THE CAPTAIN

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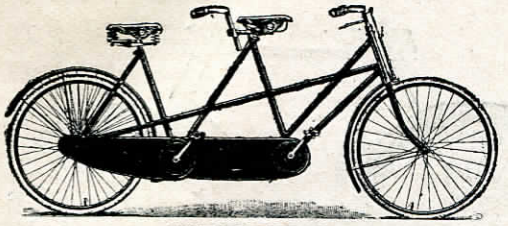
SPECIALITIES AND NOVELTIES.

THAT enterprising firm the Cycle Components Company have hit upon a clever way of advertising their cross frame. It illustrates admirably what I recently said about the rigidity of the five-barred gate and of triangular forms generally. The company have made a number of small models of ordinary and cross frames, and I have no doubt will be willing to send a pair to any of my readers who will write to them at Componentsville, Birmingham, and mention THE CAPTAIN. They are only little tin models of frames, lacquered black, and measuring but 5ins. over all. But the one that is of the ordinary pattern can have its fore part bent in all sorts of ways, while the hinder part, or what makers call the "A," cannot be altered in shape with any fair usage. On the other hand the X frame cannot be altered in shape at all with fair usage, although all the bits of tin of which it is composed are hinged together just in the same way as is the case in the other design. The little frames are very instructive as illustrating the point I explained in the article referred to.

"HUMBER" CROSS FRAME.

While speaking of cross frames I should like to draw attention to the one the Humber Company have just brought out. The double stay on the right-hand or driving side of the back fork, between the two chain wheels, as shown in the illustration, is no novelty, the firm having been partial to this variation for some years past. But an examination of the whole design will reveal several interesting novelties. The top tube entirely disappears, as it does in several other forms of cross frame, and a substitute passes from the seat-pillar lug to the fork crown. Then, from the head to the bottom bracket there pass two small and slightly divergent tubes, which splay sufficiently to allow of the large tube just described passing between them. The design is very strong, and, like everything the Humber firm turn out, is also pleasing to the eye. Provisional protection for the idea has been obtained from the Patent Office. An excellent booklet has recently been issued, entitled "Humber Cycles and How to Use Them." It explains in detail the construction of Humber machines, and teaches by means of clearly drawn diagrams the names of nearly four hundred parts of the frame and mechanism. Every fellow ought to know how his bicycle is built up, and should be able to use the right term about any part of the machine. I am happy to say that anyone who will take the trouble to write to the Humber people at Coventry, mentioning THE CAPTAIN, and asking for one of these little booklets, will receive one by return post free to any address. There is other matter of interest contained in its



REFEREE TANDEM.

pages—instructions about oiling, cleaning, tyre repairing, and so forth, and tables for finding gear and for determining lamp-time in the neighbourhood of London.

The Referee cycles which are here illustrated afford good examples of triangulation. The tandem, it will be noticed, is so constructed that the rear part of the frame is low enough to take the skirts of a girl rider. I will try to find an opportunity of saying more upon that subject another time, but briefly, the principles that should decide the choice of a type of mixed tandem are these. It looks better to have the girl rider in front; on every other ground it is advisable that she should occupy the rear seat. Of

REFEREE.

the single Referee safeties the girl's pattern shows strong triangulation near the bottom bracket, where, of course, the principal strains have to be resisted. Of the two other frames, one is modelled very much on the same lines as the Cycle Components Company's frame, while the other has a long stiffening tube running right from the rear axle to the top of the head and crossed by a tube from the seat-lug to the fork crown. The top tube proper disappears as in the Humber, but the back stays—that is the pair of compression forks passing backwards and downwards from the seat-lug to the rear wheel hub — disappear also, giving the machine a singular appearance, and suggesting insufficient support of the saddle, for any fear of which, however, there is not the slightest foundation.

Before leaving the subject of whole machines for a while, I should like to remark upon the current season's enterprise of the Rudge-Whitworth firm. Their title is, as many riders of the younger generation may not know, the relic of a great amalgamation. Rudge machines were famous away back in the seventies, and their reputation was justly earned. Not quite simultaneously the Whitworth firm built up an independent and

GIRL'S REFEREE.

separate reputation, and the amalgamation of the two concerns in their mutual interests took place at a much later date. The illustration of their No. 20 machine shows a fifteen-guinea mount of high quality, to which they are willing to add their free-wheel device and suitable extra brake power, free of extra charge. Nos. 53 and 54 are boys' and girls' mounts at the very attractive price of seven guineas each. In these cases the free wheel and extra brake power are given at a slightly increased charge. The illustration of the 1901 New Premier, which is my last of entire machines this month, represents a thoroughly high-class mount—one that has earned, and that well maintains an enviable reputation. It will be noticed that the lines of the frame are similar to those of one of the Referees, the optional top struts, or back stays of the latter being, in this case, built in place.

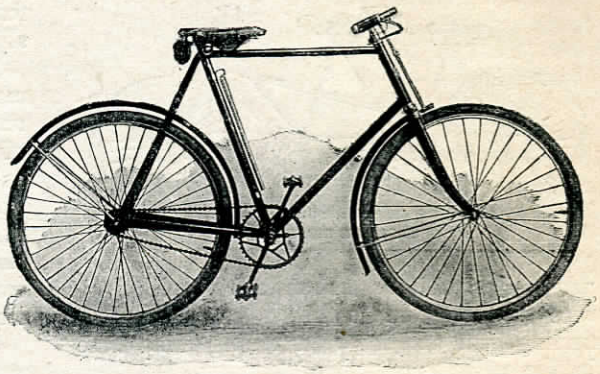
I shall now, for a moment, revert to the

REFEREE.

question of tyres, concerning which I have had several inquiries. One of my pictures shows the patent fastening of the "Scottish" tyre. The tyre, with wires and lever, is manufactured by the Preston Davies Tyre and Valve Company, Ltd., of Glasgow, and it possesses the advantage of easy detachability, which is not a common feature of all wired-on tyres. You see, the wires of a wired-on tyre must not be made large enough for there to be any danger of their mounting over the rim when in use—say, when the degree of inflation has been allowed to become very low, so that the air chamber is soft. Far from this, the well-made wired-on tyre is so closely fitted to the rim that it can only be got off after complete deflation, and then generally only after a little judicious coaxing. Some riders, especially girls, find this hard

RUDGE-WHITWORTH, NO. 53.

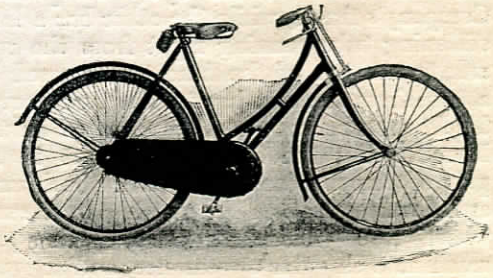
work for the fingers. Now, the lever of the "Scottish" tyre does away with any possible trouble of this kind. This desirable result is achieved by making the wire extensible; that is to say, it is like the ordinary close-fitting wire when in use, but for purposes of tyre removing it is by a touch of the lever made a trifle larger, so that it slips over the rim with the greatest of ease. Similarly, it is quite easily replaced, after which a reversal of the lever makes it a tight and secure fit once more. The lever, when not required, lies snugly under the outer cover, but springs into sight as soon as the cover is pulled aside. The tyre is made in all sizes and all weights, to suit the great variety of cycles and other vehicles to which pneumatic tyres are now fitted, and those of my readers who live near London can see the ease of manipulation demonstrated by calling at the company's new depot, at No. 58A, Hatton Garden, E.C.



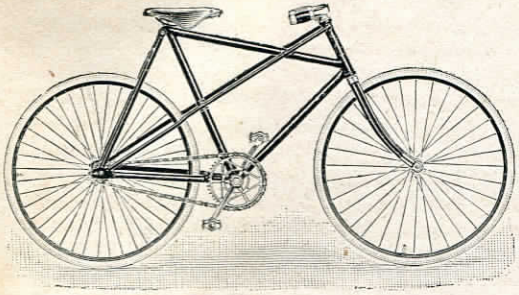
RUDGE-WHITWORTH, NO. 20, SPECIAL LIGHT ROADSTER.

The other tyre of which a cut is given is the latest pattern of the Palmer. My high opinion of this tyre has been fully stated on a previous occasion. The fabric of which it is composed is singularly durable in proportion to its lightness and speed, and provided too thin a variety of this tyre is not employed for the work required of it, none but satisfactory results may be anticipated from its use.

In my article on cyclometers I mentioned the Veeder as being an interesting and accurate little instrument for the task required of it. It is manufactured at an extensive works at Hartford, in Connecticut, where no fewer than twenty-four different kinds of the cyclometer are continually being turned out; for you can buy Veeders to register the trip or the grand total only, or to count kilometres or versts instead of miles, and to do any of these things for all sizes of wheels from 24ins. to 30ins. diameter. In addition to this very varied array of counting machines, the company now make cyclometers to register distances traversed by motor and other vehicles, and I believe they are prepared



RUDGE-WHITWORTH, NO. 54.

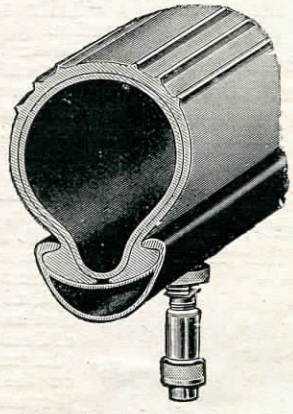


1901 NEW PREMIER.

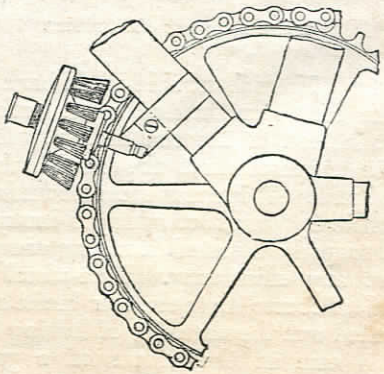
to make a counting machine for any purpose whatsoever, provided the thing to be counted is the number of revolutions of some part of some machine. All the cyclometers they turn out are "assembled" to read 9,900 miles, and are then given a test run of one hundred miles to see that they are working properly. This run is conducted mechanically at the high speed of eight miles a minute, but trial runs at the amazing rate of one hundred miles per minute have succeeded. This statement will dispose of the fear that some novices experience that if they ride too fast the cyclometer will be hit round more than the normal fifth of a revolution of the star wheel which the makers intended. By the by, I have a cyclometer from which one of the gear wheels has been omitted, the defect causing it to multiply all distances by eight. As it is quite consistent in its aberrations, exaggerating with perfect regularity at all speeds, I am keeping it on my machine for fun. It is amusing to turn out for one's before-breakfast spin, and to find on returning that one has ridden thirty miles in sixteen minutes; or to go for an afternoon's trip and discover the distance to be about 250 miles. What my season's riding will amount to I don't know, but I shall be disappointed if it does not reach something like 25,000. It will in any case be a record for me, for it is nearly that after six weeks' trial! If any reader with a mechanical turn will undo a Veeder cyclometer he will see as pretty a bit of watchwork as he may ever wish to. The motions are most of them what are called "differential," a number of toothed wheels being geared alternately to annular wheels toothed internally, and, of course, large enough to allow of the others rolling within them. I would warn all and sundry, however, that it is much easier to pull a cyclometer to pieces than it is to put it together again, and only the skilful should make the attempt. The machines are shipped to this country by Messrs. Markt & Co., of 25 and 26, Shoe Lane, Holborn Circus, London, E.C.

SCOTTISH TYRE LEVER.

Here is an exceedingly useful and recently patented device for keeping clean a chain that is unprotected by a gear-case. I am a confirmed believer in the virtues of a thoroughly well-made case for the chain, but of course there are many machines that are not equipped with one, and to fit a good case is a costly matter. The "Perfect" cycle chain cleaner, of which a picture is given, costs only a few shillings, and it will look after the chain automatically without the rider troubling to give it the slightest attention. It is attached at right angles to the plane of the chain wheel, and is driven in rapid rotation by contact with that wheel. Its circumference is shod with little groups of bristles, and these sweep every link of the chain with a light, swift, overtaking stroke, at all times during which the machine is in motion. Thus, any dirt that may attack the chain is removed at the moment



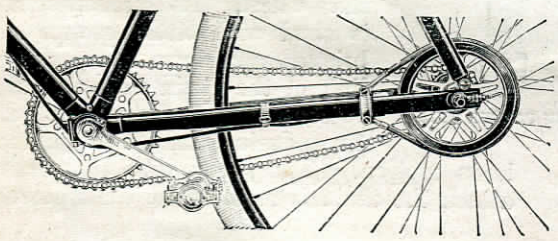
NEW PATTERN PALMER TYRE.



THE "PERFECT" CYCLE CHAIN CLEANER.

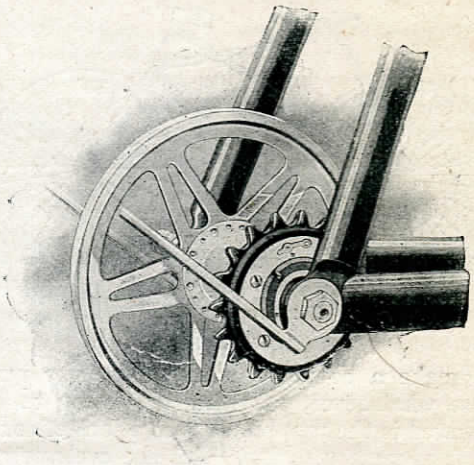
of attack, and the links are all kept bright and clean. I would not urge that the device is better than a gear-case, because I am convinced that it is not, but, as a cheap and effective contrivance for keeping a naked chain in good order, it deserves all praise.

My two last pictures illustrate the band-brake of the Triumph Company. It is actuated by the Bowden wire, or, rather, bundle of wires, for if you were to see a Bowden wire undone you would discover that it is almost as complex in construction as a submarine cable. This method of making it gives it enormous durability. The drum on which the Triumph brake acts is grooved, and the whole arrangement so adjusted that there can be no mounting over the flanges, although the band, when normally at rest, is held clear of contact. There is, of course, more power in a rim-brake than in a band-brake, but the former has sometimes disadvantages which the latter escapes. I was riding with an American friend recently, when I noticed that his chain was dangerously loose. It was an unprotected chain, and such are almost sure to wear loose sooner or later. He explained that he could not adjust it, since if he were to do so the two shoes of a pedal-actuated rim-brake would come permanently into action. On examination I found this to be



TRIUMPH-BOWDEN BAND-BRAKE.

the case. No such trouble could have arisen had he been furnished with the brake here shown instead of the one he had. It must not be supposed that the band-brake is a weak brake. It is much more powerful than the ordinary forms of plunger brake, and, when properly adjusted, is strong enough for almost any emergency. Free-wheel riders should, of course, have another brake as well. I pointed out the necessity of having two in such a case in the course of a previous article.



ENLARGEMENT SHOWING DRUM FOR BAND-BRAKE.

ANSWERS TO CORRESPONDENTS.

"Arlington" (HULL). — (1) A very wise precaution. (2) Yes; and try to keep it so that it may long look so. (3) They are expensive at present, and perhaps, with only twelve guineas to spend, you would be wiser in waiting, but I most certainly approve of the new device. (4) Yes; it is all right in appearance, and has some advantages of its own, but it is by no means so powerful as some other varieties of brake. I will speak next month upon the particular one you name, but in dealing with such a firm you are in very good hands, and you will be well treated whatever you buy. **"P. S."** (SHADWELL, E.).—I do not know, but will endeavour to ascertain for you. **"F. J. T."** (NOTTINGHAM).—You have suppressed your name and address, so are disentitled to any reply. You had better write to Messrs. Brown Brothers, of Great Eastern Street, London, E.C. **"C. H."** (CLIFTON).—Am much obliged for information on the subject of Cingalese roads. **W. H. S.** (SOUTHAMPTON).—I not only don't resent, but am very grateful for the suggestion. You'd be surprised, though, how very much there is to be said, and how long it would take to entirely exhaust the subject. It is not unlikely that something of the kind you outline will ultimately be done. At any rate, I should like to get to that branch of the subject. In the meantime, however, I hope I shall continue to interest you. **Lady B.** (CHIPPING SODBURY). — H. B. Sale, letter cutter and engraver, of Constitution Hill, Birmingham, supplies excellent name-plates. You are obliged to have one (or a less tidy equivalent) if you take the machine by rail, and in many Continental countries a name-plate is required to be in a conspicuous position at all times, and those not having one may get into trouble. **"Lame"** (BEDFORD).—The symptom of which you complain can be removed by "Sanitas," which is an excellent thing for you to have in your kit while touring. Bathe the feet night and morning. The embrocation form of "Sanitas" is even better, and will also serve as a stand-by in case you should have any wayside wounds to dress—let us hope only as a good Samaritan!

H. P.

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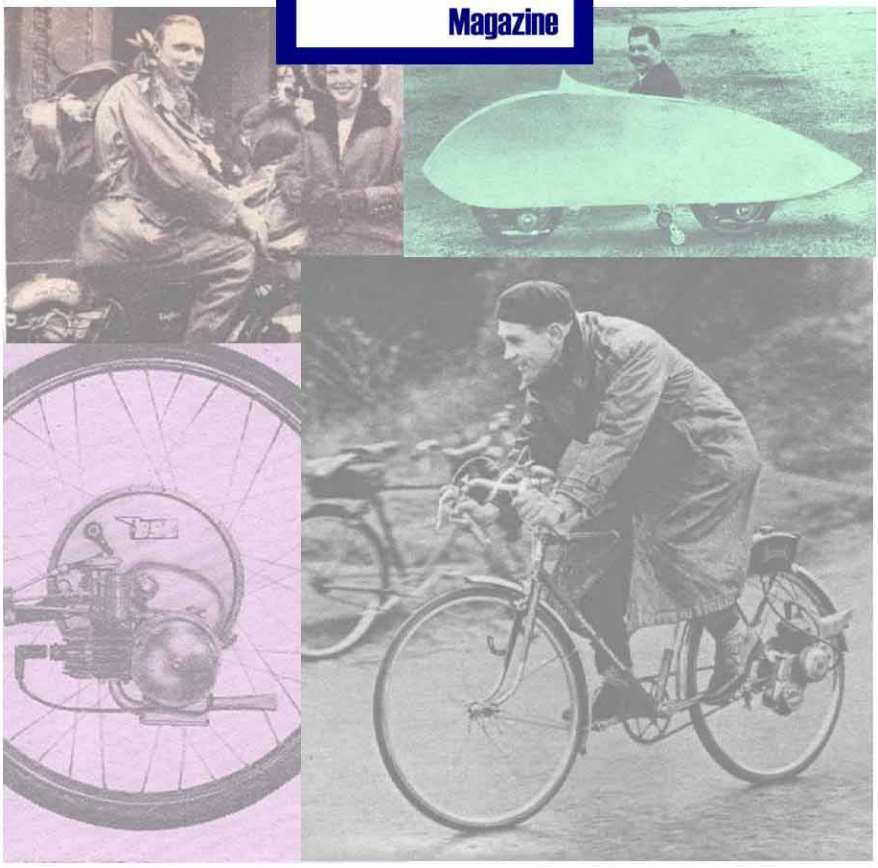

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