control of the attendant.

2. The tank must be filled, but this must be done with the gravity system. If in a city the tank may be filled from the public supply and kept as a reserve and the pneumatic system lends itself to a similar use, the public supply can be turned into the pneumatic tank, and it will take all the supply and pressure it can give, which is more than the gravity tank can do, as its pressure is limited by the height of the tank.

The pneumatic system has this failing: The pressure will fall as the air becomes absorbed, and it will require air to be introduced to keep it to standard. As to pumps—they may be worked by hand or power—by steam, gas, or gasoline or hot-air engine, windmill water power if available, or electric motor.

These details are technical and need not be discussed, as they will vary with the locality to be served.

Cost.

The question of cost is of more than ordinary moment, and I will quote from advertised prices of manufacturers that guarantee results. (It is evident that names can not be given here).

Outfit, $39.85; steel tank, 140 gallons, tested to 125 lbs. pressure to square inch; pressure gauge, self-cleaning water gauge, brass hose bib, brass double acting force pump (water and air). This outfit does not include suction pipe to the well, nor distribution pipes, which vary with the service demanded. Larger tanks vary in price from $15 to $50; extra will give tanks varying from 220 to 700 gallons. The small tank requires frequent replenishing, and a larger one is preferable for many reasons. Outfit, $64.75, in addition to the above, furnishes a 30-gallon (kitchen) hot-water heater, with connections for water discharge, at six different places. Outfit, $137.70, fits up kitchen, bathroom, water-closet, and all fixtures, as well as outfit for pumping and distributing the water.

Gasoline engine, $55.78. 1½ horse-power engine, with trucks, belt pulleys, pump jack. This can be used for any other engine work, as well as pumping.

It may be noted that the framework for supporting a gravity tank would alone cost more than the whole outfit, including bath-room, water-closet and hot water and all house fixtures.

Fire Protection.

We are apt to overlook the very numerous losses by fire that take place in ex-urban localities. Looking at them as unavoidable, though this may to some extent obtain, yet there can be much mitigation of loss were there facilities for fire protection aside from the lower insurance premiums that an up-to date water service would confer.

Allow me to describe a condition I have too often seen, and similar ones can be recalled by most people resident in the country and smaller villages:

Carelessness or a wandering spark ignites an outhouse and flames spread rapidly, there is but little help available, and this may be chiefly the female members of the household. The flames, uninterfered with, creep along from one part of the roof to another, leap an intervening space and seize another structure, and so on until everything is more or less consumed. There is plenty of water in the well or adjacent brook and mayhap 5 to 50 willing hands to help that are paralyzed by conditions. A few buckets of water rightly placed would stay the progress of the flames, but how many ordinary people are able to negotiate a slippery, steep, slanting roof, and even if this be attained the advancing heat must be contended with on a very insecure foothold. A few bolder spirits may face the difficulty with more or less success, but how are they to get water up there and how place it so that it will do the most good, under projecting eaves and in exposed places mayhap licked by the flames—quite an impossibility—for the heat of the advancing flames paralyze any attempt to get near enough to the exposed place with the saving water. Ladders may not be available, and if they be are most likely out of commission from fragility or out of repair, as anything not in daily use is apt to be.

How often have I seen a blazing spark light on shingles at a distance from the main conflagration that a cupful of water would quench, yet the whole structure doomed to destruction, because the roof was too steep for unskilled travelling on, or means of access to the roof unavailable even if the heat of the flames did not interpose.