Curious Things About Clocks in India.

Clocks are regarded as curiosities by the Hindoos, and for this reason half a dozen or more timepieces are often found in the apartments of the wealthy Hindostanees. They are not used as timepieces, but simply for ornament, since the old-fashioned way of telling the hour of the day in India, by calculating the number of bamboo lengths the sun has traveled above the horizon, is entirely satisfactory to the natives. It is said that in the country police stations in India, where the European division of the hours is observed, time is measured by placing in a tub of water a copper pot in which a small hole has been bored. It is supposed that it will take one hour for the water to leak into the pot so as to fill it and sink it. When the policeman sees that the pot has disappeared, he strikes the hour on a bell-like gong. If he is smoking or dozing, the copper pot may have disappeared several minutes before he discovers the fact; but the hour is when he strikes the gong.

Intoxicating Rye.

In some of the communes of the department of Dordogne, France, the rye of the last harvest exhibited some singular toxic properties. In several villages, persons who had eaten bread made from this rye were attacked with a general torpor and found it impossible to do any work for twenty-four hours. The effects produced did not resemble those caused by ergot, but rather those of darnel, with an intenser and quicker action.

According to the *Revue Internationale des Falsifications*, the same phenomena have been observed in Russia. Mr. Woronine, who has examined specimens of the rye said to have stupefying and intoxicating properties, finds that the grains have been overrun by a cryptogamic vegetation, and mentions several forms of fungi that may be suspected of having caused the accidents.

Mr. Prillieux has made a similar examination of the rye harvested in Dordogne, and has found that the small, light grains of mediocre appearance exhibit on their surface no trace of the presence of the fungi observed by Mr. Woronine. It is in the interior of the grains that he has detected, by means of the microscope, the presence of a fungus, always the same, whose mycelium has overrun the external layer of albumen. He has distinguished numerous interlaced filaments forming a sort of stroma surrounding the albumen and even penetrating the teguments of the grain. He has found that at certain points the starch grains present a very evident corrosion, due doubtless to the action of a diastase secreted by the fungus.

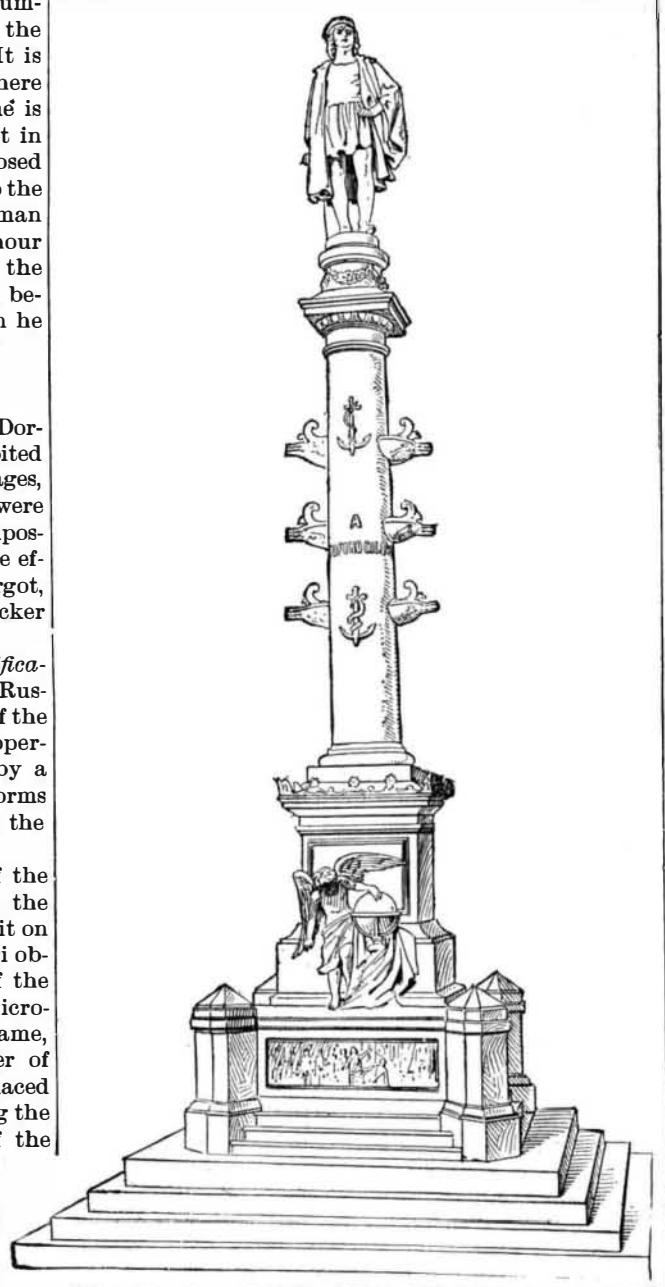
The organization of the filaments permits of the supposition that the fungus belongs to the genus *Dendodrochium;* but the arrangement of the spores more closely resembles that observed in *Sporochisma paradoxum.* As there exists no resemblance with any known genus, Mr. Prillieux thinks that a new genus will probably have to be created for this fungus.—*Revue Scientifique.*

The Fastest Long Distance Train in the World.

The Empire State Express Line on the New York Central and Hudson River Railroad has now been running since November 1, 1891, and has been operated with the greatest regularity. It leaves New York daily at 9 A. M., and goes through to Buffalo, $439\frac{6}{10}$ miles, in $8\frac{3}{4}$ hours, being at the rate of $50\frac{7}{10}$ miles an hour, including stops. The train consists of an engine and four cars, weighing about 230 tons. Weight of the engine 60 tons and driving wheels 40 tons. This is probably the fastest railway train in the world, distance considered.

COLUMBUS MONUMENT FOR NEW YORK.

Probably there will be no more beautiful and completely representative monument erected to the great discoverer on the four hundredth anniversary of his landing in the new world than the splendid gift of the Italians of New York to that city, a representation of



COLUMBUS MONUMENT GIVEN BY ITALIANS TO NEW YORK.

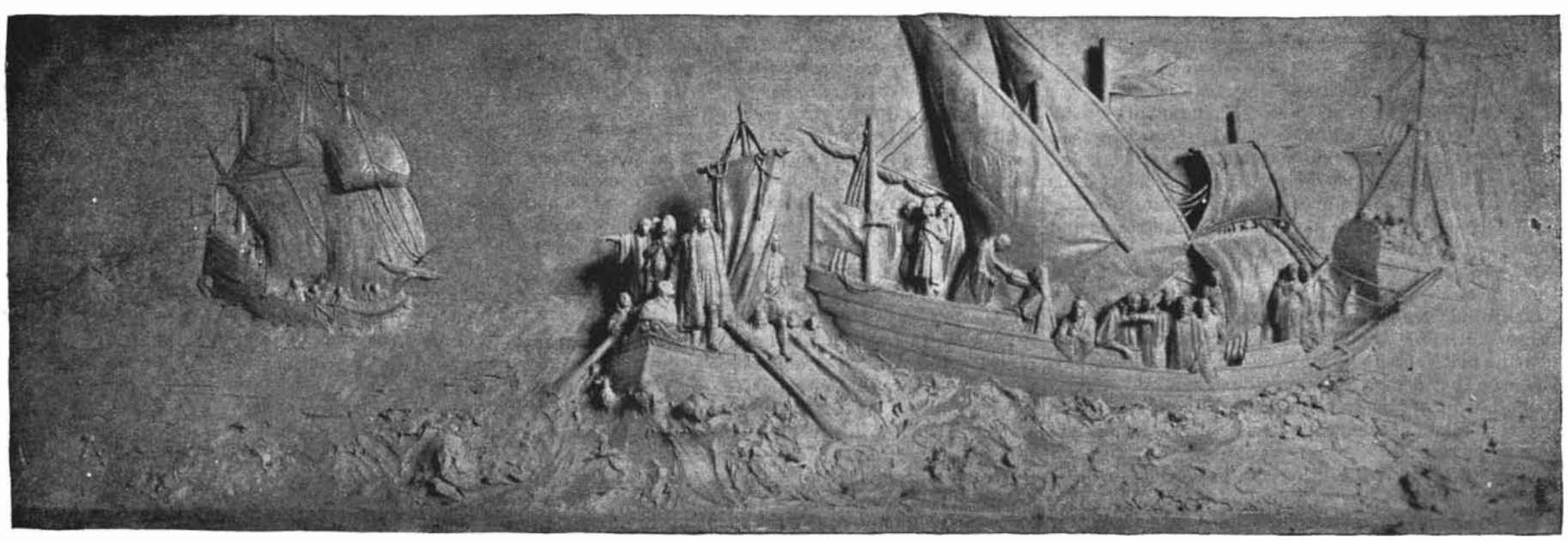
which is here given, and which is to be unveiled with imposing ceremonies on the 12th of October next. The monument will have a place at the Eighth Avenue and Fifty-ninth Street entrance to the Central Park. Sufficient contributions for the purpose were obtained without difficulty when the idea first took shape among the Italian residents here, and, through Signor Barsotti, of the *Progresso Italo-Americano*, an Italian newspaper of New York, the order for a design for the monument was, in January, 1889, forwarded to the Minister of Public Instruction of the Kingdom of Italy. The latter called for a competition of designs for the monument, in which none but artists of Italian nationality might compete. Nine judges were appointed—three architects, three painters, and three sculptors, all eminent in their respective departments—and the competition was large and spirited. The award was made to Signor Gaetano Russo, born in Messina, Sicily, and examples of whose work are now to be found in many of the public buildings of Rome and other Italian cities.

The entire monument, with its terraced pedestal, will be 77 feet high. The figure of Columbus is 12 feet 9 inches high, its feet being 36 inches long, and it is cut from a block of Carrara marble which weighed twenty-five tons. The column and pedestal are of red granite, a short terrace of Carrara marble separating them, the capital of the column being also of marble. The red granite terraced pedestal has octagonal corner columns, a noble figure of Genius crowning the second terrace on one side, and on the other side, at the back of the Genius, is depicted a magnificent Alpine eagle, both in marble. Below the figures, on each side, are splendid basso-relievos, ten feet by two feet in size, these being in bronze, as are also the six prows, three on each side of the column, facsimiles of those of the vessels of Columbus, with representations of anchors above and below the central inscription, "A Cristofero Colombo." The Genius is 10 feet 4 inches high, and cut from a block of marble originally weighing twenty tons, it represents a youth upheld by the wings of Faith, and holding in its grasp the whole globe, which it is apparently studying with an intentness which may well be likened to that with which Columbus pored over the maps in existence at his time. The Eagle, on the reverse side of the monument, and of similar size, is in the attitude of guarding the arms of the United States and those which were distinctive of the Republic of Genoa during many centuries.

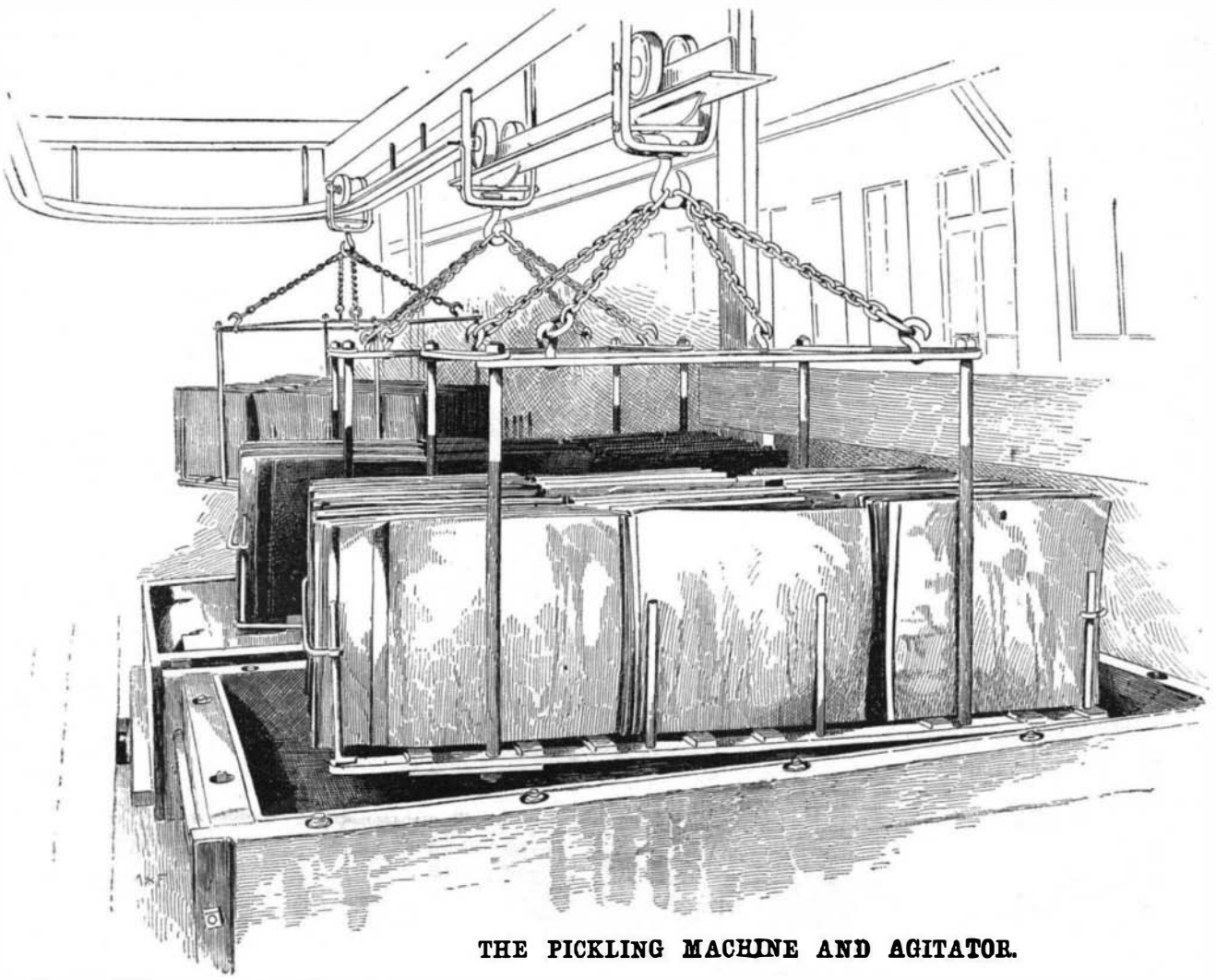
The illustration given of one of the basso-relievos represents Columbus starting in a little boat from his vessel to first set foot upon the land of the New World. The vessels, boats, banners, and costumes are designed to be accurate representations of the originals, and the artist has endeavored to faithfully portray the interest and excitement undoubtedly felt by all on board the little fleet. The basso-relievo on the opposite side shows Columbus reverently returning thanks upon the land, his companions pressing all around and kneeling about him, and the frightened Indians peeping through the foliage. The spaces between the basso-relievos and at the sides of the Genius and the Eagle will be filled with bronze tablets bearing English inscriptions by Ugo Fleres, an Italian poet.

Exhibition Notes.

In front of the Administration Building at the Exposition the largest fountain in the world will toss graceful streams and excite the admiration of millions of spectators. It is now being constructed in Paris by Sculptor MacMonnies, who is acknowledged to be one of the very best of living artists. The idea of the fountain is that of an apotheosis of modern liberty—Columbia—and will take the shape of a triumphal barge, guided by time, heralded by fame, and rowed by eight standing figures, representing on one side the arts and on the other science, industry, agriculture and commerce. The barge is preceded by eight sea horses, forming a semicircle in front and mounted by eight young men as outriders, who represent modern commerce. The smallest figure is some twelve feet in height and the largest twenty feet. The design of the base is circular—150 feet in diameter—and is flanked on each side by columns 50 feet high, surmounted by eagles. The water is furnished by a great half circle of dolphins in the rear and by a system of jets which entirely surround the barge and figures. At night the fountain will be illuminated by electricity after the principle employed in fountains in the Champ de Mars. Moulders and other artisans are working day and night in getting this immense fountain ready in time.



COLUMBUS MONUMENT—BASS-RELIEF—FIRST BOAT LEAVING THE SHIP.



THE PICKLING MACHINE AND AGITATOR.

THE MANUFACTURE OF TIN AT ST. LOUIS.

(*Continued from first page.*)

plate. The location for a steel plant at Granite City, as well as for other manufactures, is unsurpassed. Coal will cost about one-third the price in Wales. The leading railroad systems of the country connect at this point, and labor is plentiful and of a high grade. The total production of this concern is but a drop in the bucket compared with the aggregate consumption of the article. To indicate to what proportions the manufacture of tin plate can develop, it is only necessary to add that it will require fifty establishments similar to the one we have just described to supply the demand in this country.

Speed of Elevators.

The maximum speed of the fastest passenger elevators which have ever been built, the New York *Journal of Commerce* says, is 1,500 feet a minute, a rate of one mile in three minutes and a fraction. Before the fire in the Western Union building in New York City occurred that company had a machine which could run 1,500 feet a minute. It was the only one of its kind in the East.

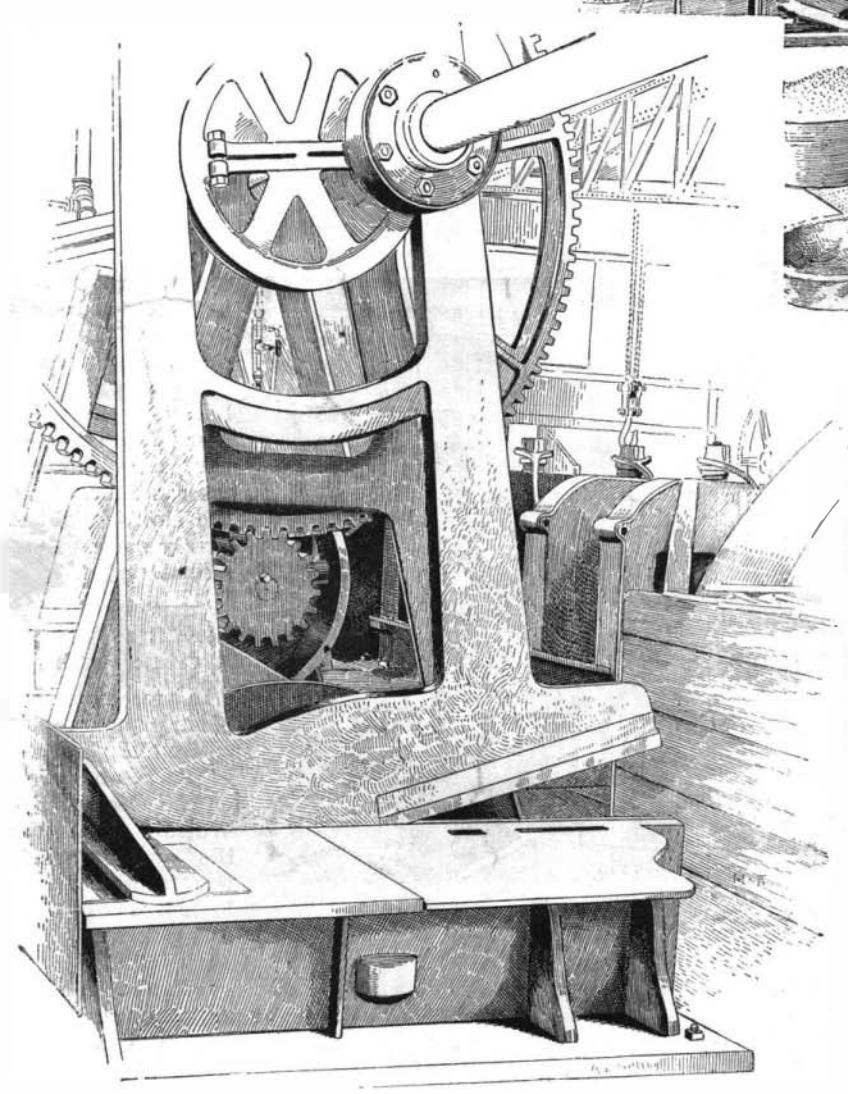
These machines are of the water balance type—that of the orignal hydraulic elevator, the invention of Cyrus Baldwin. Owing to its expensiveness, and the fact that it could not be controlled automatically, it went out of use. The speed was regulated by the engineer, and it went fast or slow as he pleased.

With the modern elevator almost any speed desired can be obtained; it all depends on the power used and the distance traveled. In a building which has a shaft of 250 feet, a speed of from 850 to 1,000 feet a minute can be attained. On a rise of 150 feet it is easy to get a speed of 750 feet per minute with a weight of 1,000 pounds aboard the elevator. In New York the fastest elevators are in the Union Trust Company's building on Broadway, near Wall Street. They shoot up or down, carrying 3,000 pounds, at a speed of 600 feet a minute. When tested with lighter weights, they have traveled from 800 to 900 feet in a minute. But the average speed of elevators in office buildings in and around New York is 300 feet a minute.

The largest elevator cars in the world are now at Weehawken. These elevators, of which there are three, are designed to carry 135 persons on each trip, and are equivalent to ten tons. They are owned by the North Hudson County Railway Company. A viaduct, 875 feet in length, has been built out from the Palisades to a point above the ferry depot. From the rails on the viaduct to the river level the distance is about 150 feet. The railroad company's contract calls for a speed of 200 feet a minute. The common elevators of small business buildings are worth at least $3,000. From that they range up to $13,000 in the same class of buildings.

From an elevator point of view, the new Masonic Temple building in Chicago will be the most important in the world. It will have 24 cars built in a circular shaft having a 250 foot rise. There will be express elevators, way and freight trains. The first will go to the top floor without stopping, while the others will stop either at every floor, or at the 5th, 10th, 15th, and so on. They will not run at full speed, probably, because passengers do not like the sensation of flying. With the present safety devices it is just as safe to run fast as slow.

THE ANNEALING OVENS FOR TIN PLATES.



THE DOUBLING AND SHEARING MACHINE.

Zinc Chloride for Preserving Wood.

A new method of impregnating logs with zinc chloride, in order to preserve them, is now in use in Austria, being known as the Pfister process. The timber is impregnated in the forest as soon as possible after it is felled. The zinc chloride solution has a specific gravity of 1·01 and is forced into the thick end of the log by a force pump. To this end, an iron disk of suitable diameter and furnished with a cutting rim is forced into the end of the log and secured by clamps. The time required for this preliminary work is only three or four minutes for each log. After a pressure of two or three atmospheres has been maintained at the thick end of the log for a few minutes, the sap begins to exude at the opposite end, and finally a weak solution of zinc chloride comes through, showing that the operation has been completed. About 2¼ gallons of the solution are required per cubic foot of timber treated. Though rapid, the process does not appear to distribute the solution so uniformly as other methods.

Electric Light in Medicine.

There recently died at Vienna the mechanician Josef Leiter, a man who, in concert with eminent physicians, spent many years of his life in zealous study and experiment in order to realize one of the most modern and remarkable ideas of medical science. He was engaged with the solution of the question how far the interior of the human body can be made accessible to the eye of the physician. Before his death he had the satisfaction of knowing that his merits were fully acknowledged in a recent work by the distinguished neurologist Prof. Lewandowski.

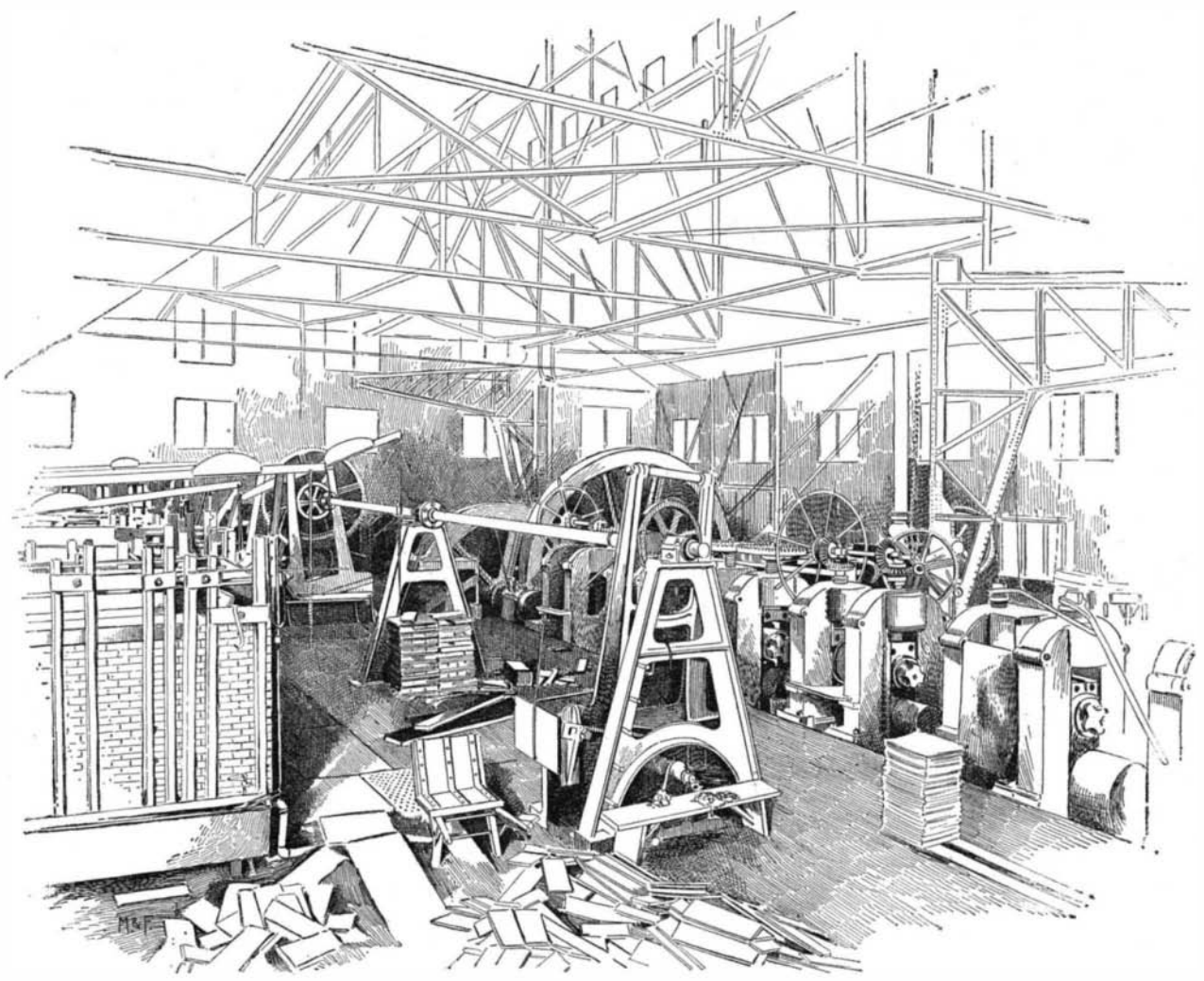
The medical world is already able to illuminate the interior of the mouth, the pharynx, the stomach, eye and ear, with the electric light. This is effected either by the direct introduction of the source of light into the organs concerned or by the reflection of the light. At first the light of incandesced platinum wire was used, but latterly the well-known carbon filaments of the glow light have been universally employed. The "mignon" glow lamps, scarcely larger than an ordinary pea, were first shown at the Vienna Electrical Exhibition, and were successfully adapted to this use by Leiter. A number of apparatus for both methods of introducing the electric light (direct and by reflection) have been devised. The instruments for the use of reflected light do not differ in principle from those used for solar light. The electric light has, however, the advantage that the medical expert is rendered independent of the freaks of the weather. This principle can of course be combined in all possible manners with concentrating lenses, reflectors, etc. The first such apparatus of this kind emanated from Vienna, where they were executed in 1883 by the optician Jirasko, at the instigation of Prof. Mosetti von Moorhof. In the direct introduction of light we distinguish two modifications, illumination properly so called and diaphonoscopy. This latter method depends on the fact that human flesh is, in thin layers, translucent. If we hold up the open hand with the fingers close together before a brilliant light (not otherwise visible to the observer), the fingers appear at their margins translucent, and transmit a reddish light. This method is used in dentistry. The patient bites a small gag of vulcanite, the lateral process of which, projecting into the mouth, supports a mignon lamp. The interior of the mouth is brilliantly illuminated, and the dentist can look into the inside of the tooth and detect any morbid changes in the enamel, the dentine, the roots, the gums, etc.

The most interesting method at present is that by which the light is directly introduced into the cavities and passages of the body. In examinations of the pharynx a mignon lamp is placed in the shaft of the mirror and the rays are allowed to fall into the pharynx, which is thus brilliantly illuminated and reflected to the eye of the observer. Much more complicated is the introduction of light into the stomach, which is first evacuated by means of the stomach pump and afterward expanded with air after the apparatus has been introduced. This apparatus is a long tube which has at its closed lower end a glass window, behind which is placed a mignon lamp connected with the battery by wires. When the current is turned on the filament becomes ignited, and illuminates through the window the interior of the body, while a small mirror makes the illuminated parts visible to the observer.

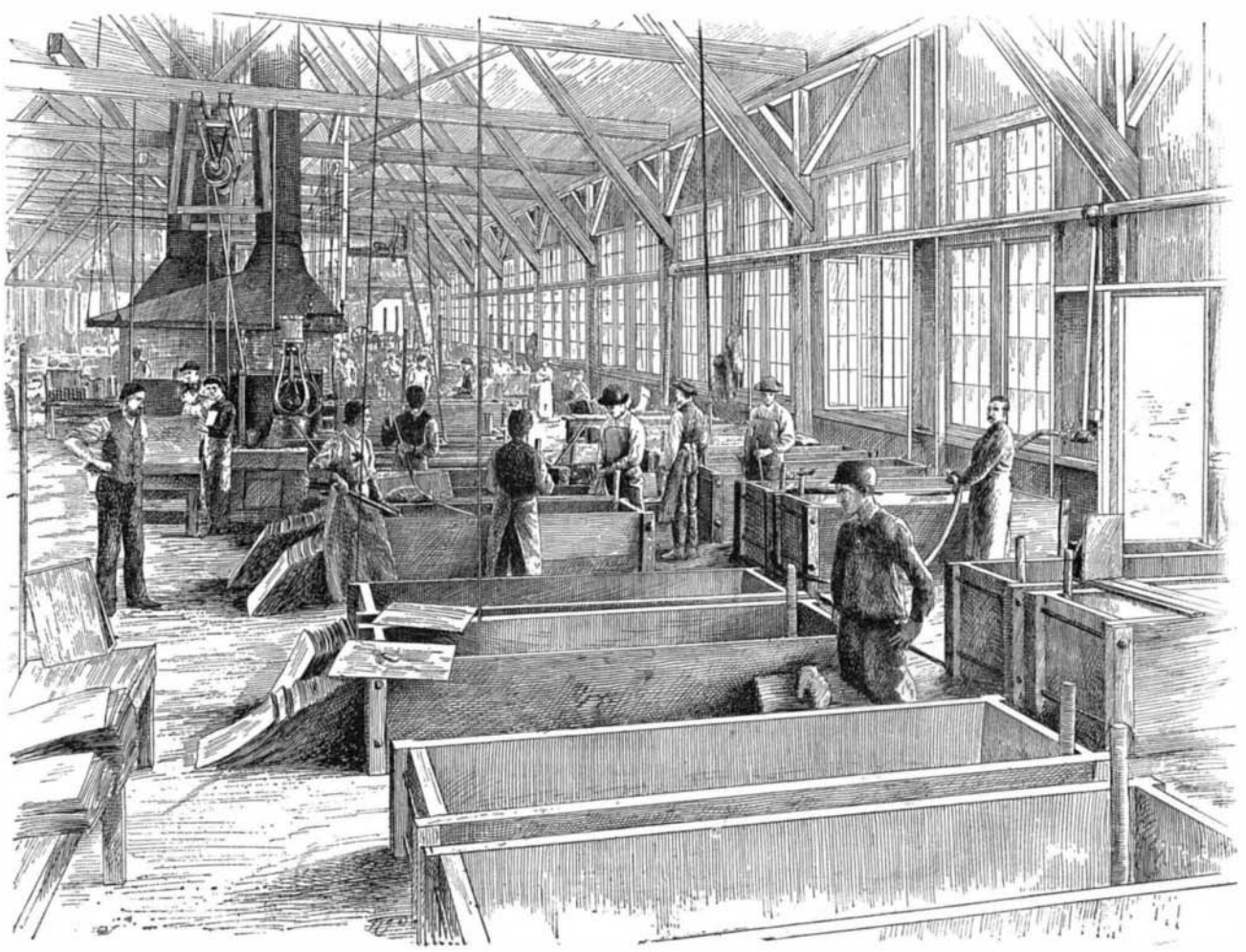
Very favorable reports on the results of such investigations have already been furnished by Profs. Oser and Mikulicz.

It will be perceived that the electric light plays already a not unimportant part in the art of healing, although we see only the beginning of its career.—*Electrical Review.*

[Many of our readers will call to mind the gastroscope, which was illustrated and described in these columns as long ago as October 29, 1881, and of the picture illustrating the application of the instrument within the stomach of a person, and the bulb lighting it up, which appeared in the SCIENTIFIC AMERICAN, April 14, 1883.—ED.]



INTERIOR VIEW OF THE TIN PLATE MILL, ST. LOUIS STAMPING COMPANY.—(See first page.)



THE PICKLING TUBS FOR TIN PLATES.—(See first page.)

Insect Illumination.

The secretary of the Smithsonian Institution, Professor Langley, has been recently experimenting with Cuban fireflies with a view to discovering the manner in which the illumination they emit is generated. He says that the light they give is the "cheapest" in the world—produced, that is to say, with the least heat and the smallest expenditure of energy—and he believes that a successful imitation of it would prove a most profitable substitute for gas or electricity. The insects are beetles two inches long, and belong to the family of "snapping bugs," so called because when one of them is laid on its back it snaps itself into the air with a clicking sound. The secret of the light this firefly gives is as yet undiscovered. Apparently it is connected in some way with the mysterious phenomena of life, and chemists and physicists have sought in vain to explain its origin. On each side of the animal's thorax is a luminous membraneous spot, and these flash at intervals, so that the Cubans put a dozen of the insects in a cage together and so obtain a continuous illumination bright enough to read by. This light is accompanied by no perceptible heat, and is seemingly produced with almost no expenditure of energy. How great an improvement it represents upon all known artificial lights can be imagined when it is stated that in candle light, lamp light, or gas light, the waste is more than 99 per cent. In other words, if they could be so obtained as not to throw anything away, they would give nearly one hundred times the illumination which they afford at the present time. Even the electric light is mostly waste.—*American Analyst.*

Credit to Whom Credit is Due.

In a recent number of our paper we quoted from *La Nature*, of Paris, an article on the electric girl. We now learn that the quoted article was translated into French from our American neighbor *Electricity*. We take pleasure in making this statement and in giving due credit to our enterprising contemporary.

New Process of Purifying Cane Juice.

William Valentine Fry, of Lambayeque, Peru, describes his process as follows:

I place a quantity—say for example thirty pounds—of the leaves, twigs, or points of small boughs of the eucalyptus tree in a kettle or boiler with a proportionate quantity of cold water, the quantity of water for thirty pounds of leaves, twigs, etc., being 55 gallons, more or less. The contents of the kettle are then boiled for three hours, more or less, or until the decoction has a density of 15° Cartier standard when the liquid is hot. When cold, the density of the decoction will be from 9° to 10° Cartier standard. The decoction will lose from eight to ten gallons during the process of boiling, the evaporation of course depending to a certain extent on the intensity of the fire. The decoction is then properly strained to separate it from the leaves and twigs, and is ready for use in the process of purification.

I use the decoction in the proportion of from one and one-half to two gallons of the decoction to 500 gallons of cane juice, as follows: I place in the defecator from twenty to forty gallons of cane juice, to which I add the eucalyptus decoction in about the proportion specified, taking care that the contents of the defecator be well stirred. Heat is then applied in the usual or any preferred manner until an active ebullition takes place. Before the ebullition takes place the impurities will have risen to the top of the liquid in the defecator. As soon as the ebullition takes place the steam or heat is cut off from the defecator, and a short time—say from ten to twelve minutes—is allowed for settling. The juice can then be passed to the evaporator or vacuum pans for the making of the sugar, and the impurities can then be removed in the usual manner employed in cooking houses. If white sugar is required, charcoal filters should be used. To make the ordinary grained sugar of commerce, no charcoal filters are required, but bag filters can be used to advantage.

American Ramie.

The first experiment in the manufacture of cloth from ramie in the United States was made lately at the San Jose woolen mill. The fiber was put through the same presses at the mills as any other material used for making cloth. It went through the machines, was twisted into thread, and then a thread of wool and a thread of ramie were twisted together. Being put on the loom the machine was started, and in a few minutes the cloth began slowly to unroll.

The fabric resultant from the process was a strong, closely woven piece of cloth. Holding it up to the light, one could not see through it. The color of the cloth was a bluish-gray, the wool supplying the dark and the ramie fiber the light portion. Ramie is much stronger than wool, is forty-one times stronger than cotton, and more nearly approaches silk in this respect than any other material used in the manufacture of cloth. Thus it is evident that a fabric made of a mixture of wool and ramie is far superior to a cotton and wool mixture. The fiber, when ready for the mills, is in bunches about five feet long, of a creamy white color, and has a luster like silk. It can be dyed any color and still retain its luster, and hence can be used in the manufacture of silk-mixed weaves, making a fabric just as good in every way, but far cheaper than if silk were used.

It will have the effect when it comes into general use of cheapening all textiles of this character, while giving a fabric better in looks and wearing qualities. One of the big points claimed for ramie is the ease with which it can be produced, and the consequent big profit to the producer. Ramie is nothing more or less than a weed, and grows and increases with the prolificness for which weeds are noted. The plant does not need a rich soil; in fact, seems to thrive best in a soil in which nothing else will grow, and is especially valuable on this account. It is claimed that three crops a year can be secured, and that at the least calculation a profit of $200 an acre will pour into the pockets of the ramie cultivator. The field will not have to be replanted for twenty years, for the plants will grow and produce good fiber for that length of time.—*Pacific Lumberman.*

The Utilization of Tin Clippings.

The owners of a sardine factory have found a way to get rid of the piles of tin clippings which have encumbered their docks. These clippings are now carefully collected; those made by the dies which stamp the bottoms and covers of the cans are pounded into suitable shape for handling, while the strips made by the shears in cutting the tin for the sides are carefully bundled and boxed. The clippings find their way to the smelting furnace, where the tin with which they are coated is melted and drawn off separately, while the molten mass of steel which composed the plate is run into moulds and formed into window weights and other useful articles. The bright tin strips of various widths and lengths are made to serve manifold purposes, being made into tin tags which ornament plug tobacco, button moulds, ornamental baskets, and hundreds of other articles.

World's Fair Notes.

The agricultural building, an imposing and beautiful structure, situated across the main lagoon, southward from the great manufactures building, is rapidly approaching completion, and will be finished, even to all details of ornamentation, before October 1. It measures 500 by 800 ft. and has an annex 300 by 550 ft. and a connected assembly hall, which has a seating capacity of 1,500. Close by, on the south, is the dairy building, measuring 100 by 200 ft.

The northern portion of the main floor of the building will be occupied by the agricultural and other food exhibits of foreign nations, which, it is already assured, will be extensive. Great Britain, Germany, France, Mexico, Austria, Denmark, Sweden, Japan, Paraguay, Canada, and a number of other countries have already been assigned space, ranging from 1,000 to 15,000 sq. ft. each. It is expected that the agricultural exhibits by these countries will be as comprehensive as those of our own country, and will show some features which will be exceedingly instructive to Americans.

Occupying nearly all of the remainder of the main floor will be the exhibit of cereals and other farm products from the States of the Union. Every State and Territory, it is expected, will be represented by its products. Thus, upon this one vast floor, covering nearly ten acres, will be displayed in all their variety and perfection the pick of the farm products of the world. It is believed that the exhibit made by this country, naturally exceeding that of any other in extent, will attract great attention, also, by reason of its exceptional merit and the comprehensive information that will accompany it.

On the six acres of flooring in the annex, which is virtually an extension of that of the main building, will be shown every description of agricultural machinery, including not only the best and most improved now in use, but also such as will illustrate the progress of the industry from primitive times to the present.

In the great galleries of the building, which are most novel in construction and perfect in point of availability, will be located on the north front the wool exhibit; on the west end the apiary display, which will include working colonies of bees; on the south front the dairy implements, and on the great central sections the exhibit of the brewing and tobacco industries, and the wealth of magnificent exhibits of flours, meals, bread, pastry, sugars, confectionery, canned foods, oils, soaps, chocolates, etc.

One of the most novel, instructive and elaborate exhibits, and one that will undoubtedly attract the attention of every scientific person and scholar interested in any phase of agricultural life, will be that made by the Association of American Agricultural Colleges and Experiment Stations. This exhibit will occupy nearly 8,000 square feet of space, and will be located in the southwest corner of the building, on the first floor. It will represent the entire work of a model agricultural experiment station, covering entirely the field of experiment and research in crops, botany, horticulture, entomology, feeding stuffs, animal nutrition, dairy solids, milk testing and veterinary science, and will include an elaborate and complete botanical, biological and chemical laboratory.

In addition to this, the agricultural colleges of the United States will have, in this space, a combined exhibit graphically illustrating the work and special field covered by each college. This entire exhibit is not only unique but is something that has never been accomplished or attempted at any previous exposition. The exhibit will be put up and conducted by the directors of the different experiment stations and representatives of the different agricultural colleges of the United States, each contributing some part of the exhibit, the whole to be installed in a magnificent manner, at the expense of the United States government. This will give to every visitor an opportunity to witness the methods by which the great advances in all phases of agricultural life and research are carried on in the colleges and experiment stations of the United States.

Outside the building will be shown several magnificent exhibits, put up at a great cost, of the irrigation systems of the great West. On the lagoon just south of the annex to the agricultural building will be installed traction and portable engines and a wonderfully interesting exhibit of windmill machinery.

Helena, Montana, will send to the Exposition a meteor, discovered near that city. It is composed of nickel and magnetic iron, and is in two pieces of ninety and seventy pounds respectively. It is reported that when found these pieces were in a hole in the ground large enough to contain a house, from which fact it is inferred that the meteor exploded when it struck the earth.

From Holland an offer has been made to the Holland Society, of New York, and the St. Nicholas Society, of Brooklyn, to construct and present them an exact reproduction of the Half Moon, the ship in which Henry Hudson discovered and explored the river which bears his name. The societies named have accepted the offer and are planning to fit up the ship as a club house and to take it to Chicago, both to be exhibited and to be occupied by their members during the Exposition.

The prospect is that the Engineering Congress, which is to be held in Chicago in 1893, under the auspices of the World's Congress Auxiliary, will be a gathering of very great scientific importance. Of the $15,000 estimated to be necessary for its expenses, $10,000 have been raised. Many of the most prominent engineers of the world have accepted memberships on the advisory council, among whom may be mentioned William H. Maw and James Dredge, of the London *Engineering;* Don Fernandez Leal, president of the Mexican Society of Engineers and Architects; Sir C. S. Gowzki, of Canada, and others.

Chairman Corthell, of the general committee, who went to Europe last fall in the interest of the congress, invited thirty-six engineering societies to participate by sending delegates. About twenty-seven of these societies have accepted, and not a single declination has been received. He received on all sides expressions of great interest in the coming congress, not only from the engineers composing these societies, but from the engineers of the governments of Europe—France, Germany, Holland and Belgium. The interest in the congress among the engineers of Great Britain and the officers of the great engineering societies of that country was not less than that shown on the continent. In fact, the promise of support and expression of a desire to attend were universal. Among the large societies which accepted the invitation were the Mechanical Engineering Society and Society of Civil Engineers and Architects of Germany. Each of these societies has a membership of about 6,000.

The allotment of wall space in the fine arts building to various nations for the hanging of pictures, to be exhibited at the World's Fair, has been made as follows:

Nation.	Lineal feet.	Hanging space, square feet.
United States	2,475	34,636
Great Britain	1,401	20,325
Canada	193	2,895
France	2,082	33,393
Germany	1,438	20,400
Austria	866	11,564
Belgium	835	12,318
Italy	810	12,410
Norway	550	8,462
Sweden	497	7,005
Denmark	272	3,930
Russia	554	7,725
Spain	550	7,807
Holland	658	9,337
Japan	206	2,919
Mexico	125	1,500

Clarifying Cider, Ale, and Beer.

The only clarifying agents permitted to be used in Bavaria, the country which is renowned for the best and purest malted liquors, are *mechanical ones*, that is, such as will not enter into solution or remain in the liquid under any circumstances. The principal ones are *isinglass* and fine *wood shavings.* Clarifying by means of isinglass is so well known that it need not be described here. The second method, however, is not so well known, and, as it is quite effective, a brief description of it will be of use to many of our readers.

Any kind of moderately close-fibered wood which is free from strongly tasting resinous matter may be used for this purpose, but the most suitable has been found to be beech wood and hazel wood. Either of these is cut into lengths of six to twelve inches, the bark carefully removed, and the wood reduced by a machine to shavings, which ought to be as thin as possible. These must be deprived of tannin by being soaked for several days in cold water, and afterward repeatedly boiled with water until the latter no longer acquires any color. Only a comparatively small portion of these purified shavings need be used for a cask of the liquid to be clarified—about one-half pound for 15 gallons. The *modus operandi* by which the clarifying is accomplished is, of course, a purely mechanical one, mostly due to currents established by capillary attraction into the fibers of the wood floating on top of the liquid, and the mechanical adherence of suspended impurities to the surface of the shavings, as a new portion of the turbid liquid is brought toward the surface.

When the casks are emptied, the shavings may be taken out, washed, and used over again. The wood shavings are a regular article of trade, and may be obtained through dealers in brewers' supplies.

Trade Mark—Infringement.

In the case of White *et al. vs.* Miller *et el.*, recently decided by Judge Colt, in the United States Circuit Court, at Boston, a suit was brought to restrain the infringement of a trade mark. The complainants were the owners of a trade mark used on a brand of whisky, which consisted of a chicken cock standing upright in a circle surrounded by certain words. The defendants sold a brand of whisky upon which they used as a trade mark a chicken cock standing upright in a circle. The words surrounding the circle were not the same in both cases, but the court held that there was a clear case of infringement.