

**THE METROPOLITAN RAILWAY OF PARIS.**

The project for a metropolitan railway submitted by the State for the examination of the General Council of Bridges and Roadways, as well as to that of the Municipal Council of Paris, has been definitely adopted by the Government, and declared of general interest. It will probably be the object of a concession to a special company, which will undertake its construction and operation without requiring either any subvention or guarantee of interest.

According to the proposed scheme, the railway will be subterranean for the greater part of its length. Starting from Puteaux, the passenger will pass under Grande Arme Avenue, the external boulevards, Rome Street, Boulevard Hausmann, and the great boulevards, and will not emerge into the open air until he reaches the Bastille. Such is the principal route.

The city will gratuitously concede the subsoil of the wide streets that we have just named, and it is owing to this that the cost per kilometer will be reduced to the expense of constructing the long tunnel and the two tracks.

The passenger will descend to a depth of about 8 meters, and will travel beneath the earth, just as if he were in the Saint Gotthard Tunnel.

Is it possible to give the public of Paris, which is essentially artistic, complete satisfaction? Can it be offered easier and more rapid travel than it has at present? On another hand, can it be shown at the same time in these multiple routes the different panoramas of the great metropolis? Yes, most certainly, provided that more is spent, and, consequently, that the company is subsidized or guaranteed a minimum of interest.

The entire question of elevated or of an underground line is reduced to this question of cost. It is well said, it is true, that underground traveling is performed at London; but it is not always added, when this question is being discussed, that the London company is making enormous sacrifices every year to bring to the light and air every part of its line that it is capable of getting out of the darkness and sulphureted atmosphere that fill this long tube.

And then, should we not offset the example of London by that of New York, Berlin, and Vienna, where traveling is everywhere done above the surface? Should we copy the old English city railways, or should we do like the American and our neighbors across the Rhine? Such is the question, and the answer to it does not appear doubtful.

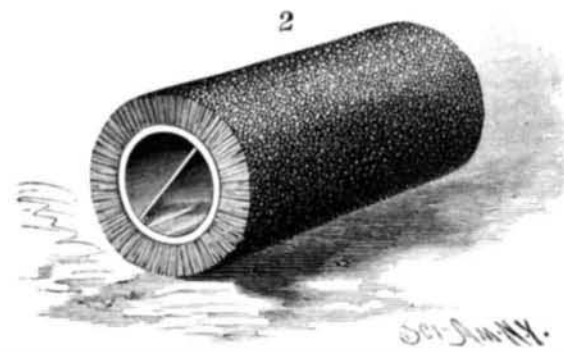
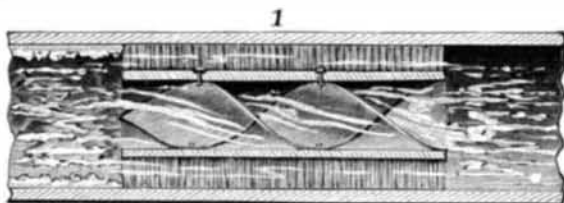
However this may be now, or a little later on, when the subterranean will be doubled by an aerial one, there is one side to the aerial problem which has served as a theme for partisans of the underground project, and that is the one relating to traversing the boulevard. It has been contended that this aerial road is impracticable because it will injure the aspect of that thoroughfare.

of the Metropolitan, or by reaching it through houses whose interior, being of less value than the parts in front, may be traversed without necessitating so great expenses.

It was in order to try one of the thousand possible solutions of such a mode of crossing the avenue that we some time ago took up our pencil and made the sketch which is herewith reproduced.—*Le Genie Civil.*

**PARAFFINE BRUSH.**

Crude petroleum in its passage through pipes deposits paraffine on the surface of the pipe, thereby obstructing and sometimes stopping the flow. In very short pipes it is a simple matter to remove the deposit by means of rods or scrapers, but it is impracticable to clean out long lines by ordinary methods. The object of an invention lately



**THOMAS' PARAFFIN BRUSH.**

patented by Mr. Henry C. Thomas, of Rock View, N. Y., is to provide means of clearing away the paraffine by mechanical agency without the use of solvents or heat. The clearing device is made in the form of a hollow cylinder, to which is attached a series of wire cutters projecting radially from the exterior. One or more blades, made of metal in spiral form, are arranged within the cylinder, as shown in the engraving. The cylinder is so proportioned that its length is about four times its diameter.

The cleaning device is inserted in the pipe, where it is pushed forward by the flowing liquid, the projecting wires loosening any paraffine that may slightly adhere to the walls

**MILK.**

The following synopsis, by the *Sanitarian*, of a paper by Dr. Dougall, of Glasgow, detailing experiments conducted with a view to discovering the absorptive power of milk on various volatile substances, will be of interest:

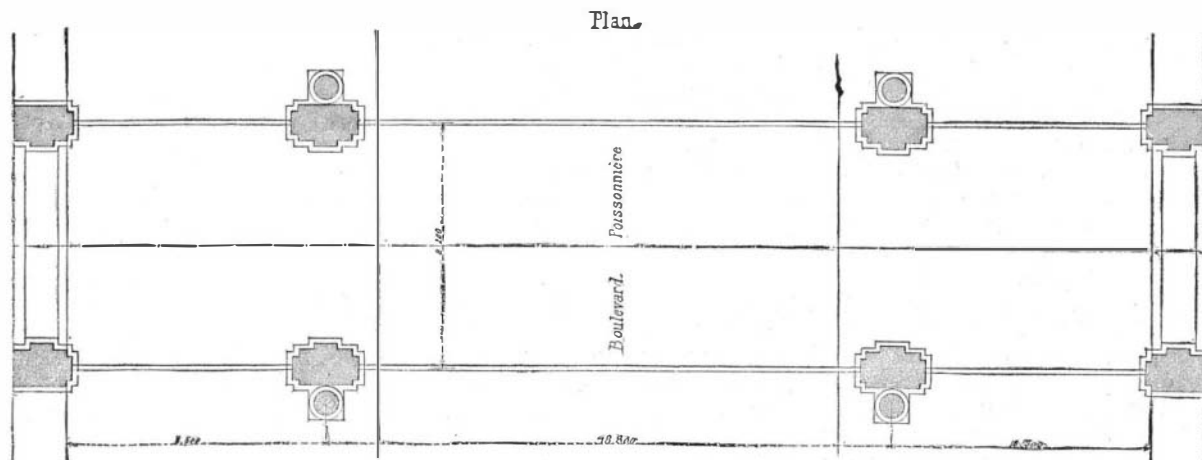
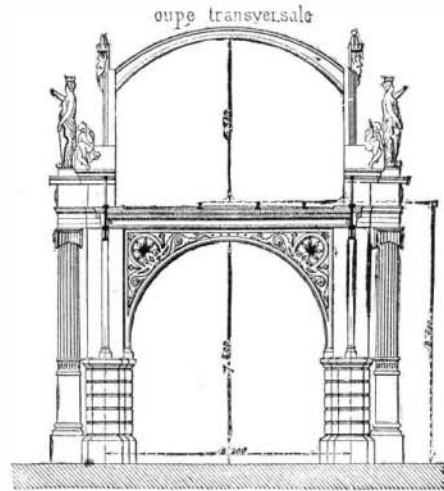
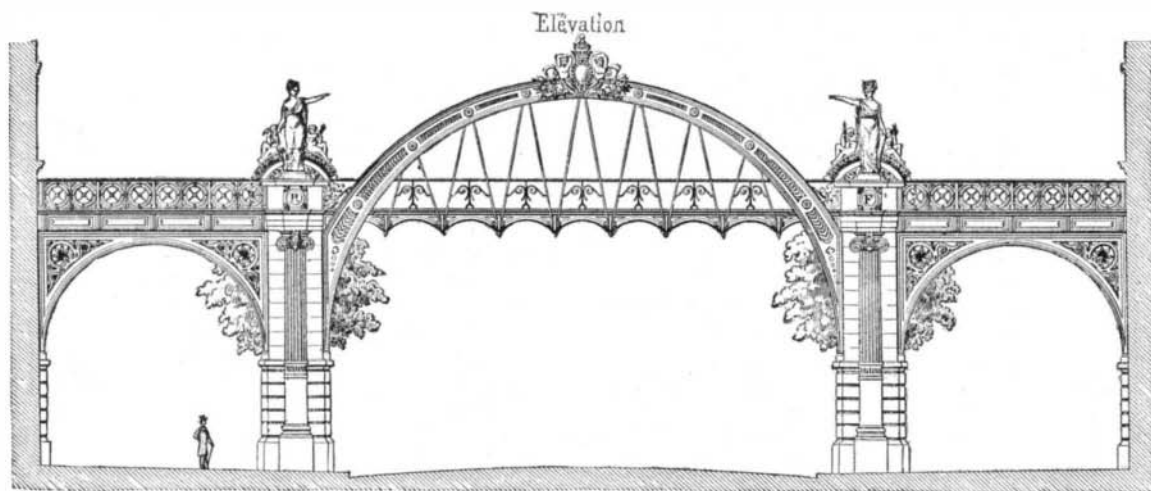
Dr. Dougall inclosed in a jar a portion of certain substances giving off emanations, together with a uniform quantity of milk, for a period of eight hours. At the end of that time a sample of milk was drawn by means of a pipette from the lowest stratum of the vessel exposed in the jar; and we find that the following were the results of his experiments:

	Smell in milk.
1. Coal gas .....	distinct.
2. Paraffine oil .....	strong.
3. Turpentine .....	very strong.
4. Onions .....	very strong.
5. Tobacco smoke .....	very strong.
6. Ammonia .....	moderate.
7. Musk .....	faint.
8. Asafetida .....	distinct.
9. Stale urine .....	faint.
10. Creosote .....	strong.
11. Cheese (stale) .....	distinct.
12. Chloroform .....	moderate.
13. Putrid fish .....	very bad.
14. Camphor .....	moderate.
15. Decayed cabbage .....	distinct.

It thus became obvious that the milk had absorbed the emanations of all the substances to which it had been exposed, and it further transpired that all the specimens examined retained their distinctive odors for as long as fourteen hours after their removal from the glass jar in which they had been exposed.

Cream, according to Dr. Dougall, may be regarded as acting in much the same manner as milk; indeed, although it contains less water than milk, yet it has special qualities of its own, which may perhaps make it even more liable to retain offensive and dangerous emanations than the parent fluid itself. Abundant evidence has, however, been given to show that far more care is needed in connection with the storage of milk than has heretofore been regarded as necessary, and this especially where milk or cream is kept in apartments or wards occupied by sick persons. If the emanations to which the milk is exposed are of a diseased and dangerous quality, it is all but impossible that the sample can remain free from offensive and dangerous properties; and it should become an invariable rule to keep as little milk as possible in sick rooms, and never to allow a supply which has been thus exposed to unwholesome emanations to be used for food.

Under these circumstances it has been lately held desirable to boil all milk which is open to suspicion before using it. In the course of several epidemics in which milk has acted as the vehicle of infection, it has been noticed that



**THE METROPOLITAN ELEVATED RAILWAY, PARIS.**

It goes without saying that it scarcely seems possible to construct an elevated railway longitudinally to this so frequented avenue, which, although it formerly appeared to us so spacious, has become insufficient because of the ever increasing travel therein.

Moreover, it will not do to hide the Madeleine and the Opera House, or the gates Saint Denis and Saint Martin. It is necessary, then, to cut this principal artery perpendicularly to its axis, either by new streets opened for the peculiar needs

of the pipe. Should the wires come in contact with a deposit of sufficient thickness to check the motion of the brush or to stop it, the force of the current will then act upon the spiral blade, causing the device to rotate and cut away the obstruction.

OUR Government has now \$170,000,000, or 600 freight car loads, of silver dollars piled up in its treasury vaults, and is still manufacturing at the rate of two millions a month.

persons who had only consumed it after it had been boiled escaped all ill results, whereas other members of the same family or community, who had not taken that precaution, had been attacked with disease.

**The Men Who are Promoted.**

The *Manufacturers' Gazette*, in a recent editorial, made the following statements, regarding young men and their advancement, which others than the class to whom it is addressed will do well to heed:

"The young men who receive promotion are the men who do not drink on the sly. They are not the men who are always at the front whenever there is any strike, nor are they the men who watch for the clock to strike twelve, and leave their picks hanging in the air. They are not the men who growl if they are required to attend to some duty a few minutes after the whistle has sounded. They are the men usually who pay the closest attention to the details of their business, who act as if they were trying to work for their employer's interest instead of to beat him at every crook and turn. They are the men who give the closest attention to every practical detail, and who look continually to see whether they can do any better or not. This class of men are never out of a job. They are scarce. They never strike, they never loaf, and they do not ask for their pay two or three weeks before pay day."