mite to have blown up the Capitol building at Washington and to have torn the State, War and Navy Department into atoms. There was no top to the box, and as the miner placed it close to my feet, I thought of the terrible possibilities. Suppose a rock should drop from the top down upon that dynamite! Suppose a spark from a candle or a bit of wick should fall into it! A sudden jar might throw one of us upon it. I could feel my hair rising and my face whiten. I asked as to the danger, and was told that it was comparatively small, but that the box contained 40 per cent of nitro-glycerine. I was much relieved when it was taken away.

And so we went on down to the bottom, where we were to visit one of the greatest feats of mining engineering known to the world. This is the famous Ontario tunnel, which has just been completed at a cost of $500,000, in order to draw the water off of the mine. The Ontario is a wet mine, and a river of water flows through its tunnel. It is, in fact, a great subterranean passage, so wide you could drive a buggy through it, and so high that we walked in it without stooping. The three-mile tunnel has a floor running through its middle, upon which there is a railroad, by which the ore and men are dragged from one part of the mine to another by mules. As we walk over the road we hear the rushing of water, and look down between the boards. There is a torrent flowing under us. It comes from the mine at the rate of ten thousand gallons a minute, and as we listen we hear the water falling, falling, as it comes from the levels above. There was not an ounce of silver in the rock which was dug away in order to make this tunnel, and it gives you some idea of the cost of mining when you learn that this half million dollars was spent for dead work, and solely to get water away from the other parts of the mine. Until this tunnel was built all of the water had to be taken out by means of pumps, one of the pumps used costing the enormous sum of $250,000. It had a capacity of 2,000 gallons a minute, but it is now lying idle and useless, its work being done by the tunnel.

It is the water that necessitates the walling of the tunnels and the stopes with logs The wet earth and rock is always pressing in, and without timbers the mine would not last for an hour. The force is so great that it sometimes grinds these great pine logs—some of which are as large around as your waist—to powder. Some of the highest-priced men employed in the mines are those who take care of the timbers, who walk through the mine daily, looking for weak spots. The best of timber is required, and that used in the Ontario mine comes from the forests of Oregon.

And so we go along from tunnel to tunnel. Now we climb into one of the stopes and watch the men at work. We have candles in our hands and we crawl along almost bending double, the water dripping down upon us. At last we enter a cave: Here a half dozen miners are working: Some are taking the ore out with picks. Their wire candlesticks are stuck into the rocks beside them as they dig away at the pile of stone which has been blasted out by dynamite. Some are loading ore. They push it into the chutes with long-handled shovels and we hear it roll down and strike the iron bottom of the car beneath. In other places men are drilling in order to blast. They cut out holes by means of diamond drills compressed air furnishing the force which turns them. There they have the work done and a half dozen holes are ready for the explosives. Note how carelessly the miner seems to handle that dynamite! He picks up one of those dynamite candles, cuts it in half with his knife and slices it down at one end. He then puts a fuse as big around as a lead pencil and about three feet long into the powder. He next pushes the candle into the hole in the rock and fills what is left of the hole with mud and dirt, pounding it close in about the fuse, handling his tools with great care. A strike too hard might send off the candle and blow him into eternity. Other holes are prepared in a similar manner, and the charge is now ready for lighting The miner hands me the candle and tells me to start the explosion. I hang back a moment, but finally consent and touch the candle to the end of the fuses. The powder at once begins to fizz, and the miners as well as ourselves run for dear life. We get just around the corner and into a chamber or stope when there is an immense report. It is dull, heavy and cannon like. It blows out our candles, and following it we hear the falling and crushing of ore. We go back to the scene of the explosion. The dynamite has torn the rock out of the earth and a great mass of silver bearing ore has been loosened from the sides of the mountain. As we stop the miners show us the vein. It runs from six inches to forty feet in width, the average being fifteen feet, and the ore streaks ranging from two and a half to three feet in width.

But let us follow the ore to the mill. It is now little more than a lot of rocks. It is put into the steel cars, raised to the surface and carried in wagons to immense frame buildings further down the mountain. First it is run through a crusher, which chews the rocks between its teeth, until they become no larger than pebbles, and fits them for the dryer. The ore as it comes from the mine is wet, and the drying is done by the means of an immense iron cylinder, about 100 feet long, through which a stream of fire runs. The cylinder is inclined at a short angle. The ore is put in at the top, and as it slowly revolves the pebbles of silver ore are rolled over and over until they come to the lower end, perfectly dried by the flames. The ore as it comes from the dryer looks much like gravel It must be made much finer. This is done by means of stamps, each of which weighs 150 pounds, and which drops on the gravel at the rate of ninety-two times per minute. This pounding reduces the gravel to dust, and it soon becomes a flour. It is now mixed with salt by means of machinery, and then carried by an elevator, made like that which carries the flour in a mill, to the top of a furnace and dropped into the flames. This furnace is so arranged that the ore dust mixed with salt falls down in millions of dust-like particles. The furnace is thirty-nine feet deep. It is filled with flames, and it is kept at such a heat that the ore is roasted, but not melted, by the time it falls to the bottom. In falling the salt brings about a chemical action by which the ore has been changed from a sulphide to a chloride of silver, the only form in which it can be acted upon by the mercury, which is to suck the silver out of the rock. After falling to the bottom the ore is drawn from the furnace and piled up on the floor outside, and left there for about twenty hours, during which this chemical action is perfected. When I entered this furnace room I saw perhaps a dozen of these great piles of ore. They did not seem to be hot, and they looked for all the world like piles of sand. They appeared, indeed, so inviting, that, boy-like, I was tempted to jump into them. The manager, however, pulled me back and, handing me a long-handled shovel, told me to stir the sand. I did so, and saw that it was red-hot ore. Putting your finger into it would be like sticking it into molten lead. The yellow crust was of the thickness of paper, while all beneath was of the temperature of the Shadrach, Meschach and Abednego furnace.

After the silver-bearing sand has thus lain for twenty hours it is ready for its marriage to the quicksilver. The union of the two metals makes me think of the prince who broke through the hedge and kissed into life the princess who had been sleeping for a hundred years. It is the quicksilver prince, in fact, who kisses the sleeping silver-ore maiden into life and carries her away from her palace of rock in which she has been locked for ages. After the sand has cooled it is carried into what is known as the pan room, and is thrust into great pans of iron, each of which holds about 3,000 pounds. Water is introduced, and the pans seem filled with a thick brown mush. Now into each of them through a little pipe is poured 300 pounds of quicksilver, and stirring machinery is set to work which moves about through the ore, mixing the quicksilver with it. The sand was warm and the quicksilver by the warmth becomes active, and by the mixing divides into globules the size of the point of a pin or needle. The mixers shove these about at the rate of sixty revolutions a minute and send these little globules flying about through the sand. As they go they seek out the particles of silver. They seem to become alive, and each globule which touches an atom of silver embraces it, and with amorous lips sucks it out of the sand. This traveling of the globules of quicksilver is kept up for eight hours, at the end of which time all of the silver in the sand has come into contact with and been absorbed by the quicksilver.

The two metals have united, and the marriage is complete. The quicksilver is now taken out of the sand by drawing the sand and quicksilver into a big tub, known as the settler, and running cold water upon it. As the cold water touches the mush it congeals the quicksilver. The little globules run together, and having grown heavy finally fall to the bottom. More cold water is poured in to wash off the sand, and in four hours the sand has all gone, and you have a bucket full or so of quicksilver, containing the silver. This is drawn off into cone-shaped amalgam sacks of canvas, the meshes of which are so small that the silver cannot go through them. Much of the quicksilver drains out and that which is left is a thick, pasty amalgam, containing the silver.

But man cannot use quicksilver and silver united together. The marriage was all right. The next question is to get them apart. The marriage was by water. The divorce is by fire. The quicksilver and silver amalgam is now