THE NEW GEODESIC TACHEOMETER ROD.

An indispensable adjunct to every tacheometer is a properly constructed and suitably divided rod. Of course any kind of levelling or telemeter rod answers, in a way, for use in connection with the "tachéomêtre auto-réducteur," some better than others, yet I know of none, which altogether satisfies, in my estimation, the requirements of an ideal tacheometer rod that can be used advantageously for ordinary engineers' and surveyors' field work as well as for precision levelling operations.

I therefore ventured to add a speaking levelling and measuring rod constructed in accordance with the particular views I entertain in this respect, to the already long list of such rods of various patterns which are in existence. The proposed geodesic rod, inclusive of all the accessories required for carrying on successfully tacheometric operations of all kinds is shown on illustrations Nos. II and III, which are to be found in the accompanying pocket, with details enlarged; the figures being accompanied by explanatory references.

The new rod is similar, as regards general construction, to the geodesic levelling rods **E** and **F** designed by me, which have been used exclusively for some ten years past, on the geodetic levelling operations carried on under my direction on the St. Lawrence, etc., for the Public Works Department, viz.: eversince the rods were returned to the Department from the Indian and Colonial Exhibition held at London in 1886; but instead of having a scale of feet, tenths and half-tenths with a white target line 0.008 foot wide, painted at every half tenth of a foot on a black strip on either side, like the said levelling rods, the new rod has its scale marked out in white as follows, on a black ground or strip 0·05 foot wide, painted on one side of its face, viz.:—

1st. When the foot is adopted as the unit of lineal measure, at the quarter, half, three quarters and whole tenths of a foot, by white target lines 0·02 foot wide, connected in the centre by a white bead 0·005 foot wide; the whole and half-tenth white stripes being left the full width of the scale strip, but the quarter and three-quarter tenth lines only one-half this width. The half-tenth target lines are further distinguished from the quarter-tenth lines by black points painted at their inner ends, and the whole tenths from the quarter and half-tenths by heavy black lines run across the whole width of the space left for the figures beside the scale strip.