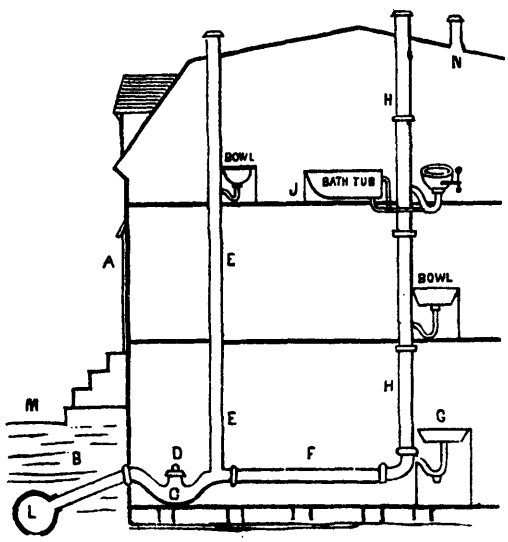
In the August number of the *Sanitary Engineer* we find the following remarks under the head of

"A MONTREAL PLUMBER'S VIEWS."

We find in a late issue of the *Montreal Witness* a long letter by J. W. Hughes, of that city, on drainage, together with the accompanying sketch, which we reproduce with the following extract referring to it. Mr. Hughes writes:

"My experience is that carrying the soil and branch waste pipes full size above the roofs of our houses with traps under the different apparatus is the best plan so far. Some of the self-sealing traps are excellent and reliable in their working, and prevent effectually the inlet of sewer gas, but any mechanical device is apt to get deranged and out of order, so it is not safe to place entire dependence on them. A trap on the private sewer just before it enters the house is a good thing in itself, but the great objection to their general adoption is that after a few years they become filled and stopped, and according to the present plan of running the private sewers under the floors where they are not accessible, are liable to become deranged without the fact being known. The choking of the trap is a very serious matter, as the sewage might be filtering out through a defective joint, under the floors, for months before it was known that anything was wrong. The practice of running long lines of sewer pipes under the basement floor is bad, and in any rules or laws laid down in the matter by our sanitary department an effort should be made to correct this evil.




"The accompanying sketch shows one plan of trapping and ventilation that is about as effective as it is possible to get such things; but trapping alone will not do. I know of one case in point, where one of our citizens, a builder, went on trapping in his efforts to keep the sewer gas out of his house, until he had no less than four traps in the sewer between his house and the main sewer besides the traps under the different plumbing apparatus, and in spite of all this his house was at times filled with sewer gas, but on his putting in a ventilator the trouble ceased."

If Mr. Hughes will read the files of this journal, or any of the sanitary literature of the past two years, he will see more effective plans than the above, which does not show the best practice.

Branching a waste from a bath into dip of pan water closet trap is quite common, but nevertheless reprehensible. This trap generally has more or less filth in it, and whenever the closet is used, a puff of foul air is driven through the bath waste into the apartments. The bath should be trapped separately and drained directly into the soil pipe. The bowl and sink traps arranged as shown will be siphoned out when a pail of water is thrown into the water closet tray.

Mr. Hughes' objection to using a trap on the main drain to disconnect from sewer is based on an assumption of badly constructed work. *No drain should be under cellar bottom*, but should run along cellar wall with a good descent. There would then be little risk of stoppage at main trap. We consider the plan shown on page 36 of January issue of this journal as more safe and effectual than the above.

We had much pleasure in favorably noticing, in a previous issue, a pamphlet published by Mr. Hughes, because it contained many suggestions which for years past have received the approval of sanitary engineers, and if any city in Canada requires light more than another on sanitary matters, certainly it is Montreal—particularly as many of those suggestions have been totally ignored by self-styled plumbers with which this city abounds—but when Mr. Hughes publicly approved, by illustration, in a city paper which has a wide circulation, the pernicious practice of inserting the waste pipe of a bath into a water-closet trap, the public health is in danger. In a recent issue of this magazine we protested against this objectionable method of carrying off the waste water of the bath into a trap that is *always foul*, in fact, unhappily, we have experienced its bad effect upon the health of a family. We again most strongly condemn this most reprehensible habit of plumbing, and the only excuse foreman of plumbers could give for it when questioned on the subject was, "that it was the custom and every plumber did it." We are now pleased to find that our ideas are endorsed by so able an authority as the *Sanitary Engineer*.—ED. S. C.

## A WONDERFUL CLOCK.

We present our readers an engraving of a curious piece of mechanism, which is said to eclipse all former achievements in this direction, without excepting even the Strasbourg, which for so many years has been regarded as the great clock of the world.

Mr. Meier, of Detroit, Mich., is the maker, and his clock is the result of nearly ten years of patient labor and the expenditure of $7,000 in cash. The clock is eighteen feet in height, eight feet wide, by five feet deep, and weighs 4,000 lbs. It is of handsome proportions; the framework is entirely of black walnut, elegantly carved. Above the main body of the clock is a marble dome, upon which Washington sits in his chair of state, protected by a canopy, which is surmounted by a gilded statue of Columbia; on either side of Washington is a colored servant in livery guarding the doors, which open between the pillars that support the canopy; on the four corners of the main body of the clock are black walnut niches containing human figures, emblematic of the march of life; the two lower ones are supported by two female figures with flaming torches; one of them contains the figure of an infant, the second the figure of a youth, the third of a man in middle life, the fourth of an aged graybeard, and still another, directly over the centre, contains a grinning skeleton representing Father Time. All of these figures have bells and hammers in their hands. The infant's bell is small and sweet toned; the youth's bell larger and harsher; the bell of manhood strong and resonant; that of old age diminishing in strength, and the bell of the skeleton deep and mournful.

The astronomical and mathematical calculation, if kept up, would show the correct movement of the planets for 200 years, leap years included.

The clock shows the time at Detroit in hours, minutes, and seconds; the difference in time at New York, Washington, San Francisco, Melbourne, Pekin, Cairo, Constantinople, St. Petersburg, Vienna, London, Berlin, and Paris. The day of the week, calendar day of the month, month of the year, and seasons of the year. The signs of the zodiac, the revolutions of the earth on its own axis and also around the sun. The revolutions of the moon around the earth, and with it around the sun; also the moon's changes from the quarter to the half, three-quarters and full. It also shows the correct movement of the planets around the sun.

There is a movement in this clock which cannot regularly be repeated more than once in eighty-four years.

The inventor has a crank attached to the clock, by means of which he can hasten the working of the machinery in order to show its movements to the public; by turning continuously twelve hours a day for sixteen days and eight hours, a perfect revolution of the planet Uranus around the sun would be made.

At the end of every quarter hour the infant in his carved niche strikes with a tiny hammer upon the bell which he holds in his hand. At the end of each half hour the youth strikes, at