

ii. Cycling

22ND JANUARY, 1914.

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AUTO-WHEELS, Limited
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WALL AUTO-WHEEL

THE FAMOUS

“CYCLIN

RE-INFORCING THE MOTOR-ASSISTED BICYCLE.

HOW THE AMATEUR MECHANIC MAY STRENGTHEN HIS MACHINE
FOR AUTO-WHEELING BY THE AID OF GIRDERS.

TO cyclists who have become devotees of the Auto-Wheel, the following article may be of some interest, as many think it necessary that the front forks of a cycle to which the auxiliary power unit is attached need strengthening by the aid of girders. These useful accessories can be very easily made and fitted at the expense of an evening's labour and the moderate sum of 1s. 6d. to 2s. The steel tubing, out of which the girders are made, should be $\frac{1}{2}$ in. in diameter, 18 gauge, and 6 ft. long.

If the bicycle to which the girders are to be fitted has the type of head with the handlebars held in position by the tightening up of the split head clip, the clip should be reversed, so that the tightening bolt is to the front of the machine. If, however, there is no bolt of this description, a suitable clip to receive the top of the girders may be obtained by the adoption of a saddle clip, which is placed on the stem of the handlebars at any convenient height.

The distance between the centre of the front wheel spindle and the centre of the bolt passing through the head ring or the saddle clip, as the case may be, is now carefully measured. If the reader decides to have his girders simply in the form of straight bars from the head to the front spindle (and this, without doubt, is the strongest form), all he has to do is to cut off convenient lengths from his steel tubing, heat and flatten both ends of each length, and drill holes (at the measured distance apart) to receive the front spindle and the bolt at the head. In flattening the heated ends it is better to do so between the jaws of a vice and not with a hammer, as the finished surface is then perfectly smooth.

On the other hand, if he has an artistic eye, and objects to this form of girder from the æsthetic point of view, preferring girders with graceful curves to them, the following method for obtaining the improved appearance is the best. The two lengths of tubing are prepared and drilled as before, save that the distance between the centres of the two holes is

about $1\frac{1}{2}$ in. longer than the distance between the head bolt and the front spindle. A piece of wood is then obtained about 1 in. thick and fixed in the vice. A hole $\frac{3}{8}$ in. diameter should be drilled in it and the bottom scalloped out.

The tubing is then placed in the hole, and, starting about 6 ins. from one end, is pressed upon until it is felt to give slightly. It is then pulled a little farther out and the operation repeated. In this manner the operator is able to curve the end of the tubing without kinking it, until the distance apart of the centres of the holes corresponds to that of the head bolt and front spindle. The girders can now be fitted as before, and although their outline may be more graceful, they cannot be so strong as the straight ones, and take a little more time in the making. When completed, it will be found that these girders weigh only a few ounces, and so may be permanently left on the machine without much extra weight being added.

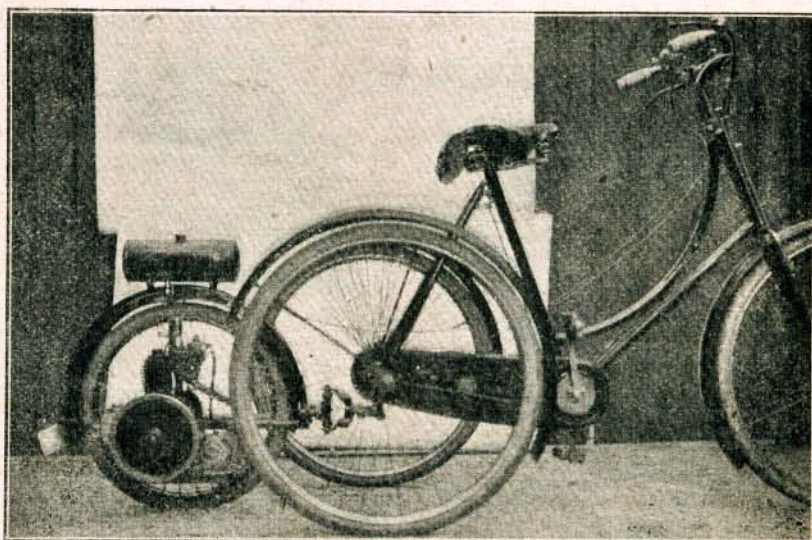
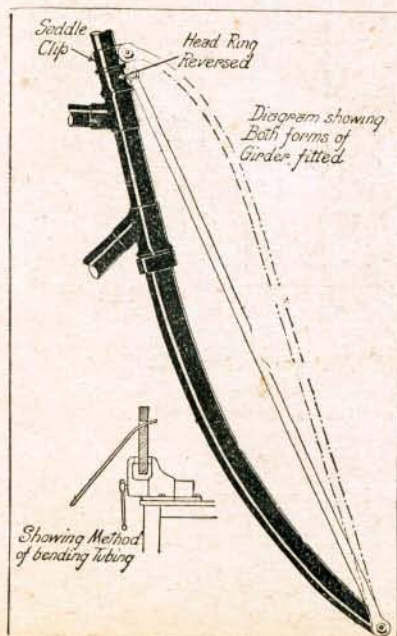
H. L. FISHER.

A Tricycle Attachment.

We illustrate on this page a form of attachment for Auto-Wheel and tricycle, made and protected by Mr. T. Pincott, of Rhyl. The joint works on a ball-bearing axle and has both vertical and lateral play, allowing the combination to be steered round a sharp corner without the slightest pull.

A Reply to Mr. Reynolds's Suggestions.

With reference to the stand fitted to the Auto-Wheel, upon which Mr. H. R. Reynolds remarked in a recent issue, Mr. A. Pooley, the managing director of Messrs. Auto-Wheels, Ltd., writes:—"We hope to effect a considerable improvement in this, and then feel that it will be all that is required. Regarding taking the machine up and down steps, Mr. Reynolds evidently is not familiar with the practice usually adopted by Auto-Wheelists, namely, that of strapping the Auto-Wheel up to the seat pillar, the strap passing underneath the tank."



Our illustrations show a simple re-inforcement for Auto-Wheel bicycles (on left), and an ingenious Auto-Wheel attachment for tricycles. Both are described above.