

CHANGE IN EAST RIVER TUNNEL PLANS.

ADDITIONAL APPLIANCE ADOPTED THAT WILL PREVENT CARS FROM RAMMING THE STEEL TUBE.

It has practically been decided that concrete benches somewhat like those planned for the Pennsylvania Railroad tunnel will be placed in the East River tunnel, which is being excavated from the Battery to Joralemon-st., Brooklyn, as suggested in The Tribune in January. At that time it was asserted that without something of this sort, should a car run off from the track going down the grade into the tunnel it might break the cast iron tube. These benches, containing the electric ducts and rising as high as the car floor on each side of the cars, will prevent the cars from coming in direct contact with the sides of the tunnel.

As the pressure is reduced, one realizes that there is a difference between the air inside and the air outside. The door quickly subsides, the door is opened and once more one stands in daylight, surrounded by the cloud of steam which sweeps past. The air feels almost balmy in comparison with the temperature in the air chamber. Entrance by the small emergency or man lock above the big lock does not look so inviting as that through the larger lock. Climbing a ladder to the little platform across the centre of the tunnel, one is face to face with a doorway just big enough to pass a man's body. Pushing the door in, one climbs through on all fours to find one's self in a pipe not above three feet in diameter. A single electric light illuminates the doorway. Crawling along through the sawdust lying on the bottom, the tube becomes darker and darker, until one begins to wonder if this little cramped tunnel has no end, and to think it would be a little pleasant outside. Again the air rushes in, you "push with your lungs" and blow your nose, and feel thankful when the little door at the far end is opened and the big arch of the tunnel is seen by the electric lights.

The "sand bags," as tunnel workers are called, are an interesting lot of men. One day several of

becomes clammy as the temperature drops rapidly. As the pressure is reduced, one realizes that there is a difference between the air inside and the air outside. The door quickly subsides, the door is opened and once more one stands in daylight, surrounded by the cloud of steam which sweeps past. The air feels almost balmy in comparison with the temperature in the air chamber. Entrance by the small emergency or man lock above the big lock does not look so inviting as that through the larger lock. Climbing a ladder to the little platform across the centre of the tunnel, one is face to face with a doorway just big enough to pass a man's body. Pushing the door in, one climbs through on all fours to find one's self in a pipe not above three feet in diameter. A single electric light illuminates the doorway. Crawling along through the sawdust lying on the bottom, the tube becomes darker and darker, until one begins to wonder if this little cramped tunnel has no end, and to think it would be a little pleasant outside. Again the air rushes in, you "push with your lungs" and blow your nose, and feel thankful when the little door at the far end is opened and the big arch of the tunnel is seen by the electric lights.

Nor is the house of Hohenzollern without American affiliations, for two of the princes, namely, Frederick and Maximilian, while they did not wed daughters of Uncle Sam, at any rate married women who had an American mother. The latter is Countess Paul Hatzfeldt, widow of the diplomat who died as German Ambassador in London a few years ago. She is the daughter of Colonel and Mrs. Moulton, of Albany, N. Y. Mrs. Moulton having been the only daughter of the famous dancing master Metz, who, in the early part of the nineteenth century, was all the rage and fashion in New-York, and who taught the great ladies of fifty and seventy-five years ago to trip the light fantastic toe. Countess Hatzfeldt has had a most extraordinary career, for, although her husband was devoted to her, he was forced by the late Prince Bismarck to divorce her, after the birth of her three children, under threat of being ousted from official life, but remarried her as soon as ever Bismarck's downfall was brought about, the late

there, came to the United States and went to work for Ladeburg, Thalman & Co. without remuneration, for the sake of obtaining a knowledge of American business methods. No unmarried prince ever lands on these shores without being at once credited with matrimonial intentions, and consequently as soon as Hugo Hohenzollern's presence here was known speculation became rife in the press as to which of the marriageable heiresses he was likely to lead to the altar. Advantage was taken of this to connect his name with a totally unfounded story, according to which he had engaged the services of a marriage broker in order to secure the hand of Miss Mary Goelet, the people responsible for it being obviously unaware that he would have been debarred by the statutes of his house from marrying her otherwise thanmorganatically, unless he resigned his rank and prerogative as a mediatized prince of Hohenzollern and descended to the status of an ordinary nobleman, neither of which alternatives is likely to commend itself to any American girl possessed of great wealth. These stories, which obtained widespread publicity, caused the prince to cut short his stay in New-York.

Since his return to Germany he has gone into business at Berlin, and has formed a partnership with a merchant of the name of Leonard Schade von Westrum for the exploiting of certain patents in connection with the oil industry, the name of the concern figuring in the current issue of the Berlin Trades Directory as the German Oil Works Company, the capital being given at 300,000 marks. It is to the ideas which he acquired in America that must be attributed his refusal to contract with Mme. Helge a morganatic marriage, which always places the wife in an invidious and unsatisfactory position, and, as he would have forfeited all right to any share in the immense family fortune of the Hohenzollerns had he wedded in defiance of the laws of his house and without the consent of his agnates, he agreed to surrender his princely rank, his prerogatives and his name, and to accept the status of an ordinary nobleman with the title of Count Hatzfeldt, in order to be able to marry the woman of his choice on a footing of equality. Prince Victor Hohenzollern, uncle of the German Emperor and nephew of Queen Victoria, in the same way gave up his position as member of a mediatized family and took the rank of a mere nobleman and the name of Count Gleichen in order to marry on a footing of equality Lady Laura Seymour, sister of the present Marquis of Hertford, and aunt, therefore, of Lord Yarmouth, who married Miss Thaw, of Pittsburg. His eldest brother, Charles, declined to make this sacrifice, but, retaining his title of Prince of Hohenzollern, married mor-

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HEROES SUCH AS ANDREW CARNEGIE LOVES.
SOME THRILLING INSTANCES OF BRAVERY WHICH SHOW HUMAN NATURE IN A FINE LIGHT.

In his latest benefaction Mr. Carnegie has set apart \$5,000,000 to reward heroes. A permanent commission has been established which is to give money and medals whenever it believes an act of heroism justifies such a gift. Should a man or woman die in the performance of a courageous deed, those left without support are to receive financial assistance. Orphaned children are to be educated. Should the hero survive he is to be honored with a purse or medal, as the commission shall decide.

The world recognizes two kinds of heroes, each the antithesis, the negative, the paradox even of the other. The one risks his life to kill, the other to rescue his fellow men. In the latter the soldier and the nurse brave shot and shell side by side, both of them consecrated to purposes called No-stink or No-kill as well and heaven. The general who overhauls his hand-arms is exalted as the hero of his nation and made the subject of odes, orations, paintings and statues. The mother who dies in rescuing her child from a blazing tenement house, leaves a memory to few, and is soon doomed to oblivion.

Only for the heroes and heroines of peace are the guerdons of the Carnegie commission intended. "Whenever heroism is displayed by man or woman in saving human life," said Mr. Carnegie in his letter concerning the project, "the fund applied, . . . The sea is the scene of heroic acts, and no action is more heroic than that of doctors and nurses volunteering their services in the case of epidemics. Railroad employes are remarkable for heroism. All these and similar cases are embraced."

In the records of the Royal Humane Society of England the Carnegie commission may obtain some idea of what the scope of its work will be. No similar record is kept in this country. This society furnishes medals only to those who have rescued persons from drowning and suffocation, and in one year it honored 75 British subjects.

Some time ago this society conferred medals upon two young men who risked their lives to save a couple of black Kaffir boys from a De Beers diamond mine in South Africa. One of the youths, by the name of Brown, had been a football player before he became a miner, and Brand, the other, was a member of the Diamond Fields Horse, of South Africa. Both were employed in a mine near Kimberley.

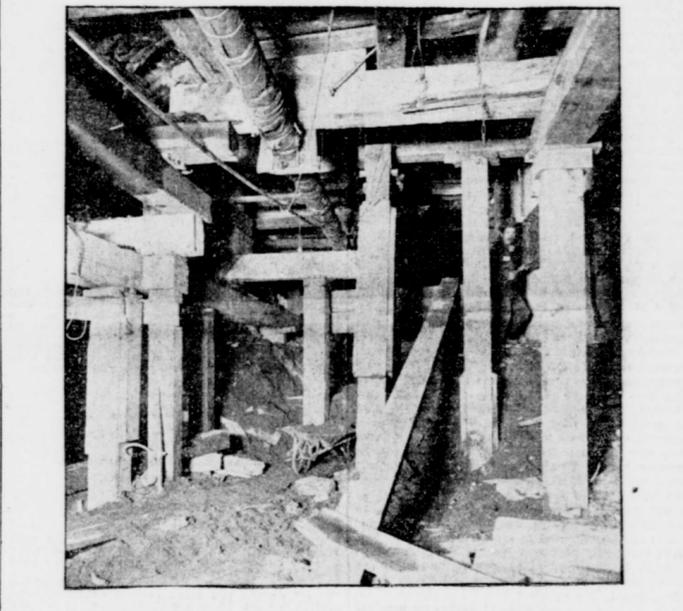
It chanced that Brown and Brand were about to go into the mine one day when they heard screams, and were suddenly knocked down by a swarm of Kaffirs, who came tumbling and sprawling into the pit.

"Mud rush! Mud rush!" yelled one who could speak English somewhat better than the rest of his black companions.

Both Brown and Brand had been long enough in the diamond mines to know what a mud rush was. Nothing causes such horror among the blacks as this kind of disaster. Unlike explosion or flood, the mud rush gives no warning to its victims. Without a sound the black slime wells up from the floor of the mine, and, catching the miner in its mirthy grasp, it crawls up his chest, so slowly that he may live hours before death finally buries his head and all.

Fortunately a Kaffir had seen the first bubble of this mud rush and had spread a general alarm. After a hasty count of those who had escaped, however, it was discovered that there were two Kaffir boys employed as helpers missing. For several hours no plan of rescue was possible, because the mud oozed out of the mouth of the mine like muck out of a bottle's mouth. At the first sign of its subsidence, a gang was put to work digging out the mine, and when an afternoon, a night and a morning had passed the surface of the mud lay about a foot below the roof of the mine.

"No use in trying to save those Kaffir kids," said a veteran miner. "If they were caught, they're dead."

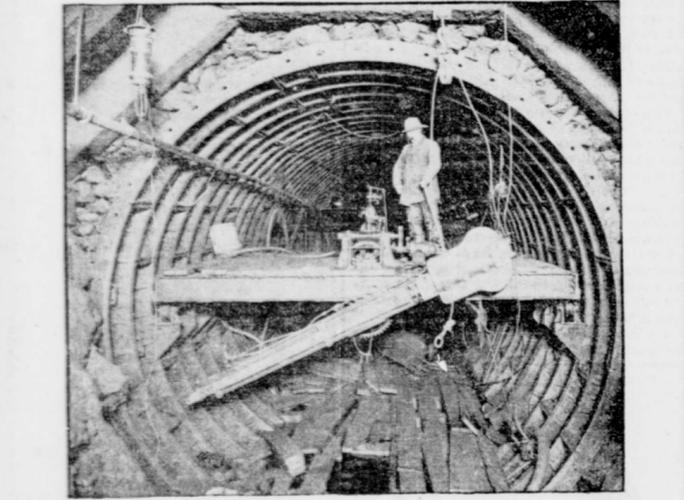


UNDERMINING BROADWAY BELOW THE CITY HALL. This picture shows the difficulty of excavating the subway without removing the surface of the street. The forest of timbers is needed to support the street pavement and the gas and sewer pipes.

Empress Frederick and her daughter being present at the second marriage. The count remained a warm friend of his second wife all the time he was divorced from her, and managed to frustrate all the attempts made by the Chancellor to marry him to the daughter of the great Berlin banker Bleichroder. It may sound amazing that the count should have consented to divorce a wife of whom he was fond at the mere bidding of Bismarck, but, like so many noblemen, Paul Hatzfeldt had been living by his means, and after occupying the post of ambassador at Constantinople he found himself so terribly embarrassed that he was face to face with ruin, in which his wife and two daughters and his son would have been involved. Bismarck, aware of this condition of affairs and entertaining a very high opinion of his abilities, recalled him to Berlin and offered to befriend him if he would comply with his directions. The conditions were that he should divorce his wife, be appointed Secretary of State for Foreign Affairs and wed Mlle. Bleichroder. There was no alternative, and the great Chancellor pointed out that it was out of the question for any one occupying the position of Secretary of State, and as such entrusted with all the secrets of Germany's foreign policy, to remain married to an American wife and subject to her influence. The count, with the full consent of his wife, divorced her, was appointed Secretary of State, had his financial affairs arranged, thanked to the aid and influence of Bismarck, but managed to put off marrying the banker's daughter until she wedded some one else, a handsome young guardsman of noble birth, who treated her so shamefully that he was turned out of the Prussian Army, and from whom she is now divorced. One of Countess Paul Hatzfeldt's daughters, Helen, married to Prince Maximilian Hohenzollern, died a couple of years ago, leaving two boys and a girl, with the two daughters of her sister Marie, married to Prince Frederick Hohenzollern, constitute, therefore, a little party of five princes and princesses of Hohenzollern who have an American grandmother and American blood in their veins.

Prince Hugo, a younger brother of the Princes Frederick and Max, just mentioned, is by no means the first member of the House of Hohenzollern to follow the dictates of his heart rather than the conventional requirements of his rank in taking to himself a wife. Indeed, there are probably none of the princely families of Europe in the annals of which romance plays so great a role as that of Hohenzollern. Hugo Hohenzollern is not unknown in this country, where he has been the subject of much unfriendly misconception. Abandoning the overworked official service of the state, in which he held the office of provincial magistrate, as offering no scope to a man of active and progressive character, he determined to devote his attention to business, and with the object of acquiring the experience necessary for a commercial and industrial career joined the Deutsche Bank at Berlin as an unpaid clerk, and, after spending a year

ganatically a Mlle. Marie Grathwohl of Paris, who was created Baroness Brown, a title now borne by her three children. Princess Amelie, sister of the late Chancellor, married a humble and relatively unknown portrait painter of the name of Lauchert at Gotha. Alexander of Hohenzollern is another scion of the family who preferred to give up his princely rank and his name rather than subject his wife to a morganatic union, and, sacrificing his hereditary honors, became a Baron von Gabelstein, in order to be able to wed Mlle. Elsa de Ondaarra on a footing of equality. These are but a few of what may be described as the romantic marriages of the House of Hohenzollern, whose history, with its cardinals, its famous generals, including the Count Hohenzollern who was the most trusted friend and confidant of King Gustavus Adolphus during the Thirty Years' War, and Prince Hohenzollern, the field marshal of the French Army and peer of France in the reign of Louis XVIII. is full of drama and tragedy.



HYDRAULIC MACHINERY FOR PLACING THE RINGS OF THE TUNNEL IN POSITION UNDER THE RIVER.

rock on the Manhattan side and fifty to seventy through the sand on the Eggklyn side continues uninterrupted.

A visit to the tunnel while the excavation is in progress is an interesting experience. Old clothes and a yellow slicker coat and hat are donned. Climbing around trestlework and through passes between piles of rocky debris, the mouth of the shaft is reached. Crude elevators fitted with the small cars of debris from the heading and taking the empty cars down again, slide up and down the shaft, empty cars being sent back over the floor above the other. While it is sometimes quicker to descend by the dirt incrustated ladders to the bottom, forty feet below, it is easier going down into the forest of timbers on the incline. Little is gained in cleanliness, however, for it plunges into a pool of water at the bottom, which flows out around it and then comes back over the floor above the shaft. The interior of the big-foot hole, with its iron circumference, is lighted with a few electric lights. A short distance away is the 6-foot cement and brick wall of the air lock. Following the engineer down the incline, which is steeper than any of the grades on the elevated railroad, having a descent of 210 feet in every hundred, one hears him rattle on the big circular tube at the bottom with a piece of iron which he picks up from the plank floor.

"Rat-rat, rat-rat, rat-rat-t-t" it sounds hollow. Through thick plate glass, two or three inches square, in the square door at the end, which is large enough to let the cars laden with broken rock pass through, electric lights can be seen of the wall—"rat-rat, rat-rat, rat-t-t"

A blast like the sudden escape of steam from a safety valve indicates the release of the surplus pressure of air from the lock. The roar surprises one, for the pressure is only ten or twelve pounds. The man in the lock plays with the escape valve, the tube snorting two or three times like some great animal turned loose to play. Finally the air rushes to rush out and the door is opened. From the electrically lighted tube pours through the doorway a cloud of steam. The figure of a man is seen dimly as he emerges in the midst of the cloud, pushing a car of rock before him.

Entering the lock, the door is again closed. "Pinch your nose and push your lungs hard," the engineer says as he gropes his way half bent over toward the far end of the tube, perhaps twelve or fifteen feet away. "Put your foot against the door until I have turned on a little air." He takes hold of a big handle on the side of a three inch pipe and gradually pushes it over. The air rushes in with a roar. In a moment he turns it off.

"How do you feel?" There is a little buzzing of the ears. "Squeeze your nose this way," he says, illustrating with the thumb and forefinger of his right hand as he opens the valve again. After shutting off the air two or three times to find how it is going with the visitor, the top pressure is reached and the door is opened. There has been no bleeding at the ears, as happens in some cases, and as the pressure on either side of the eardrums becomes equalized the buzzing ceases. One hardly realizes that there is any difference in the pressure between the air in the tunnel and the outside. Above the lock is a sign directing that the door of one of the two locks must be open at all times. Should anything occur in the tunnel which would endanger their lives this would leave a way of escape open.

Because of the smoky atmosphere one can see only a short distance down the tunnel. In the middle of the completed section, on a platform cutting the circle in half, stands a young engineer with his theodolite. Over his head suspended from the roof on a little frame is a lighted candle. Before the frame hangs a string. The engineer holds a candle in one hand with which he signals through the smoky atmosphere to an assistant on a similar platform in front of the airlock. Here, hanging from the centre of the arch, are another candle and string, and suspended directly beneath this is a small smoking lamp without chimney. In this way the direction the excavation is taking is determined, and upon the accuracy of the engineer's work depends the accuracy with which the two ends of the tunnel shall meet under the middle of the river.

At the far end of the tunnel the cast iron rings have not been placed in position. Resting on brackets attached to the rings already set up is a machine for pushing the arcs of the rings in place and holding them there until they are bolted to their fellows. Beyond, the drills are pounding away with ear racking noise. The only evidence that one is under the river is the dripping of drops of salt water from the rocky roof of the heading. Through the rock come the hurried tap, tap, tap, of the drills in the heading of the adjoining tunnel, only twenty or twenty-five feet away.

The return to the outer world is accomplished in a cloud. Entering the lock, the door into the tunnel is closed and the valve opening into the air is opened. With a rush the imprisoned air escapes and the chamber becomes thick with the steam of the condensed moisture. The air

the workers were in the air chamber making their way into the tunnel.

"I saw you in Glasgow, didn't I," one of them said as he turned to a new member of the shift. "I guess that's right," the other replied. They go from one part of the world to another to engage in tunnel excavating. Among those at work on the East River tunnel are men who have worked in tunnels under the Clyde, St. Lawrence, the St. Clair and the Mississippi rivers. There are about four hundred men employed in the four headings. They work in eight-hour shifts, night and day, each shift having a half-hour for luncheon in the course of the eight hours. The half-hour luncheon period is spent outside the tunnel in what the workers have themselves termed, somewhat incongruously, the "door house." This building contains rooms for each of the shifts. These are heated to a high temperature in the winter time in order to reduce the possibility of becoming a victim of the "bends." This disease is said to arise from the sudden change of temperature from that of the compressed air of the tunnel and the outer air on leaving the former. When the pressure is increased later, as it may be when the tunnel is carried further out under the river, coffee will probably be served to the men also.

Excavating tunnels usually is not an exciting occupation. The humdrum drilling and blasting and hauling out of drifts does have a break, however, and the men make the most of it. When the two sections approach each other in the centre of the river the workmen can hear the tap, tap of the drills in the other heading. As the sounds become louder day by day, the men become more interested. They figure how soon the two headings will meet. When almost together every man watches for the first drill to break through and tries to get possession of it as a souvenir. As the hole becomes bigger for a man's body to push through there is a scramble for the honor of being the first man to pass through the completed tunnel.

The work in the lower Broadway section of the subway, notwithstanding the cramped conditions, is going forward rapidly, being ready for the steel arches at some points.

PRINCES OF HOHENZOLLERN.

Most Distinguished Foreigners at the St. Louis Exposition Opening.

Inasmuch as three princes and two princesses of Hohenzollern have just arrived in America on board the Bilcher, of the Hamburg-American Line, and are to be the most illustrious visitors from the Old World at the opening ceremonies of the St. Louis International exposition, it may be timely to call attention to the extraordinary position occupied by their family in Europe. It is the more necessary as the cable dispatches of last week announcing the marriage of Prince Hugo Hohenzollern to a circus rider at Berlin might tend to convey a wrong impression concerning the importance of the house to which he belongs. "Was sie sind, bin ich auch" ("What you are, I am too") was the reminder given by the late Prince Clovis Hohenzollern, father of one of the princes now here, to the Prince Regent of Bavaria, one day when the latter, during the course of an interview, ventured to adopt a tone which the old Chancellor did not relish, and when King Charles of Wurtemberg some time prior to his death decreed a revision and investigation of the patents of nobility of those entitled by their birth to seats in the Wurtemberg House of Lords and caused a letter to be sent asking Prince Clovis Hohenzollern for his patent the prince wrote to the King, expressing his regret that he could not put his hands on the document required, but he sent others which might possibly prove sufficient and satisfactory. The first was a description of a tournament in which a Count of Hohenzollern had unhorsed a Count of Wurtemberg, the second was the official record of a wedding in the house of Hohenzollern, where the train of a Countess Hohenzollern was borne in the ceremony by a Count of Wurtemberg, while the third was a promise of repayment of a large sum loaned by a Count Hohenzollern to the head of the house of Wurtemberg of his day, and never redeemed. Needless to add that King Charles was satisfied as to the right of the princes of Hohenzollern to seats in his House of Lords, and that no further demand for papers was made upon "Uncle Clovis," as the Kaiser was wont affectionately to call the old statesman who succeeded Count Caprivi as Chancellor of the German Empire.