

### THE ARTESIAN WELL AT SPRINGFIELD, SOUTH DAKOTA.

We give an engraving herewith of this well as it appears in operation. It is 592 feet deep, 8 inches diameter. The pressure of the water is 60 pounds to the square inch. By using the proper nozzles on the pipe it throws a solid stream 8 inches diameter  $12\frac{1}{2}$  feet high, a 6 inch stream 26 feet high, a 4 inch stream 62 feet high, a 2 inch stream 88 feet high. It furnishes power to drive a 60 barrel flour mill, with a large surplus.

Our engraving is from a photograph by Mr. B. W. Burnett, of Tyndall, South Dakota.

A correspondent of the *Rural New-Yorker* describes another well located near Aberdeen, South Dakota. It has a depth of over 1,000 feet. The pipe is six inches and the pressure about 150 pounds to the square inch. From it the owner expects to irrigate his farm of 800 acres.

The supply of water appears permanent and bountiful, and if half the expectations of the people be realized, a new era will dawn upon Dakota. Already a number of farms, level and well located, are watered by means of artesian wells, and give excellent results. Of course all farms cannot be irrigated. A farm must be smooth and with a gentle slope, with the water at the highest point, in order to give the best results. Still, there are many such that could be made very productive with abundant water.

### Storage Battery Road at Dubuque, Iowa.

The Dubuque, Iowa, *Times* of a recent issue has an enthusiastic description of the new electric railway system of that city. Storage batteries are used to furnish the current and the Dubuque paper claims that, although single cars have been propelled for a short time by this system in other cities, "the Dubuque Street Railway Company is the first to equip its entire system with this latest and well nigh perfect invention for the cheap and rapid transportation of the people."

Nine cars are already in operation. A section of the floor of each car can be lifted up, disclosing the racks containing the accumulators. Each car is supplied with three incandescent lights. The electrical equipment was furnished by the Electro Dynamic Company, of Philadelphia.

The new system appears to give great satisfaction, and already representatives of other cities have visited Dubuque to inspect it. It has inspired the *Times* man to give utterance to the following eloquent description: "There is no tangle of overhead wires to spoil the view. But down the street, swiftly and silently save for the loud ringing of the warning gong, comes a beautiful car, skimming over the rails like a thing of life, yet so perfectly under the control of the "motorner" that it can be brought to a standstill in half a car length. There is no rocky motion, no jarring. The cars run as smoothly and with apparently as little friction as a bird flies through the air."

### Canadian Pacific Enterprise.

Speaking of the late fast trip of the Canadian Pacific flier across the continent, the *Financial Times* (London), says: "The Canadian Pacific Railway has been very much in evidence of late. It is at once ubiquitous and irrepressible. Its enterprise breaks out in the most unexpected places, and produces results which startle red-tape people out of their propriety. Even the Americans have been taken aback by the Canadian Pacific. They do not know what to make of it, or how to regard it. It will not fit into their preconceived ideas of the Canucks as a sleepy, short-sighted race, whose destiny is to sink gracefully into the folds of the stripes and stars when they become ripe for that distinguished honor. Whatever else may get swallowed up in the almighty union, it is not to be the Canadian Pacific Railway. That seems to be well able to take care of itself, and it swallows more of American trade than the Americans like to see going past them. Its latest feat has, like all the

rest, a dash of romantic brilliance. Without any fuss or preliminary flourish it has started a new mail service, which cuts down the orthodox course of post between London and China by nearly a week. In the overland journey across America it has saved at a stroke fully two days out of six. The first through mail from the East did the 4,300 miles from Yokohama to Vancouver in less than ten days, and the 2,900 miles from Vancouver overland to Montreal in 3 days, 17 hours, making barely two weeks from Yokohama to Montreal."

### Stone Walling.

Of whatever quality the stone may be of which a wall is to be built, it should consist as much of stone and as little of mortar as possible. If it be inferior in durability and power of resisting the action of the atmosphere, etc., to the mortar, besides the certain fact that the mortar will yield until it has set hard, and so far act injuriously, no ulterior good is gained;

bonding through a wall or transversely, it is much better that many stones should reach two-thirds across, alternately from the opposite side, than that there should be a few thorough stones, or stones extending the whole thickness of the wall. Indeed, one of the many faults of stonemasons is that of making a wall consist of two scales or thin sides with thorough stones now and then laid across to bind them together, the core being made of mortar and small rubble merely. This is a mode of structure that should be carefully guarded against. There is no better test of a workman's tact and judgment in rubble walling than the building of a dry wall, or a wall without mortar, affords. Walls are frequently built with mortar that without it would have fallen down under their own weight in a height of six feet, in consequence of their defective construction, thus rendering it evident that they are only held together by the tenacity of the mortar, which is very seldom an equivalent for a proper bond of stone. Masons are very apt to set thin broad stones on their narrow edges to show a good face, by which the wall is injured in two ways. It tends to the formation of a mere case on the surface of a wall, and it for the most part exposes the bed of the stone to the atmosphere, as a stone is more likely to be broad in the direction of its bed than across it.—*Builder, Decorator, and Woodworker.*

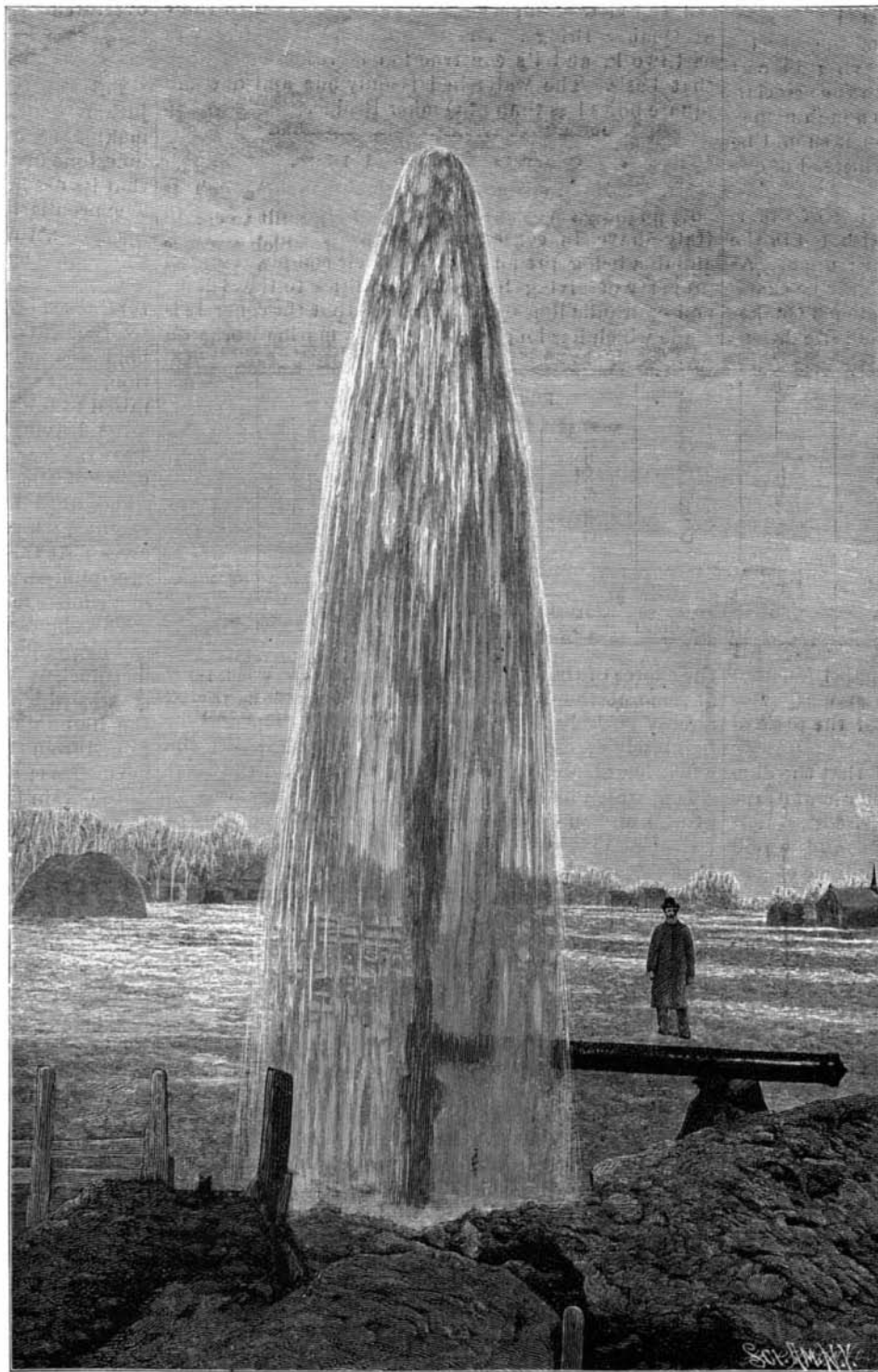
### Chloralamide.

Dr. John Gordon, of Aberdeen, has resumed his study of recently introduced hypnotics, taking on this occasion chloralamide. His results are communicated to the *British Medical Journal*. After referring to the chemical and physical properties of the substance, Dr. Gordon gives the results of his experiments with it on blood pressure and respiration, its action on motor nerves and on muscle substance, after which clinical observations are mentioned, including the effect of the drug upon the urine, pulse, respiration, and digestion. In regard to its hypnotic action he says that "with the smaller doses there was no evidence of any sleep-inducing power, but when doses of 20 grains and upward were given and the subject placed in favorable surroundings for sleep, the hypnotic influence became evident. As a rule, sleep came on in about half an hour after the dose. The sleep induced was pleasant, tranquil, and easy, awakening was gradual, and without mental confusion, headache, or depression." Only in one case was excitement observed, and that is to be regarded as exceptional. In addition to the direct hypnotic action of the drug, it was frequently observed that the patient being once put in the way of sleep, there followed a series of sleepful nights. Still more frequently was it noticed that on the night succeeding the administration of the drug, sleep supervened spontaneously. That this did not depend upon deferred action of the drug is shown by the fact that the patients stated that they had no feeling of drowsiness or depression during the day. In no case was it noticed

that a craving for the drug was developed, although in some cases it was given for two or three weeks almost nightly. The results were most satisfactory in senile insomnia, pulmonary diseases, and hysteria.

### The Nickel in Slot Library.

The invention consists of a box, fitted with a glass front, through which the titles of the books within may be clearly seen. Each box forms a library, and is divided into as many sections as may be needed, and each section holds one book. These library boxes can be fixed in railway carriages and elsewhere. Apart from the pattern for railway carriages, where space is the first consideration, the library boxes will also be made in various shapes of artistic design to stand on the mantelpiece or the table. Any one wishing to take a volume from the library places a penny in the slot of the section containing the selected book, and, on pressing back a small lever attached to the section holding that book, the door is freed and the book can be taken out. The door of the section out of which a book has been taken will not close until the book is replaced.



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and if the stone be the more durable material, the more of it that enters into the wall, the better. Indeed, in rough walling, if the stones be pressed together until the more prominent angles on their faces come into actual contact, the interstices being occupied by mortar, it will be better than if a thick yielding mass were allowed to remain between them. Absolute contact, however, should not be permitted any more than in brickwork, lest the shrinking of the mortar in drying leave the stones to such unequal bearing as the prominent parts alone would afford. Stone being generally of a less absorbent nature than brick, it is not a matter of much importance that it be wetted before setting. Nevertheless, adhesion on the part of the mortar is more certain and more complete if the stones be worked in at least a damp state. Bond is of not less importance in stone walling than in brick laying. Instead of carefully making the joints recur one over the other in alternate courses, as with bricks and gauged stones, the joints should be carefully made to lock, so as to give the strength of two or three courses or layers between a joint in one course and one that may occur vertically over it in another. In