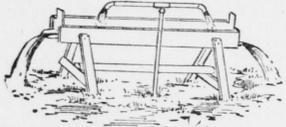




Irrigating a Farm Garden.
Many farmers feel so sure of success with artificial watering that they are putting down artesian wells and intend to build reservoirs as soon as possible, the past dry seasons causing them to realize the necessity of a most constant supply of moisture. Nearly all the wells are 2 inches in diameter and cost from 50 to 80 cents per foot. The flow amounts to from 15 to 85 gallons per minute. One 3 1/2-inch well that cost \$200 and is 295 feet deep flows about 1,300 gallons per minute, though the amount has never been accurately measured. It is thought the flow of some wells near this large one has diminished and it is possible that the artesian water supply may be limited.

A few fields have been flooded or "wet up" direct from these wells during the fall and winter, and have produced the following season 25 to 30 bushels of wheat to the acre, and other crops in proportion, while fields not so treated produced less than half this amount. Irrigation here is largely confined to gardens, the water in most cases being used direct from the wells, but a few farmers have reservoirs which aid in the economical use of the water, thus giving much better results. One garden has been irrigated five years and is producing all kinds of vegetables in abundance and of fine quality. A few gardens have been watered by wind-pumps. This method gives excellent results, especially where a small reservoir is used. Other gar-



AN ARTESIAN WATER SUPPLY.

dens have been watered by pumping from streams. This mode of irrigation must necessarily be limited, as the amount of water in streams is very small during a dry time. In fact, I have seen it almost dry.

The water is usually run between the rows of the various crops, sometimes between every row, or at most every third or fourth row. The plan proposed is to have main ditches, with several sets of laterals dividing the fields into squares, varying in size according to the slope of the land. Instead of ditches for the second set of laterals, back furrows may have to be substituted if the fields have much slope, for the water is too valuable to permit of waste. The illustration shows how a few "catch" the water from artesian wells. It may be distributed as best suits the gardener or farmer.—L. G. Hendricks, in Farm and Home.

The Gradus Pea.

Those who find the best profit in raising the wrinkled varieties of peas will be glad to have the Gradus, shown in the illustration. Not only is the quality of this variety equal to that of any wrinkled sort, but it is better than any of the smooth sorts that are early in season. The Gradus combines quality with extra earliness and extreme productiveness. Most of the wrinkled sorts are rather tender, but this variety may be planted as early as any of the smooth sorts without injury, and is said to be the only wrinkled variety with which this can be done. The growth of the vine is strong and healthy, and the bearing qualities are of the best. The pods are large, holding from eight to ten peas. While the sort is comparatively new, it has been tested quite extensively, and if it does



THE GRADUS PEA.

as well generally as in the localities where it has been tested it will be an acquisition.

Deep Plowing.

We used to believe in what we read when young about the value of plowing deep to bring up the fertility that had leached down through the surface soil into the subsoil. Our opinion was changed when we tested the deep plowing upon a field with a clay subsoil that we planted with corn. Later experiments have more thoroughly convinced us that deep plowing, by which we mean a depth of more than four to six inches, is seldom beneficial in this climate, whatever it may be in other sections of the country. The crops like corn, that like to spread their roots near the surface where the soil is

warmed by the sun, certainly do not need to have the earth stirred very deeply for them, while those that send their roots down into the subsoil, as onions, clover, beets, etc., can do so almost through the hardest subsoil or anything excepting a gravel in which there is no moisture.—American Cultivator.

Keeping Old Hay.

We used to say that old hay well kept in the barn was better than money at interest, but the following paragraph from an exchange leads us to think that it is possible to keep it too long for profit. A farmer in Laconia, N. H., has been feeding out hay to his stock this spring which was harvested in the spring of 1857—forty-five years ago. This hay is yet clean and bright, being in every way as handsome and perfect as when put into the barn. We do not remember the price of hay in 1857, but about 1867 we sold hay of our own curing at about \$60 per ton. But if that hay was worth but \$20 per ton forty-five years ago, and had been sold and the money placed at interest, it would have bought a great deal of hay this spring, while at compound interest the price of a ton would have been enough by this time to have paid for a pretty good New Hampshire farm. While it is not a good idea to sell out so closely on non-perishable produce as to be obliged to buy again before another crop can be harvested, we think forty-five years is too long to hold a crop. We used to like to sell when we could get a fair price, and just retain what we thought might be needed at home.—Massachusetts Ploughman.

Guessing and Knowing.

Thousands of farmers have guessed it did not pay to feed, and so have let their cows dry up nearly, destroying all profit in milk for the entire year. To those who read, think and don't guess any more than they can help have kept their herds up to the usual standard. Their verdict is that it has paid a good profit to do this. The others are looking ahead with gloomy eyes. O, no! I don't pay to be a reading farmer. In connection with the foregoing the Dairyman quotes the following as illustrating that knowledge is better than guessing at things: "The Kansas experiment station at a recent test found that counting wheat at \$1 per 100 pounds, cottonseed meal at \$1.50, and rating butter at 17 cents per pound, and placing the value of skim milk against the hauling, there would be a very handsome profit in the transaction; therefore, that it would pay farmers a great deal better to purchase cottonseed meal and increase the amount both of wheat straw and ground wheat and thus keep their cows in milk, avoiding the shutting of the creamery with all the evil results which follow."—Hoard's Dairyman.

An Underground Cistern.
Mrs. Lon Detwiler, of O'Brien County, writes Iowa Homestead: "Will you please give a good plan for an underground cistern? I would like one to be in the house." To this the editor of the Homestead replies: "A cistern is built according to the customary methods with an inlet for the rain water. In the bottom or to the side of the cistern is built a filter, which consists of a solid brick wall made of soft brick. A lead pipe leads from this to the cistern pump in the kitchen. All cisterns should be provided with an overflow pipe to let off the surplus water in times of flood. We need this a better plan than to depend on cutting off the flow in the inlet, as that will sometimes be neglected."

Farm Notes.

Bordeaux mixture controls downy mildew on lima beans.
A haphazard, go-as-you-please way in farming is not going to bring a big profit this year.

Make the boy's interest in the farm so profitable that he will be anxious to make farming his life work.

Chicory culture was started by Long Island farmers several years ago, but it did not pay and has been abandoned. The farmer as well as the business man who is going to forge to the front these times is the one who thinks and plans.

It has been demonstrated that in the sections where thorough drainage is practiced larger crops are produced, and at less cost than when drainage is neglected.

The currant worm is ready to begin work on the first approach of warm weather. Powdered hellebore is the remedy, which may be used with water or applied in the dry condition, while the leaves are damp from rain or dew.

String beans can be obtained during the entire summer by planting once a month for successive supplies. The seed germinates quickly in warm weather, and the plants grow rapidly. They can also be extensively grown for pickling.

When the old strawberry beds are out of use plow them under for late cabbage or turnips. If preferred the land may remain for a garden plot next spring, but if such is preferred the bed must be seeded. Late in the fall cover the beds with manure and plow the plot next spring.

MISCELLANEOUS MINING NEWS.

The Pacific Sheet Metal Works, Fairhaven, have manufactured 18,000,000 cans thus far this season.

According to the Scientific American 30,000,000 gallons of mixed paint were sold in the United States during 1901.

Laurence Carrigan, a prominent mining man of Hancock, Mich., died in Butte recently, after an illness of pneumonia covering about a week.

Sameul Word, of Helena, is examining the coal beds of the upper Ruby valley, Madison county, Montana, with a view of buying them for a company.

At Helena more men reported for duty at the East Helena smelters and the list at the company's office now numbers about 200 men. All of these have signed the agreement.

International mining congress meets at Butte, Montana, in September. The Western Mining World of Chicago, will soon issue a souvenir number of 100 pages, fully illustrated, comprising 50,000 copies for this meeting.

Superintendent John M. Scrafford and a force of 16 miners have left for the Gold Bug, near Princeton, Idaho, on the headwaters of the Palouse river, 20 miles northeast of Palouse City, to start operations on the property.

There are already a number of contestants in the field for the 1903 meeting of the International mining congress, which this year will be held in Butte. St. Louis, Minneapolis, Arkansas Springs, Deadwood and Los Angeles are all applicants.

The Champion Mining company, operating in the Williams district, Oregon, have just completed the work of putting in a new five-ton air compressor and other machinery and improvements at the Rising Star mine. About \$30,000 worth of new machinery has lately been added to the mine.

Theodore Swartz, a miner of long experience, gained on the Pacific coast, in Alaska and on the Salmon river and its tributaries, has returned from Thunder Mountain. He left there on the 5th inst. When asked regarding the famous camp he replied:

"Men are leaving it rapidly. When I left there were about 150 men in Roosevelt and vicinity, about the same number in Thunder City and about 50 in and about Marble City. There were six men at work on the Dewey and four on the Sunnyside."

According to the government report Montana's mineral output (gold, silver, lead and copper) for 1901, amounted to \$60,387,619, a decrease of \$3,000,000 from the previous year. Montana's copper output for 1901 was 228,021,503 pounds, valued at \$26,751,837, which is a decrease of \$2,075,298 from 1900.

The production of magnesite in the United States is reported by Dr. Joseph Struthers in Mineral Resources of the United States, 1901, now in press, published by the United States geological survey, as amounting in 1901 to 13,172 short tons, valued at \$43,057, as compared with 2,252 short tons, valued at \$19,333 in 1900.

The very ingenious "perpetual motion" invented by Daniel Quinn, an aged mechanic, for display at the World's Fair, consists of a tank of water through which an endless chain of hollow cylinders runs, entering at the bottom between rubber lips, going out at the top and down the outside. He depends upon the buoyancy of the cylinders to keep them in motion and to overcome the water pressure at the point of entrance.

Kettle valley lines are preparing to haul out ore from Republic.
A force of six men went to work on the San Poil mine last week. A larger ore bin will be put in, and the mine prepared for shipping ore.

Four cars have been loaded with California ore. Five cars are on the track of the Kettle valley lines awaiting to be filled with Line Pine-Surprise ore. A force of men has been breaking ore in the mine. A force of men will begin putting the Black Tail mine in shape for shipping.

The four carloads of ore that were shipped a few days ago from the Quilp mine have reached the Granby smelter. The ledge on the Trade Dollar has been cut at a distance of 99 feet from the shaft. The ore is of fine grade.

The machinery for the Silver Dollar hoist has left Spokane.

The raise in the Tom Thumb connecting the 265-foot level with the 150-foot level has been completed. The mine is now ready to ship.

Unless the supreme court overrules the decision of Judge Neal of Ferry county, Wash., the tax assessments on mining property there for 1899 and 1900 will stand, in spite of the suits brought by eight Spokane mining corporations to have the levy declared invalid.

Patrick Clark, who developed the Republic mine to a point where it paid dividends of \$35,000 per month, has again resumed the presidency of the Republic company, and operations on the mine will be resumed under his direction, probably within a month.

At a meeting of the stockholders of the Republic Consolidated Gold Mining company in the office of Foster & Wakefield the following Spokane men were elected to the board of directors: Patrick Clark, W. M. Ridpath, Huber Rasher, A. L. Kempland, John Bresnahan. The five comprise a majority out of the board of nine. The other four are eastern Canadians, and the management of the company will therefore be in the hands of the Spokane men in harmony with Mr. Clark. The directors of the company at a meeting Friday elected the following officers: President, Patrick Clark; vice-president, Robert Jaffrey of Toronto; secretary, Mr. Landskill, of Republic; assistant secretary and treasurer, A. L. Kempland of Spokane.

KITCHENER NOW IN LONDON

WAS GREETED BY THOUSANDS.

His Reception in the Metropolis Was Most Remarkable—Met by Many Notables—Made Short Speeches in Response to Ones of Welcome—An Elaborate Luncheon Served.

London, July 14.—Lord Kitchener has reached London and his reception in the metropolis was one of the most remarkable of the many of the past few days. The carriages carrying the general and his staff lacked spectacular features, but evidently the crowd was there in its tens of thousands to see the man of the hour, and not a pageant. From the moment he set foot in London to the time of his disappearance beneath the portals of St. James palace, Kitchener received such an outburst of popular enthusiasm as quite overshadowed the demonstration on previous and similar occasions. The platform at Paddington railroad station, when Kitchener arrived, looked more like a reception room of the war office or Indian office than a railroad station. It was covered with red carpets and decorated with a profusion of flowers and palms, while rows of decorated stands, crowded with spectators, had been erected at all parts from which a view of the returning general could be obtained.

The platform itself was crowded with distinguished personages, including Indian princes in resplendent costumes, generals and other officers in full uniform and many ladies in summer dresses. The prince of Wales, duke of Connaught, the duke of Cambridge, Lord Roberts, the commander in chief; Lord Lansdowne, the foreign secretary; Mr. Broderick, the war secretary; the duchess of Somerset, Lady Roberts, Lady French, Major General Sir Francis R. Wingate, who succeeded Kitchener as sirdar of the Egyptian army and governor general of the Sudan, and Major Laydin Pacha, British inspector general of the Sudan, were among those who assembled to greet the general.

When Kitchener's train arrived, punctual to the minute, a tremendous cheer greeted the latest hero as he emerged from his car and shook hands with the prince of Wales. He stood head and shoulders above nearly everyone on the platform and his workmanlike khaki uniform, with the large brown sun helmet, made familiar by his pictures, was in striking contrast to the glittering uniforms and rows of medals and orders worn by most of those in waiting. The reception lasted 10 or 15 minutes, when the prince of Wales and other members of the royal family drove off. After an interval Lord Kitchener and Generals French and Hamilton took seats in one of the royal carriages, and, followed by Lord Roberts and an escort, left the station amidst loud cheers from those inside, which grew into a perfect roar as Kitchener and his companions came in sight of the gathering outside.

In spite of his hatred of "palaver," the popular general was obliged to submit to the presentation of welcoming addresses at Paddington and other points on his way to St. James palace, but his replies were cut as short as politeness permitted, and he showed signs of relief when the procession was resumed. The route throughout was decorated with Venetian masts, banners, flags and steamers with mottoes of welcome, the house fronts were draped and the troops lined most of the way, colonials and Indian soldiers being mobilized as well as the local troops.

Every vantage point, even to the housetops, was occupied by sightseers, and solid masses of people gathered in all the open spots, such as Hyde Park corner and the space in front of Buckingham palace, while the sidewalks, stands, windows and roofs were packed with gaily dressed spectators, who waved flags, hats and handkerchiefs and shouted with a warmth that showed their hearts were in the welcome.

Shortly before the arrival of the procession at Buckingham palace Queen Alexandra and the princess appeared on a balcony and remained there until the victor of South Africa had passed in his triumphal journey to St. James palace, which he entered amid a final hurricane of cheers.

Kitchener and the generals who accompanied him were entertained at luncheon in the great banquet hall, where covers were laid for 50 persons. The prince of Wales occupied the central seat, with Kitchener on his right and with Lord Roberts opposite. Among the guests were the premier, Lord Salisbury; Lord Lansdowne, Mr. Broderick and Lord Raglan, the under secretary of war. The hall was hung with pictures representing war scenes.

The luncheon occupied an hour and a half. The prince of Wales toasted King Edward and then proposed a toast to Kitchener. The prince expressed the pleasure which it gave him to extend to the general, in behalf of the king, the heartiest congratulations on the successful manner in which he had terminated the long and arduous campaign. His royal highness also expressed confidence that the sovereign's sentiments in this matter were shared by the empire, which had watched with admiration the general's tenacity, skill and patience, qualities in which his armies had followed his example. Kitchener made a brief reply, which exhausted the toast list, and soon after 3 o'clock the general proceeded to Buckingham palace to see the king and queen.

112 BODIES NOW RECOVERED

FROM JOHNSTOWN DISASTER.

Result of Big Mine Explosion—Work of Rescue Rapidly Done—Many Caught in Mine Brought Out Ravaging Mania—Continuous Funerals for Days—Distressing Scenes.

Johnstown, Pa., July 14.—The extent of the horrible catastrophe of the rolling mill mine of the Cambria Steel company is now capable of being grasped. In spite of conflicting reports as to the number of dead, a careful and complete compilation by the Associated Press shows that 112 is the exact number of bodies taken from the mine. Almost all the employees who could have been in the mine at the time of the life wrecking explosion of last Thursday are accounted for. Very few inquiries for missing have been made to the authorities or the mine officials, and this, better than anything else, demonstrates the impossibility of many bodies still remaining in the death trap.

Sunday dawned upon the populous city of Johnstown prepared to devote its attention to mourning and obsequies. The inaugural of this grim program was given today, when more than a score of interments took place.

Inspector Evans said later as to future investigations:

"Those of the company officials who were in the mine at the time of the explosion and have survived will be called upon to testify. Until these men are able to be present at the inquiry it will be useless to try to do anything."

Asked as to whose duty it was to take care of the gas in the mine, Mr. Evans replied, "The fire boss, of course."

After the consultation at the office, Evans went into the mine with Robinson and Moore. They did not emerge until late in the afternoon. The work they did while in the mine was to direct their attention to the damage wrought and more critically examine into the possible hiding places for more bodies.

Prying about in the fourth right heading in the Klondike, State Inspector Evans came across rooms 19 and 20, distributed between which were the bodies which were brought at 2:30 p. m. Evans was alone at the time. The bodies he found were in a bad state of decay. The search went on after the three were brought out and still continues.

All day thousands of men, women and children, drawn thither out of morbid curiosity, lingered about the low frame structure. Their appetite apparently could not be satisfied by the already vast horror. Hundreds stood in a baking sun nearly opposite on the other side of the Conemaugh river, where the cars came down from the mine entry. Most of these were interested in friends who were possible victims. Down below, a quarter of a mile, the streets of Conemaugh City were clogged with funeral corteges.

At 3 o'clock in the morning the charred remains of 15 victims were brought to the Westmont pit mouth and taken to the morgue. The bodies were found in the upper end of No. 6 right heading, where the explosion occurred.

The bodies were all lying far in from the point of the explosion and could not be reached until the heading had been entirely cleared of the noxious gases.

Far back in the heading the searchers came across the bodies of 15 men. This discovery was made shortly after midnight. Mine Superintendent Geo. T. Robinson today said they would have the mine ready for work by Monday.

He said there has not been the slightest danger from explosion since the original and only one, on Thursday. The mine, he admitted, especially the section known as the Klondike, always contained gas. It did not exist in dangerous quantities, he said, and to cause an explosion some one must have violated the rules as to lights. Every precaution was taken to guard against accidents.

Superintendent Robinson commends the Johnstown doctors for saving the lives of a dozen or more. "When we made our first dash into the mine," he said, "we were taking our lives into our hands, as none knew what was beyond our course. The doctors came on and followed us without the slightest tremor. State Mine Inspector J. T. Evans reached the pit mouth at 8 o'clock this morning. There he was joined by Chief Inspector Roderick, who came here last night."

Mr. Roderick held a private conference with Superintendent Robinson and Mine Engineer Marshall G. Moore which lasted some time. Moore had been in the mine up to 5 o'clock this morning. He informed Roderick, among other things, that the air was making a clean sweep of the mines and that no bad gases remained there.

Saddest of all the scenes of the great disaster were the affecting leave-takings of the dead, which commenced this morning. All day the Croatian, Slav and Greek Catholic churches were filled with picturesque throngs, who attended the last service for the dead. Knots of women and men stood on street corners weeping and groaning.

Many women who attended the last rites in the churches were overcome with grief and fell fainting to the floor.

Most of the funerals today are in St. Stephens' Slovak church, where both Slavs and Poles worship.

At the Greek Catholic church and

the Croatian church, where mass was said over many of the dead, the streets surrounding the buildings were choked with great throngs clamoring for admission.

Friends of the dead miners and employees who lost their lives on Thursday morning have been going over the list of dead with a view of learning the number of widows and fatherless children here and who will be made helpless by the catastrophe. According to the most reliable data there are 66 widows and 138 children. Of this number there are five widows and 18 children living in the old country. Five of the widows are brides of a few months and eight widows and 64 children are survivors of American employes of the mines, who are numbered among the dead. There are a number of dead who are comparatively newcomers to the country and to Johnstown, who are believed to have wives and children in the old country and who were expecting to come over here when they had earned sufficient money to pay their passage. Some of the young men who were unmarried were also known to be the sole support of mothers and sisters who could well be numbered among the helpless ones to be looked after.

BOLD ROBBERS IN COLORADO

MASKED MEN HELD UP A TRAIN

Went Through Pockets of Passengers, Who Had Been Lined Up Along the Track—Hew Open Two Safes in the Express Car, but Secured Little Booty—They Escape.

Salida, Col. July 15.—A report was received here that the Denver & Rio Grande narrow gauge passenger train was held up and robbed by several men near Sargents, west of Marshall Pass.

The robbery occurred at 8:50 o'clock today at Chester, Col., 250 miles west of Denver.

The engineer was compelled at the point of a revolver to stop the train by masked men who had climbed over the tender.

Two safes in the express car were blown open, but it is claimed by the officers of the Rio Grande Express company that the robbers failed to secure any plunder from the safes.

The passengers were compelled to alight from the cars and line up alongside the tracks in the canyon, and they were relieved of their money and valuables.

Many of the passengers threw away their money, watches and jewelry among the rocks before the robbers searched them. There were many tourists among the passengers, and it is presumed that the losses of some were heavy.

The train was the west bound narrow gauge passenger train which left Denver last night. It is not known how many passengers were aboard, but the cars, as usual this season, were all filled.

The scene of the robbery is in a wild, mountainous country at the foot of Marshall Pass, on the west slope, and the robbers, of whom there were four, escaped into the mountains.

Aggregator Won Race.

Chicago, July 14.—Aggregator dissipated the idea that a horse can not come from the east a few days before a long distance race and win by capturing the Young handicap at Washington park, beating the best field of horses of all ages that has started in any race at the present meeting.

Mrs. Alexander Is Dead.

London, July 14.—Mrs. Annie Alexander Hector, the novelist, who wrote over the nom de plume of "Mrs. Alexander," died suddenly in London last Thursday. She was born in Dublin in 1825.

Battleship Illinois Sailed.

London, July 15.—The United States battleship Illinois, flagship of Rear Admiral Crowninshield, and the United States cruiser San Francisco have sailed from Graysvee for Christiania, Norway.

Chairman Griggs Coming West.

Washington, July 15.—Chairman Griggs of the democratic congressional committee has decided to make a tour of the west during the coming campaign and he expects to go as far as the Pacific coast.

Archbishop Feehan Is Dead.

Chicago, July 14.—Archbishop Patrick A. Feehan, for 22 years in charge of the Roman Catholic archdiocese of Chicago, died after a long illness, aged 73 years.

In Death Valley.

Tourist (on vacation, as he meets a stroller along the road)—I say, you are the first one that I have met in half an hour's walk. Is it always as dead as this in this neighborhood?
Native—Dead? Worse! If it wasn't for an occasional funeral in the place you would not see life here from one end of the year to the other.—N. Y. Times.

A Tryst.

Benevolent Gentleman—My little boy, have you no better way to spend this beautiful Sunday afternoon than by standing before the gate idling away your time?

Boy—I ain't idling away my time. There's a feller inside with my sister who's paying me sixpence an hour to watch for pa.—Tit Bits.

A Poser for "Pop."

Teddy—Pa?
Pa—Yes, dear.
Teddy—May I ask a question?
Pa—Certainly, Teddy.
Teddy—Where's the wind when it don't blow?—New York Times.