

THE CAPTAIN

A MAGAZINE
FOR BOYS & "OLD BOYS".



VOL. V.

APRIL to SEPTEMBER, 1901.

London :

GEORGE NEWNES, LIMITED, 7 to 12, SOUTHAMPTON STREET, STRAND.



A FEW SPECIALITIES.

EVERY cycling season has its own particular "rage," and this one will be characterised by what is indiscriminately called the "cross frame." The idea of the cross frame is to more or less completely triangulate the frame of the bicycle, so as to obtain a design which



GIRL'S RALEIGH "MODELE SUPERBE."

shall be theoretically stronger than the so-called "diamond," with which we have all now for many years been familiar. Of course, everybody who has thought about it knows that a triangle is a very strong form of figure. You see, it cannot alter shape without being destroyed; whereas a figure like a parallelogram can sag, or "shear," and still remain a parallelogram. This statement applies to all figures having four or more sides, and practical men have been familiar with the principle from very ancient times. Take, for example, that extremely old invention the five-barred gate. Why has it always the diagonal piece of wood running from corner to corner? Simply because the carpenter knows that the parallelograms of which the gate is mainly composed may, under various strains, such, for example, as the

weight of children swinging on them, show a tendency to alter shape. By dividing the whole outline of the gate into two great triangles, he forms a structure that cannot alter shape until it breaks. The makers of cross frames are all working with a similar object—that of gaining greater strength.

The effect in nearly every case is to get greater rigidity, about which a word later. But some of the designs now upon the market are very far from being

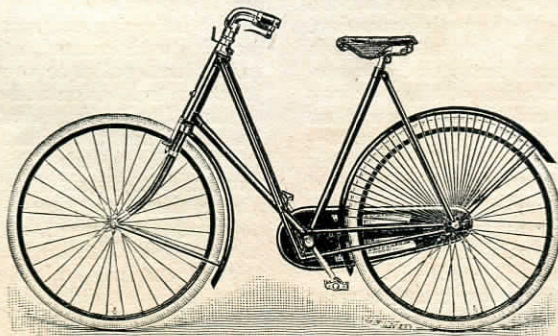
improvements upon the old diamond, although nearly every one of them is superior to the parallel top tube design which has of late years had so good a run, especially in the south of England.

To retain rigidity was the aim of the early builders of the "ordinary," because they had found by experience that the lack of it was



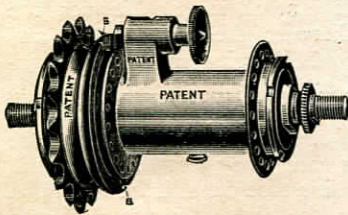
RALEIGH "MODELE SUPERBE."

the reason for a very large proportion of cycling troubles. Rigidity is not less desirable in the modern safety, provided that certain conditions are complied with. And that is why spring frames are, as a rule, not worth experimenting with. They are not even a comfort, except in



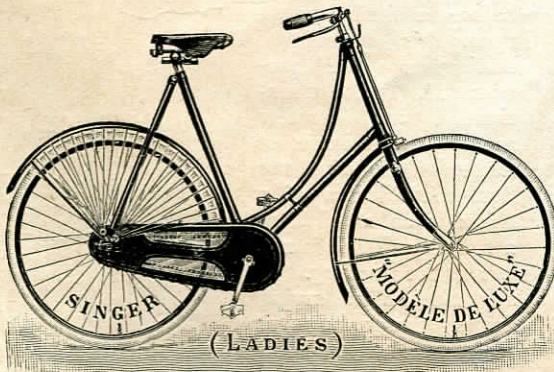
A GIRL'S "CENTAUR."

cases where improper tyres are being used, so that undue vibration steals its way through them into the frame. The proper place to kill vibration is at the point of contact between the wheel and road, and before it has had a chance of damaging the frame; not after it has travelled through the frame and has done its best to disintegrate the latter. It is, therefore, wise to have tyres that are big enough to absorb all shocks that can be reasonably expected. I would rather have tyres too large than too small, just as I would rather have them too thick than too thin.

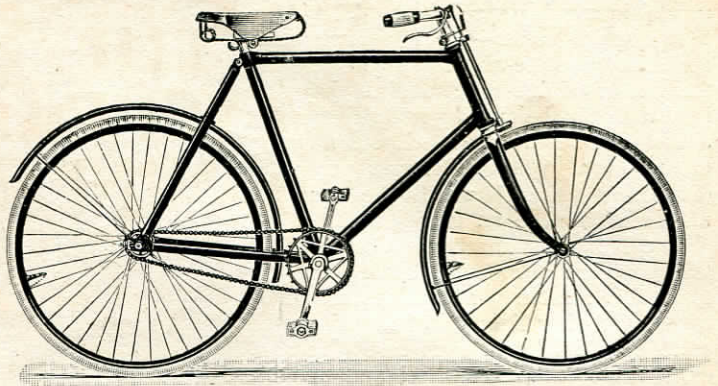


"SINGER" FREE WHEEL LOCKING BOLT.

But there is a happy mean, depending largely upon the weight of the rider, and to some extent upon the uses to which the machine is to be put. Of course, for racing purposes, light, small tyres are just the things to have. Granted, then, that your wheels are properly shod, rigidity of frame is a thing to be sought after rather than avoided, provided that the form of design employed is not such as to lead to the transmission of shocks to parts of the machine ill adapted to sustain them. A very good system of triangulation is shown in the Raleigh cross frame, of which I give a miniature illustration, as well as of its companion, the girl's machine. The point about the Raleigh cross-



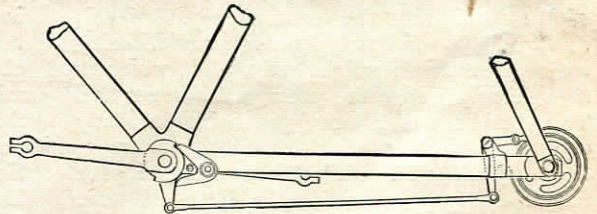
A GIRL'S "MODELE DE LUXE."



A "CENTAUR" ROADSTER.

ings is that they result in nothing but triangles, and further, that no tube reaches a terminal which is not supported by at least one other tube (see the head), generally two others, and in one case (the crank bracket) three others. Raleigh machines may be had at all sorts of prices from £10 10s. to £31. The one illustrated is retailed at £25.

Another form of "X" frame, as it has been named, is marketed by that enterprising firm the Cycle Components Company, and as they sell to a large number of bicycle builders, both large and small, you will encounter the design

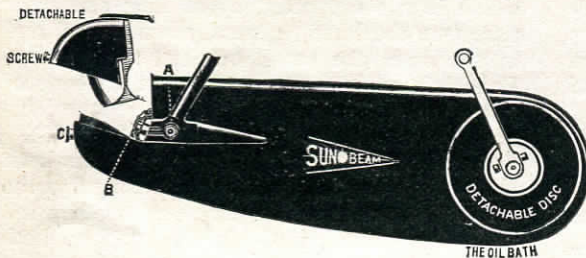


QUADRANT BAND BRAKE.

at almost every turn. The goods sent out from "Componentsville" hold a justly high reputation, and the small maker knows that he is able with them to build a machine upon which he can rely, and which will not injure his reputation with his customers. The Components Company, by the way, have added tyre making to their many industrial departments, and they are now able to supply sets of parts complete, tyres and all. They call their tyre the "Liberty," and it is made under the Dunlop license. Before passing from the subject of makers of parts, of whom there are many, but only one or two of whom I have space to mention now, I may say a word about Messrs. Perry & Co., of Birmingham. Besides the chains for which they have long been famous, they are marketing

several interesting specialities. They have two good rim-brakes—very important accessories in these free-wheeling days—while in the matter of free-wheel devices they now have not only their spring roller clutch, but a most ingenious clutch without a spring of any kind in it. The new pump-clip (Osmond's patent) which the firm are marketing, is also an excellent thing.

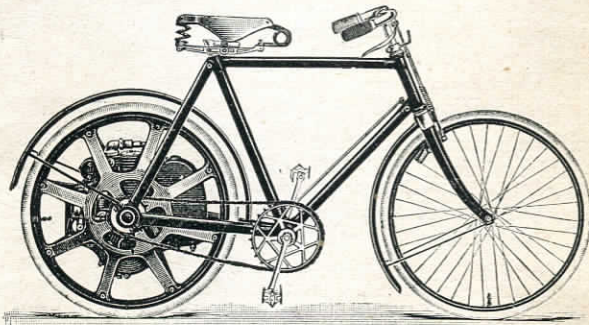
The New Centaur Cycle Company, of Coventry, are introducing some new patterns this season. Illustrations are given of two of their "Centurion" machines, the price of which is in each case £10 10s., or, if fitted with free wheel and suitable brakes, £12 12s. In addition to these they have designed a "Feather-weight X frame." The frame is reinforced by two extra tubes, passing from the back fork-ends to the top



THE "SUNBEAM" GEAR-CASE.

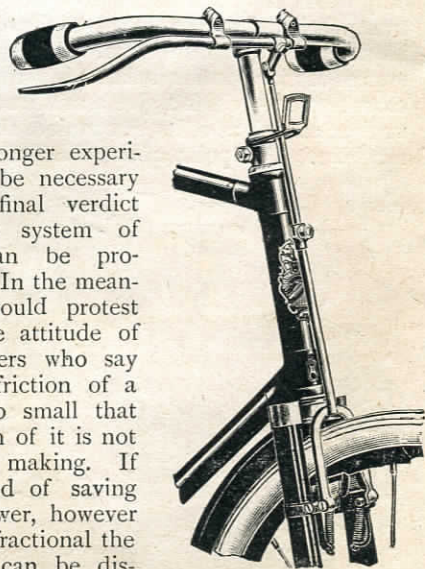
of the head, and the extra strength of this design allows of much lighter material being used. The frame weighs only 5lbs., which is considerably under the average for road use. The company are now producing a fully equipped roadster which weighs no more than 25lbs., "all on." Then there is the Singer Company, who keep well to the fore with their excellent work. Here, too, there is plenty of variety in the matter of price. A "Royal" may be bought for £13 10s., while a "Grand Modèle de Luxe" of the girl's pattern, of which a picture is given, costs £22 10s., or, with free wheel, extra brake power, and free wheel locking bolt, £25. This locking bolt is a contrivance for converting your free wheel into a fixed one, so that any free wheeler who cares for a little back-peddalling for a change, can avail himself of the device and indulge. Those with long purses may go to much higher prices when dealing with the Singer firm. Their motor bicycle, as shown, is listed at £66 10s. The motor, which is of two horse-power, is fixed to the back wheel of a bicycle, or the front wheel of a tricycle. It is neat and compact, emits no smell, and has all its parts so placed as to be easily "getatable."

If the chain is to be superseded as a means of



SINGER MOTOR CYCLE.

transmitting driving power, which is not as yet by any means certain, there appears to me to be no more likely contrivance to supplant it than Lloyd's cross-roller gear. It is at present fitted to all "Quadrant chainless" bicycles, the connection between the crank bracket and the driving wheel being made by a connecting rod or shaft which revolves, but is not driven on the favourite American plan by means of bevelled toothed wheels. The teeth in this case give place to rollers and pegs. Now, if a true cylinder be laid upon a true plane, the parts of contact make a straight line with theoretically no breadth. If, on the other hand, one cylinder be laid across another, the contact between them is a mere point. The Quadrant people make much of this "point contact" which they thus obtain. The contact surfaces are reduced to a minimum, and the friction of the working of the gear is proportionately lessened. Further investigation and longer experience will be necessary before a final verdict upon this system of driving can be pronounced. In the meantime, I would protest against the attitude of those writers who say that the friction of a chain is so small that a reduction of it is not worth the making. If any method of saving driving power, however slight and fractional the difference, can be discovered, it should be



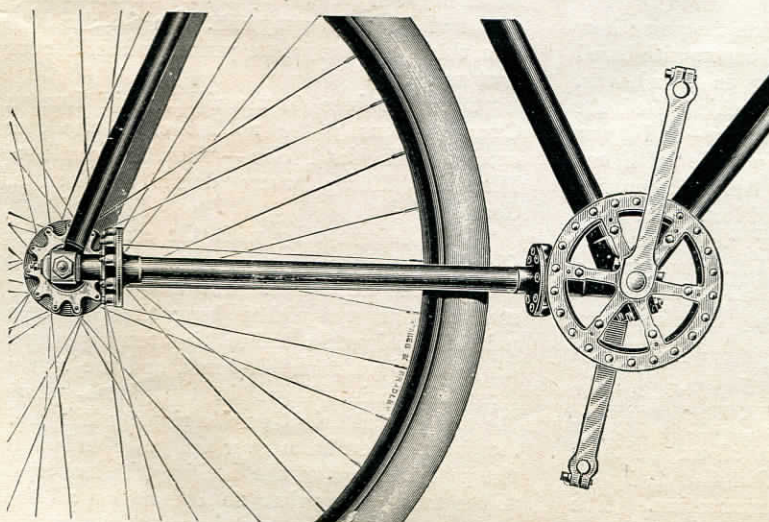
A RIM-BRAKE ON A "SUNBEAM."

welcomed. The bicycle has only been perfected by the introduction of an enormous number of small improvements. The Quadrant people have a good pedal brake which can be put on at two points of the crank revolution. It is very simple in construction, and for those who prefer a band-brake to a rim-brake is all that could be desired.

I have two other firms of the first importance to mention before I close this month's article. One is the Enfield Cycle Company, of Redditch, whose Royal Enfields still hold a foremost place. They make a speciality of a graduated saddle pillar, the idea of which is very simple, as you will see by the illustration. The advantage of it is that, having once got your saddle into the position that suits you best, you can easily memorise the two numbers on the pillar and arm which indicate the exact places of adjustment. I should think the lending of machines to friends is at least as common now as it was in the days when I learnt to ride, which I did on bicycles borrowed from fellows at the same school. Well, your friend's reach is not always the same as your own. If it isn't, nothing is easier than to readjust for yourself, by means of the numbers, the moment the machine is returned, without any trouble of



ENFIELD GRADUATED SEAT-PILLAR.



LLOYD'S CROSS-ROLLER GEAR—QUADRANT.

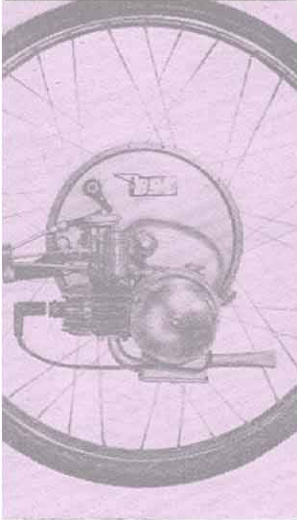
measuring. The other firm is that of John Marston, Ltd., of Wolverhampton. I have pictures of their very excellent gear-case and of their front rim-brake, which is one of the best to be had. I shall from time to time call attention to various specialities or novelties marketed by other firms of high standing and reputation, and in the meantime shall always be ready to give the best advice I can to individual inquirers.

ANSWERS TO CORRESPONDENTS.

Ethel H. (CLAPHAM COMMON).—

Try some "Three-in-one" oil, obtainable of the South British Trading Company, of 6, Victoria Avenue, Bishopsgate Without, London, E.C. I think it unlikely that the original brightness will be quite restored. I am glad you are a member of THE CAPTAIN Club; but I don't send replies through the post. **Reg. (BURTON-ON-TRENT).—**(1) By all means walk to London, but don't try to do it in too little time. From the "Queen's Hotel" at Burton to the Mansion House the distance is 124½ miles, so that even if you never took a wrong turning your programme would entail a little stroll of over forty miles a day. Of course I do not know your age and strength, but for myself, when I walk for real pleasure and enjoyment, I think between fifteen and twenty miles, with open eyes and a bit of energy left when evening comes, is enough. You would hardly finish your walks in daylight if you did as much as you suggest, and that *would* be a pity. (2) It varies greatly. I have known it as low as 1s. 6d., and from that up to all sorts of prices. Anything beyond 4s. is unfair. It depends upon the sort of house. (3) No, I really could not. Here's an itinerary for you:—Woodville, Ashby-de-la-Zouch, Hugglescote, Markfield (pause), Groby, Leicester, Oadby, Kibworth (pause), Market Harborough, Desborough, Rothwell, Kettering (pause), Barton Seagrave, Burton Latimer, Fineden, Higham Ferrers, Rushden, Bletsoe (pause), Bedford, Clapham, Barton (pause), Luton, Harpenden, St. Alban's (pause if you like, looking at grand abbeys), and Barnet. The word "pause" means that a resting place might be looked for in the neighbourhood if you would cut the journey into seven fairly equal stages. I shall be much interested to hear how your tramp succeeds.

IceniCAM Information Service



www.icenicam.org.uk