

dynamite is exposed for a long time to a temperature of 90° or higher, it becomes more sensitive to shock and may lose strength by exudation. In some thaw-houses, the steam coils are placed at one end of the building, in others, in the centre with the shelves on the walls, in others again, along the walls while the shelves are in the centre. The United States Bureau of Mines has advocated the construction of an extension in which the steam pipes shall be placed. The racks must be placed some distance away from the heating pipes. The building should have an ante-room opening into the room where explosives are thawed, to guard this room against any sudden change in temperature. The racks must be thoroughly cleaned and washed at least once a month.

No caps and fuses should be kept in the thaw-house. Fuses should be kept in a cold place.

Hot Water Heat.—The low-pressure steam coils of the previous type of thaw-houses, have been replaced at certain mines by hot-water coils. The same precautions which have been advocated for the steam type of thaw-house must be taken with the hot-water type. The water-heater, stove, furnace, etc., must not be nearer than twelve feet from the building in which the explosives are being thawed, and should be well protected from fire. It is claimed that this system has the advantage, over the low-pressure steam method of giving a much more uniform heat.

Hot-Air Heat. Some thaw-houses are heated by hot-air circulation. As for hot-water heat, the stove warming the air, and thus creating the circulation, must be situated at a distance not less than 12 feet from the thaw-house. This system, which has the advantage of being cheap, is not to be recommended, since as for hot-water heat, the source of heat is too near the thaw-house. It is difficult to regulate the heat. The conduit of hot-air may at a certain moment, if a defect in the chimney occurs, give passage to the smoke and gases, and perhaps also flames, from the stove, which could create quite a nuisance in the thaw-house, and perhaps be the cause of an explosion. As a general rule, wood-burning stoves or furnaces should not be erected near thaw-houses, as they often give out sparks during a strong wind, which might set fire to the surrounding buildings.

A better method of warming the air used for thawing explosives is by the use of an electric heater, either of the electric resistance or cluster lamps types. These two methods have been employed with success especially in underground thawing rooms. Again, the above rule given for the previous types of heater is to be applied. The electric heater must be placed at a distance of at least 12 feet from the explosives, in a special fire-proof box, room or building.

It must be remembered that electric heaters are less efficient and less safe than low pressure steam. Sparks and flashes may be produced, which are sufficient to ignite a fire and cause an explosion. It is also very difficult to regulate the temperature.

Of all these methods the low pressure steam heat is by far the safest.

The extra expense of constructing a pipe line to take in the steam from the exhaust of the engine room will always be warranted by the satisfaction obtained and the safety secured in thawing the explosives.

Underground Thaw-house.—No more than a twenty-four-hour supply must be taken down into a mine. The thawing-room must be located in an out-of-the-way drift, in such a way that an accidental explosion would not cut off the escape of the men working in the mine.

A very serious danger in an underground magazine and thaw-house is lightning, which may cause the explosion of the dynamite stored therein. Cases such as this are known to have happened.

CITY ENGINEERS MUST DESIGN MONTREAL AQUEDUCT POWER HOUSE.

The city engineers of Montreal must prepare plans for the power house in connection with the aqueduct enlargement, according to a decision reached last week by the aldermanic committee appointed to study the recommendation of the board of control, asking for a special credit of \$45,000 to engage consulting engineers for the preparation of the plans.

The aldermen thought that there are enough employees on the city engineering staff to make it unnecessary to pay extra for such plans. The aldermen said that the board is at liberty to retain the services of one or two engineers, should the present city engineers be unfit, but they thought that there was every reason to believe that the present staff could cope with the situation, although it should be necessary to have these plans approved by some expert.

The recommendation for the credit of \$45,000 came from Controller Cote and the only controller who opposed it was Mr. Villeneuve. At the time, Mr. Cote stated it was his intention to ask Henry Holgate, a consulting engineer, to undertake the preparation of the plans. Members of the aldermanic committee stated that they had no objection to Mr. Holgate personally, but were against the principle of hiring "outside" engineers.

FORD CITY PLANS OWN WORKS.

Ford City may withdraw from the Essex Border Utilities Commission and construct their own waterworks and sewers instead of building jointly with the city of Windsor and the towns of Walkerville, Sandwich and Ojibway, and the township of Sandwich West. Owing to the location of Ford City, however, their withdrawal would not necessarily interfere with the construction of joint works by the other municipalities mentioned.

The Ford City council last week appointed the firm of Aird Murray & Lowes, consulting engineers, Toronto, to prepare plans for a sewer system and for sewage treatment plant. If a satisfactory system can be devised and tenders secured for the sum which the Ford City council think should be spent, it is likely that Ford City will go ahead with the work at once without waiting for the joint scheme. If the cost of the individual scheme appears excessive after the plans are prepared and the tenders are opened, Ford City will then likely decide to stay with the other municipalities in the joint scheme.

Morris Knowles, consulting engineer of Pittsburgh, is consulting engineer for the joint scheme appointed by the Essex Border Utilities Commission, which consists of the mayor of each of the six municipalities and one other member representing each municipality. These twelve commissioners also appointed a board of engineers consisting of the following: M. E. Brian, representing Windsor; Owen McKay, representing Walkerville; Morris Knowles, representing Ojibway; Owen McKay, representing Ford City; R. McColl, representing Sandwich; and J. J. Newman, representing Sandwich West.