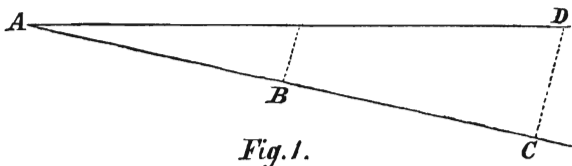


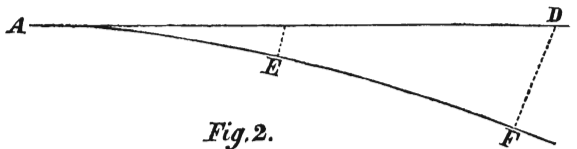
SIR,—In common with many others, I have been much interested in the experiments on the canal at Old Bedford Bridge. Mr Wallace has proved his point most satisfactorily and conclusively; and the public must feel that the award has been rightly given.

Mr Carpenter is, I venture to say, wrong, both in his diagrams and his argument from them, and therefore his conclusions cannot be other than incorrect.

The whole force of his reasoning is based on his statement, in which he says (when looking at the disc, &c., with the level telescope) "the stations appeared, to all intents and purposes, equidistant in the field of view." Now if they had been equidistant, he would unquestionably have been entitled to a decision in favour of Mr Hampden, because the line joining the three points would have been, as he says, a straight line, and not a curved one as Mr Wallace was required to prove; indeed, a straight incline, showing that the surface of the canal was the same. But although not present, I assert that the "stations" were not equidistant, but that the centre of the telescope and the middle disc were nearer together than the disc and the signal on the bridge; and they are drawn so in Mr Coulicher's diagrams. This is clearly seen in the diagrams below.



In Fig. 1, if A B C represent the surface of the canal, with the signals at B and C, the distance of the level telescope line (A D) will be exactly twice as much from C as it is from B; but in Fig. 2, which I maintain



is the true one, the distance between E and the telescope line is much less than half what it is at F—how much, would of course depend on the sharpness of the curve.

If the canal had been level in the sense of flat, the level telescope line would have coincided with both signals; but, as it did not, and as both signals fell *below* the telescope line (above in the inverting telescope), the surface of the canal must be *either an incline or a curve*; but since the appearance was the same at both ends, the canal could not incline downwards both ways, therefore it was not an incline. Therefore it follows: 1st. The level telescope line is a tangent to a circle, approximately the circle of the earth. 2nd. The surface of the water is not a straight incline, but a curve.

THOMAS WESTLAKE.

Fordingbridge, March 28.