

have been secured had the Parliamentary representatives not felt that their constituents were anxious for the change.

I am, Sir, your obedient servant,

E. JOHNSON,

Sec., Decimal Association, Cannon St., London, Eng.

Extracts from the petition referred to: That in the opinion of your petitioners the adoption of the Metric Weights and Measures by this country is highly necessary: 1st. Because it has already been adopted by nearly all the civilized countries. 2nd. Because it would materially assist education by facilitating the teaching of arithmetic, and setting free a considerable amount of time which would be devoted to more useful subjects than the learning and practising of our complicated and confused Tables of Weights and Measures. 3rd. Because, as our Consuls frequently reiterate, we lose trade in consequence of our Weights and Measures not being understood in other countries, and because the adoption of the Metric Weights and Measures would obviate the present necessity for manufacturing on one basis for export trade and on another for home trade. 4th. Because the colonies desire the change, but feel that the lead must, on account of intercolonial trade, be taken by the Mother Country. 5th. Because it would lead to the abolition of a large number of anomalous, customary, or local, but illegal, Weights and Measures, still largely used in various parts of the country. These irregular Weights and Measures are chiefly objectionable because they give facilities to dishonest traders to take advantage of purchasers who are not acquainted with them.

That numerous demonstrations of the desire for the change have been made by resolutions and petitions of public bodies, institutions, chambers of commerce, trades unions, retail trade organizations, manufacturers, engineers, and teachers.

That a Select Committee of the House of Commons in 1895 reported in favor of the compulsory adoption of the Metric Weights and Measures within two years.

That your petitioners are much disappointed that, although eight years have elapsed since then, no steps have been taken to give effect to this recommendation of the committee.

That by reason of the fierce competition for foreign trade, the need for the change is even more serious now than in 1895.

That there are indications that the Metric Weights and Measures will before long be adopted by the United States, one of the main arguments likely to influence that result being the facility it would give for successful competition with this country in trading with countries using the Metric System, especially in the Republic of South America.

That the Colonial Premiers at the Coronation Conference resolved: "That it is advisable to adopt the Metric System of Weights and Measures for use within the Empire, and the Prime Ministers urge the Governments represented at this Conference to give consideration to its early adoption."

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### A NEW VACUUM GAUGE AND ALARM.

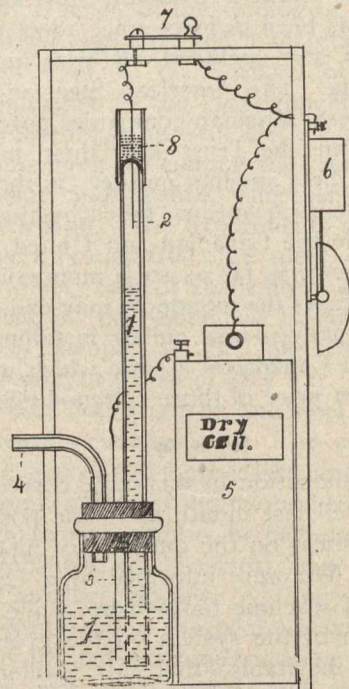
Harry G. Spurrier, of Davenport, Toronto, has invented a vacuum gauge and alarm, for which a patent has been issued.

The instrument was devised primarily to meet the necessities of vacuum pan practice, where even small variations of vacuity seriously affect industrial results. The instrument consists of a rather short mercury column (1) which by its variations of altitude will make or break electrical contact with a bell and battery circuit, resulting in an audible as well as visible announcement to the engineer.

A small bottle or reservoir containing mercury is tightly fitted with a rubber stopper (S) through which passes the tube containing the mercury column, and bearing a platinum wire fused through its upper end. The lower end of this tube passes nearly to the bottom of the reservoir, and is well immersed in the mercury.

Through the rubber stopper also passes a bent tube (4) terminating immediately beneath the stopper, and also a

wire (3) which passes into the metal in the reservoir. The necessary bell and battery wiring completes the arrangement. In practice the connection is made by stout India rubber tube between the bent glass tube and a small metal tube tapped into any convenient portion of the pipe or pan to be exhausted. As the vacuity increases in the condenser-chamber or pan, the mercury in the upright tube descends to a point correspondingly low. At a predetermined point, say 25 inches, or 635 millimeters of vacuum, the mercury in the column falls below the lower extremity of the platinum wire and the electrical circuit is broken at this point,—but, should the vacuum fall below 25 inches, or 635 millimeters, the mercury will rise, touch the wire, and the bell will ring, and continue ringing until the switch (7) is opened or the vacuum increases,



Vacuum Gauge and Alarm.

1—Mercury. 2—Plat Wire. 3—Copper Wire. 4—Tube to Vacuum Pipe. 5—Battery. 6—Bell. 7—Switch. 8—Mercury Cup.

The obvious use of such an alarm in a condensing plant scarcely needs comment, as the engineer is at once warned of approaching danger, and the cost of the instrument would be more than repaid in a single instance when flooded cylinders were avoided. The instrument may be piped up by 1/4-inch pipe to any desired point, or the bell alone may be wired to the chief's office.

The alarm is also an absolute check for accuracy to ordinary spring gauges. By measuring the column of mercury from the level in the reservoir to top of column—the "deficiency," or how far short of perfect vacuity the realized vacuum falls, may at once be ascertained, this measurement being absolute, which is not the case when the vacuum "realized" is gauged in the ordinary way, because this implies a constant barometer which we do not actually have. A model as the cut has been in actual operation for two years, and on dozens of occasions has rung out a valuable warning, and has never failed in a single instance to report itself at the right moment.

This instrument will at once appeal to all who operate condensers, whether attached to engine or pan systems. Its use, for example, on the big engine of the Street Railway power house in Montreal would have saved the disastrous accident which happened there two or three years ago.

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—Two spans of the C.P.R. bridge, near Saskatoon, have been washed away by the high water in the South Saskatchewan.

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—The E. S. Harrison Co., Winnipeg, have been awarded the contract for the machinery in the new power house for Regina, N.W.T., to be constructed from plans by John Galt, C.E., of Toronto.