume.

The number available is limited so **ORDER NOW** for delivery immediately.

SEE the best cyclemotors at **THE SHOW**
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ROAD TEST REPORT

THE 4-STROKE

On The Road

From the point of view of performance the *Cucciolo* is in a class by itself. The combination of high efficiency engine and two speed gearbox gives a fast getaway, good acceleration, exceptional hill-climbing and a high cruising speed on the level.

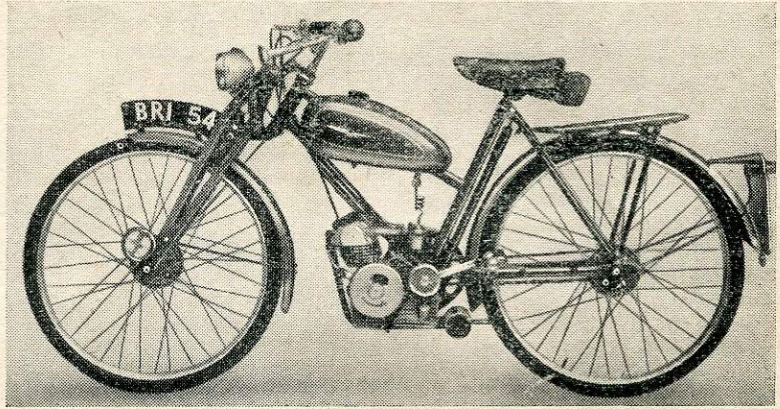
With a thirteen stone rider sitting bolt upright the mean maximum speed on the level with the machine tested was exactly 35 m.p.h. Crouching rather uncomfortably behind the bars raised this figure by no less than 3 m.p.h. and a slight but steady favourable breeze behind took it up to a steady 42 m.p.h. cruising speed which could be held for as many miles as the road and wind permitted. Naturally there was a similar falling off when riding against the wind but main road hills made surprisingly little difference to the cruising speed, so it appeared that the gearing was just right.

Acceleration from standstill using the clutch was very good indeed and most cars were left behind in the getaway from traffic lights. The low gear is low enough to provide unassisted climbing on all hills normally encountered in a day's run and this limited speed in that gear, but it was found that a change up at 15 m.p.h. enabled the engine to get well into its power range in top.

Only one hill was found that demanded pedal assistance over any distance and on this despite the rather high pedal gear, the climb was still effortless.

The cycle is a first class machine for its job. Comfort is well above average for any type of two wheeler, the brakes are superb, either of them pulling the machine up smoothly and more quickly than most autocycles stop with both at

DUCATI "CUCCILO" with the ROYAL ENFIELD—BRITAX CYCLE



once. But the outstanding thing about the outfit is its stability. The soft but firm springing of the rubber suspended forks is undoubtedly a major factor in this excellent road holding characteristic but the weight distribution, rigidity and balance of the whole machine are dead right also. Downhill speeds around 50 m.p.h. were reached and held on several occasions without any feeling of excitement at all, yet the handling when crawling through traffic was equally good.

At one point in the test the rider had to make a forty mile journey in drenching rain with roads awash in many places and for some miles carpeted with slimy sodden fallen leaves. Yet, even in these conditions, the cruising speed was maintained between 25 and 30 m.p.h. without a tremor on the part of machine or rider. Even when the greasy wood-blocks of South London were reached, the performance was used to the full without a slide to disturb the rider's confidence.

Horrible

The engine itself is remarkably and delightfully quiet for such a high performance unit, but the

noise from the gear drive was horrible—so much so that it took several days of riding to reassure the tester that the whole contraption was not going to dissolve into a mass of mangled melting metal beneath him. It did not and we are sure that it never does, but to the mechanically sympathetic ear it was an awful strain.

Also on the wrong side of the account we must record that the front mudguard was too short and had no flap, so that water from the road came back with hosepipe force, soaking the rider's feet and even discouraging the engine somewhat.

The lighting set gave a good driving light at main road speeds but not enough for the lower speeds of bylanes. Perhaps double bulbs or lamps are the only way out of this difficulty, a very real one for the regular night rider.

The trick gearchange too was a doubtful advantage, but it must be admitted that this is very much a matter of personal taste. In the open road very quick changes up or down could be made without taking the hands from the bars or feet from the pedals, but in London traffic

we found that the impossibility of using the clutch and pedals simultaneously and the fact that neutral always seemed to be missing when most wanted was a serious disadvantage that led to some embarrassment and time loss. A hand change is an optional extra with this machine and we would choose that every time.

Conclusion

By no stretch of imagination could the *Britax/Cucciolo* be called a motor-assisted cycle. It is frankly an auticycle and with the pedals exchanged for footrests would make a fascinating light motorcycle. Yet its weight at 76lbs. all up is not excessive and the balance so good that it was rarely felt even when manhandling.

Appreciation of the engine/gear unit must be on the "One man's meat is another's poison" basis.

Those who appreciate sheer performance and like to have that something extra over the others will hear nothing against the unit. Others, especially among the older riders, will consider that these advantages are too heavily paid for in mechanical noise and complication.

About the *Britax* cycle, however, there will be no doubts whatever. This is a first class auticycle assembly at a very modest price, and combined with the *Cucciolo* power unit provides, perhaps, the most economical high performance personal transport vehicle in the world. If cyclemotor sport ever gets a hold in this country there is no doubt that this outfit will always figure high up in the awards lists and a machine that can do that and still be ready for the ride to work next morning must have a wide appeal to many.

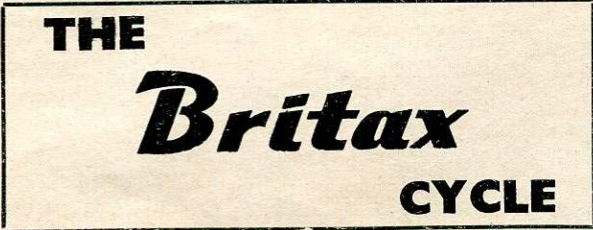
Specification :
CUCCILOLO. 48 c.c. fourstroke, o.h.v. engine in unit with 2-speed gear. Unit construction, primary drive by train of gears through 5-plate cork clutch, final drive by cycle chain. Price £40.

BRITAX-ROYAL ENFIELD cycle: Heavy duty frame with pressed steel girder forks, rubber suspension and check action, 26in. x 1 $\frac{3}{4}$ in. wheels with "Dunlop" Carrier tyres. Hand-operated internal expanding brakes to both wheels. Lycect saddle, 6-volt., 15 watt Lucas lamps, carrier, toolbag and tools.

Total Weight, 76lbs. Petrol Consumption: 223 m.p.g. at 25 m.p.h. Price of cycle complete £18. 18s. 0d. plus P.T. £3.15s. 7d.

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 AT
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*** DUCATI 'CUCCILOLO'
 48cc CYCLE ATTACHMENT
 MOTOR : £40. 0s. 0d.**

Supplied complete with Number Plates, Reflectors, Front and Rear Lamps, Horn, Carrier, Tool Bag and Tools.

- * REINFORCED HEAVY GAUGE STEEL FRAME * PRESSED STEEL GIRDER FORKS with RUBBER SUSPENSION AND REBOUND DAMPER
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Test Report

The "Telelink" Spring Fork

THE sheer necessity for some form of front springing for use with the faster types of cyclemotor engines was brought home to us very forcibly a few months ago when we found ourselves unable to try the full capabilities of one unusually high performance unit because we could not be sure of keeping the machine on the road. This was not the fault of the cycle in any way, but ordinary bicycles were not made for riding on open roads at speeds approaching 40 m.p.h. and one reason for this is that the front wheel does not stay down over bumps.

We have previously tested and reported on two types of spring forks that happened to be fitted to test machines but the obvious need of the market was for a fork attachment that could be fitted to the existing cycle quickly and easily. It was, therefore with a sense of practical value as well as technical interest that we road tested and since acquired the *Telelink* spring fork attachment.

This is a complete unit that slips into the normal cycle forkends and then attaches by the calliper brake locating bolt through the fork crown. This bolt also carries the front mudguard so that the guard is kept close to the wheel all the time and moves with it. Compression springs control sliders in the main fork legs, auxiliary tension springs outside these look after the static loading, and in the head linkage at the fork crown is a *Niedhart* progressive rubber damper. The whole fork is scientifically designed to provide exactly the right degree of reaction to every load imposed over a very wide range.

"ITOM"

Tourist
48cc

*Second
to none
For*

Power

*Absolute Simplicity
of Maintenance*

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ALMOST OPP. PADDINGTON

MAINLINE STATION

AMBASSADOR 2450

The fork was first tried on a light, lively machine that had already proved somewhat skittish on the road and the fitting created a complete transformation in handling. Any sized bumps could be taken casually at any speeds without a tremor on the part of machine or rider. Steering actually appeared to be improved by the fitment, although how this was so we admit we do not know, and hands-off riding was safe and comfortable from 10 to over 30 m.p.h. As with all the front springing designs we have ridden, a major additional factor of safety was the greatly improved front braking resultant from the extra wheel adhesion under all road conditions.

The effect of the progressive damping system is that the rider is completely unconscious of the movement of the forks. Bumps and holes in the road seem to be absorbed rather than reacted to and the tendency is to forget that forks are there at all. Little movement is visible even when watched for and the degree of deflection over ordinary irregularities of road surface is obviously small. On a heavier roadster type of cycle, tested without an engine fitted, the *Telelink* was quite unnoticed from the saddle and it simply appeared that the local roads had somehow miraculously improved, the cycle retaining all its normal, familiar handling characteristics.

We are not sure that the makers have been wise in fitting grease nipples as few cyclemotorists own grease guns and most are used to oiling for cycle maintenance. If grease is necessary an approved gun should be recommended or supplied with the fork. Apart from this there is no criticism of the fitment at all and we confidently recommend it to all who wish to add to their safety and comfort as well as to the life of the machines.

Makers : B. S. Developments,
Farnborough Road, Farnborough,
Hants.

Test Report

**The
"Dermax"
Autocycle Coat**

As our regular readers will know, right from the first issue of *Power and Pedal* we have ventilated the subject of the need for proper protective clothing for cycle motorists, in particular the popular requirement of a really waterproof top coat that is smart enough and comfortable enough for normal wear off as well as on the machine.

We must admit that the search has been long and arduous and the goal not yet reached, but at last it is in sight and we have actually tested one prototype garment in practical everyday use.

Quite early on in our researches we published the conclusion that we had found the right material for the job in PVC (Poly-vinyl-chloride) plasticised fabric, a tough integrated material which has virtually replaced oilskins, leather and rubberised garments throughout the Services and for marine work as well as a whole range of industrial protective clothing. We contacted the producers and through them a number of manufacturers. A few of these replied to our queries and one firm, "Dermide" Ltd., of Leeds, sent us a coat they had made up "specially for the powered cycle rider".

The test has proved conclusively that the choice of material is correct. Several hours exposure to unusually heavy rain failed to penetrate the garment except at points where stitching leaked water through not having been sealed, round the unnecessary flap pockets for instance.

Tests in which pools of water, petrol and oil were left on the coat overnight showed the material to be completely proof against these liquids and ordinary dirt could be



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ARC 5388

washed off with warm soapy water leaving the coat looking as new. The plasticised fabric is very strong, almost untearable and highly resistant to abrasion, thus providing valuable protection in case of a fall or other accident. It is extremely supple, much more so than a heavy tweed coat when wet, and does not hamper the movements.

The choice of colour, brown, is a mistake in our view as it leads to the suggestion that PVC is "imitation leather". It is not imitation anything but a fine material in its own right and one which we feel sure will make a first class *Dermax* coat for cyclemotorists in the very near future.

**Springing the Front
End**

Continued from page 43

cation of the fork is progressive we can have under two inches and still not notice the bumps.

Summing up the discussion then, I ask "What exactly are the benefits from spending around four pounds in cash and adding a like amount in weight". Having ridden most of the forks on the market, and some that never reached the market (and believe me never will), puts me in a fair position to answer the question. In the first place, the comfort derived from a well designed spring fork makes every mile a pleasure. It is all the difference between chalk and cheese. Your wrists feel far less tired after a run, and the increased stability and knowledge that dangerous stresses aren't going on in that vital part of the machine give a feeling of confidence.

And the disadvantages? Weight and cost, the inevitable penalty of progress. Adjustments may be required from time to time, greasing to be done, but I am of the opinion that the vast majority of spring fork users don't mind greasing nipples because they know they are saving money in terms of wear.

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I declare that I am the owner of the above cycle/s and that the above statements are true and complete in every respect and that the cycle/s insured will be kept in good and thoroughly sound condition. I further declare and agree that if such statements and particulars which I agree shall form the basis of and be considered as incorporated in the policy to be issued by the **UNITED KINGDOM FIRE & ACCIDENT INSURANCE COMPANY LIMITED** are in the writing of any person other than myself such person shall be deemed to have been my agent for the purpose of filling in same and the Insurer shall not be affected by the knowledge of such person, whether also an agent of the Insurer or otherwise.

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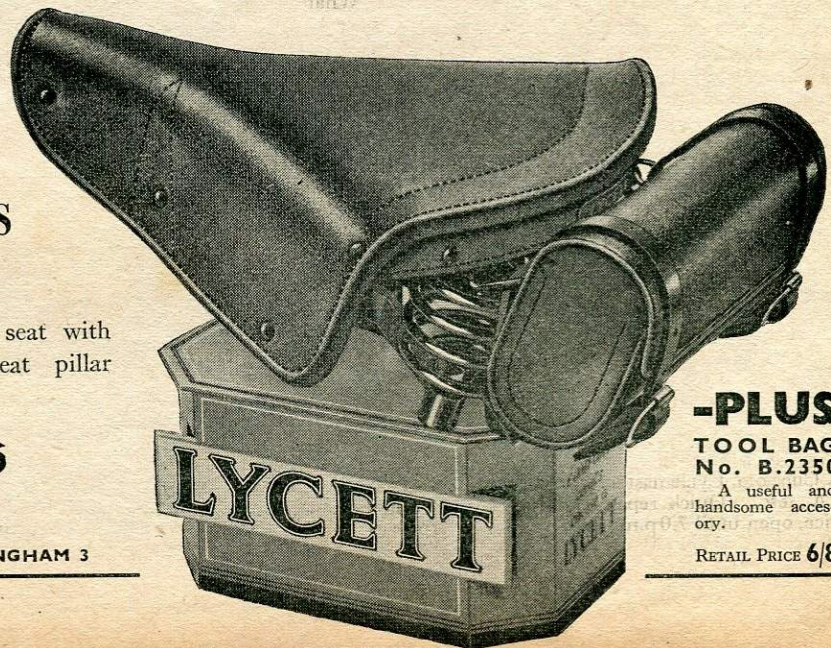
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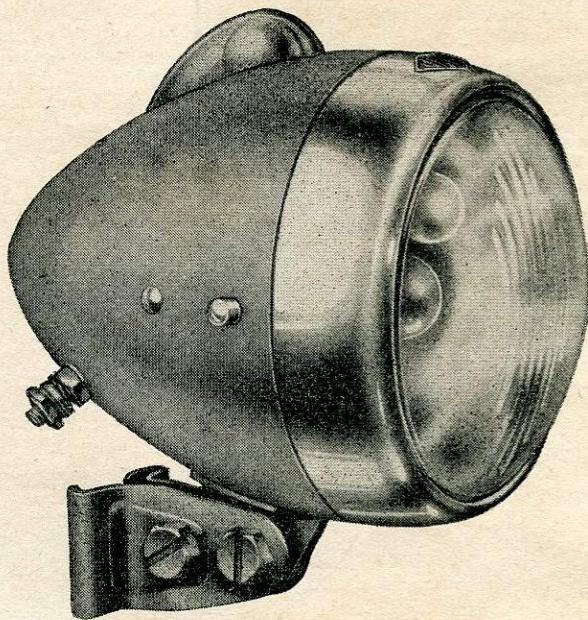
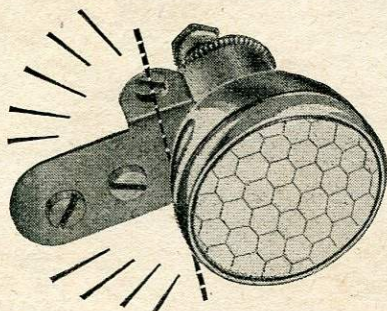
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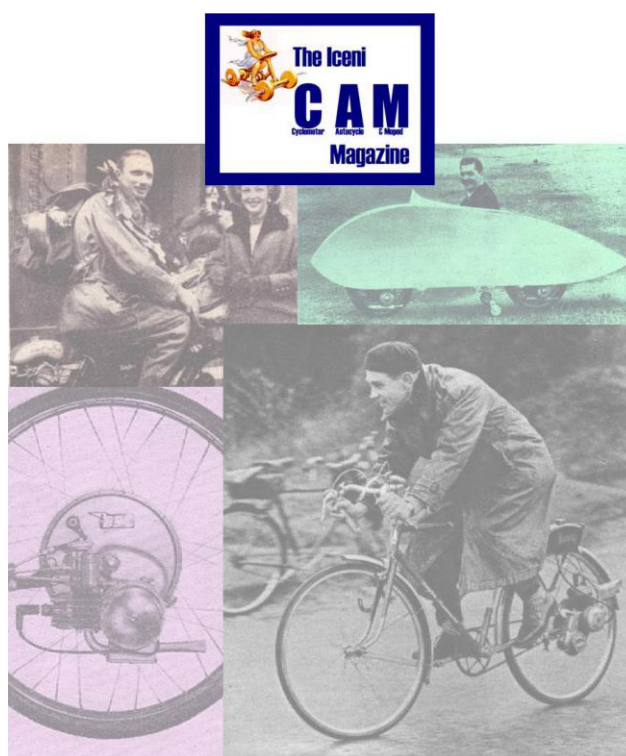


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