

# Engineering Department

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## WATER METERS.

Objection to the use of meters is still being raised in some quarters on the ground that it would prevent what is considered to be a necessary waste of a sufficient quantity of water which, in the erroneous language of the objectors, is supposed "to find its way into sewers, flushing them, and thereby performing an important function for the benefit of the sanitary demands of the city." This is an old and exploded theory, and it has no weight with any well-informed hydraulic engineer of the present day. It is one of the most popular arguments, however, against the use of meters, especially when the opponents of the system wish to appear as disinterested and reasonable as possible. The cry is that people will not use metered water in sufficient quantities to keep themselves in good health. So far as public health is concerned practically nothing can be said against the use of meters, for the simple reason that the cost of water is so small that no saving of any amount can be made by even the most stringent economy in its use for cleansing purposes. On the other hand, the waste of water from a leaky faucet or defective tank valve—defects which a small amount of care on the part of the consumer will rectify—will be at once apparent in the water bill, and the consumer who neglects a leaky fixture "because the leak is so small and not worth bothering with," will not repeat his neglect a second time.

The only remaining argument from the health standpoint is that a liberal use of water will keep soil pipes and sewers clean. But, as a matter of fact, any variation in the actual use of water will make little difference in the condition of soil pipes and sewers, and waste by leaky fixtures, even though it reach large proportions, has practically no cleansing effect. As every engineer knows, a trickling stream has no flushing or cleansing power.

It may be urged, however, that meter rates prevent some people from putting in such sanitary fixtures as bath tubs and water closets; but, on the other hand, people who would practice such economies would certainly not introduce such fixtures if they were charged at schedule rates per year.

As a final answer to these objections to metering domestic supplies, it should be said that it is a common practice in well-managed water departments to charge a minimum flat rate where a meter is installed, fixed at such a figure, both as to price and quantity, that the consumer will have no object whatever in stinting his use of water, while on the other hand the meter acts as a check to make him pay for its extravagant waste through carelessness or defective fixtures. In the absence of any such rule the consequences are apt to be, especially in small communities, somewhat disadvantageous to the department.

The sooner municipalities and individuals recognize the real facts concerning water waste and its prevention, the sooner our waterworks officials will be enabled to give better water pressures, to extend the distributing pipes to new sections, to improve the quality of the water and to effect a betterment of the service in every way, and all with a reduction in a great majority of the present rates. Heavy waste often means deficient house and fire pressures, as is obvious to any engineer or waterworks

superintendent. It often means, also, that such funds as are available for extensions must be spent for larger pumps, reservoirs and mains, instead of for mains in previously unsupplied quarters, or for the improvement of the quality of the supply.

Hand in hand with the meter system should go one of filtration, as all public water supplies should be subjected to the most perfect filtration capable of being obtained by the use of the best and most approved methods of filtration wherever in the least degree necessary. This is the true health measure for any city to insist on, but how much easier to carry it out when the consumption is down to the lowest possible point, and how foolish to spend large sums in purifying water and then allow it to flow in a steady stream into the sewers from numberless leaky fixtures. Many cities in this country could readily filter the water which they actually use with no greater expenditure than now goes to pay for pumping water that runs to waste without doing any one a particle of good. Again, with the expense due to water waste stopped, lower rates could be given to consumers, such as would place the public water supply within the reach of even the poorest classes. Thus the abandonment of dangerously polluted wells, so often the source of untold disease and misery, could be brought about, and better plumbing could be afforded. That these improvements are in the direction of public health cannot be gainsaid. The experience of cities which have used the meter system for many years has demonstrated that by it waste can be reduced to smaller proportions than by any other means. Thus it becomes obvious that, instead of being a detriment to public health and welfare, the meter system would prove to be one of the greatest available aids to that end. And, after all, measuring water is only applying to it the method that is applied to every other measurable commodity that is sold. It is often urged by unthinking political agitators that water should be as free as air or sunshine, but it is only under the most primitive conditions that water and air are to be had for the asking, and only during a part of the day that sunlight is available for any one. Water, pure air and light have to be brought into our homes at some outlay in cash or its equivalent, and those who enjoy them ought, in fairness, to pay for these necessities in the proportion that they use them.—*Water and Gas Review.*

## LESS IN PROPORTION.

The problem of highway construction and maintenance differs somewhat between the country and city, although they are closely allied. The difference is only one of degree. The concentration of traffic on the business streets in the cities necessitates, as a rule, the construction of a more durable pavement than is demanded by the light traffic of the rural highways. The greater valuation which is attached to city property makes the burden of constructing the more costly pavement less proportionately, than it would be to construct a less expensive pavement in the country.

Collingwood carried the good roads and elevator by-laws by a large majority.