inches of stroke, we noticed, corresponded to one inch of movement of platen; and with a steam pressure of 125 pounds, this would develope a pressure of two thousand tuns.

Finally the limit of stroke was reached, and the follower had risen to a distance of between 7 and 8 inches from the immovable portion above it. Here the bale was held until the straps were passed and the ends secured, and then steam was allowed to escape from the upper cylinder, allowing the follower to drop.

It will be noticed from the drawing that the piston rod of the upper and larger engine projects up through the cylinder and terminates in a flanged collar. Beneath the latter is a rubber buffer, so that, as the piston descended, the falling weight was met by this elastic support taking against the top of the cylinder, and all jar is thus avoided. When the widened portion of the guides was reached, the clutch of course uncoupled, leaving the piston of the smaller engine to continue its descent, cushioning slightly on the contained steam. The rack and segments necessarily resumed their position as at the beginning of the operation.

So quickly is the work performed that, probably during the time the reader has devoted to perusing the above description, a dozen bales of cotton would have been pressed, banded and removed. In the case of the bale referred to in the beginning as 52 inches through, we found that it occupied about 5 seconds to complete the pressure; and within 50 seconds, the bundle was reduced to 14 inches in thickness and securely tied. The economy of space in shipping thus gained need hardly be pointed out. Estimating cotton bales pressed by other means as of an average thickness of 33 inches at the beginning, and supposing them to be compressed to the uniform dimension of 18 inches, here is a saving, we are informed, of 175 tuns admeasurement per 1,000 bales, while it is further claimed that, thus packed, 24,000 pounds of cotton can be stowed in a 28 foot car. In case of hay, the economy is even greater; for two bales, standing 6 feet 2 inches high, can be compressed into a single bale of 20 inches. A fair statement of the average capacity of the machine (judging from our own examination, together with the claims of the inventor) seems to be about 60 bales of cotton per hour. There are other advantages incident to thus compressing cotton into such perfectly compact form, in addition to that of economy of space; among which may be mentioned its greater facility in handling, less danger of being permeated by fluid or moisture, and also greater immunity from the peril of fire.

As regards the construction of the machine, we may add that it appears exceedingly strong and durable. Its weight is about 100 tuns. The follower rods, as already noted, are of wrought iron, while the segments, rack, crosshead, etc., are of gun metal. The cogs are cast from templates and claimed to be more perfect even than cut gear, while their strength, we are assured, precludes all possibility of their stripping. There are also powerful braces placed so as to meet the strains in the most advantageous manner; and rubber buffers are applied at the various points which might be jarred by sudden or too heavy impact.

The invention was patented by Mr. G. W. Grader, and may be seen in operation at the works of the Standard Compress Cotton Company, Nos. 108 and 110 Morton street in this city. Further particulars may be obtained from Mr. C. H. Close, of the latter address, or from Mr. J. H. Edmundson, Memphis, Tenn.

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NEW YORK, SATURDAY, NOVEMBER 8, 1873.

Contents.

(Illustrated articles are marked with an asterisk.)

MR. R. A. PROCTOR, the distinguished British astronomer, has recently arrived in this country. He proposes, we believe, to give an extended series of popular lectures, for which purpose he has brought with him a series of paintings illustrative of astronomical problems and discoveries.

THE ELECTRICAL CONDENSER.

In the working of the steam engine, the office of the condenser is to assist the power and economy of the machine, by rapidly removing the back pressure of the exhaust steam and converting it into water for re-use in the boiler. In a somewhat analogous manner, the employment of the electrical condenser appears to facilitate and improve the working of certain kinds of telegraphs. When a battery current is sent through an insulated telegraph wire, there is produced another current, termed static induction, which interferes with the operation of the battery current.

On the ordinary pole telegraph with the ordinary instruments, the static induction gives little trouble; but in the case of subterranean and submarine cables, the induced currents prevent the rapid working of the instruments.

The electrical condenser consists of tin foil, separated by sheets of insulating material, such as paraffin paper; and when the metal of the condenser is connected with the telegraph wire, it absorbs the electricity of induction, and changes it so that it acts to assist instead of retard the transmission of telegraphic signals by the instruments.

The various submarine cables could hardly be worked with commercial success, were it not for the combination with them of the condenser. The condenser has been recently applied to some of the land lines with greatly improved results. It is employed in connection with the Stearns duplex instruments, by which messages are simultaneously transmitted in both directions over one wire; thus doubling the capacity of transmission without augmenting the expenses. The Stearns invention has been heretofore described in our paper. It has lately been adopted by the British government, in accordance with the recommendation made by us.

Another recent application of the electrical condenser is in connection with what is termed automatic telegraphy. This consists in operating the sending key by drawing under it a strip of perforated paper, each perforation, of given length, representing a given signal. At the opposite end of the line the message is received upon chemically colored paper, the color of which is instantly changed and the signals made visible by the passage through it of the electrical currents. The great trouble with the practical working of this system of telegraphy always has been that the static electricity operated to string out the electrical waves, producing tailings, making the signals to run into or overlap each other, and render them illegible, upon the receiving paper. This was especially the case if a certain limit of rapidity in the transmission was exceeded. This limit of transmission was 100 words per minute over a line of 250 miles extent; which is about the speed of the common Morse instrument.

Mr. George Little, who is well known for his indefatigable efforts and ingenuity in connection with automatic telegraphy, has applied the condenser to his instruments with marvelous results. He states that it enables him to transmit 5,000 words, or 30,000 signals per minute, over one wire, with perfect legibility, and that the instruments of the Automatic Telegraph Company are now working the system at this rate between New York, Philadelphia, Baltimore, Washington, Mobile, and other cities.

This discovery promises to be of much importance in the business of electrical transmission. It will enable people to do their correspondence in full by telegraph, instead of by brief sentences, as at present. It will assist to prevent blunders in transmission, for which at present there is no remedy, except by double payment. It is well known that the Western Union Company will not otherwise guarantee the correct delivery of any messages sent over their lines. The successful introduction of the automatic system will, however, put an end to this extortion. The facility of transmission is so great that the Automatic Telegraph Company is now enabled to send twice as many words, for the same money, as the other lines; and thus the sender may make sure of a correct delivery of his message, without loss of time or payment of extra charges.

Another striking advantage of the electrical condenser is its use in connection with subterranean wires. It permits the transmission of signals with as much facility when the wires are placed underground as on the pole lines, and will enable our city authorities to pass ordinances requiring the removal of the many poles which now disfigure and encumber our streets.

PROGRESS OF SCIENTIFIC EDUCATION.

Two more munificent gifts have been made in aid of scientific education: one in the shape of a bequest of the sum of $200,000, by Mr. William Wheelwright, of Newburyport, Mass., lately deceased in England, for the establishment of a scientific school in his native place, and the other by Mr. Mr. Ario Pardee, of Hazelton, Pa. The latter gentleman, finding through his own experience the necessity of increased facilities for technical instruction throughout the country, some time since selected Lafayette College, in Easton, as the object of his donations. Although the aggregate amount thus bestowed had, up to some sixteen months ago, already reached a large sum, Mr. Pardee determined to found a complete scientific department, and to this end began, within the college grounds, the erection of the edifice, which quite recently has been formally presented to the authorities of the institution. This magnificent gift, while forming a fitting culmination to the series of benefits already rendered by its donor in furtherance of scientific learning, brings the total pecuniary value of his endowments to the large sum of half a million dollars.

The building, which has been named Pardee Hall, is five stories high, 256 feet in length, and is constructed of brown stone. It contains chemical and metallurgical laboratories, geological and mineralogical cabinets, large and elegantly fitted up lecture rooms, besides a spacious hall. The laboratories are said to be the most complete in their appointments in the United States. Accommodations are provided for 250 students. Pipes throughout the building convey gas, oxygen, hydrogen, sulphuretted hydrogen, steam, and blast, to all points where the same may be required. There is an elaborate set of chemical apparatus, together with a valuable stock of chemicals, besides models of machinery for mining operations and various industrial purposes.

The formal ceremonies of donation consisted in an address by Mr. R. W. Raymond, lecturer on mining geology in the college, on the "Necessity for Scientific Education," together with speeches by Mr. Pardee, the Governor of Pennsylvania, and Dr. Cattell, President of the Faculty.

THE STATE OF THE IRON TRADE.

There exists at present a general feeling of depression in the iron trade, and this more especially among the smaller firms. We do not share in the gloomy apprehensions of its permanency, however, throughout the winter, and it seems to us that there is ground for a much more hopeful feeling than that expressed in the majority of cases.

The railroad supply firms and locomotive works have probably suffered most, through the countermanding of orders. But the money which would have been expended in payment for the completed work is not out of existence, but simply locked up. The same is the case with regard to all other industries which have felt the effects of the crisis. Funds, if not in circulation, must accumulate; and when they once break over the barriers which confine them, there will be a superabundance of cash within easy reach. How soon this reaction will take place, it is impossible to say. The panic gave no warning of its approach, and we believe that the anomalous state of affairs which now causes the people to so closely guard their purse strings will disappear in an equally sudden manner. The only counsel to be given is simply to hope, and to use every effort to tide over the interval which may elapse before the resumption of easier times. The country is unquestionably in a prosperous condition, and industries generally are doing excellently well. Hence, as to the temporary nature of the present difficulties there is not a shadow of a doubt; and that they cannot much longer continue, we consider almost a certainty. Those houses which, by careful management, succeed in bridging over the chasm without making serious sacrifice, will, we further believe, when the reaction comes, clear sufficient to wipe out the record of the losses they may have incurred, and, besides, show a fair profit for the year.

Regarding the probable condition of the workmen, due to the reduction of force in many establishments, we notice with regret that the sentiments of one of our most prominent firms breathe a spirit of retaliation and a lack of sympathy for the men, on account of the part taken by the latter in the strikes of a year ago. Such expressions tend but to re-open old wounds, and employers will find that, instead of thus planting the seed for future feuds, they will serve their own interests best by considering the welfare of their employees. By assisting their men in a time of trouble, to the extent of their ability, they will engraft in them a feeling of gratitude which will serve materially to diminish the chances of future dissensions; while it will be but ordinary charity to endeavor to alleviate the condition of fellow beings who, from no fault of their own and for an indefinite period, are thus forced out of employment and compelled, as best they may, to face the hardships and miseries of the coming winter.

ELASTIC PROFANITY.

At a summer festive gathering on one of the Thousand Isles of the St. Lawrence, last summer, the Rev. Dr. Pullman, of Peoria, playfully gave, as a complimentary toast, "The health of the inventor of Elastic Profanity," in allusion to Dr. S. C. Barnum, of this city, who happened to be present, and who is well known in the dental profession as the author of the *rubber dam*. This is a device now in common use, for keeping fillings dry during the operation of tooth plugging, and is almost as indispensable for good success in dentistry as chloroform is in surgery.

The rubber dam is nothing more than a piece of sheet rubber, which is punctured and stretched over the necks of the teeth, serving to hold up the gums, and wholly prevent the access of saliva at the point where the filling is being introduced. It is not only a marvelous convenience for the dental operator, but affords great relief to the patient; for it in no way interferes with the natural functions of the tongue, muscles, and glands of the mouth. It enables the dentist to perform with ease and certainty a class of most necessary operations which were previously counted almost among the impossibilities by leading practitioners. In thousands of cases, teeth which before were condemned for extraction are now readily saved and filled.

The rubber dam was invented in 1865, by Dr. Barnum, and presented by him as a free gift to the profession, at the Dental Convention held in this city during that or the following year. Previous to the discovery of this device, dentists were obliged to resort to all sorts of curious contrivances in the attempt to keep their fillings dry. Among these was the duct valve, a round disk which was placed in the mouth of the patient, upon the orifice of the salivary gland, and there pressed by a clamp, to prevent the escape of the saliva. This was painful to the patient, as well as injurious, as it caused an unnatural engorgement of the gland.

Then there was the saliva pump. While the dentist was engaged in filling the tooth, an attendant stood by and worked a hand pump to draw off the saliva from the patient's mouth

Sometimes the dentist had to take plaster casts of the defective tooth and adjacent parts, and by their aid manufacture temporary bulworks of gum mastic, to fit the mouth, with a view to shut off the water from the designated tooth. This preliminary operation involved much more time and trouble than the filling of the tooth.

Then there were the tongue clamp, the gum clamp, the gag, the iron presser, and other special tormenting devices, which were brought into operation for the one purpose mentioned; to say nothing of sponges, blotting paper, and cloth napkins, with which it was deemed necessary to stuff and torture the patient's mouth. All of these relics of what may be termed the dark age of dentistry have been superseded by Dr. Barnum's rubber dam. The author occupies a high place in the estimation of the profession, by whom he is justly regarded as a benefactor; while every dental patient, who remembers the old instruments, gives honor to the inventor, and rejoices with elastic profanity.

THE LATE DR. NELATON.

To Nélaton, the greatest of modern French surgeons, recently deceased, it is said that the medical profession owes the perfection and simplification of an immense number of the most difficult chirurgical operations. Although he wrote but little, he manifested a wonderful genius for devising tools and apparatus, and for imparting clinical instruction to others. "Give him a piece of wood, some iron wire, and some chisels," says a biographer, "and he will invent and construct an instrument to suit any requirements."

He detested display, and particularly avoided spreading out cases of implements during the course of an operation. "Surgery *à grand orchestre*," he called such exhibitions; and it seemed as if he managed to do far more with his fingers than many other surgeons with the most elaborate of tools.

His coolness equaled his dexterity, and some of his sayings will doubtless pass into proverbs. "When you have made a correct diagnosis and know what you are about, you risk nothing," was a favorite remark. "If you have the bad luck, while operating, to cut a man's carotid artery, remember that it takes two minutes' time to cause syncope, and four minutes will elapse before he bleeds to death. Now four minutes is just four times as long as is necessary to place a ligature on the vessel, provided you do not hurry": and "You are working too quickly, my friend; remember that we have no time to lose," were other now famous observations made during the course of difficult operations.

Nélaton attained very general celebrity from the fact of his treating the Prince Imperial and the wounds of Garibaldi. He died of a lingering malady of the heart, continuing his teachings and practice to the last.

SCIENTIFIC AND PRACTICAL INFORMATION.

A NEW GALVANIC BATTERY.

Abbe Fiehol, says *Les Mondes*, has recently constructed a new battery, using a Spanish mineral which is probably a kind of pyrites. Within a glass jar is placed a zinc cup, 7 inches long, 3 inches deep, and 2 inches broad, in which the mineral is packed. Above is a piece of copper, and the interstices are filled with pulverized coke, mixed with ten per cent of chloride of sodium (common salt) and moistened with water. Four elements, united with isolated copper wires, copper to copper and zinc to zinc, it is stated, gave a current of surprising energy, fully equal to that of five Bunsen couples. The battery is constant, and it has been found that, after eighteen months continuous use, it operates as well as when first employed. The only condition seems to be that it should be kept thoroughly moistened.

A NEW TEXTILE PLANT.

The jury at the recent Exposition, at Lyons, France, awarded a medal for the utilization of the fiber of a marsh plant, commonly known as the *massette*. It is of the typha family, and three varieties, namely, *typha latifolia, angustifolia* and *minima*, yield the fiber. The plant grows in a wild state in great profusion in streams of water, ponds, etc., and reaches a hight of some ten feet. Heretofore it has been employed for seating of chair bottoms and thatching of cottages, and occasionally in place of straw as bedding for animals.

The mode of extracting the fiber from the leaves after the latter are cut and dried consists simply in boiling them for several hours in an alkaline solution and afterwards dressing them in a mill or under rollers. Washing terminates the process. A yellowish paper is made, worth about $16 per 220 pounds. The fiber, it is believed, may be used for fabrics and for cordage, and is considered equal to hemp, flax or jute.

AMERICA NO LONGER A CUSTOMER FOR BRITISH STEEL.

The excitement produced in Sheffield by the rise in coal has been intensified by a rumor that one of the largest firms engaged in the manufacture of steel—mainly for American customers—is about to transfer its business to the United States. For a long time past these makers have been producing steel from Bilbao ores, but have at last found them selves (overweighted by the cost of freight and the high prices of fuel and labor) unable to compete with American makers, who import the ore direct, and manufacture upon the spot. If confirmed, says *Iron*, this report will only tend to prove more clearly than before that, although we need not —for awhile—dread the American as a rival, he is gone for ever as a customer.

THE MANUFACTURE OF MAGNESIA.

The Washington factory, near Newcastle, England, manufactures the greater part of the magnesia used in the world. The principle of the process employed consists in treating dolomite with gaseous carbonic acid, under a pressure of 5 or 6 atmospheres. The dolomite is first dried, then finely pulverized, and afterwards placed with cold water in a cylinder which constantly revolves on its horizontal axis. The carbonic acid gas formed by the action of hydrochloric acid upon carbonate of lime is, by a powerful pump, driven into the vessel at the pressure above noted. The solution of bicarbonate of magnesia thus produced is carried into a vertical cylinder and submitted to steam (the consequent elevation of temperature regenerating the neutral carbonate,) and then led into canals beside the last mentioned receptacle. Lastly, the substance is gathered into masses, from which are cut the parallelopipeds which, after desiccation, are supplied to commerce. Caustic magnesia is obtained by heating the carbonate in red hot muffle furnaces.

ANALYSIS OF TEA.

Zöllers analysis is as follows:

Potash	39·22
Soda	0·65
Magnesia	6·47
Lime	4·24
Oxide of iron	4·38
Protoxide of manganese	1·03
Phosphoric acid	14·55
Sulphuric acid	trace
Chlorine	0·81
Silica	4·35
Carbonic acid	24·30
	100·00

THE BRITISH ASSOCIATION.

We continue, from our last, abstracts from papers read at the late meeting at Bradford:

HEAT-CONDUCTING POWER OF ROCKS.

Professor Herschel and Mr. Lebour have been experimenting in this subject. Twenty-eight specimens of rocks were reduced to uniform circles of 5 inches diameter and ½ inch thickness, carefully gaged. Out of six specimens that had been tried, slate plates, cut parallel to the plane of cleavage, transmitted the heat faster than any of the others. Where the flow of heat had become uniform, the water was raised 1° Fah. in thirty-two seconds. With marble, sandstone, granite, and serpentine, about thirty-nine seconds were required to raise it by the same amount. The greatest resistance to the passage of heat was offered by two specimens of shale, gray and black, from the coal measures in the neighborhood of Newcastle, which occupied forty-eight or fifty seconds in raising the water one degree, or half as long again as the time taken by the plate of slate.

PHOTOGRAPHS OF INVISIBLE SUBSTANCES.

Dr. J. H. Gladstone, F. R. S., called attention to some photographs of fluorescent substances. Fluorescent substances, such as bisulphate of quinine or uranium glass, have the power of altering the refrangibility of the violet or chemical rays of light; hence, although paper painted over with bisulphate of quinine will look nearly white, it will appear in a photograph as if it were nearly black. Dr. Gladstone exhibited some photographs of ornamental design traced on white paper with bisulphate of quinine; although the designs were nearly invisible to the eye, in the photographs they were boldly visible. A colorless solution of bisulphate of quinine was placed in one glass, and some ink in another glass; when both glasses were photographed, they came out equally black. Dr. Gladstone said that once, at the seaside, he painted a pattern with bisulphate of quinine upon paper, and took the paper to a photographer to be photographed; he objected, because there was nothing on the paper, but on trying the experiment he found out his error. It was stated that some kinds of varnish possess a similar power of affecting the refrangibility of light.

SHOOTING STARS.

It appears, from the report of the Luminous Meteor Committee of the British Association, that shooting stars and large fire balls have appeared during the past year in more than usual varieties. Large meteors have presented themselves in considerable numbers, and ordinary shooting stars in a more striking manner, as regards the explanation of their origin, than has often been the case in former years. Of all these kinds of shooting stars, both large meteors and meteoric showers, much accurate information has reached the committee. Two of the largest fire balls seen in Great Britain were aërolitic, or burst with the sound of a violent explosion on November 3 and February 3 last. Aërolitic meteors and aërolites have also been noticed in the scientific journals of other countries, which have given rise to experiments on the composition of aërolitic substances, both chemical and microscopical, the conclusions of which continue to extend the range of our speculations regarding the origin of these bodies. Thus the existence of carbon and hydrogen, in the atmosphere from which the largest iron meteorite yet found (a few years since upon the shores of Greenland) was expelled, confirms the discoveries of Grahame and Professor Mallet, in America, of the existence of the same gases in other meteoric irons. Dr. Wöhler has thus detected the oxides of carbon as gases in the vast meteoric iron of Ovifak, found in Greenland and brought to Stockholm during the last few years by Professor Nordenskiöld; and the same gas was found by Professor Laurence Smith in the siderite which fell recently in the United States. A connection between comets and meteorites appears to be indicated by these discoveries, in the spectra of some of which gases containing carbon appear to have been certainly recognized by Dr. Huggins.

The past year was distinguished by the occurrence of a most remarkable star shower on the night of November 27 last, to the expected appearance of which astronomers were looking forward with especial attention, from the unexplained absence of the double comet of Biela (to which it belongs), from its accustomed returns in the last three of its periodical revolutions.

The cloudy state of the sky unfortunately deprived observers in the South of England from witnessing the sight; but in Scotland, and north of the Midland counties of England, many uninterrupted views of it were obtained. On the European continent and in the United States of America, as well as in the East Indies, at the Mauritius, and in Brazil, observers were equally fortunate in recording its appearance, and few great star showers have hitherto been more satisfactorily observed, or indeed more abundantly described. In an astronomical point of view, the agreement of the time and other circumstances of its appearance with the supposed path of the lost comet is so exact as to prove that the calculations made by astronomers of that comet's orbit cannot be affected by any errors of a large sensible amount, and a proof almost certain is thus obtained, that the disappearance of the comet is owing to no unexplained disturbances of its path; but that like some former comets of variable brightness, it has not improbably faded for a time out of view, and that at a future time a reasonable expectation may be entertained of re-discovering it pursuing its original path in repeated visits to the earth's neighborhood, and to the field of telescopic observation.

IMPROVED PROCESS FOR PURIFYING COAL GAS.

Mr. Vernon Harcourt said that the usual method of freeing coal gas from sulphuretted hydrogen was by passing it through lime. But oxide of iron was also employed in place of the lime, the advantage possessed by the oxide being that while the lime, after it had served its purpose, was useless and difficult to get rid of, the oxide of iron could be used repeatedly for the same purpose. The chemical changes involved were that, when the gas had passed through the oxide the latter was changed into sulphide of iron; when the sulphide was exposed to the air, the sulphur separated and the oxide was re-formed, thus enabling the oxide to be again used. This was called a continuous process, because the oxide could be continuously used. But the process was not quite continuous, for, after the oxide had been used some thirty times, it became so clogged with sulphur as to be useless. The new process was applicable wherever oxide of iron could be used in the purifying process. The difference from the old process was that the oxide during revivification was moistened with a solution of ferric sulphate (persulphate of iron), and a portion of the oxide was removed from time to time, and treated as follows: It was first extracted with water by the use of a well known arrangement. The soluble salts were sulphate of ammonia—formed in the purification by the reaction of ammonia upon ferric sulphate—and, in smaller quantities, sulpho-cyanide, hypo-sulphite, and probably sulphate of ammonia. This extract was mixed with a small excess of sulphuric acid; and yielded, when concentrated by evaporation, crystals of ammonium sulphate. The remainder of the substance was then boiled with dilute sulphuric acid, which dissolved the oxide and left a residue of sulphur. The actual process of extraction by acid consisted in treating the substance successively with (1) a solution of ferric sulphate containing some free sulphuric acid; (2) with a more dilute solution of ferric sulphate to which sulphuric acid had been added; (3 and 4) with more dilute solutions of ferric sulphate—all these liquids being the product of a former extraction—and (5) with water. The liquid resulting from the first of the treatments enumerated above was a strong solution of ferric sulphate, which was used as already mentioned, by being mixed with the charge of oxide before it was replaced in the purifier. The residue of the final washing consisted almost entirely of sulphur, and required only to be dried. It would be evident that all the oxide which had been freed from sulphate of ammonia and sulphur by this treatment passed into the condition of ferric sulphate, and in this condition it was replaced in the purifier. There it again became oxide by the action upon it of the ammonia in the gas, which it completely removed, fixing it as sulphate. This system had been brought into use as a manufacturing process, and had been found to be, as far as could be judged, a complete success.

NEXT YEAR'S MEETING.

The next meeting of the British Association is to take place at Belfast, Ireland, on August 9, 1874. Professor Tyndall has been elected to preside.

A Gigantic Cotton Press.

We devote our initial page this week to the illustration and description of a new machine for the compressing of cotton, hay, or similar material. The apparatus is a gigantic affair, occupying two stories of a moderate sized building, and is a model of admirable workmanship. The parts, though weighing tuns, move with the ease and regularity of a well balanced engine, and the tremendous pressure which they develope produces results which it is difficult to imagine could be otherwise so well and readily effected.

The application of the invention to the re-pressing of cotton bales, previous to their shipment abroad, will tend to increase materially our present facilities for exportation, as a vessel is thus enabled to carry fully three times more of the staple than heretofore. There are many advantages gained, notable immunity from danger of fire or injury by moisture, increased facility in handling, besides others which will be easily apprehended on perusal of the description of the device. Apart from its capabilities, the machine is intrinsically well worthy of the examination of engineers and mechanics.