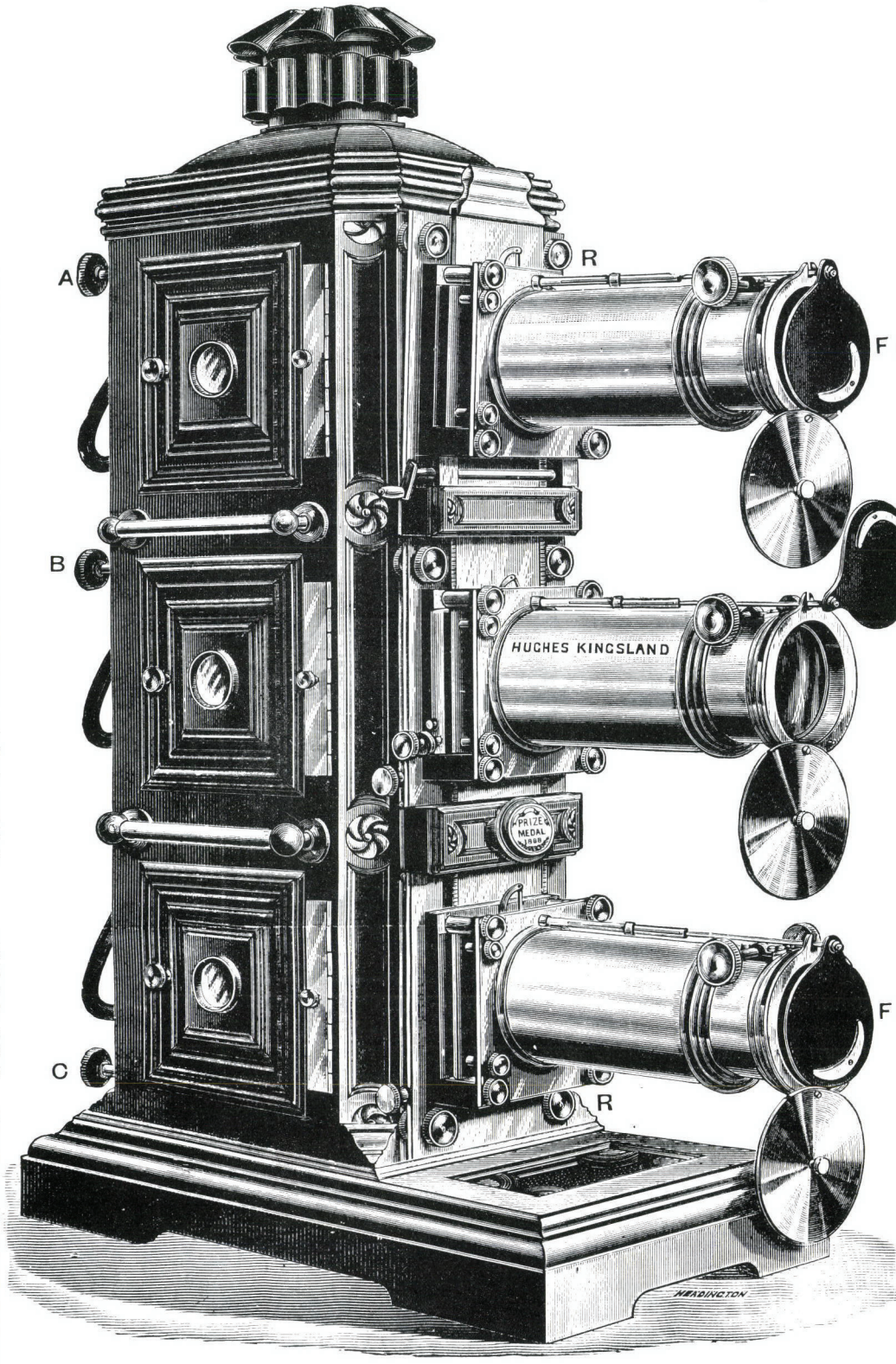
THE DOCW

This is the Grandest Instrument of its class ever designed, and obtained the on
pannelled, on handsome plynth. Fittings and ventilation doors, burnished and

Among the many to whom we have supplied these High Class Triple Instru
Colin Docwra, Esq., John Docwra, Esq., Dr. Harry Gratten Guinness, The Po



Three Double Plug Disso
with one

Price -

The Anti Halation Shutter

THE DOCWRA TRIPLE derives its name from that eminent lanternist, Mr. Colin Docwra, who designed the body of this lantern, and has done much to raise the tone of lantern exhibitions.

It is as its maker designates, a *chef d'oeuvre* in skill and invention. Its mechanical yet simple contrivances are covered by several patents. The necessity for a solid and well finished body to carry the magnificent optical system, and the gas supply being so requisite for a Biunial, is of especial importance in a Triple, and here every conceivable plan is used to produce the grandest results ever yet attempted in lantern manipulation. The essential points in a Triple lantern, of whatever type chosen, are solidity, mathematical accuracy in centreing of the optical system, with simplicity in its mechanical parts, and equal distribution of the gas supply to all three lanterns at the same time. *A B C* are the rods for registering the fronts from the back; *D* are the clamps for holding up the supplementary shutters; *F1, 2, 3,* show a mechanical appliance for covering up the lens when a slide is withdrawn. It is well-known that when the gases are turned off, there is still retained on the lime sufficient incandescence to interfere with the succeeding picture, and this is more especially the case with hard lime than soft; to overcome this difficulty, this mechanical appliance is used. When a slide is dissolved on and the preceding one dissolved off, the frame and slide are withdrawn, at the same time shutter *F2* drops over the lens. When the frame is replaced in the lantern and pressed home to the stop, a cam acting from this imparts the necessary motion to the rod (seen running along the top of the tubes) turning the vulcanite shutter upwards, as *F2*.

Registering the disc, slides and jets are dealt with under their several headings, but there is an important point in Triple lanterns that is often overlooked, although there are several very vital points in a Triple. We refer to the back gas supply; as a rule, the pipes which carry the gas are not of sufficiently large bore to supply the gas equally to all three lanterns, generally there is more pressure at the bottom lantern than those above. In practice, the bottom lantern is used least, the top and middle being used for general dissolving, thus the heat has not so far to travel to an outlet. To overcome this unequal supply of gas, the back supply pipes (as shown in Figure 1) are made with extra wide bore (including the dissolving taps), and joining the inlet to the dissolver is a bulbular fitting, and in this is accumulated a sufficient force of gas to keep up a steady supply, instead of the connection between the dissolving tap and supply pipes being made with indiarubber tubing, it is joined direct to the bulbular fittings by the aid of a screw nut or coupling, there being no fear of kinks to confuse the operator, as occurs in tubing.

THE REGISTERING RODS

In the usual method of effecting coincidence of discs, the front is let down at the top by means of a milled nut, this answers the purpose very well, but takes a considerable time to centre accurately. In fact this is the cause why many lanternists do not register their discs to the requisite precision, it is too much trouble; the rods *A B C* overcome this difficulty, the discs are perfectly registered by simply turning the milled heads

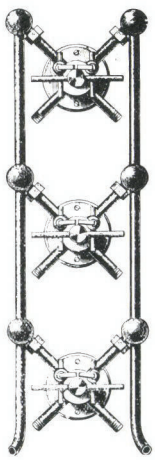


Fig.1

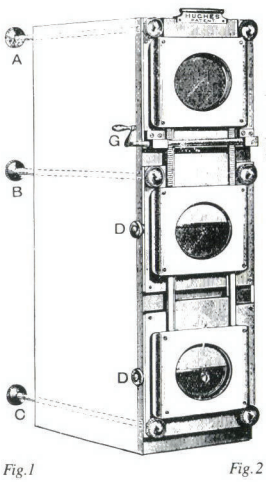
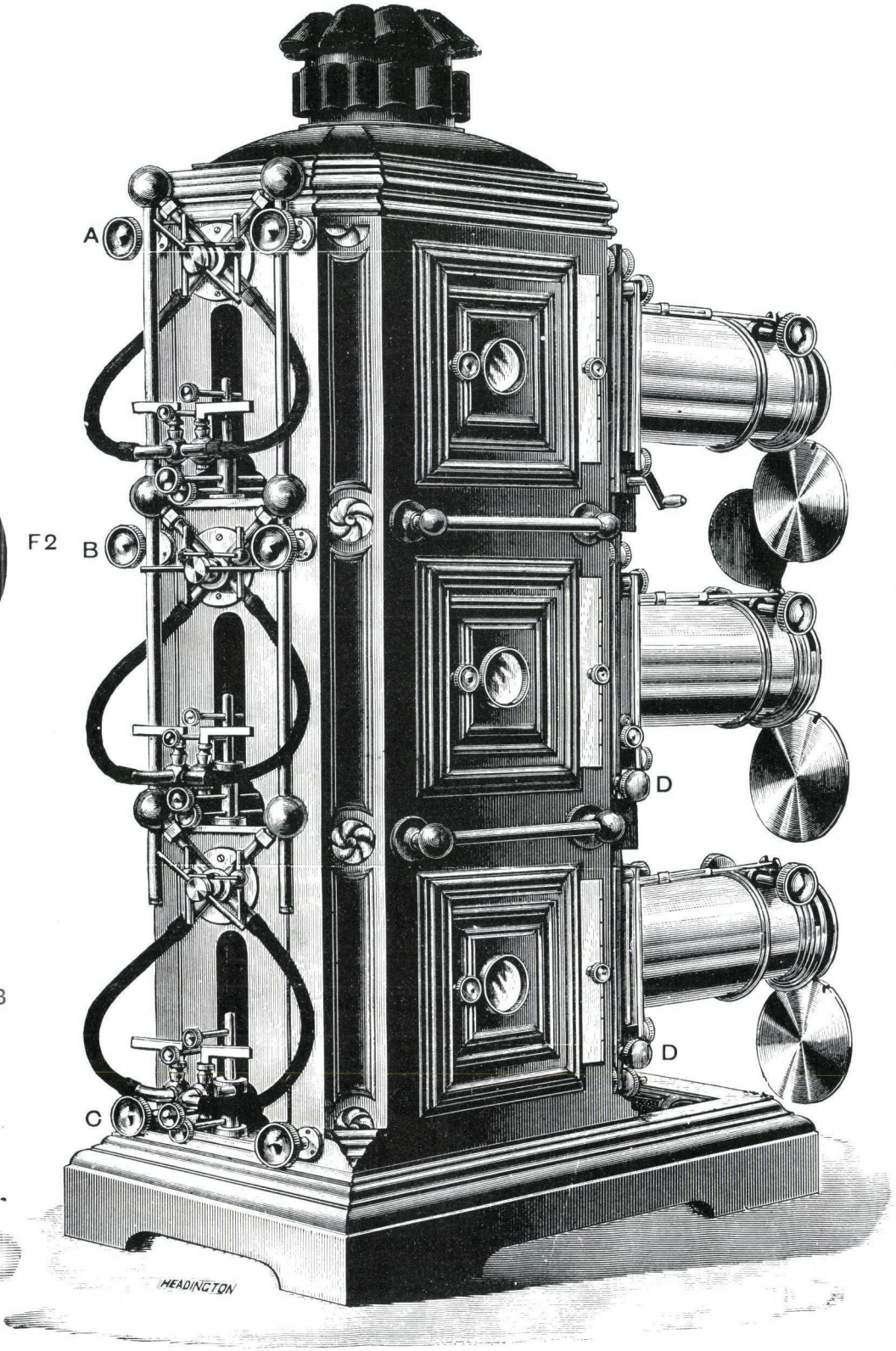


Fig.2

/RA TRIPLE

y Prize Medal granted at the Crystal Palace Exhibition. Built of rich woods, finely
acquered.
nents are:– *H.H. The Marahajh of Mysore, Baroness Celerstrum (Adelina Patti),*
technic, Captain Selwyn, M.P. (the late), Mr. Malden, Sir D. F. Goddard, etc., etc.



lving Taps, and Back Pipes
et of Lenses,
£80 0 0
s on front are not included.

on the registering rod at the back of the lantern, and it is done in less than a quarter of the time occupied in the old way. It is of great importance before adjusting a triple to see that the central lantern front is on the same plane with the body. The top of the central front controlled by rod *B* should not be tilted downwards or drawn too far back but equally flat to the body. After the lamp is lighted up and the metal work becomes heated, it will expand and throw the discs out, it is then a very simple matter to give the rods a minimum turn to bring the fronts up to the required degree of accuracy, which is no easy matter when it has to be done by the milled nut in front, which is the case when these registering rods are not fitted.

THE ROLLING DIAPHRAM OR CURTAIN EFFECT

This illusion was first invented by Mr. B. J. Malden, and he was enabled to keep the secret for two years before it becamc known by what means it was brought about. In use it has the effect of one picture rolling up and a second appearing beneath it and on the reverse movement, the picture is rolled down over the preceding view. In a great many lanterns this is defective in the following respect, if in rolling the picture there is a heavy dark band shown, it is because the diaphragm is too long, a little is required to be taken off the bottom of a brass diaphragm, if on the contrary there is a white band, it is because the diaphragm is too short; the former is easily remedied by filing away, but the latter is only to be remedied by piecing, or the making of a new diaphragm.

With the ordinary rolling shutter, in commencing an exhibition, the shutter is pulled or racked up, the curtain slide placed in the middle lantern and the view in the top, and upon the diaphragm being brought down, the illusion is produced of the curtain rolling up, this when used with statuary is very effective, and should be introduced at times during an exhibition in lieu of dissolving, being a nice change. Many improvements have been recently added to the original idea, which was a sheet of vulcanite worked between the two lanterns by means of a brass lever, it was next made of brass and lifted up and down from the top of the lantern, being capable of being drawn out when not required. A rack was next added to facilitate the motion, and a recent patent of Mr. Hughes' enables the rolling diaphragm to be used in all three lanterns, and at no time the diaphragm required to be withdrawn, which is the case with the ordinary form. When the lantern is on an elevated position, it is not an easy matter to draw the diaphram out (which runs the length of two lanterns) especially if the lantern is placed underneath a gallery and the top nearly touching the ceiling. This difficulty is overcome by the use of supplemental shutters, or brass discs, which are made to drop down into position when not in use, or to lift up out of the way when dissolving. The first to introduce the idea of supplemental shutters, we believe was Mr. Steward. For working of the diaphragm in the three lanterns according to the illustration (Figure 2) :—*G* is the handle which works the rack; *D,D,* are the handles of the runners which move from top to bottom, raising or lowering the supplemental shutter, as the case may be. The object of the three diaphragms may thus be described; supposing the operator is ready to start an exhibition. The curtain slide in middle lantern is showing (diaphragm racked up) on to this a title is thrown (bottom lantern diaphragm is also up), then as the shutters are rolled down, the curtain and title have the illusion of being rolled up, disclosing the picture beneath (top lantern).

The middle and bottom lanterns always work exactly alike, so that if the middle lantern is occupied, the diaphragm is worked in the top and bottom lanterns. When it is required to dissolve a picture instead of rolling it, the supplemental shutters are lifted up at the handle *D*, each one being independent of the others. The three lanterns are left free for dissolving effects whenever required without having to withdraw any shutter from the top.

The descriptive text and illustrations are reproduced from *The Art of Projection and Complete Magic Lantern Manual* by An Expert, published by E. A. Beckett, 111 & 113 Kingsland Road, N.E. in 1893.