

AUG. 1, 1878.]

GALLEY HEAD LIGHTHOUSE,
COUNTY CORK.

WITH ILLUSTRATION.

GALLEY Head,—a corruption or abbreviation probably of *Galbally* or *Galvally*, or the headland or promontory of the *Galli*, a tribe of the primitive natives of Gall,—is the southern point of Dundeady Island, and of the district of Derk or Dirk in the parish of Rathbarry and County of Cork.

The "Dearc" or "Derc" in this instance, although giving a name to the adjacent Cove, more particularly applies to the almost unknown but extraordinary depression, grotto, or blow-hole, locally called "Poulfahalliff," a "pollach" or cave-hole, capable of docking an ironclad of the present day, and into which the sea rushes with a western wind, producing a scene at once magnificent and impressive. The idea of erecting a light house on this all but southern point of Ireland (its latitude being about 51° 36') is not at all of recent date, as it was one of those that the Irish Lighthouse authorities had in contemplation previously to the act of Parliament of 1853, which deprived them of powers or funds to benefit the commercial world by the lighting of these coasts, and reduced themselves somewhat to the status of resident honorary clerks or gratuitous agents, remunerated by an occasional pleasure trip, a dinner at Salthill, and a luncheon once a-week in Westmoreland-street. The loss of several large vessels, particularly the *Crescent City*, had the effect of rousing the two great shipping boards—the Liverpool Ship Owners Association and Liverpool Steam Ship Owners Association—who were not long in bringing the Harbour Department of the Board of Trade to a "sense of the situation," and accordingly the late Engineer to the Commissioners of Irish Lights, with Commander Hawes of the Royal Navy, Marine Surveyor and Inspector of Lighthouses, were directed in 1871 to take the requisite steps for securing a site and erecting suitable buildings. All the usual official "red-tape delay," having been successfully overcome in the short space of 21 months (allowing for the distance from Carlisle Bridge to Whitehall Gardens), plans were prepared, tenders issued in February, 1873, and in the March following, Mr. William M Murphy, of Bantry and Dublin, was declared contractor, who carried out the works with a speed and satisfaction rarely equalled. The Tower is of cut stone, 36 ft. in height to balcony, and having an internal diameter of 12 ft., the outer diameter at base over the chamfered plinth course is 20 ft., and it batters to 16½ ft. at neck of Doric ovolo. The building is surmounted by a lantern supplied by the Messrs. J. Edmundson and Co., of Dublin and London, who had the contract for the optical and gas arrangements, unique of their kind, and the largest as yet erected in the world.

To produce a light that would not only redound to the credit of their establishments, but also have a national significance in the fact of this country being not at all behind in the race of scientific manufacture, the senior engineering member of the firm, with the assistance of the late Engineer to the Commissioners of Irish Lights, sought out and experimented on the glass of several well known manufacturers in England and on the continent; and although for a time undecided whether to employ flint glass (expense not for one moment entering into their calculations or influencing their decision), and thus obtain a very high refractive index, it was found, to procure a sufficient quantity (about 8 tons) free from striae, and having the requisite homogeneity, was almost practically impossible.

THE IRISH BUILDER.

It was also intended to produce the lenses in the Stafford Works in Capel-street, Dublin, but as this would lead to delay in the erecting of the requisite grinding lathes and machinery, the "*brut*" or rough glass obtained at the great glass works of Saint Gobain, near Laon in Picardy, was ground in the establishment of M. Barbieri, of Amiens, and, M. Fenestre, of Rouen, at La Villette, Paris. The very high refractive index obtained in the initial manufacture caused a complete change in the calculations usually adopted, and consequent difference in the sections of each of the series of panels in the apparatus, and never before or since Augustin Fresnel designed his annular lens, has such a magnificent result been attained. There are no reflecting prisms, but the apparatus is made up of four tiers of refracting lenses, each with a lamp in an independent focus, and each calculated to join the others in producing a single light of a power which we will simply set down as from 28° to 432°, or from that for the clear atmosphere of an April night to the intensity requisite to indicate its position even in the obscuration of a November fog. In making the sections of these lenses the somewhat unusual chemical radius of 975" was used, and the index of refraction was in every instance measured by Babinet's goniometer, and proved by the usual formulae. The calculations being made, the sections were tested by the ingenious methods of M. Leonce Reynaud, and so far as possible by a modification of Mr. Alan Brebner's (of Edinburgh) refraction protractor, which, however, is only designed for glass, with an index of 1.51. The difference of focus from the normal, in each case, making an allowance for the height of gas flame, being—

3"	.35—1st focal plane of lenses.	
3"	.41—2nd do.	do.
3"	.48—3rd do.	do.
3"	.49—4th do.	180 feet do. over sea level.

What will be thought of a man attempting the testing of such an erection without asking or otherwise ascertaining the physical constitution of the glass, where made, its constituents, or the formulae by which its curves or angles were set out, or ground? Yet such was done not long ago on the west coast of Ireland! — with results which might be expected—very costly as to fees, but not worth the paper on which they were written!

As will be seen by our illustration, which we owe to the courtesy of the author of the design, a more than ordinary means is provided for the quantity of gas occasionally required for this light—we say occasionally, because in reality it is a most economical arrangement, considering the enormous results obtained being group flashing, the gas is only required during the exhibition of each group, and a most striking and attractive light is obtained with comparatively little outlay and is the invention of Mr. Wigham, Assoc. Inst. C.E.I.

The lantern, the first of its kind, was erected piece by piece as manufactured on the spot, in the fitting-shop in Capel-street, and jointly produced by Mr. Sloane, Mr. J. R. Wigham, and Mr. J. W. Edmundson; every stage of the design was well considered as to ventilation, heat, and strength, and thought over, and worked out by superior workmen, with the best results; but a work which in any other country in the world would command the notice of all the great "medicine men" and scientific journals, was let to remain unnoticed and unknown as "merely Irish." The designers had only done their duty, fulfilled their contract, and received their pay, such as it was, and might be satisfied with

and the consciousness of having performed the task assigned them.

The engineer, having seen all the lenses completed in Paris, was no more wanted; he was "not required" to finish the work he had taken such pride in—one of the many to which the thirty best years of his life were devoted; he was permitted to sink into oblivion on a beggarly pension, to write a cheque for which brings a blush into the worthy cashier's face, and causes the ink in his pen to turn from black to red! Alas, it is only the way of the world. "Put not your trust in princes," or, we might add, in soulless corporations but as Fontaine says, "*Aide toi, et le Ciel t'aidera.*"

[Taken from *Irish Builder*, Vol. XX, 1878, p216]

the blessings of the mariners,