A ROMANCE OF SILK.

The Story of the Old Mills in the Derwent.

One of the most interesting relics in this interesting old city has disappeared forever. It was a big building, or cluster of buildings, on an island in the Derwent River. For many generations it was a landmark of the place, and a cherished landmark, since it represented one of the chief sources of the industrial greatness of Derby. But in the course of more than a century and a half time wrought sad havoc on the edifice. A few weeks ago a considerable portion of it fell into ruin, and the wall toppled over into the Derwent. It was then seen to be necessary to pull down the remaining portions. There will soon, therefore, be nothing left of it, and its site will in time

be occupied by some new structure.

The old building was the first silk-mill ever built in England. There were a few workers of hand-looms at Spitalsfield, where the industry dated back to the Protictorati-These were mostly French Protestant refugees, who had fied to England for safety from persecution. They brought over with them their old hand-looms, and first practised silk-weaving on English soil. After the Edict of Nantes was revoked, many more refugees came over and joined the Spitlasfield colony, so that before this Derby mill 26,586 wheels and 97,746 movements, which was built there were thousands of silk-tooms work 73,726 yards of silk thread every at work. These were all hand-looms, however, each worked by its owner in his own cottage, and they produced only a few

VARIETIES OF SILK CLOTH,

and not nearly enough to supply the demands of the English market. The trade was very profitable, and many great fortunes had their origin among the hand-looms of Spitalsfield. Yet England had still to look auroad, chiefly to Italy, for her chief supplies of silk.

Farly in the eighteenth century, however, young man named John Lombe conceived the idea of building a mill where looms might be run by water-power, and where there might be made successful competition with the famous silk factories of Italy. It was not an easy thing to do. For, to with, he must go to Italy to learn how to equip and operate the mill. And the Italian factories were secret institutions, from which sight-seers and all visitors were rigidly excruded. Lombe went to Italy, however, and, disguised as a laborer, secured employment in a silk mill. Even then he could not gain the information he wanted, as some important parts of the establishment were kept under lock and key, only the actual operators of the machines being admitted. He accordingly had recourse to bribery. Two of the foremen of the mill were induced in this way to give him secret access to all parts of the building, at times when the ma. chinery was not in a otion. He was thus enabled to study it carefully and make drawings of all essential parts. But about the time when he had learned it all, he and his accomplices were detected by the proprietors of the mill in the act of making drawings of some of the machinery. Had they been arrested they could

HAVE BEEN IMPRISONED.

perhaps for life; for in those days it was a erious matter to spy upon an industry which was protected by the Government as a monopoly. But by a desperate struggle and flight they got away, taking with them the drawings. Heavy rewards were offered, for their apprehension, and they had many narrow escapes. But at last they reached the coast in disguise and bribed the owner of a fishing-boat to take them out and put them aboard the first English vessel they met. In this way they all got to England in safety, and Lombe frequently remarked that their detection was really a godsend to him since it forced the foremen to flee with him and thus gave him two skilled assistants in his work in England.

The three men got back to England in 1717, and a year later had erected the mills at Derby which have now been demolished. The concern was the wonder of the whole community and Lombe was the hero of the hour, both on account of his enterprise in founding a new and important industry and also because of his romantic career in Italy and his hairbreadth escapes. His adventures, indeed, were the subject of song and story, and were even dramatized and pred with great success on the stage. But in Italy the feeling was bitter. There was much diplomatic haggling over it, and even some talk of war, which ended in talk. Then vengeance was determined on. Two women were selected as best fitted to accomplish the task. One of them was the young and beautiful daughter of the chief proprietor of the mill in which Lombe had been employed and the other was one of her friends. They left Italy in disguise and came to Derby, where they pretended to be Italian refugeesseeking employment. Lombe himself accepted them and set them to work in his mill, and they watched their opportunity to assassinate him and burn the mill. But before their design could be put in execution a

CURIOUS AND ROMANTIC

thing occurred. The women both fell vio-lently in love. The daughter of the Italian mill-owner set her affections upon Lombe himself, and her friend became en amored of one of Lombe's Italian accom plices. In the former case the love was all be the frieze on the wall." on one side. Indeed, the girl never let Lombe know of her affection for him. But she worshipped him at a distance and in silence. She of course abandoned her scheme of vengeance and determined to live in Derby all the rest of her life, so as to be near Lombe. Her companion, however, persisted in her design of murder, although she was compelled to pretend to the other girl that she had given it up. She took her lover into her confidence, and by her persuasions got him to turn against Lombe and aid her in killing him. Indeed, it was the runaway Italian foreman himself who put the poison in Lombe's food. When this was done Lombe fell ill at once. The doctors could do nothing for him, being ignorant of the nature of the poison. It was, however, a slow poison, and he did not die for a year. He pluckily took advantage of that time to impart to others all the knowledge of silk weaving that he had gained in Italy, so that they could carry on the work after his death. Then he died, at the age of twenty-nine, and all Derby mourned the loss. His murderen escaped to Italy and was never punished, but both the women remained in England.

Lombe's brother Thomas then carried on the enterprize. It was to him, indeed, that the King granted letters patent for the silk-weaving machinery which John Lombe had made from his Italian plans. The patent is

dated September 9, 1718, and it sets forth that "Thomas Lombe, of Our City of London, merchant, hath by his petition humbly presented unto us, shown and set forth that he has by long studies, paines and travels and at great expense found out and brought to perfection three sortes of engines never before made or used within this our Kingdom of Great Britain, one to wind the

FINEST RAW SILK.

another to spin, and the other to twist the finest Italian raw silk into organzie in great perfection which was never bofore done in this our Kindgom, by which means many thousand familes of our subjects may be constantly employed in Great Britain be furnished with silks of all sorts of the manufacture of our subjects, and great quantities exported into foreign parts by being made as good and cheap as any foreign silk can be." Therefore His Majesty grant-ed to Thomas Lombe, for the space of fourteen years, the exclusive right to operate machinery and to manufacture silkenfabric by means thereof.

Theoriginal factory was enlarged by Thomas Lomle until it was really a very considerable affair. Says a writer of those times who visited it: "One hand will twist as much silk as before could be done by fifty, and that in a truerand bettermanner. This engine contains time the water-wheel goes round, which is three times in one minute, and 318,504-960 yards in one day and night. One waterwheel gives motion to all the rest of the wheels and movements, of which any one may be stopped separately. One fireengine likewise conveys warm air to every individual part of the machine, and the whole work is governed by one regulator. The house which contains this engine is of vast bulk, and five or six stories high." But

despite his patent, Lombe did not prosper.

The building was costly, and the outlay so exhausted his means that he actually had to appeal to the country for support. The end of the matter was that Parliament purchased from him for \$75.000 the right to copy his machines, and soon thereafter many other silk mills were opened in various parts of England. But with these new means the original Derby mill was now operated successfully, and for many years was the most important establishment of the kind in England. There is now some talk of erecting a monument to the Lombe brothers on the site of the mill, but the project has yet taken no practical form. It would, however, be only a fitting tribute to one of the great bene factors not only of Derby itself but of all England.

A Triumph for the Ritualists.

The judgment pronounced by the archbishop of Canterbury upon Dr. King, the bishop of Lincoln, who was under condemnation for ritualistic practices not allowed by the Church of England, is virtually a triumph for the ritualists. Out of nine indictments, one is dismissed as irrelevant and four are settled in favor of the ritualis-tic party so that the result is, on the whole, a High Church victory. This judgment is a compromise, so far as the two parties are concerned, but it is an immense gain that the archbishop of Canterbury, and not a lay court, pronounces the decision. The con test all along for several years has been that the privy council had no right to adjudicate upon questions of an ecclesiastical or spirit ual nature, and to have reached the point where the archbishoppronouces judgment as to what the law of worship in the church really is an immense gain in favor of the spiritual independence of the Church of England. The fact also that each party pays its own costs is a new phase in a prosecution of this kind. As to the actual defini-tions of ritual law, the points at issue are seemingly trivial, but when they are understood, as Churchmen understand them, they have great significance. The mixed chalice will be allowed hereafter, but the cup must be mixed beforehand. The ceremony of ablution after the holy vessels have been used is pronounced innocent, but on another point the decision will be greatly regretted. It is ordered that standing in front of the altar during the consecration of the sacred elements is illegal, and that one must stand at the end of the altar and make the consecration before the people. Lighted Absolution is not to be made by the use of the sign of the cross while pronouncing the words. These points have a ritual meaning, and they do not mean to the outside public what they mean to those who practise them Speaking generally, the judgment is a com-It makes the point that the strict Roman ritual is not to be allowed in the Church of England. The effect of this decision is that the bishop of Lincoln is not condemned, and that the lay people who undertook to unfrock him have been defeated. The still further meaning of it is that Archbishop Benson has asserted his right to be the spiritual head of the English church, and that no single party in it will hereafter receive his exclusive patronage.

"He was generous to a fault" when the fault was his own.

He—"What makes the dining room so cold, dear?" She—"I think, love, if must

An incident which may lead to unpleasant complications is said to have recently occur red on the Upper Congo river in Africa Dispatches from these regions state that the

officers of the Congo State have confiscated the Baptist missions steam-boat Peace, giv ing as their only reason that it was required for State purposes. They are also reported to have hauled down the British flag and hoisted the flag of the Congo State in its stead. If the facts have been correctly reported, no doubt England will have some thing to say about the matter. Such high-handed proceedings will not be allowed to go unrebuked.

Emperor William spake with much wis dom the other day when in addressing the recruits who had just been sworn in as mem bers of the Berlin guards he said, that al though peace reigned within the empire, there existed within the country an enemy that could only be overcome by the principles of Christianity. No one could be a good soldier who was not a good Christian. Those who took the oath of allegiance to him as their earthly master ought, before all things, to remain faithful to their heavenly Lord and When all men follow the advice given to these German soldiers, and fol-low it in very truth, the work of the social reformer will be at an end.

THROUGH THE SUNLESS FOREST.

Extracts From a Lecture by Henry M Stanley.

On rising before a New York audience on Tuesday night, Henry M. Stanley said:
"Our journey measured over 6,000 miles.
The time occupied was 987 days. The first section of about 1,000 miles was along an unknown country by steamer up the Aruwimi river, to a place called Yambuya. The navigation was interrupted by rapids. On foot next for 169 days we went through one unbroken forest. Ah! the American forest furnishes no such picturesque sights or pleasant glades. Language is too poor to describe it. First, think of the tropics and a climate of humidity and the heat of perpetual summer. You feel as you enter this unknown region the robustness of vegetation. There is a still, warm vapor in suffocating volumes. First you dispense with

your upper garments, and then you want to get rid of the rest.

"The gloom is so great you can only compare it to the twilight of evening. You see the leafage rising up black and green, impenetrable clumps of trees, some of them rising to the height of two lands and offer force. to the height of two hundred and fifty feet. There is no symmetry, grace or softness, but all is wild, uncouth and awful. At every step you see masses of bewildering undergrowths, a wonderful variety of plants. There s the absence of any sense of decay, but rather the sense of the general healthfulness of the plants, an enduring youth, exhaustless

"As we march silently, slowly and painfully on the forest changes its aspect, and we note the labors of forgotten tribes and come to swampy grounds. One day our march is through masses of forest wildness. On the next day we go through a more open section; on the following day through frowning depths and over ground strewn with dead leaves, worm eaten trunks or dried branches. But always and above all tower the primeval woods, the deep shadows unbroken save by the flashes of

lightning.
"After the guards were set around the camp we felt safe from the surprises of the cannibals and those who wished were tree to wander away. At such a time I have been sensible of the utter poverty of words to describe my surroundings. It was not a time for poetic brooding, but one after an-other the senses yielded to the charm of scclusion. Then I beheld a magnificent forest in listening attitude, a great gloom, trees eloquent of antiquity and of venerable brotherhood.

"The forest represents human life in pantomime—the struggle for place, the indiffer-ence to the interests of others may be found When one tree is struck by lightning its former neighbors extend their branches over the space it once occupied and others spring up to usurp its place. Then countless parasites wind the nselves around the stem, eat into their bowels and make excrescences. The elephants rub their prurient hides against them and unsettle their uprightness. Then you see others falling into decay with age. Around us is a group with their dead leaves. Scarcely an hour passes but a tree falls in our neighbors There is a crash, a startling shock and logs come tumbling down. But with their death is life, and as often as one witherand dies another has spread and sprung into

"During one year we noted 569 hours of rain, equalling one hour of rain for every fif-teen of dry weather. It seems to us to be only one hour of sunny brightness to one of rain and gloom. We could observe in the forest that the sun was out only by its effect. In the forks of the trees are conservatories of lichens and other plants. The stems are wound around with parasites, twisting about like immense anacondas. Then there are myriads of living parasites. There is not a sapling or a tree from the infant of one year to the hoary patriarch of 100 years but is infested with innumerable parasites. There are thousands of threadlike filaments around them. "But when the Storm King rises overhead and the blast howls through their tops every tree seems to start into a mood of wailing and groaning as if it were some lost soul. During the hours of daylight even then these sounds are awful; but heard at night they are inexpressibly terrible. At times the whole camp is ablaze, but it is far more comfortable than when the rain pours over the desolate scene in drowning showers.

"You can understand now what was in the minds of our people, who knew not where those endless marchings were leading them, and no soul could enlighten them as to the future. Add to this sickness and depression, as they tossed their dead companions into the dark river. Their feet were scarred as they marched along, ulcers appeared and bad water inflamed their bowels and their blood became corrupted. Then the savages set on those who feebly crept after the caravan. Or the savages lay in wait and shot their barbed arrows into the weary. In numberless ways they cut off our people, with lingering torture or sudden as

the lightning strikes.
"Finally, after 160 days of marching we emerged from the forest. Then our eyes danced with rapture, for we beheld fresh young grass spreading out into flowery fields and pasture, and then beyond round and picturesquely moulded hills. Such a sight we hailed with shouts of praise and loud thanksgivings and murmurs of worship ac-cording to our respective faiths. The delicious grass, the warbling of birds, this summer loveliness of the land and the warm life and beauteous earth reposing in peace caused us to be lost in rapture. Our men had dreams of joy and they called it heaven. Its length was 620 English miles from north to south, and from west to east 520 miles. It comprised 320,000 square miles, the whole equal to 400,000 square

miles. "In the beginning of 1886 the Arab slave trade was there. In 1870 short excursions were made into this region, and in 1880 two Arab expeditions set out from the Congo on the northeastern track. By 1887 they had gained a footing and they built two sta-tions, each one bundred miles apart, forming the apex of a triangle. They began to hunt systematically for slaves. For twenty miles around they looted and burned villages. Before five months had passed there was a line of complete devastation 257 miles long. Not one village had been left standing.

"There would be general hilarity if I vere to attempt to enumerate the names of the various tribes through whose lands we passed. It would be far more convenient to say that the inhabitants of the forest are divided into big people and little people, tall people and pigmies. The pigmies are the the atmosphere they would sometimes re-restless little nomads who wander around in main invisible for weeks, then when the

the woods, seldom tarrying in one place long. The bigger people are much like other Africans, but not so dark in complexion as the dwellers on the plains. Each tribe has its distinctive marks. Some shave their heads, some wear their hair long or in ringlets. There ornaments consist of crocodile, monkey or human teeth, strung together and were as necklaces or bracelets, and collars of shining iron. Their clothing consists of a breach clout. There weapons are spears, bows and arrows, broad knives and some-times battle axes or swords. These latter are used to make clearings in the woods. They are addicted to cannibalism, but it must not be supposed that they feed on their own relatives or tribe. Nor on their own relatives or tribe. must it be supposed that they make raids for the purpose of obtaining these lux-uries. Neither is a victim easy to secure. Tribes are too far apart to render it easy of a complishment, but if a neighboring community, ten or twelve miles off, should advance against the village there might possibly be an 'accident' and thus a body may be secured for a social feast. "During the many months of our marching

in the forest, we must have captured several hundred of the small and large natives. They were very useful in giving us information concerning the country round about, but when we once got beyond their territory they were of no earthly use, and were therefore permitted to return to their homes, although in many instances they did not want to be released. Through observations of these captives we obtained a fair idea of their condition, and my conclusion is that the forest races are morally the lowest of the human race. They have no idea of God. They are without tenderness or pity, and their gratitude is so short-lived that it may be compared to the spirit shown by a fierce bulldog, who is restrained from throttling you by a pressing engagement to dispose of morsel of beef which has been thrown to him. But though they showed themselves debased they must not be regarded as utterly incorrigible. Several youthful pig nies, when taken out of the woods, where all their habits had been acquired, exhibited the attachment and servility of spanie's to those who had them in charge.
"What a number of ghastly death scenes

I could describe due to the cruel persistency and devilish malice on the part of these sav ages. At the same time many of our men in the presence of such dangers exhibit great carelessness. White men displayed more caution, but it was almost impossible to get the rest of the men to exercise their faculties of sight, hearing and judgment. Had the savages generally been as artful as the pig-mies we should all have been lost. But, fortunately, they were thoughtless them selves, although cruel enough to work any mischief upon us.

"Our scouts frequently came across newly formed pigmy camps, and after a while they learned the art of stalking the vicious little creatures. The first one we thus got hold of was a plump little queen of a pigmy tribe. Around her neck were several polished iron collars with long projecting horns at the end and down her breast hung curiously made native chains. Around her arms were several rings and her ankles were protected by several scores of rings, so close together that they resembled a compact band. Around her waist was a breech cloth. She must have been about eighteen years old, but she was as well developed as a white woman of twenty-five or twenty-six. Her feet were beautifully formed, the instep arched, the hands small, the fingers slender and the nails filbert shaped. The face was broad and round, the lips full and the large, black limpid eyes were like those of a young gazelle. The face was singularly impressive but the eyes were expressive and seemed to say:—"I am much too pretty to be hurt and I very well know what I am worth." The tender treatment that she received re-assured her. She was ultimately consigned to the care of the surgeon, whose gentle manner won her from all thoughts of flight. After a while she became an intelligent cook and a trustworthy servant, and she always bore herself most modestly.

"In October, 1888, the scouts suddenly pounced upon a colony of dwarfs and succeeded in capturing a full grown adult and his wife or sister. Before the pair could recover their faculties they were brought to the centre of our camp, where there were hundreds of great, burly men, among them several tall Soudanese ranging from six feet to six feet four. I observed that the top of the pigmy man reached to about the waist of these big fellows. The man and woman were considerably agitated, as well might be, and wondered what might be their fate." Mr. Stanley described in hymorous language how the pigmy repaid the kindness of his captors by assuring them by means of the sign language that there was an abundance of food two days off; that the river they were in search of was only four days off; that he knew where bananas were as big as logs, compared to which the bananas he had been eating when captured were simply contemptibly small. Mr. Stanley was of the opinion that this particular pigmy would have made a very good actor, and that in the art of lying it would be difficult to

give him points. A few days after this capture another group of pigmies was secured. Among them was a shrewish old woman and a lad so shy that he could not be made to speak. But the old woman talked enough for a whole tribe and kept up an incessant scolding from morning to night, and exhibited a consummate mastery of pigmy cuss words. Despite her age she was remarkably strong and nimble, and always carried on her back a hamper, into which her captor would stow away his pots and kettles and other equipments until the old woman became a veritable cam-

el of the forest. When Mr. Stanley came to her relief and threw out the contents of her hamper he re ceived for his pains an expression of gratitude which sounded very much like "swear words." The shy boy got over his shyness and became a pet of the officer who had surprised him, his intelligence and industry making him almost invaluable and far su perior to the average of white servants. They came in time to regard the pigmies as indispensable, and some of them would certainly have been taken to Europe, but after they got out of the forests the changed conditions and the differences in climate proved too much for them. Their little legs could not stand the long marches, and one after another they "collapsed."

Mr. Stanley gave an interesting description of his discovery of the famous Mountains of the Moon, which had long been regarded as mythical. He saw them several times, but owing to the cloudy condition of

mists rolled away the snow capped peak would appear clear and distinct, with all the surrounding spurs and abutments, to vanish again when the atmospheric conditions changed.

Mr. Stanley also described his discoveries concerning the estuaries to the Albert Edward Nyanza.

"Day after day as we marched," continued Mr. Stanley, "we marked the features of this splendid primeval world, revealed for the first time. Now and then we caught glimp-ses of a multitude of precipitous cliffs, which towered some 15,000 feet above. As we approached the Albert Edward we emerged from the forest, and a vast plain stretched before us, covered by immense fields of corn and sugar cane. The natives of the corn and sugar cane. The natives of the land, black but amiable, collected about us and sought our protection from incursive tribes. They volunteered to be our guides and led us up a vast grassy promontory, where for a day we revelled in pure, cold air, and the next day they took us down to the lake, where we tasted the tropics once

"From the eastern shores of Albert lake," he went on, "two days' climbing brought us to a beautiful region. The people were divided into two tribes, butthey were derived apparently from a common origin. They were a fine-featured race, and the men grew very tall. They lived mainly upon milk and sugarcane, and, unfortunately for their future civilization, they are massed into nations that

are ruled by despotic kings.
"From this country we struck the eastern end of Victoria Nyanza, and by travelling along the shore we discovered a new addition to that lake of 26,900 square miles. We struck the region during its dry season. The grass was sere; chilly winds blew over the uplands; a cold mist frequently obscured the face of the country, and a heavy leaden sky seemed to bear down upon us in searching cold. Our half-naked people shivered, and one day five fell dead in their tracks as though they were shot. They would all have perished had not the officer commanding the rear guard bolted and made great bonfires."

Mr. Stanley alluded to the intense political rivalry between the representatives of the French and English and German nations that they discovered as they approached the sea-shore, "but as our expedition was solely for the relief of Emin," he added, "we had rea-son to flatter ourselves that we had no concern with these political animosities.

Condition of the American Farmer.

The Bankers' Monthly, a United States publication, gives some figures that Cana-dian farmers might well ponder over. It is certain that the facilities for borrowing in Canada are greater than the absolute necessities of our people require, but it is something to be thankful for that to date the farming community of this country have a trifle more conservative in availing themselves of these facilities than their brethern across the border. To what extent the United States farmer has plunged himself into the financial abyss the following figures taken from the publication referred to all too plainly indicate: The mortgage indebt-edness of Kansas is \$235,000,000, with an interest debt of \$14, 100,000; Indiana \$645,-000,000, interest \$38,700,000; Iowa \$567,000-000, interest \$34, 020,000; Wisconsin \$500,-000,000, interest \$30,000,000; Illinois \$367,000,000, interest, \$22,020,000; Ohio, \$1,127, 000,000 interest, \$67,620,000. Summing it all shows us that the farms of these states alone are mortgaged to the tune of \$3,441,000, 000, and of which the interest alone, computed a 6 per cent., would amount to \$206 106,000 per annum—and yet the farmers of these states have enjoyed all the advantages of the 60,000,000 market at their very doors. On the other hand, let us turn to some statistics furnished by by Archibald Blue, Secretary of the Ontario Bureau of Industries and what do we find? Why that the value of farm property in the province is placed at \$981,366,094. In 1882 farm lands were valued at \$632,342,500, and in 1888 at \$641,481,801. In 1882 farm build ings were valued at \$188,293,226, and implements at \$37,029,815; in 1888at \$49,754,-832. Live stock at \$80,540,720, and in 1888 at \$102,839,835 or in all the values were in 1882, \$882,624,614, and in 1888 \$981,368,094, showing a total increase in the value aggregating the large sum of \$98,700,000 or more, in seven years. The latter figures are not so large as those given previously but it must be allowed We should have liked to have given a statement of the mortgages on Ontario farms but the returns do not happen to be available but we know from personal knowledge that they are nothing nearly in comparison so heavy as those of the States given.

The tied of time-an octogenarian wed-

Disquieting rumours concerning an uprising of Indians come from the vicinity of the Sioux reservation in North Dakota is reported that the Indians having secured Gen. Custer's rifles which the United States army never found , have provided themselves with a large quantity of ammunition, and that every Indian in the reservation will shortly go on the warpath. Citizens and settlers in that part of the State believe that the anthorities do not appreciate the gravity of the situation; and that too late they will learn to what an extent the disaffection has grown. Many settlers are said to be abanloning their farms and ranches because of the lack of protection afforded by the Government. This news is not cheering, certainly. In view of this another Indian tro ble one is led to conclude that either these American red men are exceedingly difficult to satisfy, or the policy pursued by the United States towards these sons of the forest is not marked by the utmost fairness and wisdom.

Telephone connection is to be established between London and Paris by a line that, judging by theory, should give better results than are usually obtained over much shorter overhead wires. New overland lines of four copper wires are being built from London and Paris to the coast by the English and French Governments, and they will unite in laying a cable to connect the land The result will be two complete metallic circuits between the two capitals. A similar line between Buenos Ayres and Montevideo, 180 miles, is now in successful operation. The lines are in cables under water for a distance of 28 miles. The adaptation of the telephone to long distance talking is really limited by the cost of the line with respect to the business to be done over it. The cost of the line itself is very heavy, where a metallic circuit has to be laid with

copper wire, but it insures clear sounds at distances of hundreds of miles.