

INDUSTRY'S GENIUS

Latest in the World of Work in the Stone Lathe.

The Machine Turns Huge Square Blocks of Granite Weighing 310 Tons, 67 Feet Long and 84x7 Feet, into Beautiful Cylindrical Columns, Which Will Each Weigh When Completed 160 Tons.

Look at this immense block of granite and think of the amount of work that must be put upon it to convert it into a perfectly round, highly polished column. Then look at the companion picture taken only a few days later with the granite already reduced to cylindrical form ready for the polishing process. The machine which works this rapid transformation is the latest triumph in the industrial world. It is called a lathe, and the work that it has been doing since it was installed has demonstrated that it is a success. It renders possible of easy and inexpensive accomplishment construction that has heretofore been very difficult.

This lathe was built in Philadelphia, and has been installed in the granite quarries at Vinalhaven, Me., where columns of many sizes are being turned out for the Cathedral of St. John the Divine, New York City. In fact, this machine was primarily

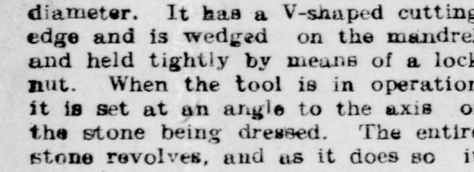


BLOCK OF GRANITE FOR ONE OF THE COLUMNS—WEIGHT 310 TONS; LENGTH, 67 FEET; HEIGHT, 84 FEET; WIDTH, 7 FEET.

conceived and built for the special work called for by the plans for this great new cathedral of the metropolis, which is to have no less than thirty-two granite columns fifty-four feet long by six feet in diameter, which will weigh when completed 160 tons each. In addition to this it will have innumerable columns of smaller dimensions.

In length the lathe that will perform this work is eighty-six feet, and when in working order it weighs 285 tons. It has swings six feet six inches by sixty feet long, and it has eight cutters. Each tool takes out a cut three inches deep, the entire eight cutters reducing the column twenty-four inches in diameter at one pass over the stone.

The block of granite in the illustration weighs 310 tons; it is 67 feet long, 84 feet high by 7 feet wide. The piece of granite to be cut is rough hewn at the corners by hand in order that it may be placed in the lathe. Once in the lathe it requires about six weeks to turn out a finished column, dressed and polished. The tool that does the cutting is a circular disk of steel seven-eighths of an inch in thickness and ten inches in diameter. It has a V-shaped cutting edge and is wedged on the mandrel and held tightly by means of a lock nut. When the tool is in operation it is set at an angle to the axis of the stone being dressed. The entire stone revolves, and as it does so it imparts a rotary motion to the cutting disks, which are forced into the stone by means of the feed screw. In this manner the tool splinters off the rock to any required depth leaving a roughly chipped surface. When this shaping process has been completed there is attached to the tool posts in a cup-shaped device holding hardened steel shot, by which the rough polishing is done. The final polish is imparted to the columns in the same manner, but powdered emery is used in this operation.



LATHE IN WHICH THE GIANTIC COLUMNS ARE TURNED.

When one considers the length of the blocks of granite handled, the idea obtains that there must be many supports to hold the weight while the stone is under treatment, but the fact is the entire weight of the stone is held by head and tail chucks, there being no intermediate supports. This tells in a sentence the quality of the material used in the construction of the lathe itself.

When in operation the lathe is run by a fifty-horse power engine. It makes one and three-fourths revolutions a minute at cutting speed and three revolutions at polishing speed. When the belt is thrown off and the machine runs free it runs for nearly a quarter of a minute, a fact which shows how well balanced it is. The lathe was first placed in operation in August last.

Sensations of a Balloonist.

This is how the famous French aeronaut Michael Corday describes the sensations of the balloonist:

"Ascent, descent, progress — it all goes on easily and imperceptibly. The registering barometer and thermometer, the pieces of cigarette paper thrown overboard and fluttering about, the changing geographic picture of the surface of the earth; those are the only signs of movement. In the gondola absolute silence reigns, and the higher you ascend the more eager grows the desire to mount higher and yet higher."

Another aeronaut suggests ballooning as an infallible cure for nervous diseases, a treatment, we suppose, based on homeopathic principles.

Biggest Dog Show.

London has seen the biggest dog show of the century at the Alexandra Palace. It was held by the Ladies' Kennel Association, with 6,000 entries and \$50,000 worth of prizes.

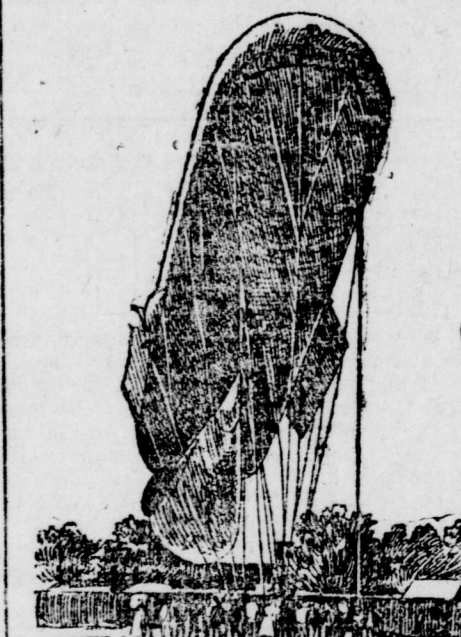
WHAT IT LOOKS LIKE.

Count Von Zeppelin's Airship That Flew, as It Appears to the Spectator, When Starting Off.

If Count Von Zeppelin, the German inventor of the latest airship, really has done all that is accredited to him by the press despatches, he is one of the greatest inventive geniuses of the century. By all accounts his airship sails either with or against the wind, is dirigible, is under the control of its manager and is capable of making great speed. If these facts be verified by further experiment and assured by the future successful working of the balloon, the day of aerial navigation has arrived. At all events, Count Von Zeppelin's airship has certainly hastened the day.

The Von Zeppelin airship is a huge affair, more than 400 feet in length and over 40 feet in diameter. It is cylindrical in shape, with pointed ends, and built of aluminum, covered with canvas. All the metal work of the airship—that of the interior framework and of the two cars suspended from it—is of the new metal and combines lightness and strength to an incredible degree. The motive power of the balloon is furnished by two Daimler motors, each of 16 horsepower, one in each car, and they furnish enough power to drive the construction at a high rate of speed. The lifting of the airship is provided for by the enormous quantity of hydrogen which it contains, and its steering apparatus consists of five rudders, four of which control its lateral direction and the fifth its ascent and descent. The body of the vast airship consists of 18 compartments, which contain 17 distinct and entirely separate gas chambers. Their separation obviates the danger of the nonrising of the balloon through leakage of gas from some of them.

The inventor of the marvelous airship is an old man about 65 or 70 years of age. He has gained much military renown in his native land and attained the rank of lieutenant general. He has given to the cause



VON ZEPPELIN'S AIRSHIP STARTING.

of aerial flight many years of earnest research and study and all his fortune. He gained his first experience of balloons in the United States, while serving as military attaché during the civil war.

His Wife a Canadian.

Count Von Zeppelin, whose experiments with airships are attracting so much attention, is married to a Canadian girl. His wife is a daughter of Mr. William H. McGarvey, whose career is noted in *London*. Mr. McGarvey was formerly Mayor of Petrolia and later Warden of Lambton. He contested the West Riding unsuccessfully against the late Mr. Parnell. In 1881 he went to Austria, and became the principal owner of the oil wells in Galicia. His daughter married Count Eberhard Von Zeppelin in 1895.

YELLOW ARC LIGHT.

Violet Color Softened by Use of Combination Carbons.

While the electric arc is the most economical method of producing artificial illumination known, the violet-blue color of its light has always been considered objectionable. According to Engineering, a German firm has attempted to alter the color, making it more yellow, like sunshine, by impregnating one of the carbons with salts of calcium, silicon and magnesia. As much as 50 per cent. of these salts imparts to the arc light the characteristic reddish-yellow flame of the sodium. This combination carbon, only the upper one being of this composition, consumes more rapidly than the pure carbon rod, but this is overcome by making it of larger dimensions, so that even at the increased rate of consumption it will last just as long. Tests of the candle-power produced by such carbons show a remarkable efficiency.

Famous London House of Worship.

The famous chapel in Little Portland street, the scene of Dr. Martineau's London ministry, was reopened on Oct. 6, after extensive renovation and improvement. Among the celebrities of the past who have at one time or another been pretty constant members of the congregation must be numbered Charles Dickens (with his wife and family), Gladstone, "George Eliot," Darwin, Sir Charles Lyell and many more. Following Dr. Martineau came the Rev. Philip Wicksteed, who had the assistance for a portion of his ministry of Mr. John Trevor.

Telephones From Paris to Rome.

The Italian Government has established telephone wires along the Italian Alps, with the object of connecting Rome with Paris. It will be some months, however, before the line is completed.

The Modern Watch.

There are 156 pieces in a modern watch. In an old one there were 800.

With the aid of artesian wells, 12,000,000 acres of the Sahara has been already converted into fertile lands.

SEA WASP BAFFLED

Lord Beresford Shows the Inefficiency of Torpedo Boats.

Startling Results of the Recent Mock Battle in the Mediterranean—Resourceful Methods in Maneuvering—His Tactics Have Been Pronounced the Cleverest in Naval Annals—His Great Triumph.

It is said that mock battles and manoeuvres can give no actual idea of what would happen in similar conditions in real warfare because the element of danger is absent, and men are not so likely to lose their heads as when under real shot and shell. However that may be, such manoeuvres are no doubt better than nothing, for they teach new and scientific movements and stratagems. At the manoeuvres of the British fleet held recently in the Mediterranean Lord Charles Beresford astonished the naval authorities and won a great triumph. His tactics have been pronounced the cleverest in naval annals. It has long been Lord Beresford's theory that torpedo boats are prac-



LORD CHARLES BERESFORD.

tically of no use. Speaking in the House of Commons, he asked the Admiralty to furnish an old warship armed under his directions, of which he would take command with a volunteer crew raised by himself and defend it successfully against the attacks of any number of torpedo boats discharging real torpedoes. He said he would sink every one of the little craft.

This speech of his caused great excitement, but naturally his offer could not be accepted, but the theory was tested in the recent sham battle in the Mediterranean, in which the fleet was divided into two parts, one in command of Admiral Fisher and the other under Lord Beresford.

Beresford was blockaded in the port of Mytilene by Fisher's torpedo boats, and Fisher's fleet was hovering about and lying in wait outside. Beresford's task was to coal his fleet, then get out of the harbor and attack Fisher. It was certainly a great task, with the veteran Fisher watching his every move as a cat watches a mouse, but, considering Lord Beresford's remarks about torpedo boats, his success was just to his liking. He secured a number of launches and put lights on them in such a way that they exactly resembled his own ships; then by means of these he deceived the torpedo boats on a false trail, while he quietly slipped away to sea, with every light out on board his ships. Not one of his fleet was touched.

This interesting performance being over, he proceeded to mislead Fisher's scouts with false signals and caught the hostile fleet entirely unprepared off the Island of Lemnos.

Fisher's squadron was steaming in parallel columns, and Beresford manoeuvred his ships so skillfully that the admiral had no opportunity to change this formation or to do anything but clear decks for instant action.

Beresford ran his ships in single file right in between the lines, enabling him to fight with both broadsides, while each of Fisher's vessels could use but one. The victory was complete and undeniable, as the umpires were obliged to admit.

THE FIRST TROUSERS.

They Originated During the Pride of the Assyrian Empire.

The first pantaloons or trousers were made in Assyria, says St. Nicholas. In the reign of King Asshur-izirpal (883-858 B. C.) horses were introduced in the army as cavalry. Here, now, was a problem; the cavalryman had to have some sort of a uniform, and it was impossible for him to wear a skirt and ride astride a horse. The tailors to His Majesty's armies wagged their heads a long time over the problem, and finally decided that the only way out of the difficulty was to cut the cavalryman's skirt from hem to waistband in both front and rear, letting each side fall on its respective side of the horse. As can readily be imagined, this split skirt made an exceedingly poor article of clothing. The law of heredity, however, is full of surprises; this humble apology for a garment was destined to take the father of the original pantaloons. It took the tailors of Assyria over a century to solve the problem of the horseman's clothing. "Why not," said one of these workers with the needle and shears, "sew together the edges of each division of the skirt and thus form a separate skirt for each leg?" — or, in other words, he invented a pair of pantaloons.

A Herring Record.

Shetland has had a wonderful herring catch this season, 820,400 crans, valued at \$1,500,000. This is a record for all Scotland.

Chinaman's Gift to Christmas. A Chinaman merchant of Amoy recently gave \$1,200 to the Christian mission in that city.

COUNT VON BLUMENTHAL.

Famous German Strategist Has Been Reported Seriously Ill at His Residence in Berlin.

Count Leonard Von Blumenthal, the eminent German soldier, last of the generals who were conspicuous in the Franco-Prussian war, and one of the most distinguished strategists of the German army, is reported seriously ill in Berlin.

Count Von Blumenthal was given his title of "graf" in 1868 and was made field marshal in 1878. His missions to England for the German Gov-



COUNT VON BLUMENTHAL.

ernment were many and important. In 1850 he was dispatched to Great Britain with special military propositions and was rewarded with the order of the Red Eagle. In 1871 he represented the Emperor at the military manoeuvres at Chobham, and was enlisted with other affairs of gravity in connection with the war department.

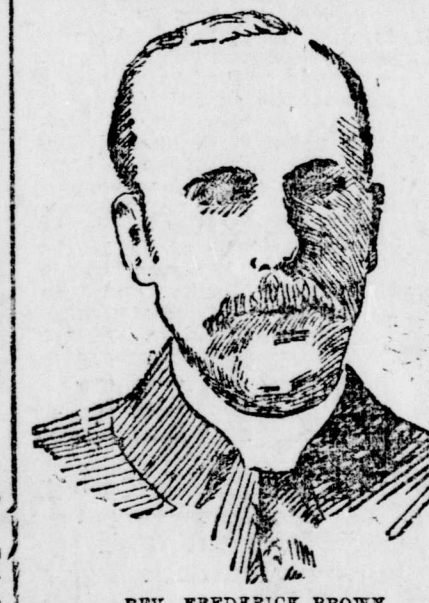
On July 30 last Count Von Blumenthal was 90 years old. He was a soldier from his boyhood. In 1827, when but 17, he was commissioned a second lieutenant in what is now the Fusilier Guards. In 1846 he had risen to be premier lieutenant in the topographical division of the general staff. His first fighting was done in the streets of Berlin during the disturbances of 1849. He took part in the Schleswig-Holstein campaign, fought in the skirmishes at Auenburg, in the battle of Golling, and in the battle of Fredericia.

Having meanwhile risen to the rank of colonel, Von Blumenthal, on December 15, 1863, was appointed chief of general staff of the combined army against Denmark. This was the first opportunity he had been given to showing his fine abilities as a soldier. For the brilliant manner in which he stormed the trenches at Dueppel he was promoted to major general, and after the peace he was made chief of the general staff of the second army, receiving the oak leaf of the Order of Merit and the star of the Order of the House of Hohenzollern. After the outbreak of the war with France Gen. Von Blumenthal was appointed chief of the general staff under the supreme command of the crown prince. When the latter was presented by the Emperor with the Iron Cross he declared that Gen. Von Blumenthal was as fully deserving of the honor as was he. The great strategist has been living in retirement for many years.

REV. FREDERICK BROWN.

Clergyman Who Guided the Allied Forces From Tien Tsin to Peking.

Rev. Frederick Brown, under whose guidance the allied forces marched from Tien Tsin to Peking, is a missionary and the presiding elder of the Tien Tsin district of the Methodist Episcopal mission in North China. Mr. Brown has labored in the land of the Manchus and Tartars for upward of seventeen years. In that time he has traveled much between Tien Tsin and Peking, and, thoroughly familiar as he was with every foot of the way, no better guide for the



REV. FREDERICK BROWN.

forces in their march of relief could have been found. When the outbreak of the Boxers occurred in Peking Mr. Brown was the last foreigner to get safely away. Later he went to Chefoo, from which point he sent nearly all the unofficial cable despatches describing the situation in China. He stood upon the wall of Peking during the first engagement, and was within a few feet of Captain Kelly when that brave officer was killed. He refused all compensation for his services.

An Irish Bog on Its Travels.

A bog, several acres in extent, situated near Lisdoonvarna, County Ennis, says the *London Graphic*, October 11, began to move on Tuesday, owing, it is believed, to recent heavy rains. Gathering momentum as it rolled forward, the bog pushed its way in an overwhelming mass across some low-lying lands, completely covering a dwelling house which stood in its way. The only inmates of the house were Mrs. McCarthy, a widow, aged 68, and a woman named Egan, aged 28. Both perished. Their bodies were recovered yesterday.

Live Fish Sales in Berlin.

More living fish are sold in Berlin than in any other market in the world.

More than four-fifths of the population of Mexico are of mixed or Indian blood.

"All coons look alike to me!"
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THE SACRED CAVE OF ZEUS

Discovered in Cretan Mountains by Director Hogarth.

Deep in the tough heart of the Cretan mountains has Mr. Hogarth, the director of the British school in Athens, been digging for months, the sacred cave of Zeus being the object of his zeal. Recently he returned to London and added to what has recently appeared on the subject of his excavations.

The cave is sacred to Zeus because his mother, Rhea, is supposed to have hidden him there to save him from the cannibal propensities of his father. It lies about 2,000 feet above the level of the sea.

For some fifteen years past the natives have been finding ancient objects there. One day a man rested his candle in a niche of the stalactite pillars with which the lower cave is lined. Something glittered behind it, and this proved to be a venerable offering placed there some 3,000 years ago. Other niches in other stalactites yielded the same finds, weapons or imitation weapons, that had been offered to Zeus, and needles and deplorable instruments offered to his mother.

To collect these objects Mr. Hogarth employed women because their eyes were sharper and their touch lighter than the men's. They fished the treasures out of the niches by means of the tweezers used by the natives in their charcoal fires. He gave them "back-sheesh" for everything they found. They enjoyed the work and rejoiced in the pay.

So great was the quantity of antiquities found by these women that Mr. Hogarth believes it will take him seven years to study and classify them—*London Daily Mail*.

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