other motive power, for animal labor; and England should not remain backward in the race, especially since to her canal system she owes so much of her present prosperity and greatness.

The cumbersome barge, with snail-like advance, feebly contrasts with the iron horse, thundering by with its speed and power. Yet, improved as they should and must be, canals will always continue to form an essential part of internal communication, to be missed quite as much as roads, railways, or even the telegraph itself.

In conclusion, the author expresses his sincere regret that this glance at the canal systems, and the mechanical methods which have been suggested as applicable to the propulsion of their boats, had not fallen into abler hands. Its compilation has been gathered from many sources and authorities, with but limited time spared from usual avocations. But, trusting that it may at least draw attention to a most important field in the economy of nations, such as it is, this paper is presented, in the hope of a favorable reception.

PHRENOLOGY AND SPIRITUALISM.---A LIVELY DISCUSSION.

At an ordinary fortnightly meeting of the Anthropological Institute, in London, the Secretary read a paper, written by the Rev. Canon Calloway, M.D , of Springvale, Natal, Western Africa, on "Dreams, Sympathy, Presentiment, and Divination, among the Natives of Natal." He began by saying that in all ages and in all parts of the world, certain strange phenomena have been seen, which by some have been ascribed to delusion, by others to imposture, by others to disembodied spirits, and by others again to the devil. The author argued that these phenomena probably had a natural source, and were probably due, in great part, to the mental condition of the observers; at the same time, he held it to be utterly unscientific to deny the existence of spirits, and the possibility of their playing any part in the affairs of man. He then proceeded to explain that certain changes in the state of the brain will cause men to see spectral illusions, and that a man who wakes very suddenly out of a dream, with the image of the person he saw in the dream still impressed upon his brain, sees that person at the moment of awakening, and believes, therefore, that he sees a spirit. Some spectral appearances he could not explain in this way, such, for instance, as the ghosts sometimes seen in haunted houses, by persons who slept therein, without knowing the house to be haunted.

In the course of his paper, he described the clairvoyant powers of some of the Zulus, and finally narrated how some of the natives went to consult a woman, in whose presence the spirits were said to talk with audible voices. A native Kraal among the Amadunga, on the Tukela, having had some quarrel with their people, settled with a relative among the Amahlongwa. After settling there, a young child of theirs was seized with convulsions; so some cousins of the child went a day and a half's journey to consult a woman who possessed spirits. The woman had never seen the inquirers before. The cousins sat on the floor of the hut, and the woman in the center, in broad daylight. Soon a voice, like that of a child, was heard near the roof of the hut, and this voice told the cousins that they had come to seek the advice of the spirits about a child suffering from convulsions; the voice also told them all kinds of things about their private family affairs, and told them what to do to cure the child. The natives then returned home, followed the instructions given, and the child recovered.

Dr. Calloway offered no explanation of this case, and he closed his paper by saying that, although these phenomena "cannot be ascribed to the direct agency of good or evil spirits alone, yet they may be intimations that not only can the soul of man look out upon the world around him, and become cognizant of it through the organs of sense, but that it can look in another direction, and, without the organs of sense, obtain a knowledge both of what is going on in the world beyond the sphere of the senses, and even look into futurity, and hold communion with the invisible world of spirits."

Mr. J. W. Jackson, F. A. S. L., of Glasgow, said that, in the first place, he did not think that the author had sufficiently explained his subject by the aid of phenomena, well known to men of science, for all the phenomena of dreams can be reproduced by means of phreno-mesmerism. He knew that subjects like these were much tabooed by the Anthropological Society, still they formed a part of the study of the science of man. When a man is in the mesmeric sleep, the operator has but to excite the organ which leads to dreamlife; if it be desired to show him somebody in distress, the operator has but to touch the organ of benevolence; if veneration be excited, he will perhaps fancy that he is in church; if the organ of philoprogenitiveness be touched, and the subject be a lady, she will perhaps fancy that she has an imaginary baby, and will begin to nurse it with the greatest care. Dreamlife is a reversal of the waking state. In the former, objects excite ideas; in the latter, ideas place objects before the consciousness. Community of sensation may also be produced by mesmerism; and what the operator feels and tastes, the patient will also feel and taste; this is the case sometimes when the operator does not touch the patient, but is on the opposite side of the room. Two minds may be united in the same way, and then thought-reading takes place. They might assert that these things did not take place; but they do occur, and every mesmerizer has his thoughts revealed to him, at one time or other, by his subjects. The paper just read was interesting, because of its bearing upon the state of the psychology of the savage; although the savage had a coarser physique than the European, he is more susceptible, perhaps, to psychological influences than the white man, because he lives nearer to nature; and all over the world, where men live closer to nature, they are more susceptible to mesmeric influences. There is no question that many of the phenomena now taking place among spiritualists throw much light upon what is taking place among the natives of Natal, and many of the things described in the paper now occur in our midst. He had seen heavy articles moved about in opposition to the law of gravitation, notwithstanding all that Professor Tyndall and others might say to the contrary; at the same time, he would not say that spirits moved them. These things are taking place around and about us. What is the value of the opinion of a man on this subject who has never seen these things? He had seen them, and knew them to occur. Many spiritualistic facts are mesmeric in their origin. He should like to hear a paper read before the society on the medicine men of North America; also, if some of our Indian officers would give a paper on mesmeric phenomena among the Hindoos, it would be interesting, for India is a great storehouse of extraordinary psychological phenomena. The great thing is for the writers of such memoirs to state what they know without fear. Dr. Calloway had not been afraid to speak the truth that was in him, and that was the great merit of his paper.

Mr. W. G. Dendy said that the spiritualists must not have the tether that evening. As regards Dr. Calloway's paper, what was true in it was not new, and what was new was not true. Dr. Calloway was egregiously wrong in writing it, and he ought to be ashamed of himself; Mr. Jackson, also, was a great man in stating things of which he was not ashamed. He wished that Sir John Lubbock had been present that evening to defend the savages, for many of the facts mentioned in the paper were mere humbug. He thought that Mr. Jackson was correct in much that he had said about dreams, but when he said he could excite a particular organ, he thought it was an entire mistake; it was the same great error that Gall and Spurzheim fell into. By mapping the skull, it was not possible to map the brain underneath it. Phrenologists place the organ of color in the forehead, whereas the nerves from the eye go a long way back into the center of the brain, so to have all that humbug stated at that meeting was too hard to bear. He thought that when their old friend, Dr. Donovan, ceased attending their meetings, that he and phrenology had gone out together. He very much regretted that such a farrago had been placed before them to discuss, and he rose to inveigh against the paper.

Major S. R. T. Owen said, that whether the brain could be mapped out or not he did not know, but almost all the experiments mentioned by Mr. Jackson he had personally tried, again and again; he knew them to be true, so took to himself all the blame awarded by Mr. Dendy.

Mr. Prideaux said that he had seen the phenomena of what is called phreno-mesmerism, and thought that they were produced by the belief of the operator; the operator believed that a certain part of the head was connected with certain organs, and because of this belief the phenomena were produced. Phrenology itself must be proved by facts, and not by opinions, and if Mr. Dendy would bring painters and color-blind people to him, whom he had never seen before, he would look at their heads, and would separate one class from the other.

Mr. Charlesworth said that the paper was all rubbish, and wholly unworthy of discussion. The society would have been much better employed in discussing phrenology and mesmerism than the facts in that paper.

The President said that the subject was one which well deserved investigation, and it was one which labored under an immense amount of prejudice. In some ages, great credulity was the rule, and in others, a great degree of skepticism; every pretence at a ghost was once believed in, and now, perhaps, we go too far in an opposite direction. He wished that some test could be applied to the phenomena, and he thought that the whole question was one which came within the province of the Anthropological Society. He thought there were certain cases of ghost seeing not readily explainable by any theory put forth that evening, such as those instances where people had died in foreign lands, say in India, and appeared to one or more friends at home at the moment of death. Those cases, he thought, could not be got over. The paper was valuable as showing how the opinions of savages agree with our own on such subjects. It was a fair subject for inquiry, and prejudice should be laid aside Could not some scientific test be applied to these things? He rather thought with Mr. Jackson, and attributed more value to the paper than had been done by some of the other speakers, though he did not exactly see the connection of phrenology with the subject. He thought that the society should scientifically study the subject, try it by tests, and dismiss prejudice as much as possible.

Mr. Prideaux asked permission to speak a second time, and said that the phenomena were real. He had had some talk with the Bishop of Winchester about them, and the bishop expressed his opinion that the phenomena were governed by exact laws, like everything else in nature, only as yet we do not know the laws. One difficulty in the way of scientific investigation is the uncertainty and fugitive nature of the phenomena; the presence of persons adverse to their occurrence interferes very much with the effects produced. Their strange nature was no argument against them, for if eclipses only took place once in a century, the testimony as to their occurrence would be disbelieved. He was quite ready to take his share of obloquy in all matters connected with mesmerism and spiritualism, but with respect to the latter subject he was not satisfied as to the cause of the phenomena.

MEDICINE stains may be removed from silver spoons by rubbing them with a rag dipped in sulphuric acid, and washing it off with soap-suds.

Duration of Animal Life.

The duration of the life of any particular animal depends on its kind of structure, elementary and anatomically, as well as upon its place and mode of subistence. Some have their lives extended to a century, whilst others live but a few hours. If we examine the longest lived, such as some reptiles, the whale, some kinds of birds, the elephant, and man, we will find the tissues of which they are composed, are so slowly changed, under the normal condition of their lives, the growth, absorption, and renewal of them being of such a character, that the induration which makes the decrepitude of age, is slow in taking place. The land tortoise, a reptile well known for longevity, is constructed of a gelatinous muscular fiber, with comparatively soft bones and shell. He lives on vegetable matter, moves about slowly, becomes fat, and is torpid during the cold weather. With few enemies to molest him when encased in his shell, those that pass from the egg state to this defence live year after year in lazy security, and answer the purpose of their creation. They do not harden and grow stiff by excessive labor as do man, the horse and the dog, and thus become prematurely old. Fish, particularly the larger kinds, attain great age. Whales are supposed to live a century. But little accuracy can be expected in computing the years these monsters roam through the different seas, but evidence from harpoons bearing ship marks, and dates, found imbedded in captured whales, is conclusive that the adult whale will live the greater part of a man's life without undergoing much change. The slow propagation of these monsters, the softness of their muscular fiber enveloped in fat, their food, all tend to that slow assimilation and expenditure of nutritious matter, which is most consistent with a long life.

The peculiar life element, nitrogen, plays an important part in the duration of animal existence. Where the food consists almost entirely of nitrogenous compounds, such as flesh, the greater amount of vitality imparted to such as live on this food, hurries them through their existence, other conditions being equal, in a shorter time than those which feed on a less stimulating nourishment. The tortoise and the whale are supported by vegetable, and other matter, that contains but little nitrogen compared with the food of carniverous animals. The whole lion tribe, whatever may be their magnitude and organization, soon show symptoms of age. The exertion necessary to procure food, strains every muscle to its greatest tension, and these muscles need constant supplies of highly animalized matter to restore their waste. This wearing away, and renewal, hardens the tissues that are thus constantly in a state of action until they become unfit to perform their perfect functions, and at a period, early, compared with the time it took to bring them to maturity, these carnivora fall into decay. An old, worn out lion is not unusual in the jungle. The buffalo, rhinoceros, and hippopotamus, less stimulated by their vegetable food, and less exercised in its procurement, live to a greater age.

Without bringing other examples in proof of the kind of food and exertion necessary to maintain life having an influence upon longevity, the laws that operate to this end, when duly considered, will show the harmony of the whole animal economy. The time appointed for the individuals of each race to live, seems adjusted to the accomplishment of their peculiar work. The ephemera, in the sunshine for a few hours, fulfil their function and die. Their larvæ are longer in coming to maturity, but one short season rounds the whole existence, from the embryo to the perfect insect, and during these stages, whether it has been created for devastation or to be devoured by some other, the wave of life has swelled and subsided. All that remains can rest until another season, when by the air and the sun it will be set in motion to repeat the same phenomena. Other beings, having purposes to accomplish that cannot be embraced in so short a period, have a slower organization.

It would be curious to trace the connexion between the elements of the air and influences of the sun in the life process, and to accurately determine how much nitrogen, one of the elements of the air, and the principal constituent of all the vital parts of animals and plants, has to do with the duration of organic existence. That kind of structure requiring altogether food of which this element constitutes the greatest part, such as the viscera and flesh of animals, should, with the vigor imparted to it by such aliment, live as long as that depending on the scanty supply of nitrogen obtained from vegetables, is not consistent with the idea that the decrepitude of old age is nothing more than the hardening of tissues by the amount of resistance they have had to overcome. The life force is most rapidly and most powerfully expended in the carnivora, and if they are such as by their habits require a daily supply to meet the exercise to which they are daily subjected, their lives must be shorter than those as continually, although not as powerfully called into action, that feed upon vegetables. In the latter, the life processes being slower, induration is later in causing decrepitude.—*James B. Coleman, M. D., in Beecher's Magazine.*

Curious Egg.

A correspondent informs us that, a few weeks since, at Westford, Mass., he saw a newly broken egg, having the usual quantity of white and a yolk, and, in addition, another (smaller) egg, an inch or more in diameter. The inner egg contained white only.

The hen who laid this egg is a mere tyro in science, and a little learning, in egg laying as in other things, is a dangerous thing. No doubt the hen's idea was, that by putting an exterior jacket on the inner egg, superheating might be achieved, and the egg would hatch itself. But she carelessly omitted to put the yolk in the inner shell. She must experiment further before she applies for a patent.

Experiments on the Strength of Cast Iron Girders.

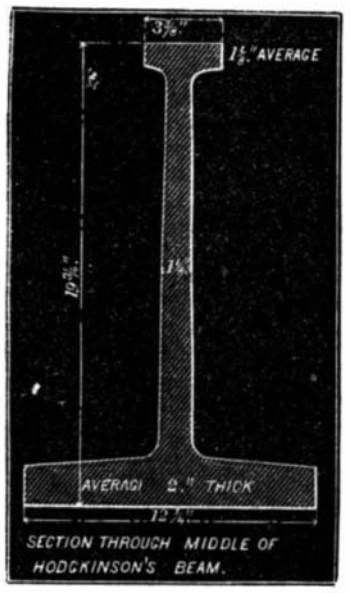
The New York Legislature passed a law, at its last session, requiring that every column girder and beam, having a span of eight feet and upwards, and intended to support a wall of stone or brick, or any floor, or part thereof, shall be tested previous to its use in any building, hereafter to be erected, in the city of New York. The margin of safe weight for large beams has hitherto been computed from standard results obtained from tests of smaller ones. To test the reliability of this method, an interesting series of experiments was recently made at the foundery of J. L. Jackson & Bro., Twenty-eighth street and Second avenue. The tests were made by means of a hydrostatic press. A number of prominent officials architects, and engineers, were present. The experiments were conducted by Mr. P. H. Jackson, a member of the above-named firm. The following is a synopsis of the results, as communicated by Mr. Jackson:

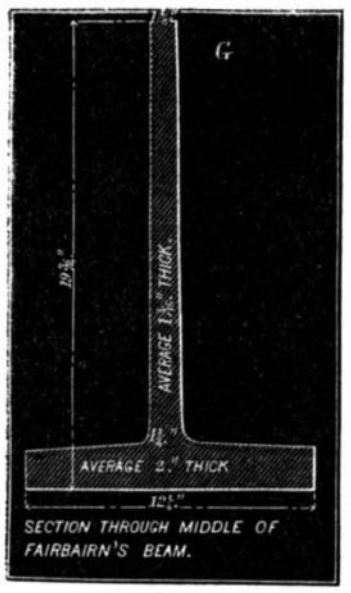
FIRST SERIES OF EXPERIMENTS, JUNE 23, 1871.

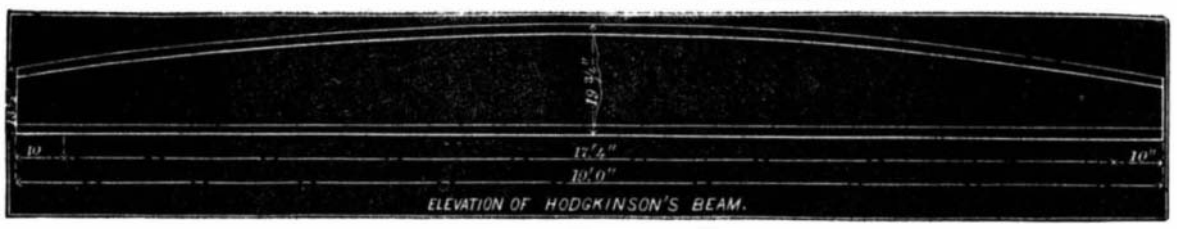
This was a Hodgkinson form of beam, whose areas of bottom and top flanges were in the ratio of $6\frac{1}{2}$ to 1. It was made of such iron as is in common use for building purposes. Area of bottom flange, $12\frac{1}{4} \times 2 = 24{\cdot}5$; top flange, $3\frac{3}{8} \times 1\frac{1}{8} = 3{\cdot}8$; vertical rib, $16\frac{3}{8} \times 1\frac{1}{8} = 18{\cdot}4$; 4 fillets, 1; sectional area in middle, 47·7 inch.

Breaking weight in middle, computed by the Hodgkinson formula: $12{\cdot}25 \times 2 \times 19{\cdot}75 = 483{\cdot}875 \div 208 = 2{\cdot}326$. $2{\cdot}326 \times 514 = 1195{\cdot}564$ cwts. $= 59\frac{5}{10}$ gross tuns.

Experiments.	Tuns.	Deflection.	Pressure taken off permanent set.
1	15	7-16 inches.	
2	20	9-16 "	2-32 inches.
3	25	21-32 "	2-32 " full.
4	30	3-4 "	
5	35	2 1-32 "	4-32 " full.
6	38	1 "	5-32 "
7	41	1 3-16 "	7-32 "
8	44	1 11-32 "	
9	47	1 1-2 "	
10	50 (broke)	1 5-8	







WEIGHT OF BEAM, 2,680 POUNDS.

In accordance with Hodgkinson's formula, the safe weight should not exceed one third of breaking weight, or 20 tuns.

The test shows that the safe weight should not exceed $16\frac{2}{3}$ tuns, being 20 per cent excess of formula over test.

I do not believe, if the pressure had been taken off at $16\frac{2}{3}$ tuns, and allowed to remain off twenty minutes, before noting deflection, that there would have been any set whatever indicated, which would have shown that the elasticity was not impaired in the least at that weight.

You will observe that, at 20 tuns, when the weight was taken off, the gages showed $\frac{1}{16}$ in permanent set. But even this is questionable, to my mind, as a permanent set, since the beam would have conformed more to its original form, provided it had been left at a state of rest after the 20 tun test. I can only attribute the deficiency of strength in this beam to the following: In all founderies engaged in the manufacture of iron work for building, it is usual to melt soft iron, principally "Scotch pig," either at the first or last of the heat, usually at the first, for cornices, capitals, and all other light castings, which require to be soft in order to be filed, but do not require any extra strength. It may have been that some of this iron was in the Hodgkinson beam. Besides, when metals of various densities and formations of grain are mixed, the different particles in cooling have a tendency to adopt their former structure, and therefore if the metals are not properly mixed the strength of the casting will be considerably impaired by unequal contraction.

SECOND SERIES OF EXPERIMENTS, JUNE 23, 1871.

Same section as beam used in first experiment, but without compression flange, G.

This is a beam of the Fairbairn form of 1825, but somewhat greater in its ratio of resistance to extension and compression. In this beam the area of the bottom flange, subject to extension, is, to the area of the top of the vertical rib—one inch in depth, subject to compression—in the ratio of 21 to 1; while in Fairbairn's beams the ratio did not exceed 16 to 1. Bottom flange, $12\frac{1}{4} \times 2 = 24{\cdot}5$; vertical rib, $17\frac{3}{4} \times 1\frac{3}{16} = 21{\cdot}1$; two fillets, ·6; sectional area in middle, 46·2 inches.

Taking the breaking weight as per section of Hodgkinson beam made with compression flange, it would be (see first experiment) $59\frac{5}{4}$ tuns. Then taking Hodgkinson's section of the greatest strength as unity, the ratio for Hodgkinson and Fairbairn will be as 1 to ·754, or $59\frac{5}{4}$: F :: 1 : ·754. F = 44 tuns.

Experiment.	Tuns.	Deflection.	Weight taken off, permanent deflection.
1	15	7-16 inches.	1-32 inches.
2	20	9-16 "	1-16 "
3	25	3-4 "	1-16 " full.
4	30	15-16 "	
5	35	1 1-8 "	5-32 " full.
6	38	1 7-32 "	7-32 "
7	41	1 5-16 "	1-4 "
8	44	1 1-2 "	
9	47	1 11-16 "	
10	49	1 25-32 "	

Broke at 49 tuns.

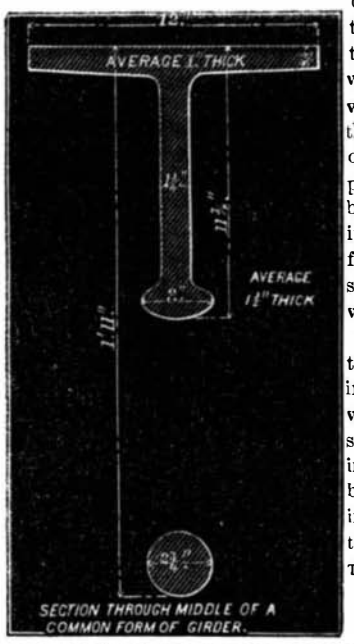
Excess of breaking weight, by test, over that of formula, providing the ratio of extension to compression did not exceed 16 to 1 (this was 21 to 1), equals 5 tuns, or 12 per cent.

At the place of fracture the bottom flange had a bright crystalline appearance, showing that the crystals had been subjected to a great tension; while at, or near, the top of the vertical web, subject to compression, the iron was of a dull blueish color, similar to the appearance of the outside of a pig of lead. Midway between these points the metal had the same appearance as a piece of the casting which I broke off at the end, and which had not been subject to strain.

On the day following the experiment I found the ends of beam at fracture rusted over, as it had rained during the night, or I would have sent you pieces from each of the three places, for your inspection.

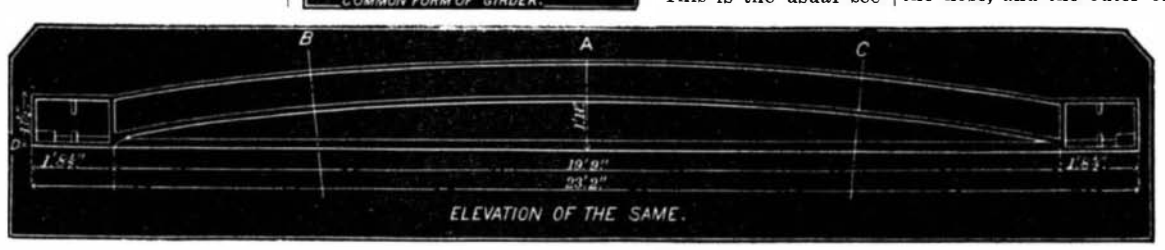
This beam had the advantage over the Hodgkinson beam of lying undisturbed in the sand 20 hours longer. Consequently it cooled slowly, and contraction was more equalized, increasing its capability to resist strain. Besides it was cast downwards. The top of the web, G, if exposed to the atmosphere equally with the rest of the beam, would cool and contract the quickest, by reason of its being the thinnest part of the casting; but, being cast in this position, it was the farthest point from where the atmosphere came in contact with the surface.

Lastly, being cast with the web downwards, all impurities would rise upward to the bottom flange subject to tension, while in the Hodgkinson beam, being cast on its side, the impurities would rise to the flanges uppermost.



THIRD SERIES OF EXPERIMENTS.

This is the usual section of almost all arch girders in common use in New York city, made to sustain four stories of 12 in. brick wall.



WEIGHT OF BEAM, 2,539 POUNDS.

Area of middle section: Top flange, $12 \times 1 = 12$; bottom flange, $3 \times 1\frac{1}{2} = 4{\cdot}5$; web, $8\frac{7}{8} \times 1\frac{1}{2} = 11{\cdot}1$; fillet, 1·0. Total, 28·6. 28·6 inches sectional area in middle = 90 pounds per foot in length.

Breaking weight of this beam, if made straight, without the rod, agreeably to the formula of Hodgkinson: $3 \times 1\frac{1}{2} \times 11\frac{3}{8} = 51{\cdot}188 \div 237{\cdot}5 = 215 \times 510 = 110$ cwts., or $5\frac{1}{2}$ tuns.

Area of rod, 7·562 inches; it was shrunk in $\frac{1}{8}$ of an inch less in length than recess made for it in the casting.

Experiment.	Tuns.	Deflection. A.	B.	C.	Elongation of rod. D.	Permanent set, weight taken off. A.	B.	C.	D.
1	10	3-8 in.	1-4 in.	1-4 in.	1-8 in.				
2	15	5-8 "	11-32 "	7-16 "	3-16 "				
3	18	3-4 "	11-32 "	1-2 "	5-32 "	0	0	0	1-32
4	21	15-16 "	19-32 "	5-8 "	7-32 "				
5	24	1 5-32 "	3-4 "	25-32 "	1-4 "				
6	27	1 5-16 "	7-8 "	7-8 full.	9-32 "	1-8	1-16	1-8	1-32
7	30	1 13-32 "	15-16 "	31-32 in.	9-32 "	1-8	1-16	1-8	1-32
8	32	1 19-32 "	1 1-32 "	1 1-16 "	11-32 "				
9	34	1 3-4 "	1 5-32 "	1 3-32 "	13-32 "				

Broke at 34 tuns.

The bottom flange cracked through, and about half way up through the web. Elongation of rod, $\frac{13}{32}$.

STAINS from acids can be removed by spirits of hartshorn diluted. Repeat if necessary. Rinse off with water.

A Second Street Tunnel under the Chicago River.

The first tunnel has been open to the public for a considerable time, and the second tunnel, the La Salle street, is now completed. The success of these works ought to be an example to the authorities of New York and Brooklyn. We presume that three or four first class tunnels might be laid between these two great cities, for less money and in much less time than the East River Suspension Bridge can be completed.

The Chicago *Times* thus describes the La Salle street tunnel: Entering the tunnel proper, there is seen above, a series of transverse arches resting on iron girders, three feet apart, the side walls being of stone. From the entrance, to the terminus of this section of the tunnel, is 396 feet; the portion covered with transverse arches being 60 feet. Next is a section of the tunnel which is covered with a regular arch of brick work, which, on account of its rough finish, has, in the dim light of the tunnel, the appearance of stone. On each side are noticed recesses in the walls, which are meant for refuge places for policemen in case of a runaway. Double gas jets are provided at intervals of 60 feet. At a distance of 40 feet from the river line is a ventilator, passing up through the arch, constructed of solid masonry, and 6 feet in diameter. Into this leads another ventilator from the pedestrian way. Passing along a well paved road, the single archway, which is $19\frac{1}{2}$ feet in width, ends at a point two feet from the river line, where it diverges into two archways, each 11 feet wide, and separated by a central pier 2 feet 4 inches in width. This wall or pier is pierced, at intervals of 16 feet, with doorways, as is also the pier separating the eastern of the two carriage ways from the pedestrian way. This latter way is 10 feet in width, and is entered by stairways at South Water street and Kinzie street. This double driveway extends 300 feet, when in inverse order come the changes in the structure described at the south entrance to the tunnel. In the center of the tunnel, at the lowest point, is a well 6 feet in diameter, which enters into a main sewer 5 feet in width. This sewer drains the tunnel, carrying the water to the north end of the tunnel, where there is a pumping well, 36 feet from the dock line, from which the water is pumped when necessary. At the north end of the tunnel, at the same distance from the river line, is a second ventilcator, or rather two, one for the carriage way and the other for the pedestrian way. At length, after a walk of 1,900 feet, the other end of the tunnel is reached. The air has been found to be pure, the ventilation good, the walls, except in a few places, dry, and the whole work bears the appearance of one well conceived and well carried out.

Drying Apparatus for Hose.

This invention has for its object to furnish simple, convenient, and effective means for drying hose quickly and thoroughly throughout their entire length, thus having the hose always in order, and not weakened and rotted in spots from being imperfectly dried. Shelves, slats, or racks support the hose in line while being dried. At each end of the shelves, slats, or racks, are partitions, having holes formed in them to receive the ends of the lengths of hose, which holes are of such a size as to fit air tight upon the ends of the lengths of hose. The partitions are made in two parts, the line of division running through the holes that receive the ends of the hose, and the outer or forward parts being detachable for convenience in putting in and taking out the hose. The rack may be arranged so that the lengths of hose may be horizontal, or inclined, or vertical, as may be desired or convenient. A closet is formed at one end of the rack, made air tight, and provided with an air tight door. In the bottom or lower part of the closet is an opening, with which may be connected a pipe leading to a hot air drum or other heater to introduce hot air into the closet, from which it can only escape by passing through the lengths of hose. Ernest Drevet, of New York city, is the inventor of this apparatus.

BURNING CHIMNEYS.—If it be desired to extinguish the fire in a chimney which has been lighted by a fire in the fireplace, shut all the doors of the apartment so as to prevent any current of air up the chimney, and throw a few handfuls of common salt upon the fire, which will immediately extinguish the same. The philosophy of this is that, in the process of burning the salt, muriatic acid gas is evolved, which is a prompt extinguisher of fire.

THE BEST REPEATER YET.—Among the numerous "repeaters" which are constantly being noticed in the telegraphic journals, we have seen nothing more worthy of mention than one which is working "out West" at the present time. It is a young lady operator, who can receive a message on one circuit and simultaneously send the same message on a second circuit with ease and rapidity. This repeater is said to be of unusual elegance and beauty, which we can readily believe, and an entire success in every respect, and good for a "house" instrument.—*The Telegrapher.*