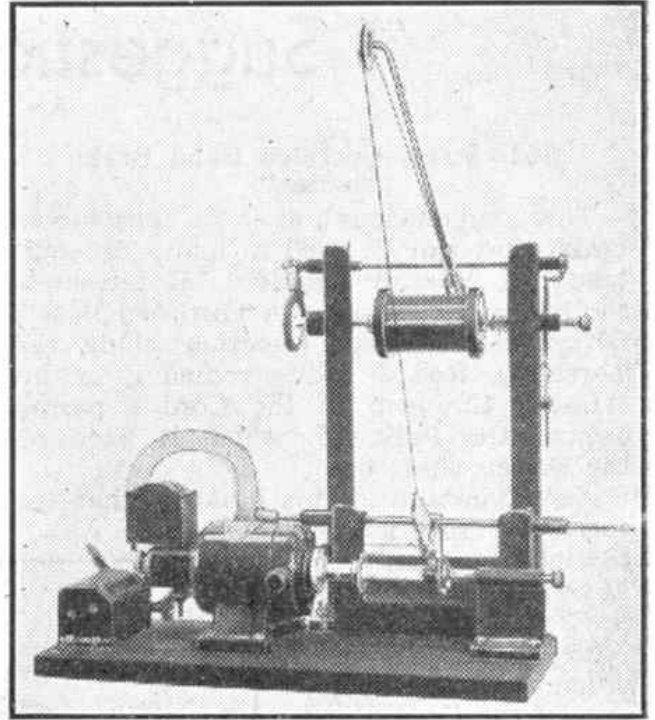


in the third picture. It will be seen that the machine is an almost identical copy of the model in every main feature.

The model is driven by a Klaxon Electric Motor running at a speed of 5,000 r.p.m., and is capable of turning out about 20 completely wound coils per hour. The bobbin of wire 1 that forms the stock is mounted on a spindle 2, which is free to revolve except that a light friction brake is incorporated to prevent the wire from over-running as it is withdrawn at high speed. This brake consists of a 1" Pulley shod with a Rubber Tyre, and contacting this Tyre is a short Strip 3 fixed to a Coupling on the Rod 5. This Rod carries also another Rod 7 at the extremity of which is a guide pulley formed from two  $\frac{3}{4}$ " Discs. The wire is led from the bobbin through the guide pulley and thence passes through a feed guide formed from two Curved Strips 9, which lead and feed it on to the core of the coil. The latter is mounted on the shaft 8, which is coupled direct to the main output shaft of the Klaxon Motor and runs at a speed of 5,000 r.p.m.

In order to feed the wire evenly along the core, and wind each turn close up against the one before it, a special feeding device was necessary. This consists essentially of a heart-shaped constant feed cam 15, cut from a piece of sheet metal, which is fixed on the secondary shaft of the Klaxon Motor and rotates at a speed of 100 r.p.m. This cam contacts a  $\frac{1}{2}$ " Pulley fixed on the end of the Rod 17, which carries also the Curved Strips 9.



As the cam turns through the first half of a revolution, it pushes the Rod 17 forward at a constant rate, so carrying the wire evenly across the length of the coil core. As the cam turns through the second half of its revolution, Rod 17 is drawn backward by a Spring 14. It will be seen therefore that for each revolution of the cam two layers of wire are wound on the coil. The cam is designed to give a rate of feed of  $\frac{1}{1000}$ " for each revolution of the main shaft of the Electric Motor, on an extension of which the core of the coil is mounted.

## The "Roman" Road on Blackstone Edge

THE appearance in the "M.M." for February last of an article describing the "Roman" road on Blackstone Edge has had an interesting sequel. The general belief that the road is Roman was challenged by Mr. J. L. Maxim, Rochdale, and here we give an extract from his letter on the subject.

"The short stretch of about  $1\frac{1}{4}$  miles of paved highway on Blackstone Edge is by no means proved to be Roman at all, although that is the popular notion, based largely upon a paper by Dr. H. C. March given to the Lancashire and Cheshire Antiquarian Society, published in their first volume in 1883, and which others have tried to support. The claim that it is 'the finest Roman road remaining in Western Europe' is an unwarranted assumption, nothing of an undoubted Roman origin ever having been found on or near to it. Its proximity to and parallelism with an authentic old pack-horse track or causeway from Rochdale to Halifax is indicative of great age, but certainly nothing like 2,000 years.

"This stretch of roadway does not branch from the modern Blackstone Edge Road at the 'White House,' but lies on the open moor about  $\frac{1}{2}$  mile to the east of that noted hostelry. The old track leaves the new road at the 'Rake Inn' below 'Windy Bank,' near

Littleborough. And again this particular length of causeway does not rejoin the modern highway at 'Bailings Gate,' but crosses it at Baitings Gate. As for the entire length being paved by the original gritstones laid by Roman Legions with masoned stones, these are all gratuitous assumptions and wishful thinking, which follow the first presumption of a Roman origin on a supposed highway from Manchester to York by this route, instead of by Castleshaw, where a Roman camp was actually explored years ago.

"No fewer than a dozen different theories have been put forward to explain the singular manner in which the central trough stones are grooved—well shown in the photograph—but nothing has been generally considered feasible except perhaps some form of skidding, and even then it need not be of Roman origin. At the crest of the hill there is an open area, but no traces of a courtyard to a military post of anything like Roman date of construction. (You may know that Col. Roseworm had troops on the Blackstone Edge in the Commonwealth period). The so-called stone-bridge is nothing but a restored culvert about 3 ft. high to cross the shallow mountain stream flowing down Black Castle Clough, where the old pack horse road crossed it, and the so-called 'Roman' road.

"I may add that I am aware of most, if not all, the matter which has been published on this interesting and unique stretch of roadway in my native district Rochdale, and have not made the statements without due reasoning and forethought."