MEXICO.

From Our Own Correspondent.

MEXICO, Jan. 29, 1857.

I send you the editorial of the *Heraldo* of to-day, which will give you as good an idea of the situation of things here as may be desired for the present:

"THE PRESENT SITUATION.

"We are about to write a few notes upon the present situation of the Republic, without making any comments thereon, because we are in want of precise data necessary to give them force to act upon the mind of the Supreme Government and of our readers. In the interior of the country the discontented still continue their work; under their protection various bodies of men adopting their flag, sack and destroy the villages and towns, and commit assassinations. The same malcontents who proclaim *religion* and *privileges of the clergy*, seize upon money deposited under the safeguard of the flag of H. B. M., and thus increase the difficulties of the present Government. Exterior relations also appear compromised. Everything indicates that the difficulties with Spain will not be arranged in a pacific manner; nevertheless much account should be made of the prudence of her Government and the good disposition of ours. Things have arrived at that pitch when the least strain will break the band that unites the two nations.

"The situation of the country is, therefore, serious; but we will not say that it is desperate. One of the events which in appearance may have an influence is the progress of things is the publication of the fundamental code promised by the plan of Ayutla, already concluded by the Representatives convened for the purpose of making it. It was said that, constitutional order being established, which is so much desired by the nation, the Executive would remain without the power necessary to carry out the reëstablishment of peace, so necessary if it desired, as is believed, the happiness of the Republic. The plan of Ayutla, with notable tact, did not fix a term to the Dictatorship, nor for the Congress to complete the work recommended to them. [This must be a mistake.] The regeneration of the Republic cannot be verified within a certain number of months, however good might have been the will of the Government to reform all the branches of the Administration, and to correct the abuses that had taken root; to re establish the *moral* time has been wanting, because the enemies of the Government have occupied a great part of it. The Government has been under the necessity of flying constantly where the duty of re-establishing order called it. The Constitution is finished, but the country does not enjoy peace, and for the purpose of obtaining it the (supreme) power needs to be invested with faculties sufficient to enable it to act as circumstances demand.

"Seeing that the plan of Ayutla fixes no term for the Dictatorship nor the duration of Congress, as we have said, as the latter, beside the discussion of the constitution, has to revise the acts of the Executive, it is thought that both powers may continue as up to the present; the one dictating those measures it may deem proper for the fulfilment of the duty imposed by the said plan, and Congress to revise such of the former's acts as may be in conflict with the Constitution, which must be considered as the code to be observed

"The new Constitution fixes the period for the elections and for the formation of the Government. It will then prevail and all will be subject to it. Thus it is seen that that which appeared to threaten disturbance to the situation, by depriving the Executive of the power he now exercises in carrying his arms to all parts of the country to punish the disturbers of order, will have no influence.

"The present state, however, is not the less serious if the view be extended over the various sections of the Republic, and the exterior relations be taken into consideration. To sustain a continual struggle is the fate of the present Government. A painful task has fallen to its lot, but the greater will be its glory if it come off victorious."

It has been said here that there is a probability of the new Constitution's not being proclaimed—at least for a long time to come—and I should understand from the above editorial of the *Heraldo* that it was in reality the intention of the Government to defer its proclamation, and, in fact, any great change at present is much to be feared. The Government is pretty firmly seated now, and it is feared that the transit from the present state to a constitutional one, at this time, would give a chance for confusion, if not for the complete overthrow of the Liberal party.

The opposition have millions of dollars at their disposal, but they have no head—no person in whom they can place confidence enough or in whose hands they may place funds for revolutionary purposes—to command, in a military point of view; and this gives an equal strength to the Government. The two affairs of Puebla failed because the opposition had not the confidence necessary to invest their leaders with powers or money; the late revolt at San Luis has shown that the leaders of that affair are no more than a band of robbers, and *they*, of course, cannot be trusted; and as these together, which compose the mainstay of the opposition, have been thoroughly disgraced in the eyes even of the same opposition, and more especially in public opinion, it is not likely they can do anything for a long period yet to come. Were it not for the division and want of a head on the part of the opposition, notwithstanding the good-will toward the Government of Comonfort, it would have been overthrown before now.

I mentioned in a former letter that all the revolters of San Luis Potosi had taken to their heels on the approach of the Government troops. It appears, however, it was only the larger portion of them who left with the $240,000 they took from the English Consulate in that city, and the $127,000 arising from the forced loan imposed on the inhabitants. A portion of them remained in San Luis, and are now besieged by a part of the Government troops, and those that left with the money are pursued by General Parrodi, who, it is said, has them hemmed in near the town of Cadereita, in the State of Queretaro. Those that remained at San Luis *let out, as is usual, all the criminals, murderers and the like, from the prisons there, whom they enlisted in their service.*

The news from Sonora is that things there have become quiet. One of the Gandaras has come to this city to explain, his friends say, if necessary, his conduct.

Gen. Blancarte, the Commander-General of Lower California, has abandoned his post there without orders from the Government, and has brought all his forces, 500 men and 10 pieces of cannon to Tepic, where he arrived on the 22d inst. The cause of this is a profound mystery, but it is reported that he was on the point of starvation, and deeply in debt for the support of his garrison to all the inhabitants of property, and therefore chose the least of two evils and left his post. It is probable he brought his cannon to prevent their falling into the hands of any party of fillibusters that might happen along that way, or to raise a revolution against this Government should they attempt to proceed against him for leaving his post.

The matter of the new treaty between Mexico and the United States is now publicly talked about here, and has even got into the papers, but they do not manifest any opposition to it. I have not ascertained the terms but I understand that Mexico desires a loan of $25,000,000 from the United States Government, and in consideration of the same offers Lower California and the Isthmus of Tehuantepec as security for the payment of the principal within a fixed period. Besides, she offers advantages of a certain per cent in favor of American goods introduced into the Mexican ports. I understand, also, as a matter of course, that a certain cent out of this loan is to be reserved in the hands of the United States for the payment of the claims of American citizens against Mexico.

The British Chargé left this city a few days ago, having broken off his relations on account of the non-compliance of the Mexican Government against the robbers and murderers of Mr. Bermegillo and other Spanish subjects in the South. He required Mexico to capture and execute them within eight days. Mexico did make all kinds of efforts to do so, but could not even *arrest* them in that time, so the Spanish representative left for Vera Cruz.

HAVANA.

From Our Own Correspondent.

HAVANA, Feb. 8, 1857.

In a previous letter, for which I have been brought to account, I stated that New-Orleans had become the rendezvous of the Spanish slave-dealers. I still persist in the same belief. To my certain knowledge some ten or twelve Spanish vessels have been dispatched from there to the coast. Among the American vessels employed in the trade, I will only mention the brig Adams Gray, which was sold here to a Spanish house for $7,000, to be delivered in New-Orleans. She, probably, has already received her dispatch. The cargo of these vessels consists of lumber, rum, &c., and they all clear regularly for the coast of Africa. Dropping down the river, the vessel is turned over to her Spanish Captain, who has probably come on board as passenger. From the large number dispatched, and the facility offered to carry on the business, it would appear either that the authorities wink at it, or receive some compensation for their services. Many cargoes are now expected daily, most of which have been disposed of to arrive. An honest Chief of Police would soon discover what number of Africans has been introduced during the last two years by a careful examination of the Cedula books, which will be found to contain the most reliable evidence of the culpability of the Cuban Government in conniving at the continuance of the Slave Trade.

Sr. Don José Luarez de Argudin, the celebrated originator of the first company for the introduction of African apprentices, has just returned in the Spanish mail-steamer from Madrid, where he has been residing for the past six months. He has intrigued considerably with the Ministers for the furtherance of his "grand scheme," but has been entirely unsuccessful. England is opposed to it, and Spain has no other remedy than conformity to the stern will of her old ally. Mr. Argudin has been to considerable expense, printing circulars, publishing articles in the papers, &c., and complains bitterly of the backward tendency of Spain's actual rulers, who either do not or cannot view the thing in the same favorable light as he himself does. If Sr. Argudin would do as much for the benefit of the souls and bodies of his own negroes, without losing his time and spending his money in foolish plans to enslave, convert and civilize the native African, he would find himself better off in the end, avoid his frequent bankruptcies (I believe he has failed five times), and eventually succeed in tranquillizing his romantic spirit. Sr. Meana's project of introducing the inhabitants of Joló has also been laid on the dusty shelves of some Secretary's office, to become food to the moth. Poor fellow, he has been sued by a humble laborer for the paltry sum of $11! The Lord deliver us from such disinterested patriots!

The great Cattle Show at Güines has terminated. I have not seen any account of the cattle presented on exhibition, and suppose that this first Fair is considered as the beginning of the series. However, I have been informed by respectable parties that there was any abundance of cock-fights, bull-baits, balls and gambling-houses, and the usual accompaniments of such feasts, and that many of the visitors gambled extensively. The hope of being allowed to indulge in the national failing doubtless led many a one to Güines, who feels no more interest in the improving of our stock than a Chinaman. I am sorry to say that some of our prettiest ladies forgot themselves so far as to gamble, both in the cock-pit and monte houses.

The Spanish steamer Ysabel Legunda arrived here from Vera Cruz on the 2d, and brought the Secretary and Attaché of the Spanish Legation. It appears that Mexico has refused positively to give any satisfaction for the execution of the Spaniards shot by order of Gen. Alvarez, and that, in consequence of this refusal, the Representative of Spain has left the country. It is difficult to ascertain what Spain's next step will be. I hardly believe she would be willing to go to war, knowing, as she does, that by so doing she would open the gates to the inroads of the much-dreaded "fillibusters," who would flock to the standards of Mexico and beg for permission to join any army that might be fitted out against this Island. However, a thousand bellicose rumors are afloat, though they amount to but little more than the usual Quixotic ideas of all Spaniards.

The mail steamer Ysabel Catolica arrived from Cadiz on the 2d. She brings no news whatever of a political nature. The home Government continued to dispense its protection to Gen. Concha, and it was generally understood that he would not be removed. Gen. Concha is well liked here by all parties, and I doubt much if the Creoles would be bettered in condition, even if he were displaced. During the past few months he has appointed a great many to office. Some have been chosen from families notorjously celebrated for their hatred of Spanish rule. They have either changed opinion, or were too cowardly to refuse the honors tendered them.

Our ladies have been busily engaged for several weeks past, preparing articles for the fair for the poor, which will be opened in the course of a week or so. Many handsome presents have been received from the different corporations. I passed through the saloon the other day, and I was struck with the quantity and costliness of the gifts.

Our cold term ended about the 27th, when the weather turned as warm and sultry as we have it in the month of July. On the 31st, we were visited by a severe thunderstorm, which lasted some three or four hours. The lightning struck two houses, in different parts of the city, but caused no damage.

Max Maretzek has finished his engagement, and is now giving the benefits; Madame La Grange's was crowded.

The English screw ship Nile, of 90 guns, has paid us a short visit. She was last from San Juan del Norte. During her stay, she did not attract much attention, not being anything like so formidable as our Wabash.

THE EUROPA'S NEWS—*Correction*.—Our telegraphic dispatch from Halifax of the Europa's news states that the bullion in the Bank of England during the week had increased £60,000. This is erroneous; the actual increase was only £5,873.

The pith of some remarks on the Liverpool Cotton market is also lost by the substitution of the word "Liverpool" for India. The article should read as follows:

"LIVERPOOL COTTON MARKET.—The circular of an influential Liverpool house says: The shipments of COTTON from India are unusually large. The quantity now at sea is estimated at 180,000 bales, and it is thought that the Chinese difficulties must divert to the Liverpool market more than the usual proportion of the crop. The continued large purchases by speculators and exporters of INDIA COTTON to arrive are creating some interest. The improved quality of the crop, and relatively moderate prices as compared with American having induced speculators to contract for COTTON that in all probability may not be shipped from Bombay before April next."

At Shanghae, Dec. 25, ship Wild Pigeon, Hanson, from New-York.

HIGHWAY ROBBERY.—Martin Gallagher and John Hare, desperate-looking fellows, were arrested on Sunday night charged with knocking down Robert McGowan, as he was passing through the Sixth avenue, and robbing him of a $10 gold piece. They were each committed at the Jefferson Market Police Court, in default of $2,000 bail, for trial.

SHOCKING TRAGEDY IN NEW-ORLEANS.—Last evening, a female with a quick step and a flushed face, might be seen moving hurriedly along Gallaspe street, and when near Tchoupitoulas, she turned into a house, which, in a moment after, was the scene of a most fearful tragedy. The woman was Mrs. Mary Cull and the house she entered was the temporary abode of her husband and her husband's alleged paramour, one Margaret Kelly. As Mrs. Cull entered the house and attempted to pass into a rear room in quest of her husband, Margaret Kelly sprang before her, and grasped her by the throat, and as she did so Mrs. Cull drew a knife and plunged it into her heart, thereby killing her on the spot. Thereupon a citizen, who was attracted to the spot by the noise of the occurrence entered, and seeing Mrs. Cull standing over the prostrate body of her victim, took her into custody, and conveyed her to the First District Lockup. Subsequently a woman named Margaret Clark was arrested as an accessory to the murder, but in what manner she was accessory we have not learned. We may perhaps obtain further facts when the Coroner's inquest is completed. According to Mrs. Cull's statement, she and her husband resided at St. Louis, and he, being a brick layer, came to this city about three or four months ago in search of employment. While here he became acquainted with Margaret Kelly, and at length it was rumored that an improper intimacy existed between them. Mrs. C. then persued her husband to the city, and finding him repentant, she forgave him for his past transgressions, and they went to live in a house on Dryades street. Recently the husband made a trip on a boat, and on his return he went to his wife's residence and stopped with her one night. The next day he left her, and she learned that he had renewed his intimacy with Margaret Kelly. After waiting two days for his return, the enraged wife went in pursuit of her husband, and the bloody issue thereof we have already stated. The prisoner does not appear in the least to regret the bloody business in which she has been engaged. [N. O. Pic., Feb. 4.

[Advertisement.]

BENJAMIN HARDINGE'S NEW PROCESS

FOR

Extracting All the Gold from Quartz,

BY DISSOLVING LARGE QUANTITIES OF QUARTZ IN WATER;

And then using the LIQUID STONE in Molding Granite, Making Artificial Porphyry, Jasper, Marble, and almost all the precious stones, colored with mineral oxides and molded cheaply—promising to effect an entire change in Building Material, Statuary, &c.

To the Editor of The N. Y. Tribune.

SIR: Some of the public journals of this city were led into a most egregious error with regard to my processes for dissolving *fifteen tons* of quartz rock in water per day, then precipitating all the gold, and afterward applying the liquid stone *(liquor silicii)* in a great variety of ways, useful and ornamental. True, Sir, I not only dissolve and apply as aforesaid, but with an engine of fifteen horse-power I can use *five digesters* (or boilers) and dissolve 25 tuns per day. The *simplest apparatus (and appendages)* that I use will not only dissolve fifteen tuns per day, but also *spare* abundant power from my engine to carry my newly invented pestle-mill to supply that quantity prepared daily for solution; from which is run off and siphoned into my great reservoir, four thousand gallons of the liquid rock *(liquor silicium)* daily—not of the article we "read about," nor by any such process or ways and means spoken of in some papers, by their misinformed editors. Sir, I shall prove to you, and through your columns prove also to to the inquiring world that my "*liquor silicii*" (liquid stone) contains the silex in great excess, and in far greater proportion than has ever been made before in Europe or America; that it is the long sought desideratum, for the purposes and uses hereinafter described and vouched for by those chemical gentlemen who have been prompted to accompany, with their certificates, this communication, which you will please append, provided it meets your approbation; to give your readers the gratification of knowing from my own pen, facts which, though astounding, are fully vouched by gentlemen who have been prompted by that spontaneous and enthusiastic admiration for any valuable step, achievement, or discovery which promises so great and valuable a change as the present—no matter by whom achieved.

These gentlemen will satisfy you, Sir, that I can dissolve fifteen tuns of quartz rock in water per day, with but one set of apparatus and appendages. They will satisfy you, Sir, that the four thousand gallons of "Liquor Silicii" (liquid stone), made in twelve hours, is as clear as spring water, and that the Quartz, or Silica, is largely in excess; and is a different article from any ever made before; and the only successful achievement of the kind ever before known; and that the article I make so cheaply, and in such immense quantities, they have all analyzed (and have samples of), and that it is the long desired *base* to make molded ornamental stone upon a large scale, after having precipitated every particle of gold from gold-bearing quartz. They know, also, the appreciation of the principles which I have patented, and they know, also, that it is by the application of these only that any one else can ever succeed.

The European Professors of chemistry, who have addressed you, Sir, upon this subject, all fill responsible positions in this country, as well as having received tokens of distinction in Europe, and their scientific skill and ability to judge of the importance, as well as the truths, about to be embodied in this communication, none who know them, will question. Should you, Sir, consider the announcement as of importance, as well as facts of an extraordinary character to your readers, please introduce the proof, viz: The addresses of as many (before this goes to press) as shall have handed in their names.

Thousands of your intelligent readers, Sir, would doubtless like to know from *myself*, in as brief a manner possible, how I operate upon the quartz to obtain so valuable a *base*; and how I afterward apply it in a variety of ways and to such valuable purposes. I am receiving more letters of inquiry upon this subject from every section of the country than I can answer. Most of these are evidently from intelligent and scientific men, whose laudable curiosity has been aroused to ascertain the facts from my own pen, as they were *confused* by different descriptions of my processes, written without my knowledge or consent.

I am not seeking notoriety, Sir, but it is truly mortifying to be so misrepresented. This explanation is therefore forced from me, and is (at your option) to present to your numerous readers, not only as a correction of the mistakes above alluded to, but in order that they may know the ways and means, the how, why, wherefore; the time, the cost, &c., not only of dissolving fifteen tuns of quartz per day, in water, but how every particle of gold is precipitated when gold-bearing quartz is operated upon. The following description embraces paragraphs from my specifications in patent offices in Europe, Central America and the United States, and will (together with my plain manner of explaining) sufficiently elucidate most of my operations—operations which I hereby contend are to produce an entire revolution in building materials throughout the civilized world, viz., the interior as well as exterior, the ornamental as well as useful, the durable as well as beautiful beyond description, and cheaper than common brick.

It will be observed (as the following facts will demonstrate) that my whole inventions, *connectively* as well as *separately*, are arranged with an eye to economy in outlay, the saving of manual labor, and every other possible expense. I have accomplished this object by a happy combination of the laws: 1st. of *Gravitation*, by arranging the processes upon steps or declivities; 2d. Of *Mechanics*, in the simplified construction of the whole, including my Pestle Mill; 3d. In the compound CHEMICAL action upon the quartz, by which the solution in water is perfected, and *all* the gold saved and precipitated. Fifteen tuns of quartz per day is thus acted upon by one set of apparatus with three digesters.

Quartz rock is the native matrix of gold; it there adheres, clinging to its refractory protector, concealed in ovoid scales so fine as scarcely to be seen with the naked eye, and often so plentifully disseminated as to yield from $20 to $5,000 per tun in California, Central and South America, and Australia, and in some strata of gold-bearing quartz in Virginia, North and South Carolina, and Georgia. Veins incredibly rich are being discovered every day in those regions, and will continue to be discovered, from the fact of the vastness of the extent of the "leads," running perhaps the entire length of the Cordilleras and other ranges, not only in Central America, but in South America, leading into the Andes. But the discoveries are and must be numerous, from the fact also of the *dip* and *rising* again in ten, fifty or a hundred miles off, or five hundred or a thousand, following their respective strata, bearing in their rich bosoms countless millions of the precious metal, defying all the processes heretofore employed to obtain even a sufficient per centum to defray the enormous outlays which have been appropriated for crushers, heavy power, and all descriptions of amalgams; because untold millions of the fine scaly particles are washed away, and but a portion of what is left is taken up by the amalgam. And these are the reasons why quartz-mining has been abortive, excepting only in the richest veins. I use no amalgam, no heavy crushers, no heavy power, and but little manual labor. And it will be seen that I get *all* the gold.

Now, how is this great desideratum accomplished? I answer, not by any bursting out of a single one-idea; not a spontaneous accession or appendage to any operation or operations heretofore employed; in short, not the work of a day, a week, or a year, but of eight years of arduous effort, and zealous application of thought and physical labor and very many experiments.

I will here state a fact known only to a few: that I had previously been engaged in that department of *synthetical chemistry* which science suggested to me in the formation of variegated rocks from their real elementary substances. I found that I must dissolve quartz in large quantities in water, without much expense, and with the quartz largely in excess. I need not recapitulate here my numerous experiments. Suffice it to say, I took various phenomena in the great geological laboratory of Nature for my guide—the Geyser Springs, and other thermo-hydro-siliceous phenomena, &c., and also the agency of silica in its aqueous solution in the formation of rocks. Having thus obtained the desired *base*, I succeeded in producing many of the marbles (by mixing carbonates of lime, &c.), and also jasper, and some of the *precious stones*, coloring these with mineral oxides, treating same in a variety of ways for building and ornamental purposes. I found it necessary to dissolve a tun of quartz at a time, cheaply, for such purposes; and it was my entire success in this particular that further suggested my processes for treating gold-bearing quartz, to which your attention is hereby respectfully solicited.

I first build a calcining kiln, holding about twenty-five tuns of quartz, with the fire only in each side, at the front. The floor, grate and trap-bridge are upon a *declivity* at an angle of about 30 deg., to facilitate its *tumbling* into the cold tank, fed by a pipe of cold water. The quartz, thus rendered friable and somewhat porous, is *tumbled* again into a scoop platform of like descent into the "Pestle-Mill" of circular construction, embracing all the facilities of crushing and sifting in a very rapid manner, with less than a four-horse power to turn the shaft, which raises from a dozen to twenty iron pestles (with case-hardened steel facing), each pestle having a small pulley for a succession of inclined planes in a steel rim to traverse upon. The shaft carries also around with it a shoveler, in form somewhat similar to a plow-share, close to the stamping-floor; the latter being of solid timber, covered with a succession of iron bars bent in and against each other. The shaft also carries a metallic sieve with its knocker. From this mill the pulverized quartz finds its way by a continuous descent into the digester or boiler, No. 1, being first saturated on its passage thence with a small quantity of the cheapest solvents rendered caustic by lime. In regions remote from civilization, where there are no facilities for transporting the liquor of flint, the solvents are desiccated and used over again. It will be observed that this boiler is constructed with a view to resist heavy pressure, its bottom being of ¾ boiler iron, and its sides of ½ ditto, cone shape, twelve feet high and eight feet diameter; the bottom of a saucer shape, of such heavy iron, and the sides tapering inward toward the "cut off," of ½ iron—the whole corresponds best with natural pressure, and is most suitable for working so heavy a mass at a time. The lower part of this boiler is set in mason-work, with its bottom in a flue.

One end of a pipe is connected with the said boiler a little below the line which indicates the hight of the intended charge. A little below the point of connection this pipe is provided with a valve cock for opening or closing the connection; and below this pipe is bent in a series of coils in the fire-chamber of the furnace, so that it can be highly heated; and thence the pipe extends up, and is connected by a suitable packing-joint with the upper end of a vertical hollow shaft, which is placed centrally in the boiler, with its closed lower end fitted to turn in a step at bottom. The said hollow shaft passes through a stuffing box in the top plate of the boiler, and above this the said shaft is provided with gearing to receive a slow rotary motion. At the lower end the said shaft carries a scraper, the lower edge of which is curved, to correspond with the form of the bottom of the boiler; and the said shaft is also provided with a branch pipe, which is curved around to the back of the scraper, and with its discharge aperture at the back of the scraper.

The boiler is also provided with a main (or charging) hole, through which the charge is introduced and inclosed; with a safety-valve (8) at top, the bar of which is connected with another lever attached to the opening of the condensing pipe, the latter operating as the *general safety-valve* by a provisional tube in the seat of valve, while this valve operates as an indicator to work up to a given amount of pressure before its own valve will open. There are try-cocks at the side, and with a large cock at the bottom, for the discharge of the contents. Above the line the condensing pipe is connected with the said boiler, and the said pipe is coiled in the manner of a still-worm, and placed in a cold-water vessel, for the purpose of condensing the vapors from the boiler when permitted to enter the said pipe by a valve, and when condensed the contents of the said pipe can be discharged by a cock into a vat.

Thus, by the powerful chemical action and the happy result of an advantage taken by highly-heated steam being brought to bear upon *susceptible quartz*, in addition to the latent heat, and dry heat as well as humid heat (the quartz being first rendered porous, and saturated with an incredibly small quantity of the cheapest solvent salts, rendered caustic by lime), the process is completed. The solution is perfect, with quartz greatly in excess. There is not a particle of quartz to be found in sediment, while the gold precipitates and I get it all; I use no amalgam.

When each batch shall have been perfectly dissolved which requires about an hour—it is then drawn off in a large receiving tank, made of rough plank and covered with my porcelain mortar, and made very smooth inside, calculated to hold all of the working of two days; when tank No. 2 is also filled with boiling liquor of quartz (gold and all); when this is full from other two days working, No. 3 is filled in like manner—which just finishes the week. On the following Monday, all the gold in No. 1 has precipitated; hence the supernatant liquor of flint is drawn off into the common general reservoir. A small car traverses under the bottom of Nos. 1, 2 and 3 Tanks. The gold is taken out, with a little water, through a faucet in the bottom, and carried to the drying-room in pans of 3 feet, made of 4-cross tin.

A fifteen horse-power engine will carry five digesters beside the power required for the "Pestle mill." But three digesters, well attended, produce results incredible. It is necessary there should be three digesters from the fact that while *one* is being charged, or *another* is being discharged, a *third* is supplying power to the engine. These digesters are also steam-boilers; which dissolve a tun of quartz each charge; and five charges each per day (of twelve hours), making fifteen tuns of quartz dissolved in four thousand gallons of water each day, as well as precipitating all the gold, providing gold-bearing quartz is being worked.

To describe more minutely: each of the hollow shafts above mentioned, rotate in their respective stuffing boxes and bearers, *slowly*, by their respective gearing, independent of each other all day without stopping. But the almost red-hot steam is stopped off from each alternately for the purposes above stated—a complete solution is effected in *one hour*, and it requires another hour to run off the liquor silicii, (liquid silex), and to *let in* three hundred gallons of water, *(cold water, and nothing but water)* for another charge. The one tun of prepared quartz is let into the main (or charging) hole, (through a scoop descending from the bin), and quartz, water and all, are together carried around by the same shaft which supplies the steam heated, (as above described), almost to the point of decomposition, and jetted out at the bottom of the charge next the fire, in a contrary direction from the turning of the shaft, thus favoring the motion, saving resistance, and saving the bottom of the digester; which is smooth inside and saucer-shaped at bottom, and eight feet diameter, twelve feet high, with four feet only inclosed in the furnace. For, be it remembered, a cooling and condensing process is going on in the steam chamber.

I here state, from that experimental knowledge which must at last prove the fact, that from no other patented principle whatever can such a quantity of silex (or flint) be dissolved in water with so little solvent agencies; and even the latter are *spontaneously* found in the immediate neighborhood of many of the gold-bearing quartz regions. I mean natron-lakes and natron-beds: I mean also the common salt of commerce first used in treating gold-bearing sulphurets, Titanium and other obstinate pyritiferous ores which cannot be dissolved like quartz. In operating with common salt upon these ores and their compounds and oxides, the chlorine will be set free and the soda-ash formed at the close of the process; and if rightly managed, it will be chemically pure and free from sulphur as well as muriatic acid, and a far more caustic solvent for quartz, and makes a much more suitable agent in the hydrous silicates for building material than the soda-ash of commerce. For be it known that without some alkaline agent of some sort, along with the "*liquid stone*," no such thing as artificial granite, porphyry or conglomerate, &c., could be formed by man; but with this in the proportion made by my plan Dr. Ure tells you the most perfect and durable sea-wall can only be made. But in regions far remote from civilization and perfectly inaccessible by navigation or any other means of transportation (and I wished to work a very rich mine of gold-bearing quartz in such a region) I would, in that case separate and *desiccate my solvents*, and use them over again. More than a year ago I was bargaining with a gentleman who had a mine in the most remote mountain in California, and if we would lay out the necessary money to put up works, it would evidently pay well, independent of building material. I gave him a gallon-can of a medium quality of liquid quartz to send out to San Francisco, which has seemingly caused a desperate attempt on the part of certain men, aided by such chemists there, and such as could be reached in New-York, London, and on the Continent, (for their purpose); and one whole year and many thousands of dollars freely expended to get round my patents in the manufacture of the article which I make so cheaply in such immense quantities. But all their time, labor and outlay are in vain. As well might man undertake to suspend an immutable law for his own benefit. I have freely given samples to all who have sent for them, and they amount to hundreds. They have gone to the ends of the earth, even to Australia. I have heard of various attempts in London and France to do likewise within the last two years. It is now about that time since I took out a patent in London for Dissolving Quartz—a plan which I have superseded by a better.

Thus, Sir, you have my mode of operation, so far as dissolving is concerned; and if these results be true, and the expense has not been great, then the following conclusions are not extravagant. In less than one year from the time when my patents shall have been generally adopted more than ten millions of gold will be obtained from gold-bearing quartz where a million is now obtained; and in a few years immediately following, the ratio of increase must be immense beyond conception.

Aside from the application of my patents in localities like California, where the gold-bearing rock is quarried, I aim at the establishment of factories at New-York and other harbors, where the gold-bearing quartz can be brought in cargoes from the Southern States and Central America, and where the fluid-rock (or the articles manufactured from it) can be most convenient for shipment. As the *fluid silicate* is very valuable for building materials, and many other purposes of utility and ornament, *even the quartz around New-York*, both the rock and granular (without reference to gold), can be made to yield immense profit, and used in the thousand ways that art and science will use it for the necessities and luxuries of civilization. And I will here refer specially to an immense change in building material, both exterior and interior—common and uncommon—not only much cheaper than brick or sandstone, but far more durable, and beautiful beyond description. Even my handsomest building stones are molded very rapidly into blocks of any desirable shape and size. They are made up of variegated waste quartz rock, as quarried in opening streets and leveling hills; some of them being already richly colored with mineral oxides and interspersed with mica. These are broken and mixed with quartz pebbles, burned calcareous argil, &c., &c., &c., mixed with and consolidated by the aforesaid liquid *base*.

I have bought a great many tuns of white and colored granite, gneiss and feldspar, interspersed with mica, just as it was blasted, in the neighborhood of Thirty-fifth street, delivered several squares off, for eighteen pence a load of about a tun each. I paid $50 also for a cargo of white pebbles from Long Island beach, ranging in size from a pea to that of a goose egg. I bought a few tuns of snow-white sand. It is my purpose to mix these, by dumping a tun of each alternately into a common heap; then mold them into any desired form by mixing for the last interstice calcined calcareous argil, carbonate of lime &c., variegating also the liquor silicum with mineral oxides. A chemical solid is thus formed that will never disintegrate. A few hands and a press, (to be furnished me by Joseph E. Holmes) of quick delivery will mold a great many tuns a day. These stones slide on to a "facing bed" of my own patented invention. They are then varnished by the liquor of flint, and exhibit the richest conglomerate ever beheld. *No eye ever saw so beautiful a stone.* These cost me no more than the price of the commonest brick, and they are laid up in wall much faster, on account of their much larger size and exactness. The mortar in which they are laid is of the same material as the stone, and the whole sides of the building become one solid mass. For the commonest buildings, the colored pebbles and brown sand, already mixed spontaneously at different points, where works can be erected for the great supply, quickly molded, at a much less price than brick, and far more durable and beautiful. The stables and other outhouses, and stone walls for my model house, are destined to be of the latter, in order to preserve relief in keeping with the sublime and beautiful. The windows of unique form, neither square, Gothic, nor round, but forming, as it were, large gems, in prismatic colors, of crystalline quartz, with the ornamental projections of scrolls of blood-stone, with here and there a set design of figures in chalcedony and onyx (as cameo) all molded and easily done. I make the blood-stone by first making a tun or two of ultramarine from my liquor silicium, and mix this with raw terra de sienna, &c. This makes the mass or general base of the right color. The crimson spots are distributed in the molding; the projections of the doors, &c., similarly; the columns, pillars, pilasters, with their capitals of molded porphyry, and of the choicest and most variegated molded marble; the floors, laid in mosaic, of same material; the ceilings of cold porcelain, colored in rich designs in fresco, relieved in basso-relievo; the niches are figures in alto-relievo; the statuary in molded snow-white marble; as also the fountains and jets.

The roof of my buildings, first of wood, then covered with similar cold porcelain, with the exception of the introduction of snow-white sand, which gives the appearance of snow crust, is now "Ligneous stone," and is fire-proof. I have also in the archives of the Patent-Office an adjuster for lighting up the different rooms, all taking different forms at different times, at pleasure. The tables, sideboards, &c., in keeping and contrast as to the tops and frames, some in sapphire, others in porphyry, others in jasper, others raised in chalcedony, &c.

I now announce the all-important fact, which every scientific man (who possesses the usual stock of chemical knowledge in this department of the science) will already have discovered—that my gold has cost me nothing! A fact which is too extraordinary to be first announced before submitting the foregoing pages. By *the operations above described, I first get all the gold. In addition to this I obtain another article of commerce worth tenfold the cost, independent of the gold.* I mean the silicates in aqueous solution, with the silica largely in excess. I have hogsheads of this article now in New-York, which cost me but a trifle per gallon to manufacture. It is not too extravagant to say that the quantity which will be made by dissolving gold-bearing quartz in all seaports whereto it can be shipped, will be sufficient to revolutionize building materials, both public and private, both useful and ornamental, in every part of the civilized globe!

Since the foregoing paragraphs were in type, a scientific friend has favored me with an extract from remarks by Dr. G. S. Newberry before the "Scientific Association" at Albany, calling the attention of that body "to the action of thermal springs in a locality in "Oregon, changing the nature of deposits through "which these springs found outlets. These springs "contain *much silica in solution*, and to the action of "this *silica* he referred the change in specimens which "he exhibited, from a *conglomerate of materials* to "the forms of *opal, jasper, &c., &c.*"

Long years of chemical research have at last enabled me *to master the secret whereby nature* in her great geological laboratory *accomplishes these wonderful results*, and to produce such results in multitudinous forms, and with the most beautiful hues—my plan extracting *all the gold* from gold-bearing quartz, while *liquifying that or feldspar*, and afterward *solidifying it*, in any desirable shapes or colors; thus adapting it to hundreds of other uses, which might (to *some* persons) seem visionary now to mention.

As an illustration of the architectural and ornamental uses to which my inventions may be *profitably* turned, by using the liquid rock after separating the gold, I have said that I intend, at some suitable public locality, to erect *a model edifice*, of moderate size, of materials the *most beautiful and durable which imagination can conceive*—equaling in brilliancy *any and all of the precious stones* except the diamond, and yet *at a cost for material not exceeding the price of common brick.* The chief object of this structure will be to show at a glance the practicability of *molding and coloring cheaply* all the materials required for architectural purposes of utility and ornament, so as to produce edifices of the most enduring character, rivaling the splendors of oriental romance; and yet at a cost not exceeding the price of common brick.

The following synopsis and title of the materials for this building and its finish furniture, statuary, ornaments, &c., are taken from my specifications in Patent Offices.

The title of this patent is for "Manufacturing Artificial Marble, Variegated Conglomerate, and Precious Stones." The base of most of the material is quartz silicates dissolved in water (several hogsheads at a time), as above stated, and colored with mineral oxides. My handsomest building stones are made up of variegated waste quartz, interspersed with mica; these are broken and mixed with quartz pebbles, &c., with the aforesaid base, and molded into blocks very rapidly; and faced as if sawed out of the quarry; finally polished with the liquid quartz as described.

The floors will be of similar material, colored in mosaic, with oxides of minerals. The style of architecture will be unique; the ornamental projections of the rarest marbles, and many of the precious stones.

And all these formed from, or with the aid of, the FLUID QUARTZ, plentifully produced, at trifling cost, under my patents. The liquid is colorless, clear as spring water, and capable of receiving, from cheap mineral oxides, &c., any and all colors which art can give, or taste desire. I repeat—the cost of this extraordinary material for architecture and ornament *will not exceed the price of common brick!*

Hogsheads of this FLUID QUARTZ, from which such results are produced, may be seen at my residence, as stated by Prof. Moffat, late United States Assayist, and as known by sundry other scientific men. In view of these things, well might the Professor assert, as he does in his statement annexed, that "the *liquid quartz* "will be a source of more wealth to the proprietors of "my patents than the *gold* from *ordinary* veins, from "the many uses to which it may be applied."

I am highly gratified to find that the scientific world is waking up to this subject. Prof. Hume, of London, tells me that his experiments, and those of Prof. Faraday, confirm the value of my invention, viz., the practicability of holding silicia in perfect solution in water, with silex largely in excess; and Prof. Hume pronounces the silex in my "liquor silicii" in astonishing excess—far beyond any proportion known before.

There are a great many other uses and adaptations perhaps not so sublime and beautiful, but equally as useful—such as fire-proof safes and rat-proof cellars; and where, as rats cannot conceal themselves from the society of men and dogs, cats, &c., they must soon be exterminated. I have also in caveat an artificial porphyry paving-stone, molded somewhat like my building conglomerate, with two exceptions, viz., they are groove molded to fit the horses' hoofs and are worn so as to preserve this form by weakening the interstice cement, and the wear is precisely like instances of strips of white quartz which you sometimes see stratified in flagstones of gneiss, traprock and other stone.

I shall also use my material in proper combinations for preserving dead human bodies by *fossilization*, with the face covered by cold liquid glass poured upon it. The coffin becomes a *Ligneous stone*, as my red oak barrels for holding my liquor of flint are treated: I ornament the coffins in relief, &c.

The *acid* in the porous red oak causes the immediate formation of ligneous stone.

I also supply the precipitated silex for making porcelain ware, teeth, stereotype and many other things.

I have in caveat a mode for covering the great lengthy submarine telegraphic cable—a stone covering. It is put on by letting the cable run out through a strong plank vessel, constructed for the purpose in the ship, the brush hause-pipe being reproduced by machinery. The composition consolidates in the *salt water* in a few hours, and remains forever impervious to its action; while, on the other hand, animalculæ of the coral family attach themselves to it, along with siliceous sand and other like sediment, which, together with the phosphates and a few other agencies, continue to form coatings in lamina, as oyster and other shells are formed. I can show you, Sir, an old black (or junk) bottle which had been lying on the bottom of the sea since the old Revolutionary war. This bottle but partially proves the above statement, for reason of the difference in substances susceptible, as above; but this bottle has become a part and parcel of adherent shells and sand,