

### A Chapter on Pneumatic Tires.

There are now on the market four different and distinct kinds of tires, viz.:—solid, cushion, "Clincher" pneumatic and Dunlop pneumatic. The solid tire is so well known and evidently so soon to be a thing of the past that I will not discuss it. The cushion tire has caused much discussion; many fear that it is not durable and raise many objections to it. I will say for the information of those interested that at the present time I have five of them in my family and that they are all wearing well and cause me much less trouble than solid tires. The vibration on the spokes is much less and the ease of riding is much greater on both city and country roads. For the average rider I consider the cushion tire preferable.

The "Clincher" pneumatic comes next in order; it is a step between the cushion and the Irish baloon. That the "Clincher" has many advantages over the solid is very apparent upon investigation; the following are some of its good points: the rear tire is two inches in diameter, the front tire is one and one-fourth inch diameter, so we get a larger surface to support the rider on soft ground than with a cushion. With the "Clincher" we have the more ready accessibility of the air tube for repairs and less liability to puncture than with the Dunlop; but we do not get so lively a tire in the "Clincher" as in its Irish neighbor.

In the Dunlop tire we get the *ne plus ultra* of all that one can desire for ease of riding and speed, but the moment you buy it you must be prepared with an unusual stock of patience. For the information of those who do not know, I will say that this tire is made in three distinct sections or layers. The first or inner section is the rubber air tube, which gives the life to the pneumatic tire. This air tube is made from nearly pure rubber and is about one and one-fourth inches in diameter. When inflated with the air pump this tube if unconfined would keep expanding like a toy balloon until it burst. It is to prevent such accidents and to enable the air to be compressed in the tube that a stout linen case or sack is made to cover the air tube; this sack has flaps sewed to it and these are brought under the felloe and cemented, thus holding the tire in its place. Over this sack is the rubber cover that comes in contact with the ground. In this form of tire we get the greatest elasticity possible; but this form of a tire is the most likely to puncture of any mentioned and the most difficult of repair. In purchasing my pneumatic I bought the highest priced one in the

market, and it is a fact that with one exception I have not come back from a long run without my tire being crippled in some manner. On the last occasion I was on the century run with the West End club when the tire gave out, about forty miles from the finish; I had learned from previous experience to carry a repair outfit with me, so I stopped at a farmhouse (losing over an hour), made my repairs and caught up with the party one mile from the finish. If one goes at the matter seriously, repairs are easily made. The necessary outfit consists of a two-ounce bottle of quick drying rubber solution which may be obtained at most large drug stores, or rubber stores, a piece of sheet rubber such as is used for bandages, two inches square or more will do. A piece of linen canvas two inches wide by eight inches long, a stout needle and some stout linen thread together with a very stout cord ten feet long, will be all that is required to meet any emergency.

Now for the repairs. In case of puncture and the location is not known, proceed to locate it as follows:—

Inflate the tire and immerse it in water slowly revolving the same until air bubbles are discovered, mark the spot on the cover with a pencil and carefully remove the canvas binding that secures the cover to the rim of the wheel. Then with a sharp knife cut squarely across the canvas sack at the point where punctured, being careful not to cut the air tube which is now laid bare. With a knife (or better yet a piece of sand paper) carefully remove all the sulphur that has gathered on the surface of the rubber and apply a coating of solution to the air tube, being careful not to get any solution on the inside of the canvas sack. Cut a patch an inch square, round the corners, and scrape or sand paper same as before, and solutionize. When the solution appears dry apply a second coat and let stand for twenty minutes and apply the patch which should be pressed firmly to the tube, then sew up the sack, partially inflate the air tube, solutionize the sack and apply the canvas patch already mentioned. The canvas patch should have previously been coated with three coats of solution. Replace the cover and binding, inflate and the wheel is ready to use.

VERY TIRED.

The great firm of Mackintosh, whose name is a household word the world over, are about to place on the market something unique in the shape of an air tire.