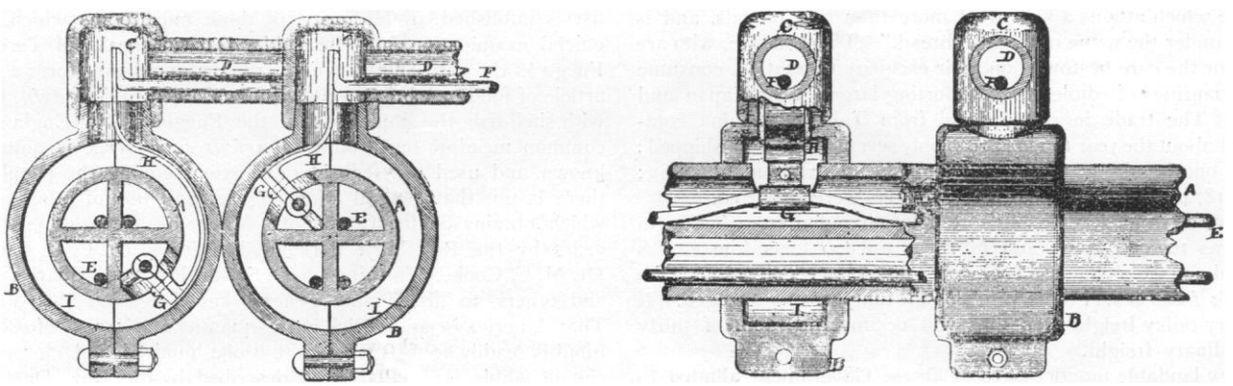
for the filthy water supplied to almost half the people of the State, it is of incalculable value, and there should be no delay in securing its health-giving benefits.

The artesian wells bored at various points on the Atlantic coast between Sandy Hook and Cape May continue to yield a supply of good and wholesome water, and some very satisfactory ones have been sunk along the Delaware.

THE MEDBERY UNDERGROUND SYSTEM.

WE have to record this time another instance of the moving in cycles of human progress. As the first water-pipes for distributing water through towns were made of wood, to be afterwards made of iron and iron and cement, so now an inventor has produced a wooden pipe, not necessarily for use in conveying water, but more especially for use as a conduit for electric conductors. This pipe is made from long wood fibres, separated, washed free from saps and gums, and then moulded while in a pulpy state into the requisite size and shape, being subjected to great hydraulic pressure. After this it is treated and hardened by a chemical process, that, it is believed, renders it impervious to moisture, acids, or gas. The piping looks not unlike iron, but is, of course, much lighter, and is made in sections which can be joined by threads, like iron pipes, with a sleeve coupling. The pipes can be made continuous, thus preventing gases or moisture coming in contact with the enclosed wires. Each conduit is divided into four or more compartments, as shown in the illustrations; and the wires occupy separate ducts, which precludes the possibility of cross-circuits. The question of insulating wires is one of considerable importance, and the expenditure is necessarily very great; but in this conduit, by reason of the high insulating power of the material, expensive insulation of the wires is avoided.



FIGS. 1 AND 2.—THE MEDBERY UNDERGROUND SYSTEM.

Another noteworthy feature of this system is the method of distributing to houses and street-lamps. Usually it is necessary to make provision for this when laying the conduit, which is necessarily very expensive; but by this system side taps and connections can be as easily made at any time after the conduit is laid, and without serious expense, as will be explained from the accompanying illustrations, Figs. 1 and 2.

When desiring to make connection with the main line, the conduit is exposed at any point, and an opening is cut in it in any preferred manner. It is usually drilled. The wire is then lifted from its resting-place in the conduit, through the hole in the conduit; and the two parts of the metallic clamp *G*, being first separated, are put over the wire, and firmly attached thereto by means of a screw. The clamp has a chamber into which a suitable metal or solder is melted or fused, making a perfect contact and permanent joint. The two sides of the casing or connecting box (which, it will be seen, has a recess or hollow interior) may be filled with suitable insulating-cement while in a plastic state, and they are then placed about the conduit in such a manner that the extension of the clamp *H* projects through the neck of the casing, as shown in the cut. The bolts are then inserted in the lips of distributing-duct *B*, and screwed up. The cap *C* is then applied, and forced firmly down upon the tapering neck of the casing, after being properly cemented. The branch wire is then connected with the extension from the clamp *H*, and, when it has been passed through the first length of the branch conduit *F*, the branch conduit is screwed into the threaded hole in the side of the cap *C*, or, preferably, cemented into place. The branch line can thus be extended as far as may be desired. Thus far in the process, connection has been made with one wire only, either the negative or the positive wire, but of course the connection with the other wire will be made in a similar manner.

The system as above outlined is being introduced by the American Indurated Fibre Company of Mechanicsville, N.Y., from whom further information may be obtained. It may be mentioned that satisfactory practical work with it has been done by the Bell Telephone Company of Philadelphia, the Pennsylvania Railroad Company, and other parties.

EDIBLE MUSHROOMS OF THE UNITED STATES.

FOR several years past the division of microscopy of the United States Department of Agriculture has been in receipt of numerous letters from regular correspondents and others, from which it appears that in various localities, representing almost every section and climate of the Union, there are found large quantities of edible mushrooms and other allied fungi; few of which, however, are utilized, owing to the inability of the great majority of the people to distinguish the edible species from the poisonous ones. To obtain some clear and trustworthy criteria by which to make this essential distinction has been the object of the various communications received; and in view of the highly nutritious properties of this class of esculents, and of the great possible value of their aggregate product as indicated by the vast quantities produced in countries where attention is given to their cultivation, the importance of a satisfactory answer to these inquiries will be readily appreciated. This answer is given in a little pamphlet on twelve edible mushrooms of the United States, illustrated with twelve colored types, by Thomas Taylor, M.D., microscopist of the Department of Agriculture, Washington, D.C.

Rollrausch and Siegel, who claim to have made exhaustive investigations into the food-values of mushrooms, state that "many species deserve to be placed beside meat as sources of nitrogenous nutriment;" and their analysis, if correct, fully bears out the statement. They find, in 100 parts of dried *Morchella esculenta*, 35.18 per cent of proteine; in *Helvella esculenta*, 26.31 per cent of proteine, from 46 to 49 per cent of potassium salts and phosphoric acid, 2.3 per cent of fatty matter, and a considerable quantity of sugar. The *Boletus edulis* they represent as containing in 100 parts of the dried substance 22.82 per cent of proteine. The nitrogenous values of different foods, as compared with the mushroom, are stated as follows: "proteine substances calculated for 100 parts of bread, 8.03; of oatmeal, 9.74; of barley-bread, 6.39; of leguminous fruits, 27.05; of potatoes, 4.85; of mushrooms, 33.0." A much larger proportion of the various kinds of mushrooms are edible than is generally supposed, but a prejudice has grown up concerning them in this country which it will take some time to eradicate. Notwithstanding the occurrence of occasional fatal ac-