

TEN YEARS OF CYCLING.

By ROBERT MACHRAY.

Illustrated by J. AYTON SYMINGTON and J. BARNARD DAVIS.

arrived at absolute perfection, not so much, perhaps, as regards the Safety itself, for there seems to be a general opinion that there is scarcely any room for improvement on that type of bicycle, but is there not always the possibility of something newer, and in its way better, some fresh idea, the carrying out



SOMEONE has well said that men and women, as regards cycling, are at the present time divided into two classes—those who ride the wheel and those who don't, but who would like to. All the old questions about the advantages or disadvantages of cycling have long been settled, and there can be no manner of doubt whatever that the wheel has come to stay. The only questions that can be raised now are: first, so far as each individual is personally interested, "Am I physically fit or unfit for cycling?" and second, so far as the wheel itself is concerned, "How to improve, to perfect the machine, so as to get the most and the best out of it?"

The present article gives an account mainly of what has been done, in answer to the second question, during the last ten years—since, in fact, the invention and general acceptance of the "Safety."

In the construction of cycles, as in most other things, there has been going on a process of evolution, until the type of machine now almost universally used may be said to be fairly well worked out and established. Many consider that finality has been reached, but the same idea was expressed in regard to the "Ordinary" machine twelve years ago. This would appear to warn us against being too sure that we have

of which may bring about as big a revolution in cycling as the invention of the Safety did?

Men have frequently tried to make machines for locomotion, the power for propelling which should be obtained by the action either of the legs or of the arms, and some very extraordinary machines indeed have been brought out, most of them however not getting beyond the Patent Office stage. One of the most elementary of these was the "Hobby-horse," which, along with the variation of it known as the "Dandy-horse," was extremely fashionable in the first quarter of the present century.

The Hobby-horse ordinarily was nothing more than two wheels joined, tandem fashion, by a wooden bar. It was propelled by the rider striking, as quickly as possible, his feet alternately against the ground. It had no steering apparatus, but this want was rectified in the Dandy-horse, its successor. It is perhaps too much to say that these machines are the direct progenitors of the cycles of to-

day, but there is certainly something more than the mere suggestion of the latter in the former. A very humorous drawing from the pen of one of the famous caricaturists of the Georgian period would also seem to show that the Hobby-horse anticipated bicycles "built for two" or other machines intended for the carriage of more than one person.

Very similar to the Hobby-horse was the "Céléfire" (the speed-maker), invented by Baron von Drais, of Mannheim, in 1816, or thereabouts.

Then we come to a bicycle—it certainly well deserves that name—made by one Kirkpatrick Macmillan, a Scotsman, some-

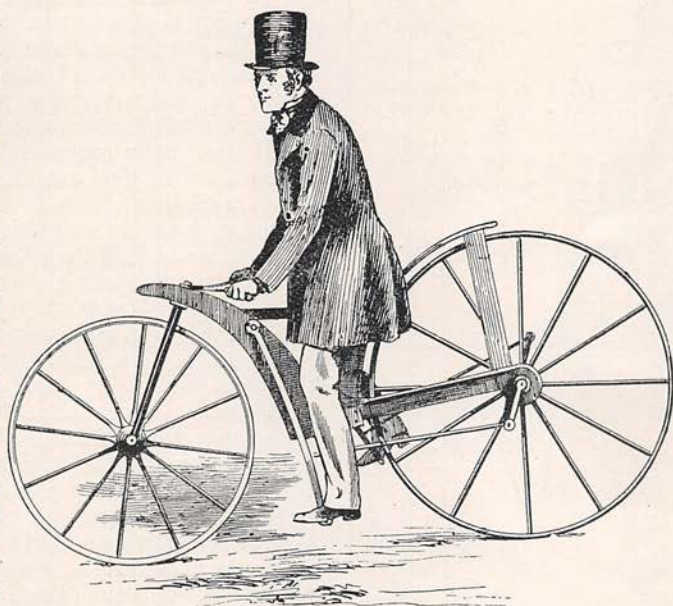
where about 1836. Another Scotsman, Gavin Dalzell, a few years later, exhibited a machine which was either a copy of Macmillan's, or was constructed on very similar lines. Macmillan's bicycle was up to that time the only machine which placed the feet of the rider clear of the ground, and which could be propelled and steered satisfactorily. It is interesting to notice at this point that there are not a few resemblances between Dalzell's bicycle and that of the present day; as, for example, the front fork is sloped back much in the same way as in the latest cycles, while the handles are almost similar. The rear wheel, which was 40 inches in diameter, was the driving

wheel. The front wheel however was smaller than the rear, its diameter being 30 inches. The material used in its construction was wood; indeed it was not till 1876 that iron entirely replaced wood in the structure of cycles.

The next development was the "Bone-shaker," the earliest model of which was exhibited at the Paris Exposition in 1865.

It was the work of Pierre Lallement, a French mechanic, who had been employed in the making of toys and also of velocipedes of the type then used. It was a clumsy and heavy machine, yet it must be honestly admitted that it was a very distinct advance on anything which had so far appeared.

In addition to the Bone-shaker, there were at that time velocipedes of various kinds—three, four and even five-wheeled machines, worked with pedals and long levers attached to crank-axes, but they were very far from being easily run, or even managed, for that matter. I remember quite distinctly using a tricycle worked with pedals and long levers attached to crank-axes in the early seventies.



MACMILLAN'S BICYCLE.

The Bone-shaker underwent important changes. By 1876, as I have said, iron had replaced wood. The front wheel grew very large and the back one very small. There were 48-inch front wheels and 24-inch back ones, and they were shod for the first time with rubber. Men rode right on the top of the front wheel, tall men using wheels 60 inches, and, in some extreme instances, 66 inches in diameter. The back wheel was reduced to 16 inches, and the total weight of a racing bicycle was brought down to 30 lbs. When it had evolved itself, and the type had become pretty well established, this bicycle was known and spoken of as the "Ordinary."



THE "ORDINARY."

Now this machine was never very popular; indeed it was impossible for it to be so, considering the one great fact that "headers" were, no doubt involuntarily, but with the most irritating frequency, being experienced by its riders. It was quite impossible for any woman, outside of a circus, to ride such a wheel; in other words the "World on Wheels" was closed to women.

It is not to be wondered at, then, that during the years 1880-6 general attention was turned to the tricycle, and many very ingenious three-wheeled machines were brought out. In the year 1884 there appeared the "Kangaroo," which had an extraordinary run of popularity for a short

time, but which proved no real match for the Ordinary. At this time various men, possessed of considerable mechanical talent, were experimenting on the bicycle, and in 1885, as the most notable result of such experiments, there was shown the first rear-driving Safety. It was exhibited at the Stanley Exhibition, held in a canvas tent on the Victoria Embankment, near Blackfriars Bridge, London, and I am told by one who was present at the show, and saw this machine, that everybody laughed at it. Yet there is hardly anything more epoch-making in its own way than that first Safety, then jeered at so generally.

Just as the Ordinary killed the Bone-shaker, so the Safety has killed the Ordinary. Is the Safety to give way in its turn? Well, Mr. J. K. Starley, of Coventry, the "man who made the Safety," tells me there is nothing so good in sight as yet—and he is one of the greatest authorities on the subject—and that quite apart from his being connected with the manufacture of any particular cycle.

Running down to Coventry for a day, some little time ago, I had the pleasure of having two extremely interesting conversations with Mr. Starley. It is now everywhere conceded, I believe, that Mr. Starley was the inventor or introducer of the first Safety, and I naturally asked him to be good enough to tell me something about himself and his first efforts in the construction of the Safety.

Mr. Starley informed me that he started in business very early in life—it was in May of '72—at Coventry, when he began to work under his uncle, whose name was afterwards identified with a very successful tricycle. At that time there were only two firms in Coventry who made velocipedes, and the chief business of those firms was really the manufacture of sewing-machines. Mr. J. K. Starley watched with great interest the evolution of the Bone-shaker into the Ordinary, but so far from being satisfied with the latter, he was possessed by the idea that a radical change was necessary. When he had set up for himself in business, he determined on attempting to make that change. "So," Mr. Starley said, "finding that riders had little objection to alter the position in which they sat on their cycles, I resolved to design a type of machine which should be altogether new, and brought out the 'Cycle of the Future,' as I had some idea of calling it, but which I named the 'Rover.'"

"Of course a complete change of form was necessary, but once the essential principles

and points were determined on, the actual form was a mere detail. Consider: here is the rider, the power, the motive force;



From a photo by [Maule, Coventry.]

MR. J. K. STARLEY.

and believing it to be absolutely necessary that the rider should be so placed on the machine as to be able to exert the greatest amount of power on his pedals with the least amount of fatigue to himself; believing

also that the cycle of the future must be so made that such essentials as the crank-shaft, pedals, seat and handles, could be made easily adjustable, I decided to change the shape.

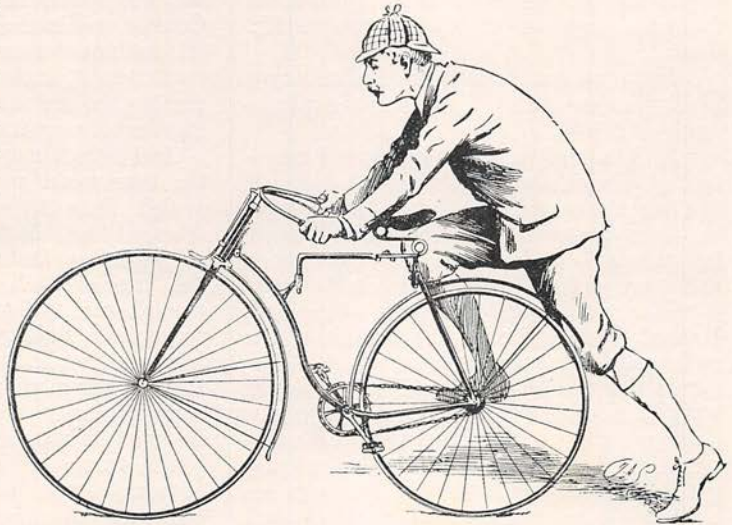
"Thus you see," continued Mr. Starley, "I made my wheels of a good rolling size.

I placed my crank-shaft as near the ground as it possibly could be with safety. Then I connected my back wheel with my crank by means of a chain—the chain had been in use on tri-cycles—so that the gear might be adjusted and varied at pleasure. Thus a short strong man could ride with a 50, a 60, a 70, or even a higher gear, while a tall weak man could ride with a lower gear than a short strong one. Next I gave my saddle a vertical adjustment, so that it could be raised or lowered at will. Then the handles were so placed as to be easily set forward or backward, raised or lowered, as might be desired. The last point was to make it impossible for the pedalling to interfere with the steering.

"Now in the case of the old-fashioned Ordinary, the rider, if he wished to put on full power, had to sit in such a position that when his pedal was at its lowest his leg was stretched and straight. Thus a tall man could only ride a tall machine, and that, of course, owing to their being little or no adjustment, resulted in all cycles being built to scale. In the Ordinary, the wheel was driven by cranks fastened direct to the axle, and the rider got one revolution of his driving-wheel to one revolution of his cranks. You see that when he put on force, his pedal was in front of the centre of the driving-wheel, his fork sloped backwards, and his handle was seldom, if ever, very much in front of the top of his forks. The only way in which he could effectually put his weight upon the pedals was to double himself up over his handle-bar. The cycle I constructed changed all that."

"You have seen," I remarked, "a perfectly amazing development of cycling all over the world as the result of your successful experiment, have you not?"

"Yes," replied Mr. Starley, with a smile. "The most astonishing thing perhaps about the whole matter is that, when everything is said and done, the cycle of to-day is to all intents and purposes the same cycle as that first introduced; that is to say, the cycle of to-day embodies those



J. K. STARLEY'S "ROVER," 1885.

principles which I insisted upon in the making of my machine, and practically no others."

"That is indeed remarkable," I replied.

"Did you have a quick and immediate success, Mr. Starley?"

"Well," he answered, "it was fully eighteen months, I should say, before the new type of machine began to go. And here let me say—and the remark applies with equal force to all machines of the same type, properly made, no matter who makes them—that the expression 'Safety,' in describing these machines, is a little misleading. For the safety of these machines is only one of their characteristics, so to speak. They might as well have been called—to take another characteristic—'Easy Cycles.'"

"I understand," I said. "I suppose the introduction of pneumatic tyres not only gave a wonderful impetus to cycling generally, but completed the triumph of the type of cycle you introduced?"

"So far as the cycling trade is concerned," said Mr. Starley, "the two chief points are: the introduction of the Safety—which was an imperfect machine because of its small wheels—and second, the pneumatic tyre, which not only has the advantage of making rough places smooth for the cyclist, giving him what practically amounts to a prepared track, but which made the wheels of the Safety quite large enough."

"You would say, then," I asked, "that we may consider 1886 as being the year that saw this great new birth of cycling?"

"It was getting to be known just about that time—say ten years ago," replied Mr. Starley.

"Have you got the first wheel of this type which you invented?" I asked, "or a photograph of it?"

"No," he replied; "but here is an illustration of one of the first I made. I should like to remark again that while the machine has been changed much in detail since its beginnings, there has never been any change in the principles of its construction."

"What was the first race or feat of riding," I asked, "which drew the attention of the cycling world to your machine?"

"It was the 100-mile road race, held in 1885, that made the first record. Of course it was made known in other ways. We sent samples all over the world and gradually got to be pretty well known. So you see by 1886-7, ten years ago, the Safety had established itself."

"The Ordinary did not disappear all at once?" I asked.

"You still see a few of them," Mr. Starley replied. "But as a cycle it was soon seen that its day was gone for ever."

"You did not take out a patent for your cycle, Mr. Starley?" I asked.

"No," he replied. "You see the machine was rather an adaptation of various parts of machines already in existence. It was their combination, of course, that was my doing. Other makers soon saw the value of the new cycle and at once proceeded to copy it."

In considering the changes in cycles, the first thing that strikes one is the shape of the frame. The frame has indeed undergone many alterations. The type now generally used, known as the diamond frame, was introduced by Mr. Thomas Humber, although not exactly in the form we now have it.

It will be easily understood that our space will not permit us to go into and comment upon all the many delicate details of construction which have been thought out, and the many devices which have been tried, for decreasing friction, increasing leverage, or obtaining greater power of speed. But starting from the year 1886, I must notice briefly what has been done.

There were decided signs in the machines which appeared during 1886 that something very like the Safety, so familiar to us now, might become popular, for there were placed on the market several varieties of Dwarf Safeties, as they were called, including the Courier, the Psycho, the Rudge bicyclette, the Rover and the Humber. But in the Courier and in the Humber the front wheel (22 inches) was very much less than the rear one (36 inches), while in the Psycho, the Rudge and the Rover the wheels were more nearly equal in size.

And here it may be observed that during the time under review the front wheel has varied from 18 inches to 36 inches in diameter, and the back wheel from 24 inches to 36 inches, the diameter settling down in the case of both wheels to 30 inches or thereabouts. When the wheel is decreased in size the rigidity of the whole machine is increased, while its weight is reduced, but there is far more vibration. It is of course more necessary that the back wheel should be rigid, as it is the driver.

The frames of the machines of 1886 were of various types, that of the Humber giving the first indication of the diamond frame, now used by almost every maker in the world.

The year 1887 saw the practical dethronement of the Ordinary bicycle. All through this time the feeling in favour of the Safety was gaining strength, and a writer, recog-

nised as a leading authority on all cycling matters, writing of this particular time, says, "The revolution in Dwarf machines, and the adoption of rear drivers—generally recognised as the Rover type—is a marked feature of the year." In the fairly numerous varieties of the so-styled Dwarfs, it is to be noted that the tendency sets strongly towards making the wheels nearly equal. The shapes of the frames show many peculiarities, and while the diamond frame can scarcely be said to be very prominently in evidence amongst them, it is there. The fact is that, so far as the frame was concerned, makers were hardly doing more than trying experiments. The frame most generally in use had but one backbone holding the two wheels together.

In 1889 opinion was still far from being fixed as to best size of wheels, varying, in the case of the pilot wheel, from 26 to 30 or 32 inches, and similarly for the driver. But apart from the question of the size of the wheels, the battle of the bicycles had resulted in the complete victory of the Safety, fully 90 per cent. of all the machines turned out by factories, both great and small, being Dwarf Safeties, as they were still called. Two signs, the importance of which there was no mistaking, sufficiently indicated the extraordinary development in cycling and in cycle manufacture that was about to immediately take place.

Not only did existing firms add to their plant and increase their capacity, but a large number of new firms went into the business. Great improvements meanwhile were made in the different tools used in the constructive detail of bicycles. The skeleton diamond frame was now replaced by the divided or braced diamond pattern, the best frame yet invented. Improved methods of chain adjustment were sought after, and a further advance was made in this direction. A vitally important point was the introduction of ball bearings in the structure of the machines.

At the same time the popularity of the bicycle had very greatly increased, and it became quite evident that where it had been used by hundreds, whether for pleasure or for profit, it was now going to be used by

thousands. Two things conspired to draw the attention of the public; the first was the machine itself, the ease with which it might be mounted, and the comparative immunity from serious accidents, as compared with those resulting from the Ordinary; the second was the great advance in the rates of speed now registered on the new machine. These rates do not seem so very wonderful to us now, yet they were considered very remarkable at the time. As examples, it may be mentioned that on August 31, 1888, 21 miles were run in less than an hour; 50 in less than 2½ hours; 300 miles inside a day.

The years 1888 and 1889 were marked—and I dare say no one had the least idea of what a tremendous event, physically, socially, and in many other ways, it was—by the introduction of bicycles fitted for the use of ladies. By the middle of 1889 ladies' bicycles were quite a common feature, not only in the windows of the show-rooms of the great cycle manufacturers, but on all the roads of the country, and in the cities also. There were a great many people who said that women should not ride the wheel, but the controversy was practically closed by the ladies doing what they liked to do—which is, I think, what they generally do in any case.

It may be doubted if ladies would have taken so generally to the bicycle if the very

time which witnessed this new departure—of course women had ridden on tricycles before this time, but they were comparatively few in number—had not also seen the introduction of the world-famous Dunlop pneumatic tyre. In 1888 Mr. Dunlop, a veterinary surgeon of Belfast, produced an air tyre on which his son simply romped away from faster men who were mounted on solid tyres.

It will be remembered that in my conversation with Mr. Starley, reported above, he had said that the great objection to the Safety of the Rover type was the smallness of its wheels; the pneumatic tyre now came in to give them such additional height as to make the machine practically perfect. For twenty years, that is from 1870 to 1889, there had been no real progress made with respect to tyres for cycles. During all that time solid rubber tyres had held their own,



MR. THOMAS HUMBER.

either in the older form or in the later, known as the "cushion." In 1889 Mr. Dunlop succeeded in making a much better air tyre than that of the previous year.

When this invention made its appearance in England it was received, just as Starley's Safety had been in 1885, with almost universal scorn and derision. It is very amusing now, when the use of the pneumatic tyre is general, to look back upon the comments made upon it some half a dozen years ago. But there was one test from which there was no getting away, and which determined the future of the new tyre. That test was the test of speed both on the path and on the road. What it could do, or rather what could be done with it, was first shown at the Spring Sports of Surrey, held in 1890. A machine, tyred with pneumatics, although it started in a race with a heavy penalty, yet won easily. Other races were equally conclusive as to its value. In the following year these tyres were adopted, more or less doubtfully, by most manufacturers, but the public showed at once its belief in, and acceptance of them. From that time on, the pneumatic was and is everywhere.

The principal recommendation of the pneumatic tyre is generally supposed to be the ease with which it overcomes what may be comprehensively termed, for want of a better phrase, "the jolt of rough roads." And, of course, this is a great recommendation, for what the tyre does is, in effect, to turn an ordinary road into a prepared path. But the greatest point about the tyre is that it actually adds to the speed of the rider, on even the smoothest of roads. The already compressed air being still further compressed by the weight of the rider, on being released, acts as a momentum, as it were, to the wheel, and thus adds to the pace.

The diamond frame, closely approximating to the present type, was also now in general use—the main difference being that the top backbone slopes upward to the socket tube instead of being straight, as at present. In the year 1892 there were extremely few points of difference between the various makes of machines turned out by manufacturers, either in England or America. In

1893, any individuality in the make of a machine had almost entirely disappeared, as it was quite clear that the public wanted a cycle with straight tubes, and extended wheel base, and what is known as the long ball-socket. The only possible rival of the Safety was what was termed the geared Ordinary, but it never had much favour shown it.

The year 1894 saw the introduction of what was known as the "Boudard gear," and in 1895 there came the "Simpson chain," but neither of these had come to stay, and the use of them has been generally abandoned. Last year (1896) was marked by an influx of American-made bicycles, the great point in whose favour was their extreme lightness as compared with English-made machines. There is no doubt whatever that American-made machines of the highest grade are most beautiful and desirable machines, and the recent cut in their price will bring them within the reach of many who were unable to secure them before. The great point about these light machines is of course the question—and it is an important one—Has not strength been sacrificed in making them so light? In other words, are they safe machines?

Last year there was brought out what is known as the "Acaténe" or chainless Safety. The first sample of this bicycle was exhibited at Paris, by Messrs Melicet et

Blin, in 1895. As will be seen from the illustration (p. 403), the gearing of the machine is simple enough. The hollow shaft (A) is provided with bevelled wheels (B) at each end, revolving in the back stay of the frame of the machine (C) on ball bearings. These bevelled wheels are connected with others fitted to the crank-spindle (D) and the axle of the back wheel (E). The advantages claimed for this type of machine, according to its inventors, are, in addition to its doing away with the chain, its greater cleanness and neatness as compared with the chain-driven cycle, and that accidents are much less likely to occur from it. The greatest riding feat in connection with this wheel is that of a ride of 533 miles 357 yards in twenty-four hours.

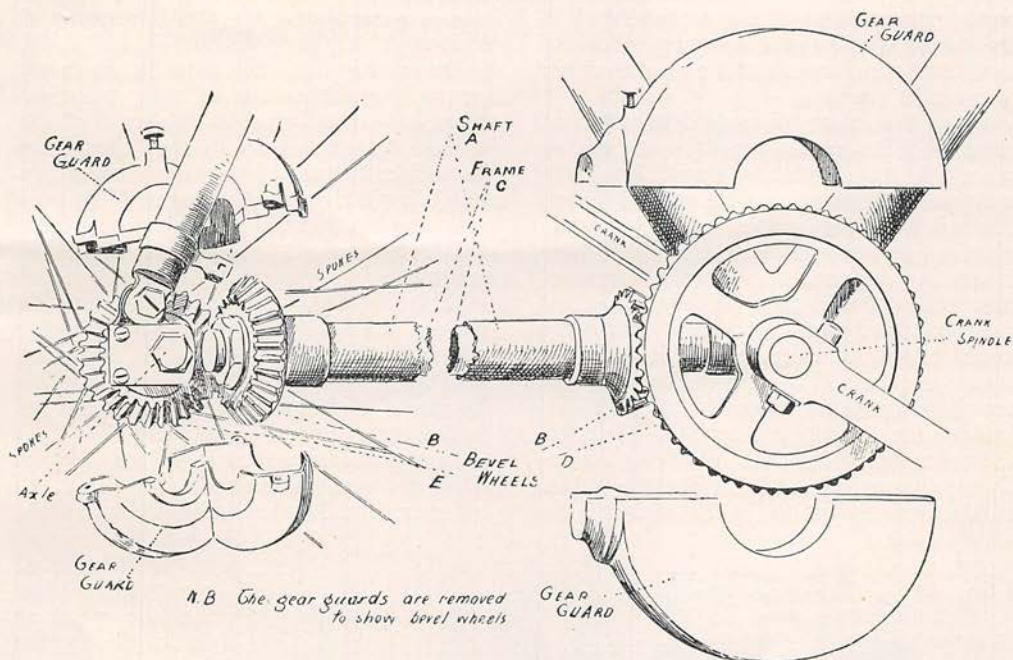
A few days ago—I am writing this article in the beginning of July—I was shown what



From a photo by]

[Lajayette.

MR. J. B. DUNLOP.



THE ACATENE MOVEMENT.

is a new type of cycle altogether. It is called the "X-centric" cycle, but the machine is too new and untried for me to say anything about it.

A recent invention too is Sargeant's patent detachable cycle handle-bar. Mr. J. F. Sargeant is a solicitor, whose family includes ten clever daughters who all cycle. He has had therefore every opportunity of noticing the requirements of cyclists. The handle combination which bears his name contains a capital pump, oil-can and cleaner, while attached to it is a spanner and carrier. The portion of the handle containing the pump can be detached by one turn of the wrist, yet otherwise it is thoroughly rigid. The diagram (p. 404) will explain the adroit disposition of the handle-bar and its accessories. But further, Mr. Sargeant has come to the assistance of the railway companies in devising a cycle-holder which can be affixed to the interior of a guard's van. One portion of the handle can be retained by the passenger, and thus ensures the correct and speedy recognition of the machine. These ideas have not exhausted the ingenuity of the inventor, for he has arranged a Colt's revolver to take the place of one end of the bar, allowing it to be loaded and prepared for immediate action. And turning from the necessity of emergency to the need for a sunshade or umbrella, Mr. Sargeant has an

ingenious method of holding either with the greatest ease

Now what has been accomplished by the cycle during the last ten years? To say that it has opened up avenues of delight to countless thousands in every part of the world is, of course, to give expression to the merest commonplace, but its very commonplaceness shows the marvellousness of what has been accomplished in this one field of human activity.

Perhaps more immediately interesting is it to



SARGEANT'S PATENT HANDLE-BAR. (Showing portion with pump detached.)

notice what the cycle has accomplished in the way of speed, and I now propose to say something therefore about the records of the road and of the path.

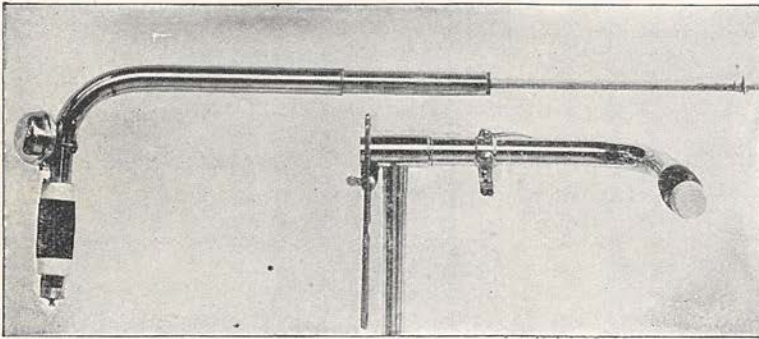
There first must be noticed the famous ride from London to John-o'-Groat's, undertaken in June, 1873, by four riders who went on Ordinaries from Kensington for an 800 miles' ride due north. As a contrast to what can be performed nowadays, it is both instructive and amusing to show some of the details of this ride. During the first day 65 miles were traversed, but more would have been accomplished had it not been for rain. The second day saw the travellers at Newark; the third, at Wentbridge; the fourth, at Aberford; the fifth, at Darlington; the sixth, at Newcastle-on-Tyne; the seventh, at Alnwick; the eighth, at Dunbar; the ninth, at Edinburgh; the

with a flying start. On the Wednesday of Whit-week in this year (1897), Mr. J. W. Stocks actually rode $32\frac{1}{4}$ miles in one hour, a greater speed than that of many passenger trains, and about equal to the speed of the swiftest Atlantic liners. Mr. Platt-Betts also holds the record for the 5 miles, his time being 9 minutes $4\frac{1}{2}$ seconds. The only other records which I shall put down here are those for the 12 hours and for the 24 hours' races on the path. The former record is held by Mr. G. A. Patterson, and the distance he accomplished in the half day was 288 miles 460 yards; the latter by Mr. C. Huret, who rode the almost incredible distance of close upon 560 miles within the limits of one day and one night.

Among the more remarkable long-distance rides of recent years is that of Mr. R. L. Jefferson, from London to Irkutsk, in Siberia,

about 6000 miles, which he effected in about 3 months. For the greater part of the way the journey had to be made over cart-tracks, and often there were practically no roads at all. In April of last year, Mr. J. Foster Fraser—a contributor to the WINDSOR—Mr. Lunn and Mr. Low, started on a cycling expedition

The Pump.



Receptacle for oil.

Spanner.

SARGEANT'S DETACHABLE CYCLE HANDLE-BAR.

fifteenth, at John-o'-Groat's. That was the pioneer long-distance ride. How poor it seems when compared with later records!

In 1895 Mr. Neason rode from London to Edinburgh, a distance of considerably more than 400 miles, in 27 hours 38 minutes. In the previous year, Mr. G. P. Mills rode from Land's End to John-o'-Groat's in just about one-fifth of the time taken by the four riders mentioned in the previous paragraph to do a very much shorter distance. His exact time was 3 days 5 hours 49 minutes. The editor of the *Cyclist* kindly informs me that the official road records at the present time are 221 miles in 12 hours, done by Mr. G. Hunt, and 402 miles in 24 hours, by Mr. M. A. Holbein.

The figures for path records are certainly very interesting. Mr. J. Platt-Betts holds the world record for the fastest mile, having made the distance in 1 minute 40 seconds,

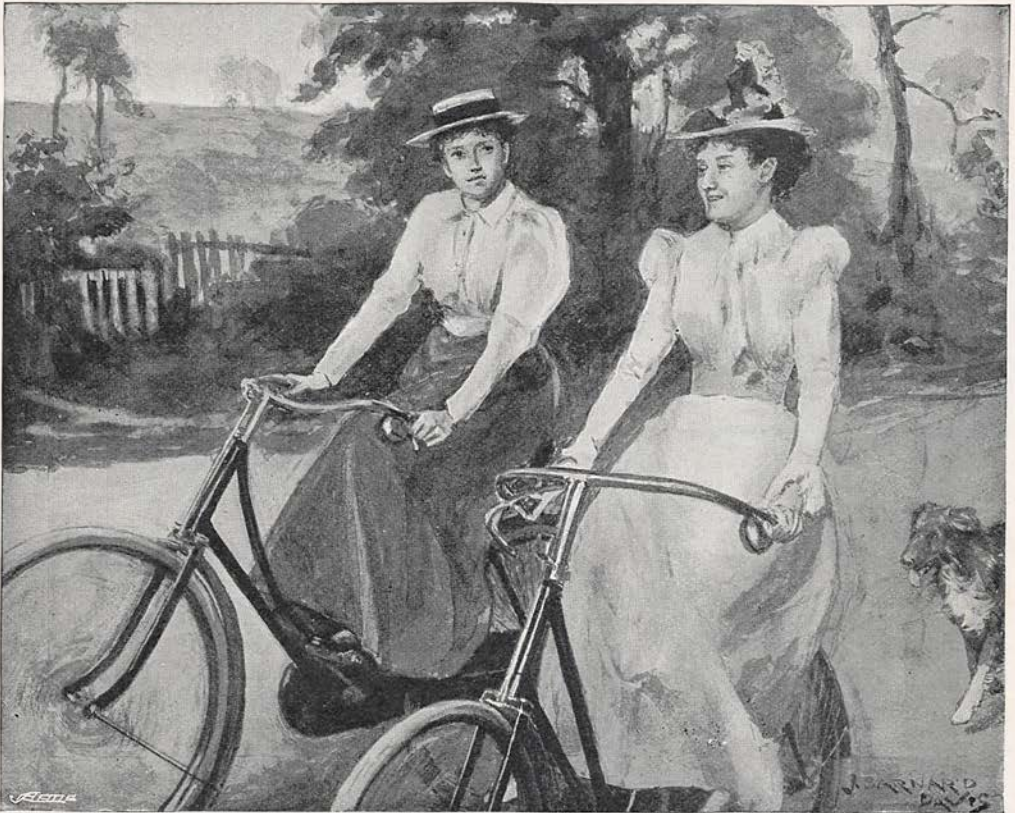
round the world. They have already ridden through Holland, Germany, Austria, Roumania, the Crimea, Southern Russia and Persia, to India, and are now on their way to the Chinese frontier. This is perhaps the most wonderful cycling tour ever projected.

Another phase of cycling which is of especial interest is the hold which it has taken upon *all* classes of society, from the highest to the lowest. Here at least is one amusement where king and commoner may, both metaphorically and literally, meet on common ground. The highest classes have their select club grounds, but after all club grounds, however nice or extensive, do not make up for the free open country. Still, at such clubs as the Wheel Club and the Ranelagh there are to be seen some forms of cycling of a very interesting description, not to be witnessed elsewhere. I allude to those amusements and sports one sees at a cycling

Gymkhana. Then there are cycling quadrilles, musical rides, Maypole rides, and so forth.

In conclusion, attention may be drawn to

the rider and his cycle may become identified. This is the only real value—this evidence of how the machine can be thoroughly mastered—that trick-riding can be said to have for



OUT FOR A RIDE IN THE COUNTRY.

the perfectly amazing mastery shown by trick-riders over their bicycles. When one watches such performers as the Valdares, one gains a distinct idea of how thoroughly

the cyclist proper, as nearly everything done by trick-riders on their cycles is a matter of balancing—an affair of acrobats, of the gymnasium, or of the circus.

Next month an article dealing with Cycle Records and Record-breakers will appear, illustrated with many portraits of eminent riders, and containing an interesting account of their careers and methods of training.