DEPARTMENT OF

TRADE AND COMMERCE
CANADA

SD-GA.47

STANDARDS DIVISION

OTTAWA, December 8, 1953.

TYPE APPROVAL

BAILEY TYPE "CH" FLOW MECHANISM

The apparatus specified and illustrated herein has been duly approved by the Standards Division under the provisions of the Gas Inspection Act, Chapter 82, R.S. 1927, as amended, and may be admitted to verification in Canada.

Apparatus Approved: Type "CH" Flow Mechanism, manufactured by the Bailey Meter Company Limited, Montreal, P.Q.

Application: Measurement of fluids in conjunction with standard orifice plates and approved pressure gauges.

Rating of Apparatus:
Differential range ..... 0-14.3" water gauge
Working pressure ..... up to 800 p.s.i.

Description: The type "CH" Flow Mechanism is designed for low differentials and the manufacturer uses this basic element in a variety of flow meters in applications where the line pressure is low. This approval covers its use with any approved static pressure element, integrator or other auxiliary device.

The general remarks in Circulars SD-GA.27, SD-GA.34 and SD-GA.42 regarding the manufacturer's arrangement of type designations are pertinent to this mechanism as well.

The operating parts of the type "CH" flow mechanism, illustrated on the back of the circular, include a straight-walled bell sealed in mercury, to which is attached a specially-shaped displacer which is also immersed in mercury. The higher pressure from the orifice or other primary element is applied to the interior of this bell and the lower pressure is applied to the exterior of the bell. An increased differential pressure results in the bell moving upward to a position where the change in buoyant force due to the section of displacer withdrawn from the mercury balances the force of the differential pressure. Motion of the bell is transferred through the bell casing by means of a forked lever and spindle to operate the indicating pointer, recording pen and integrator. Movements of the pen and indicator are directly proportional to changes in the rate of flow as a result of the special shape of the displacer.

For any chart reading, the corresponding differential

$$= \left(\frac{\text{Chart Reading}}{\text{Maximum Chart Reading}}\right)^2 \times \text{Maximum Meter Differential}$$

= "h" inches (water).

.....(OVER)