

bustling crowd is gathered, full of action and color and suggestion for the moralist.

"The First Born," by T. A. Pelevin, is one of the few pictures in the collection that brings a touch of light-heartedness to the beholder.

In a little peasant's cottage, where garments and kitchen utensils are side by side on the wall, a young mother is holding her baby, and the kitten is creeping into the warm cradle beside her. The little hands are raised, the face is full of smiles, and the mother's seems lit from the glow of the baby's eyes.

In general, the pictures intensify any previous notion one may have had of the seriousness of life in the Czar's dominions.

Nearly all the subjects are national, but Ivan Constantinovich Aivazovsky has ventured into foreign fields. (What might not a man with such a name venture?) His five large paintings of scenes in Columbus' career show much power. No. 106 is the Santa Maria in a storm when the dauntless leader is surrounded by his crew in mutiny. No. 107 is Columbus landing with his suite at San Salvador. No. 108 is a scene from his early life, when as a youth he saves himself on the mast of a mercantile ship which has been set on fire off the coast of Portugal by a Venetian galley. No. 109 is Columbus' farewell in Palos, and No. 110 the arrival of the flotilla on the American shore. If one would like a series of sensations, novel if not bewildering, let him on the same day visit the Santa Maria, moored beside the peristyle, the convent of La Rabida with its portraits of Columbus, for whom a dozen or more men might have sat, and then look at these canvases aglow with fierce color and terrible with the storm of sea and angry men—a Russian's interpretation to us of the life of our discoverer.

My strong impression of the labor, thought, ingenuity and expense which have made the foreign exhibits so valuable has deepened every day. Never, I think, was the brotherhood of man taught in a more forceful way than at the Fair; and, notwithstanding the bickerings and disappointments attendant upon its management, it cannot fail to result in closer bonds between the scattered families of nations who for these summer months have been represented in the White City. A. DINSMOOR.

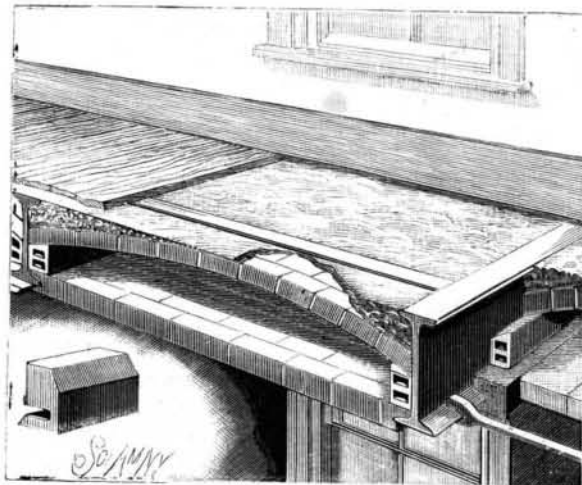
#### Pixol, a New Disinfectant.

The *Lancet's* Russian correspondent cites a report published in a supplement to the *Army Medical Journal*, by Dr. Eberman, on pixol, a cheap disinfectant introduced by Dr. Raptchevski. It is prepared by dis-

has been proved to be fatal to the *Bacillus anthracis*, to the bacilli of typhoid fever and cholera, and to the cocci of suppuration. It is said that the preparation costs only about two cents a pound.

#### IMPROVED CONSTRUCTION OF FLOORS, CEILINGS, ARCHES, ETC.

The illustration presents a combined floor, arch and ceiling, in which the ceiling is flat and the floor support arched, but with a large air chamber between the floor and ceiling, the construction being of great



DE RACHE'S FLOOR AND CEILING ARCHES.

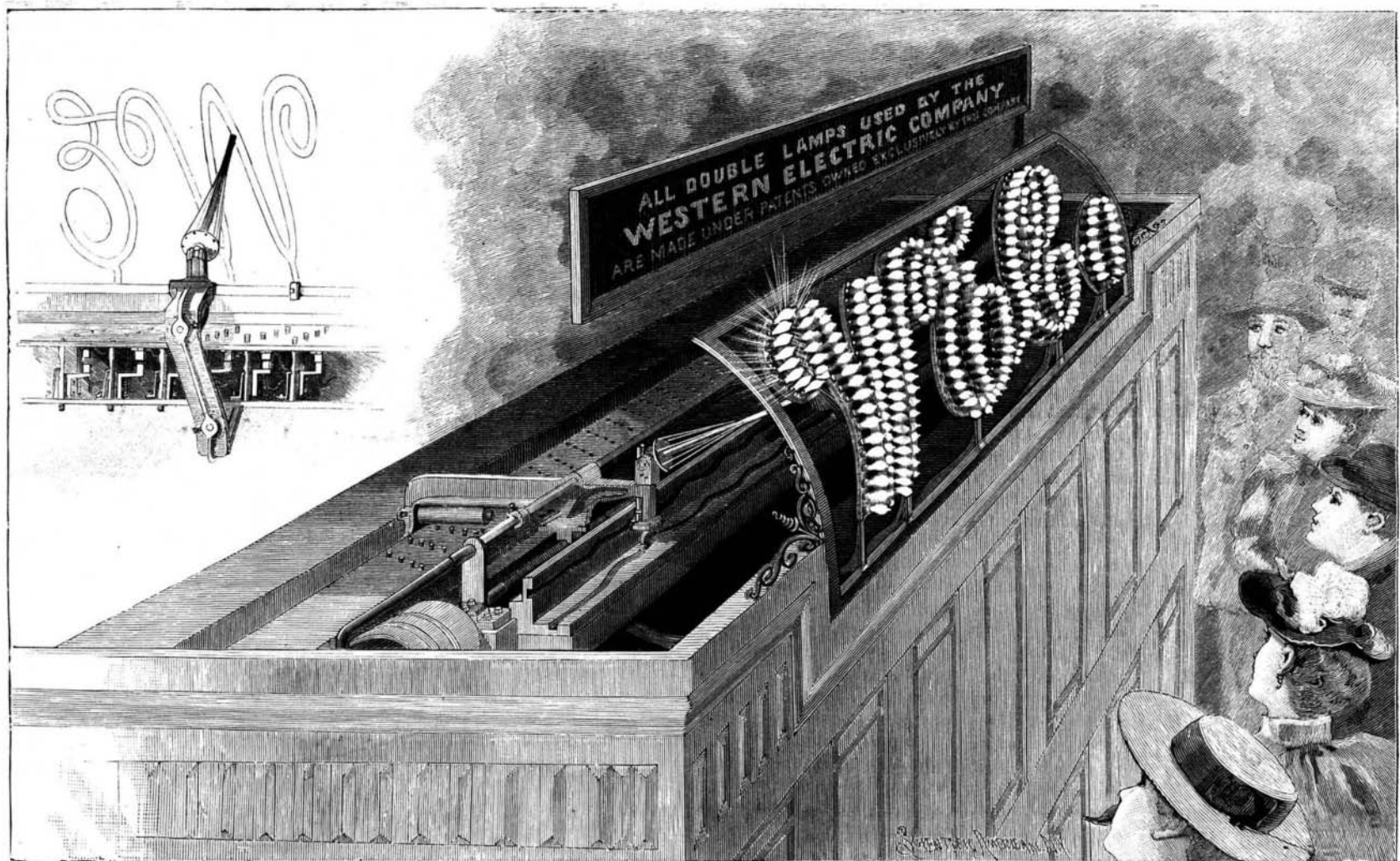
strength and such as to effectually deaden sound. The improvement has been patented by Mr. Pierre J. L. De Rache, known as Leonard De Rache, of No. 755 East 141st Street, New York City. The floor and ceiling are arranged between parallel I beams or girders of the usual kind, but the blocks, which bear upon the lower flanges of the girders and which come at the ends of the courses, are recessed to fit snugly upon the flanges and have lips which project beneath the girders, so that a key may be inserted between the lips of opposite and adjacent bearing blocks, thus covering the girder bottom and making a smooth finish. On the bearing blocks next the girders are supporting blocks or skewbacks, which support the end blocks or tiles of the series forming the arch, or the ends of the arches may, if preferred, be made to bear directly upon the bearing blocks. A different form of bearing block, with lip fitting the bottom flange of the I beam, is

#### WESTERN ELECTRIC COMPANY'S LUMINOUS SIGN.

One of the exhibits of the Western Electric Company at the Columbian Exposition received a great deal of attention from the general public. This exhibit, while in the line of what theatrical people call "business," was really remarkable in its ingenuity and construction, and answered the purpose of attracting the popular mind. It appeared like a veritable writing on the wall. It consisted of a series of lamps arranged as shown, to give the initials of the company's name in script outline. These lamps apparently are lighted and extinguished by means of a wand that moves mysteriously along the path of the letters at their rear, and which, although it does not touch the lamps, seems to exercise some magic influence and causes them to break out into a brilliant glow. It moves forward on its journey, writing on the air the letters W. E. Co., and as it moves along the lamps become illuminated. When it has reached the end of its journey and lighted all the lamps in the series, the wand begins deliberately to move back in the reverse direction but in the same path, and extinguishes each lamp as its point passes by. The movement of the wand is automatic and the precision of its movement renders it fascinating to watch. As a matter of fact, the only part that the wand has to play in this little comedy is that of heightening the illusion. It really has no function to perform beyond bewildering the uninitiated. The real secret of operation of the apparatus is not understood until the beholder has abandoned this idea and has grasped the fact that each lamp is connected with the operating table or switchboard, separately. Then all becomes comparatively clear, and he will be ready to have explained to him the details of operation which are rendered comparatively simple by having exposed to his view the internal mechanism, as appears in our illustration.

The wand or pointer is mounted on a slide rest or carriage, so that as the slide rest is traversed by a feed screw back and forth from right to left and left to right the pointer is automatically moved, so that its end, by a species of pantograph mechanism, follows exactly the outlines of the letters. Its motion in doing this is controlled by two sinuous grooves in planes lying at right angles to each other. These planes, with their grooves, are seen below the base of the pointer. Each groove receives a projecting piece, which, as it moves, actuates the pointer.

The travel of the wand is effected by a feed screw exactly as a slide rest in a lathe is worked. On the rod supporting part of the weight of the carriage, with its



THE WESTERN ELECTRIC COMPANY'S EXHIBIT AT THE COLUMBIAN EXPOSITION—WRITING THE COMPANY'S NAME IN INCANDESCENT LAMPS.

solving a pound of green soap in three pounds of tar and slowly adding a solution of a little over three ounces and a half of either potash or soda in three pounds of water. At the time of using, one part of the sirupy liquid thus formed is added to nineteen parts of water, forming a five per cent solution of pixol, and it is used of this strength for disinfecting linen and for washing the hands; for the disinfection of dejecta ten per cent solution is recommended. Such a solution

shown in the small figure, the girders with this construction, being preferably placed parallel with each other, and a tie beam or bar extending between the ends of the arch, thus increasing the sustaining power of the floor.

The advantage in this system of construction is that any kind of bricks or partition blocks, hollow or solid, may be used, but the hollow ones are preferable, on account of their lightness.

switch-shifting rollers and pointer, are two collars, one at each end, which, when struck by the carriage, shift the belt so as to reverse the feed. Thus as long as the machinery operates, the pointer moves back and forth, from right to left, and reversing from left to right, along the line of the letters, the pantograph attachment causing it to follow their outline exactly.

Behind the apparatus is a double switchboard, whose surface above and below is traversed by two

rollers. Spring jack pins, operating vertically, actuate a series of switches, one for each lamp, and turn the lamps on and off, one at a time. Two rollers, set one slightly in advance of the other and pressing against the upper and lower surface of the double switchboard, operate the spring jack pins. As the pointer moves to the right, the roller underneath, which is in the rear of the upper one, as referred to the direction of travel, presses up the spring jack pins, closes the contacts, and lights the lamps one by one. The pins are so placed with relation to the mechanism that as the pointer points to a lamp, it is lighted or extinguished. When the end of the letter O is reached, the belt-shifting mechanism comes into play, the rotation of the feed screw is reversed, and the carriage begins to come back. As it does this, it will be seen that the upper roller becomes the rear one. It presses down, one by one, the spring jack pins, opens the contacts, and extinguishes the lamps, each lamp being extinguished as the pointer points to it. The effect of this is that the pointer seems to write and obliterate the name in its

**THE WORLD'S COLUMBIAN EXPOSITION—THE COURT OF HONOR.**

Within the last few months the Court of Honor has become a household word in millions of American homes. The glory of this unique creation is almost beyond description, and whether it be viewed in broad sunlight or at night under the glare of the electrical search lamps it never ceases to charm. The unity and harmoniousness of design exhibited by the buildings which fringe the Grand Basin testify to the rare skill of the architects, while the exquisite proportion of the various buildings makes the Court of Honor at once a triumph of elegance, symmetry and dignity.

The lower or lake end of the Court of Honor, illustrated herewith, which is terminated by Mr. C. B. Atwood's highly effective peristyle, probably affords the finest single view on the grounds. At the extreme right will be seen the end pavilion of the Agricultural building crowned by one of the horoscope groups. Beyond is the Casino, which is at right angles to the peristyle. Although the Casino fell into financial

ings. At the left in our engraving, one corner of the Manufactures and Liberal Arts building will be noticed. Directly in front is one of the six Roman rostral pillars, whose tapered shafts are decorated with the representations of prows of captured galleys, and which are surmounted by statues of Neptune. It is a pity that this great dream of beauty could not be made permanent, but it will live for years in the minds of the millions of visitors who gazed upon its unparalleled magnificence, and in the photographs and engravings of illustrated histories.

**Reptiles and Insects in the Philippine Islands.**

The British consul at Manila, in his report on the Philippine Islands for last year, says: The reptiles and insects are various and abundant. Crocodiles are found in most of the deep rivers and uncultivated tracts. Enormous lizards, frogs, snakes, crabs, centipedes, huge spiders, ants, cockroaches, mosquitoes,



**THE WORLD'S COLUMBIAN EXPOSITION—THE COURT OF HONOR.**

travel, and as the pointer is visible to the audience, many wise conjectures are made as to its operation, induction and all sorts of mysterious powers being invoked to account for the mystery.

The larger figure of the cut shows the general disposition of the apparatus, while the arrangement of the spring jack pins pushed up and down by one or the other roller, throwing the lamps in and out of action, is shown in section in the smaller figure. The pins are arranged diagonally, so as to secure the pushing up or down of them in systematic progression.

**New Coal Vein in Mexico.**

An extensive vein of coal has been discovered 13 leagues from Pachuca—the present terminus of the Mexican Central's Tula-Pachuca branch line. The coal is said to be of good quality, as shown by all the tests. The lack of cheap coal has always been one of the difficulties with which this company has had to contend. The opening up of extensive coal deposits anywhere near its line would therefore mean an important reduction in the operating cost of the property.

difficulties several times, still many can look back upon the Casino with pleasant memories of the hours spent in rest and refreshment under the hospitable roof. The Casino matches the Music Hall, which is at the other end of the peristyle. The peristyle is composed of forty-eight columns, twenty-four on either side. These columns are symbolical of the States and Territories. It is two hundred and thirty-four feet from each corner building to the grand Columbian Arch, which is surmounted by a quadriga representing "The Triumph of Columbus." The chariot is drawn by four mettlesome horses held in check by two women. Mounted heralds on each carry banners. In front of the arch on an isolated pedestal rises the heroic statue of the Republic, which is a masterpiece of the sculptor, Daniel Chester French.

The statue is sixty-five feet high and rests on a pedestal thirty-five feet in height. This bold creation, which is of a rugged and almost archaic type, worthily embodies the spirit of the New World. It is not altogether an independent work of art, but it is intended primarily as a piece of architectural sculpture, and is a complement of the surrounding build-

ing. In the dry weather the trees around Manila are quite illuminated with fireflies. With insects in the house, however, one is less troubled than in most tropical countries, owing, it is said, to the predominance of the lizards and "chacons," which devour them, and which swarm sometimes on the ceilings by lamplight, and are quite harmless, while beneficial. There are huge pythons in the interior of the forests and various poisonous snakes in the fields and woods, some of which have a deadly bite, but people may pass their lives here without seeing a snake. Although a harmless species, the ratsnake frequently takes up his lodging under the roof, and only makes his presence known by the squeals of the rats which he seizes. The ants, white and red, and others, and the cockroaches and mosquitoes are more troublesome and destructive. Against the white ants precautions have to be taken by putting the legs of tables and sideboards into basins filled with water to prevent the insects climbing up and attacking articles of food. The destruction of wood by the white ants is something incredible—none but the hardest fibers withstand their ravages.