

work involved in the preparation of the plans, drawings, specifications and bills of quantities, and also the amount of superintendence by the engineer's staff necessitated by the character of the work.

When the works are designed in sufficient detail to enable a contract for their execution to be made or to enable the local government board to hold an inquiry into the propriety of allowing an authority to borrow money for the purposes of the works, but where the carrying out of such works is deferred indefinitely or abandoned, the fee for services up to this stage is one-half of the ordinary commission.

The council are advised that plans and specifications prepared by an engineer belong, as chattels, to the client, after payment of the agreed fees, both the copyright in all ordinary matter contained in such plans and specifications remains vested in the engineer. Neither the client or any other person is entitled to multiply copies of plans and specifications so far as the original matter therein contained is concerned; and further, if such original matter has "an artistic character or design" the plans can only be used for the purpose of the particular structure for which they were prepared by the engineer, or for such other purposes as he may authorize. Original matter in specifications is defined by counsel to be a composition or arrangement of the author—something which has grown up in his mind and would, if applied to patent rights, be called invention.

Charges for reports on engineering proposals must necessarily be largely dependent upon the extent of the inquiry and research upon which the reports are based and upon the professional standing of the engineer employed, and cannot therefore be dealt with in any scale of fees.

Remuneration for services in preparing for and giving evidence before parliamentary committees or other tribunals, generally consists of a preliminary fee and a charge per diem while engaged upon the preparatory work and during the hearing of the inquiry, as well as all out-of-pocket expenses.

AMERICAN WATERWORKS CONVENTION.

WATERWORKS superintendents should direct their attention to Superintendents' Day (May 13th) at the 35th annual convention of the American Waterworks Association to be held in Cincinnati, Ohio, during the week of May 10th. The entire day and evening will be devoted to practical papers, of interest to waterworks operators; answering questions; and a general discussion of practical waterworks subjects. The following short practical papers will be taken up at this session, *viz.*:

"Assessing Cost of Extensions in Municipally Owned Plants," by D. A. Reed.

"How to Determine Size of Tap and Meter," by Jacob Klein.

"A Mercury Column Alarm for Stand Pipes," by W. E. Haseltine.

"Water from Gravel Wells," by C. N. Wiles.

"Difficulties in Designing and Operation of Medium Sized Waterworks Plants," by E. B. Black.

"Plumbing and Control of Plumbers," by Scotland G. Highland.

"City Fire Limits," an illustrated lecture by Albert Blauvelt.

"Pneumatic Pumping as Applied to Municipal Plants," by John Olyphant, illustrated with lantern slides.

"Artesian Wells and Methods of Pumping Them," by John D. Kilpatrick.

Question Box.—The following questions have been propounded and are typical of those that will be discussed:

1. Experience in the use of caps instead of plugs on dead ends and unconnected branch pipes—is there any economy or advantage in the use of such caps?

2. What legal right has a water company to the use of public streets after the expiration of its franchise?

Experiences of water companies whose franchises have expired, especially in cases where duplicate public works have been built.

3. What experience have you had in the use of lead wool for joints in cast iron pipe? Is it as economical and satisfactory as melted pig lead?

4. Is it your practice to test new water meters or meters repaired at the factory, or do you rely on the factory tests?

If tests of such meters are made, do they indicate that the new or factory repaired meters are accurate, or not?

5. Are meter bills of municipal waterworks a lien on property? If so, how are they regulated?

A long list of topical subjects has been presented to the membership for oral or written discussion.

IMPROVED DESIGN OF AUTO FLUSHER.

What appears to be a most comprehensive and serviceable machine for street sprinkling and flushing, has just been designed and built by the Tiffin Wagon Co., of Tiffin, Ohio. The new machine consists of a 3½ tons capacity motor truck, of conventional design, upon which is mounted a 900-gallon tank, with devices that allow power pressure flushing, power pressure sprinkling, or gravity sprinkling. The machine is a most efficient one, compared with the horse-drawn gravity sprinklers in general use throughout Canada, and is worthy of note as a decided advance in scientific street cleaning methods.

For propelling the truck over the street, a four-cylinder motor is used, located forward under the hood as on any motor truck. Pressure for flushing and sprinkling is produced by a second four-cylinder motor, mounted at the rear, with separate ignition and cooling system, but taking its gasoline supply from a common tank. The pump for pressure is of centrifugal type, giving up to 60 pounds pressure, and is in no wise connected with the vehicle propelling mechanism, thus allowing the operator to change the vehicle speed at will without affecting the water pressure. All controlling devices, both for running and for sprinkling or flushing, are convenient to the operator's seat.

The two flushing nozzles are provided with universal ball and socket joints, enabling the operator to throw two streams on one side of the street, or at any angle desired. The nozzles being well to the front, their work is always observed. The sprinkling nozzles, which are located at the extreme front, can be operated by pressure or gravity as desired. So successful is this pressure machine in operation, that it has a range to cover the widest streets found anywhere. While it would ordinarily be most convenient to fill the machine from hydrant or stand-pipe, it is capable of pumping its charge from rivers or cisterns.