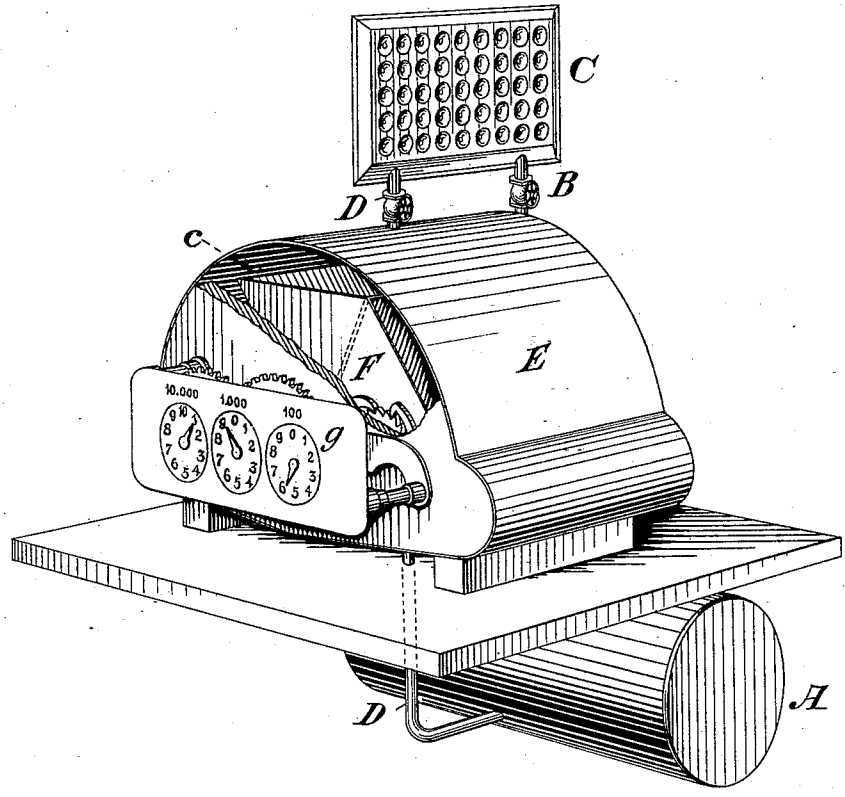
C. HOLLY.

Steam-Meter.

No. 210,328. Patented Nov. 26, 1878.



WITNESSES:

S. M. Pool

Boyd Eliot

INVENTOR:

Carlos Holly

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CARLOS HOLLY, OF LOCKPORT, NEW YORK.

IMPROVEMENT IN STEAM-METERS.

Specification forming part of Letters Patent No. **210,328**, dated November 26, 1878; application filed September 9, 1878.

To all whom it may concern:

Be it known that I, CARLOS HOLLY, of Lockport, county of Niagara, State of New York, have invented a new and useful Improvement in Steam-Meters, which improvement is fully set forth in the following specification and accompanying drawing.

The drawing represents in perspective such an apparatus.

The object of this invention is to determine the amount of steam used for heating purposes, as in radiators for buildings, &c.; and the invention consists in the combination of a metering device with the radiator, in such a manner that the water of condensation may be collected and measured, or the quantity that has come to the radiator as steam may be determined and indicated by registering mechanism automatically, and thereby record the amount of steam used in the said radiator or system of pipes wherein the condensation of the steam may occur.

At A is shown the steam-generator as a boiler, that may be placed in the basement of a building. From said boiler a pipe, as at B, conducts the steam to a radiator, C, which may be of any desired form, but here shown as a shell formed of two plates of metal.

At the lower corner of the radiator, as at D, there is attached a pipe to carry off the water of condensation from the radiator and to return it to the boiler, as is usually done. Said pipe, however, instead of returning directly to the boiler, is led into the top of a chamber, as at E, in which the meter is placed, and where the water of condensation is measured before it is returned to the boiler or permitted to escape, as the case may be.

In the present arrangement the meter consists of a hopper-shaped receptacle, as at F, divided into two compartments for receiving the water as it comes from the radiator; and said receptacle is mounted on pivots, so that when one compartment is filled to a certain extent it will be turned down by the weight of the water and thereby emptied, and at the same time bring the other compartment into a position to be filled, which, when done, will turn down by the weight of the water on that side and bring the other compartment into position to be filled, and thus the two compartments will reciprocate alternately to receive the water of condensation and to determine its quantity without reference to its temperature, as the compartments only tilt under a certain amount of weight of the water.

The water when thus measured or weighed may then return to the boiler through the pipe D′, as shown, or escape, as desired.

To ascertain the number of times the said receptacle is filled in a given time, it is connected with a registering mechanism, as shown at *g*, which consists of dials and indicating-hands, as used in gas-meters, and the axis of the unit-wheel or a pinion-shaft connected therewith extends into the chamber C, and has upon its inner extension a ratchet-wheel, into which a pawl pivoted upon the end of the receptacle works, so that each complete reciprocation is indicated and registered upon the dial; and, by knowing the number of cubic inches of water the compartments will hold before tilting it, it will be easy to ascertain the quantity of steam that has been condensed in the heater or radiator, as the water to the steam is about one to seventeen hundred.

Such an apparatus is useful in buildings or places where parties hire the use of steam for heating purposes.

It is evident that other forms of metering apparatus may be used, and also other forms of recording or registering devices; but the apparatus herein set forth will be found to answer the purpose, and is exceedingly simple in its construction and not liable to get out of working order.

I therefore claim—

A waste or return pipe from a steam-heated radiator, employed for warming buildings, in combination with a fluid-meter, as and for the purpose herein set forth.

CARLOS HOLLY.

Witnesses:
BOYD ELIOT,
A. MOORE.