Romicke & Curtice, 359 Strand, London, Eng., have sent us a copy of what is believed to be the first and only type written journal in the world It is called the *Journal of Universal Information*, and is published weekly at 1d. a copy. The sample before us is certainly interesting. It is all type-written except the cover.

The report of the city engineer of Quebec (Chas. Baillairgé, C E.) for the past two years has just been issued During the two years 5,000 square yards of block stone paving, and nearly eight miles of macadam were laid down, with 660 yards of stone and cement sidewalks and crossings, besides wooden walks. A great deal of work has been done on embankments and retaining walls, which are a large item of expense in a city so hilly as Quebec. The value of street work done in the period was $158,675. A number of streets have been widened or opened at considerable expense. Three new fire stations were built and equipped. Architecturally old Quebec has not stood still, for buildings of various kinds, to the value of $1,841,944, were erected. Mr. Baillairgé, with his usual thoroughness, has provided a clear and serviceable table, giving details of all the work done during the period under review, and he also gives a list of works that are designed to be carried out in the near future.

The annual report of the civic government of Halifax, N. S., has been received It is a document of 230 pages, of which 28 pages are devoted to the engineers' department, presided over by F. W. W. Doane, C. E. Referring to the work on the new low service main to Chain Lakes, Mr Doane mentions that when the pipes were purchased in Scotland, Ewan Morrison, foreman of the department, was sent to Scotland to inspect the pipes before shipment. "It was claimed at the time," observed Mr. Doane, "that no inspection was necessary on the other side, and that the pipes could be inspected more economically after their arrival in Halifax. However, on the recommendation of your engineer, Mr. Morrison was sent, and his arrival at the foundry showed at once the value of his services to the city and the necessity for inspection, by condemning all the pipes then cast. The expenditure of a few hundred dollars in inspection saved us many thousands that must have been paid out after the delivery of the pipes" The work on the dams at Spruce Hill Lakes was continued last year During the year 9,644 lineal feet of sewers were completed, and the substitution of concrete catch-pits for the old holes in the drain is being continued. The sanitary condition of the private houses which, in the absence of regular inspection, was very bad, is now rapidly improving since this branch has been put under the control of the engineer.

We have received from the United States Department of the Interior the "Census Bulletin," dated April 6th, 1894, which gives statistics relating to all the principal industries carried on in that country, comparing 1890 with 1880. Amongst others, we notice the tem "iron and steel" (not including finished products); in 1880 the number of establishments reporting was 1,005, the capital being $230,971,884, and the value of the product turned out $296,557,685, the figures for 1890 being respectively 645, $373,478,018 and $430,954,348. In the nail and spike industry the number of establishments engaged in 1880 was 62, the amount of capital $3,877,805 and the value of product $5,629,240; whereas ten years later, the number of establishments engaged was 138, the capital $24,334,549 and the value $34,227,517. In shipbuilding, the amount of capital increased from $20,979,874 in 1880, to $53,393,074 in 1890, and the value from $36,800,327 to $40,342,115. The "Bulletin" gives a very full and detailed account of all the industries in the United States, the value of the aggregate products of which amounts to $30,000,000 or more, and the number of employees, average amount of wages, cost of materials used, capital, operating expenses, etc, etc, are given for each branch of manufacture, the individual figures being shown for every State of the Union.

ELECTROLYTIC EXTRACTION OF GOLD.

The extraction of gold in a simple and economical manner by an electrolytic process, capable of dealing with every kind of refractory ore, is stated to be the lately accomplished result of long study and experiment on the part of a London chemist. There are several electro-chemical processes already in use for obtaining gold from refractory ores, in which such deleterious substances as sulphur, iron oxide, arsenic, zinc, etc., are associated with the gold. But it is found that no one particular process is available for every class of ore. Hence much money is often expended on an extensive plant for treating a certain kind of ore, which has to be abandoned or supplemented by another plant when the character of the ore changes.

The main requirements in these processes are: First, the circulation of the pulverized ore between positive and negative poles; second, a solvent liquid for the gold; third, means of collecting the electrolyzed gold; and fourth, the construction of the positive pole.

In the new universal process the first requirement is met by having a screw propeller set vertically near the bottom of the ore tank. The solvent is a dilute solution of potassium cyanide, and the collection of the gold is effected by a bath of mercury, which constitutes the negative pole. The positive pole consists of a mixture of powdered plumbago and powdered pitch or resin, consolidated by heat.

In operation, the ore, mixed with a certain proportion of water, is placed in the tank, with the bath of mercury at the bottom. On starting the screw, the mixture circulates down the centre of the tank and impinges gently upon the surface of the mercury. It then travels up the sides of the tank, which are conical, and on which the positive pole is laid, and back, down to the centre, to be again driven into contact with an active instead of a sluggish mercury surface, over and over again, until every particle of gold has been seized and absorbed.

It is stated that some of the most refractory and typically difficult ores have been submitted to this process, and that in some cases over 90 per cent. of the contained gold was extracted.

The chief advantages claimed for the process are that the gold is extracted directly from the ore without any other preliminary treatment than crushing; that the same chemicals are used over and over again; that the process efficiently extracts the gold and silver from the auriferous ores, whether refractory or free; that the precious metals are obtained at once from the amalgam in the metallic state, without further chemical treatment, and that any workable quantity of ore may be treated, in one vessel at one operation, and the gold obtained in one day.

WHAT IS STEAM?

The above question is frequently asked of engineers nowadays, and although they make constant use of steam, very few will answer that "steam is an invisible gaseous fluid, generated by the aid of heat from water." Many of them when told that steam is invisible, laugh and say they know better, because they see it every day. If one of these men who claim the honor and name of practical engineers will take a look at the water glass in the boiler room, if they have one—if not, let them look at the one on their neighbor's boiler, and then tell if they can see any steam inside of it. If the glass should happen to burst while they are making the observation they will, no doubt, see plenty of what they call steam in the vicinity, and they might also see the same if the safety valve should happen to blow off. Why, then? Simply because steam is invisible, and so long as it is confined you cannot see it, but when it is cooled off, as when it comes in contact with the air, and is consequently condensed again to the water from which it originated, it becomes visible to the eye, like water in very small particles, as in a fog. Viewed at such times it has lost its characteristics as steam, and instead of being a gaseous fluid it has become condensed to water in very small particles, which occupy considerable space. When in this condition we see what we call steam, but when an engineer notes the flow of steam, from gauge cock or safety valve, he will notice that near the opening nothing is visible, while at some distance he sees fog The reason of this is that at all times steam is invisible while it remains steam, but by condensation and the formation of water a fog is produced, which can be seen and distinguished in no way from fog which rises from rivers, swamps or other bodies of water during such times as the temperature and other conditions are favorable to its formation.—*Machinery*.

FOR CEMENTING IRON.

The following mixture has been used, says a contemporary, with the greatest possible success for the cementing of iron railing tops, iron gratings to stoves, etc.; in fact with such effect as to resist the blows of a sledge hammer. This mixture is composed of equal parts of sulphur and white lead, with about one-sixth proportion of borax, the three being thoroughly incorporated together, so as to form one homogeneous mass. When the application is to be made of this composition, it is wet with strong sulphuric acid, and a thin layer of it is placed between the two pieces of iron, these being at once pressed together. In five days it will be perfectly dry, all traces of the cement having vanished, and the work having every appearance of welding.