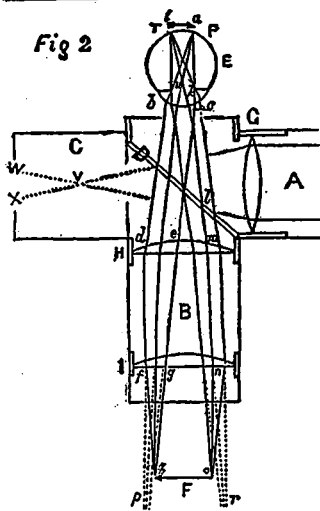


Fig 2



parallel or very nearly so) where some of its rays will be reflected through the lens G in the direction of the source of illumination, but other rays proceed to *d, e*, where they are incident on the lens H by which they are refracted, and they would proceed to a focus at the principal focal distance of the lens H—viz., at 5 inches, but they are again intercepted at *f, g*, by the lens I, which refracts them to an earlier focus at *h*. In the same way rays from *i*, on E's retina, proceed from the cornea parallel to the axis *i, k, m*, and are also refracted by the lens H and I, and are brought to a focus at *o*. In like manner all points intermediate between *i* and *a*, on E's retina, are reflected from the fundus and refracted by the lenses forming an inverted image of *i, a*, at *o, h*, which is received upon the ground glass placed at F.

#### Application—Advantages.

The advantages I claim for this instrument are:

1st. The simplicity of its construction, taking into consideration its two-fold purpose, viz., as an ophthalmoscope, and as a photographing instrument. My friend Dr. Noyes, of the N. Y. Eye Infirmary, constructed an instrument for photographing the fundus oculi, and which was I believe to a considerable extent successful, but its construction was too complicated and the instrument too expensive to be generally adopted. Dr. Noyes' instrument is constructed somewhat upon the principle of the binocular microscope. Any good optician can construct this instrument. The one I exhibited to the Institute was made by Charles Potter, of King street, Toronto.

2nd. The limited experience necessary in order to use it successfully; the ordinary ophthalmoscope requiring months of practice before it can be used satisfactorily.

3rd. Being able to see the aerial image free from reflections from the object lens, which reflections are serious obstacles to beginners.

4th. Being able to receive the image, either of a healthy or diseased fundus, upon a screen of ground glass which can be seen by a number of persons at the same time, and could be taken advantage of by gentlemen lecturing upon the physiology of the eye or upon the pathology of its deep structures.

*Reflection.*—Let E (fig. 2), represent the same eye illuminated as just described, D the plate glass, and H I the lenses in the camera tube. Rays from any portion of the illuminated fundus as *a*, are reflected from the fundus and emerge from the cornea at *b, c*, the width of the dilated pupil, and proceed to the plate glass D (parallel rays of light emerging from an eye having its accommodation paralyzed are parallel

5th. With it, artists will be enabled to make coloured representations of the fundus, which, with the instrument now in use, has never yet been effected; thus, Mr. Hulke in his *Treatise on the Ophthalmoscope*, and Jabez Hogg in the preface to his "*Manual of Ophthalmoscopic Surgery*" (June, 1863), apologizing for defects in their coloured representations, state that it is impossible to procure the services of artists having the requisite knowledge of the use of the ophthalmoscope.

6th. Rendering it comparatively easy to photograph the reflection from the posterior internal surface of the eye.

I cannot conclude without expressing the hope that this instrument will contribute something towards awakening more of an interest in ophthalmoscopic science, as the ophthalmoscope is undoubtedly as essential in investigating diseases of the eye, as the stethoscope in diagnosing affections of the heart and lungs; and I trust its use will aid in banishing from ophthalmic nomenclature the indefinite term of amaurosis, where, as Walther observed, "the patient and physician are both blind."

## Board of Arts and Manufactures

FOR UPPER CANADA.

The following is a copy of petition just presented to the three branches of the Legislature of this province, for amendments to the laws relating to patents for inventions:—

The Petition of the Board of Arts and Manufactures for Upper Canada, humbly sheweth:—

That in the present state of the Patent Laws of this Province, none but *British subjects who are actual residents in Canada*, can obtain protection for any invention or discovery they may produce:

That your petitioners consider this unjust towards British subjects non-resident of Canada; and more especially towards such as are subject to the Patent Laws of the Imperial Government, which makes no distinction as to the country to which the applicant or inventor may belong, in the granting of Patent Rights:

That in respect to the Inventions of Foreigners, the Patent Laws of this Province are not based on those principles on which the Patent Laws of almost all other countries are established, that is, the absence of prohibitions and discriminating fees in the granting of Letters Patent:

That the Patent Laws of the United States have recently been so modified as to do away with all discriminating fees, on the condition set forth in section 10 of an enactment of the American Congress, of the 2nd of March, 1861, as follows:—“That all laws now in force fixing the rates of the Patent Office fees to be paid, and discriminating between the inhabitants of the United States and those of other countries,