a room 24° F. in one hour, whilst by spontaneous ventilation he could never obtain a temperature of more than 100° F., but by pumping in the warm air he readily obtained a temperature of 150° F., or 180° F.

Mr. Horne directed the attention of the Institution to a lamp, which he thought was peculiarly applicable to lighthouses, or wherever an intense light was required. The usual burners were an inch in diameter; he had, however, succeeded in producing a clear white light by a burner of half an inch in diameter. The excellence of the light was due to the complete combustion, obtained by making the area of the external, equal to the area of the internal apertures. The air thus passed directly to the burner, and there was a perfect uniformity of draught which might be regulated, by the height at which the burner was placed above the bottom of the glass, or chimney. The draught of air being thus supplied with perfect equality to both sides of the wick, a flat and steady flame of two inches in height was obtained, and the force of the draught was sufficient to prevent the flame from touching the edge of the burner, so that the edge was always clean and fit for use.

Lamp for
Light-
houses, &c.

“A series of Experiments on the Elastic Weight and Strength of Cast Iron Beams.” By Francis Bramah, M. Inst. C.E.*

This very extensive series of experiments, had been undertaken several years ago, with the view of verifying the truth of the theory of Bernouilli, Young, and Tredgold, with respect to the equality of the forces of extension and compression in cast iron, within the elastic limit. The experiments are accompanied with a paper, fully explaining the method in which they were conducted, and with a drawing of the proving machine.

Strength
of Iron.

“A practical Method of forming the Stones of an Elliptic Arch.” By William Bald, C.E., F.R.S.E., M.R.I.A.

In presenting this paper to the Institution, the author has no object in view; but to leave a record of the proceedings of an operation, successfully carried into execution more than seventeen years ago. This consists in the application of the well-known property of the elliptic, “that the lines from the foci make equal angles with the tangent at any point.” The moulds are thus traced out, by drawing a few straight lines.

Voussoirs
of Elliptic
Arches.

* Vide Trans. Inst. C. E., vol. ii., page 113.