

# THE STAGE MECHANISM.

## PEEP BEHIND A MODERN THEATER'S CURTAIN.

How Big Stage Fires are Produced—Flashes of Lightning that Make the Falling Water Drops Appear Like a Real Shower of Rain



STAGE MOUNTING has become one of the most complex and refined of arts. The spectator, in fact, is no longer satisfied, as of old, with a vain illusion that his imagination is called upon to complete, but he requires a semblance of reality capable of giving him the sensation of the genuine thing, and, naturally, all hands, the impres-

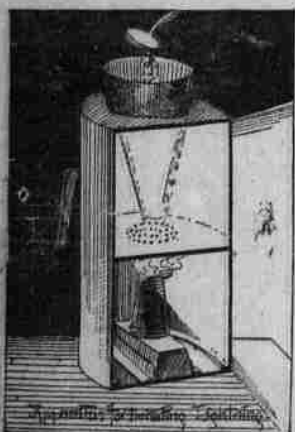
sarriani, machinists, scene painters, etc., put their wits to work (in most cases with success) to gratify his taste. Each new spectacular piece reveals to us some novel innovation, and, in truth, it is an occupation not without interest or utility to study the modifications and improvements that have been made in time in the same scenic effect.

Let us take, for example, the representation of fires, in the theater. Formerly, as in Mignon, or in the Prophet, some flames of lycopodium and some red Bengal lights sufficed to satisfy everybody. Great improvements have been made since, and in recent years the skillful stage mounters of the opera-house have twice shown us (first in Sigurd, and but a few days afterwards in the Magian, Mr. Massenet's new opera) contrivances that have been improved to such a degree as to be capable of vying with real fires, as far as effect is concerned. In this regard, the setting of the Magian is particularly remarkable. We are at the last act of the drama. The temple of Djahli is in ruins. The Turanians have burned it. Alone stands intact the triumphant statue of the goddess, before whom, like smoke of incense, rise puffs of bluish vapor from the rubbish. The Magian Zarastro contemplates the pile of debris with horror, and near him stands Anahita, the queen of Turan. Meanwhile, the priestess of the temple, Varedah, mortally wounded and lying prone upon the earth, revives and, seeing Zarastro triumphant near her rival, invokes the Djahli in a burst of fury. The latter obeys her voice. The fire, which is still smoldering under the ashes, breaks out again. At first, the smoke becomes more intense, and its spirals, on rising in the air, become tinged with red. Then the flames soon reappear along the cornices that are still in place, the statue gives way, the fire extends by degrees, and the stage is soon nothing but an immense glowing brazier, in which sparks are crackling, flames are flickering and smoke is curling.

Now what is the secret of this wonderful stage mounting? It will be recalled that in Sigurd the effect obtained is produced by jets of steam to which a rose color is given by means of Bengal lights. The steam under pressure enters through large conduits running under the stage and escapes through small tubes soldered to the supply pipes and traversing the stage floor. The maneuver is executed by operating a cock. The inconvenience of the process lies in the loud strident noise made by the steam escaping into the air.

In the Magian, where the orchestra music at the moment of the fire is relatively soft and low, this circumstance would have been most annoying. It therefore became necessary to find a means of producing the steam in abundance, while at the same time preventing noise being made by its escape. The difficulty was happily surmounted as follows:

The steam generated by a boiler is



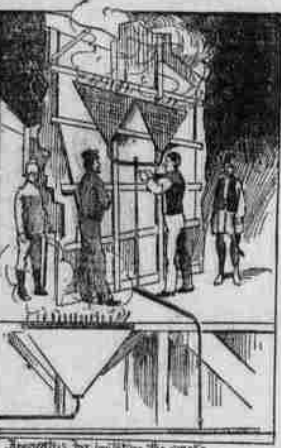
here again led by pipes as in Sigurd; but instead of its being allowed to escape through a thousand narrow orifices, it is made to pass into special apparatus—large boxes in the shape of an isosceles triangle connected in pairs at the two extremities of the same supply-pipe. These boxes, which are fixed by the apex opposite the base of the triangle, have at their point of attachment, considerable thickness, which gradually diminishes in measure as the wide part of the apparatus is approached. At the base of the triangle the thickness is greatly reduced, so that the steam, which is distributed throughout the whole extent of the box, escapes without any noise, and throughout its width,

through a narrow orifice between the two faces of the apparatus. In the interior of the boxes there are pieces of felt, the principal object of which is to absorb the drops of water carried along mechanically. (Fig. 1.)

The advantage of this peculiar arrangement, which at the opera-house, was installed entirely by Mr. David, is that it permits of the disengagement of steam everywhere where it is necessary. These boxes, in fact, are easily manipulated by two men, and hooks fixed to their surface permit of attaching them at will, and in an instant, along a strip of light or elsewhere, above the stage or on a level with it. After a simple coupling pipe has been connected with the steam conduit, the apparatus begins to operate.

In the Magian, twenty-nine of these double boxes are employed. Seventeen are distributed over the stage at different points and nearly up to the height of the soft curtains. The twelve others are beneath the stage and the orifice whence the steam escapes and traverses the flooring.

This system of conflagration, the effects of which are heightened by Bengal lights, lycopodium flames, variously colored jets of electric light, and small pieces of fireworks designed to stimulate the leaping of the sparks produced by the sinking of the statue, is not absolutely new. It has, in fact, already been employed at Dresden, and in the Theater de la Monnaie, at Brussels, in the mounting of Valkyrie. At Paris, for example, it has been notably improved by Mr. David. At Dresden, in fact, the boxes were of wood and al-



Apparatus for imitating the smoke.

lowed of the spreading of the steam, which soon filled all the parts beneath the stage. They are now made of galvanized iron, and leakages are impossible.

This new method of producing the illusion of a fire is not the only innovation made at the opera-house apropos of the Magian, says a Paris writer. The method of imitating thunder has also been improved. In the third or mountain act, we see a terrible storm, the lightning flashes of which are as vivid and blinding as those observed in nature. They are produced in a very simple way, and are due to the sudden combustion, upon a highly heated grille, of a mixture of three parts of magnesium in powder and one part of chlorate of potash (Fig. 2). It is a similar process that is employed by photographers for taking instantaneous pictures at night. Combined with the flames of lycopodium, these magnesium flashes produce surprising effects of realism and far exceed anything that can be obtained in this direction with the electric spark.

### The Weather Bureau.

The signal service corps of the army was relieved, on July 1, according to the provisions of an act of Congress, of the duty of furnishing the public with the daily weather reports, and this work was turned over to the Department of Agriculture. Gen. Greeley is succeeded as chief of the Bureau by Prof. Mark W. Harrington, professor of astronomy in the University of Michigan, at Ann Arbor, and editor of the American Meteorological Journal. He is about 43 years old, and is regarded as an accomplished student of meteorology and climate problems. He has had considerable correspondence with the department about climatic matters in relation to agriculture, having prepared a bulletin on the subject, which is about to be published by the forestry division of the department. The intention of Congress in making the change was that the work of the weather bureau might be extended beyond its present scope in every way where such enlargement could possibly be of benefit to our agricultural interests. Secretary Rosk says the work of the meteorological service of the United States government must go far beyond the mere forecasting of the weather, and be so extended as to include a thorough systematic investigation into the climatic conditions of the various sections of the country, in order that a full knowledge of them and of their effects upon plant growth should be available for the farmers.

### Government Note Paper.

Anybody who wishes can go into the big Crane & Co's factory at Dalton, Mass., and see the workmen place the blue silk on the machine that makes paper for all the United States notes. The silk comes in spools, and is made by Helling, of Northampton. It is sold in Bangor. There is no more secret about it than there is about the water flowing over the dam above the toll bridge. The real secret is in the composition of the paper. The silk thread idea is secured by patent, to be sure, but the making of the paper, the compound of the ingredients, is safe in the head of J. Murray Crane, who received the art from his father,

who made bonds for Salmon F. Chase, Lincoln's Secretary of the Treasury, away back in war times. The pure linen pulp is in a big room, looking for it the world like any linen pulp. Then comes J. Murray Crane with a grip. He and the "grip" enter the room together, and it is presumed that he locks the door, for the door is locked on the inside, and the "grip" does not seem able to do it. They are closeted a half an hour. When they come out the pulp goes to the paper machine, and Mr. Crane and the grip go home. But the pulp is changed by that visit, and nobody has been able to penetrate the Crane secret. The company gets about fifty times as much for that paper as for other linen paper made in the same mill.

### Remedies for Writer's Cramp.

Change all the conditions frequently, the height of the chair or of the table, the kind of paper, using sometimes the smoother, sometimes the rougher sort. Have every description of pen and penholder at hand, and change them frequently. Don't try to write a handsome hand, for that is something that a person who has writer's cramp in perfection cannot do. Be satisfied with legibility, and this there need be no difficulty about. The trouble seems to be a nervous one, and very little things will affect it. The change from paper that is ruled to paper that is not, and vice versa, will often give relief, and even a change from black ink to blue has been known to be beneficial. Of course you must have quill pens in your assortment, but their exclusive use will not help you. A friend who does a great deal of writing has turned to the typewriter for relief, but that is all that it affords. The fingers have got into the cramp habit, and in time the use of the typewriter wears and stiffens them. Nothing but an infinite variety of appliances, constantly changed, will afford the desired relief.—"Causerie" in Boston Herald.

### Dyeing with the Henna Plant.

The lady who is about to undergo the dyeing process is stretched out at full length on her back, and is not allowed to stir. The paste is put on the soles of the feet, the toes included, about an inch thick; the upper part of the feet is never dyed. Soft leaves are then applied, as a covering, and the whole is tightly wrapped in linen.

The same process is gone through with the palm of the hand and the fingers. To keep the application in place, the lady must lie perfectly still all night, for no other parts of the body must receive the dye, and a spot on the back of the hand or the finger joints would be a great disfigurement.

At this time she is dreadfully teased by swarms of mosquitoes and flies, but she dare not move to drive them away. In the upper classes slaves watch all night to keep away these pests with fans.

The same process must be repeated for three nights to obtain the desired red tint; but, once finished, it remains for a month, and cannot be washed out.—"An Arabian Princess."

### Grizzly and Buffalo.

When there were buffalo on the plains the Manitoba grizzlies were great hunters of them. When a grizzly and a buffalo met there was always sure to be a contest, but it seldom lasted long, and the buffalo was usually the victim. The grizzly would charge upon the bear, which awaited the onset of his foe erect on his haunches. As the buffalo dashed upon him the bear threw himself aside, and with a blow as quick as lightning with one of his fore paws seldom failed to break his antagonist's neck. A grizzly bear has been known to engage in quick succession four and even five big buffalo bulls, and to kill every one of them. It frequently happened however, that some younger and more active bull than his companions succeeded in evading the fatal blow of the grizzly's terrible fore paw long enough to give in turn a fatal thrust with his horn in the bear's side, puncturing the vitals, and making of the contest a mutual slaughter.—New York Sun.

### Educating Arabian Girls.

"Educate a girl!" exclaimed a Mohammedan to Dr. Jessup, a missionary among the Arabs, who was urging him to place one of his daughters in a girl's school in Tripoli. "Educate a girl! You might as well try to educate a cat!" Several aristocratic Mohammedan gentlemen of Beirut were induced a few years ago to place their daughters in one of the Protestant schools there, and one of them remarked: "Would you believe it? I heard one of the girls read the other day, and she actually asked a question about the construction of a noun preceded by a preposition! I never heard the like of it! The things do distinguish and understand what they read after all!" The other replied: "Mashallah! Mashallah! The will of God be done!"—St. Louis Republican.

### The Coolies of Trinidad.

The coolies work excellently. They are picturesque additions to the landscape, as they keep to the bright colors and graceful drapery of India. The grave dignity of their faces contrasts remarkably with the broad, good humored, but common features of the African. The black women look with envy at the straight hair of Asia, and twist their unhappy wool into knots and ropes in vain hope of being mistaken for the purer race; but this is all. The African and the Asiatic will not mix, and the African being the stronger, will and must prevail in Trinidad, as elsewhere in the West Indies. Out of a total population of 170,000 there are 95,000 whites and mulattoes, 10,000 coolies, the rest negroes. The English part of the Europeans shows no tendency to increase.—J. A. Froude.

# A PEDDLER'S METHODS.

## ONE OF THE FRATERNITY TELLS ALL ABOUT HIS WORK.

Ways That Are Dark and Tricks That Are Vain—A Successful Peddler Must Have Just Enough Self-Confidence. Up Stairs and Down.

"Good peddlers, like successful men in the higher walks of life, are born, not made," said the particular member of the fraternity whom a reporter questioned on the subject. He was loaded down with rugs, door mats, feather dusters and other articles until he looked like a perambulating house-furnishing store. Any or all of the articles under which he struggled he offered to sell on "time payments of fifty cents a week," and when the reporter gently but unhesitatingly declined the offer, the peddler looked so unutterably disgusted that the reporter offered him a chair and some refreshments. Soon the two were engaged in a conversation which brought forth the observation made above.

"No," he continued, "a peddler is naturally a good peddler, and no amount of training or trying will make a good one of a man who hasn't it in him. On the other hand, a good peddler is generally good for nothing else on earth. Let him try to stop peddling for any other business and the chances are ten to one that he'll make a fizzle of it."

### MADE A SUCCESS.

"Now, I am a born peddler, and at peddling I have at last made a success, where in all things that I tried before I failed. I went to school until I was 15, and since then—that's twelve years ago—I have been successively a lawyer's clerk, bookkeeper in an importing house, clerk in a dry goods store, driver of a delivery wagon, car driver, elevated railroad guard, waiter and peddler. It's four years since I found my true vocation, and I've done pretty well."

"Does a good peddler make much money?" the reporter asked curiously.

"Well, that depends. Now, I average \$30 a week. Some, a few, make more, but the majority make less. Anybody that's a good peddler, though, should be able to make \$25 a week without any trouble and be able to go out on Sunday for a good time."

"What characteristics must a good peddler possess?"

"Oh, a great many. Self-confidence, or 'cheek,' as it is called, is the most essential. Without it no peddler ever peddled with success. But too much of it is even more fatal for his prosperity, for in addition to failure he often gets a broken head. No, he must have self-confidence, but not too much—just enough, you know. Then he must be a character reader—know just to whom he can sell and whom not, who will stand a stiff price and who must be offered the goods at cut rates."

"To be a good peddler you must also have a firm, yet gentle disposition. You must allow nothing to deter you when you see a person to whom you feel you can sell. No matter what he or she says, you must persevere. This is where the firmness comes in. The gentleness is necessary, so that you may, under no circumstances, lose your temper. It doesn't pay. If the door is slammed in your face, swearing will only make matters worse. The people next door will only laugh at you. No, you must preserve a dignified silence and smile indulgently as you turn away. Then you can sell to the neighbor. Her sympathy will be aroused, and by patronizing you she thinks she can administer a rebuke to the unmercifully woman next door and shine by comparison."

### UP STAIRS AND DOWN.

"Is peddling hard work?"

"Trudging up stairs and down with this assortment of goods isn't as much fun as playing poker, but there is more money in it for the average person; and, besides, it's no harder than many other things—selling dry goods, for instance. I can pick my customers in this business, but when I was a counter jumper I was entirely at the mercy of any woman who happened along."

"What becomes of all the peddlers?"

"That question has often puzzled me. There are two things I never saw in my life—a dead mule and a dead peddler. Sometimes I think that when mules and peddlers die Old Nick carries 'em off bodily as choice bits of 'cussiness.'"

"Are all peddlers full of ways that lead to Old Nick?"

This was rather a leading question, but the peddler met it unblushingly.

"Well, generally," he replied, nonchalantly, "Some save their money, but very few. I generally turn up with a big head and empty pockets on Monday morning."

"Then how do you manage to buy your goods? On time?"

"We don't buy our goods. We get them from houses around town that are only too willing to let us have them to sell on commission. When a new haul starts in he has to deposit the value of the goods he takes out, but after awhile, when he gets better acquainted, he can get all the goods he wants to take out."

"I must go now. I just saw the red-headed woman who lives across the street return. I knew she was out, and I've been waiting for her all this time. I can always sell to a red-headed woman. I don't know why, but I can. A red-headed man, though, is a useless being as far as peddlers are concerned."

With this parting shot the reporter's hair taken on a russet tinge at sunset the ungrateful vendor of rugs took his departure.—New York Press.

### The Prize Ring.

Paddy Shea, "heavy-weight champion of Kansas," claims to have boxing against Ed Smith, Jake Kilrain or George Godfrey for \$1,000 to \$2,500 a side.

George Siddons, Chicago's feather-weight, wants to get on a match with any one of his weight at the Olympic club, New Orleans.

A forfeit of \$250 has been posted in Youngstown, Ohio, in behalf of Jack Bates' challenge to Mike Dugan of Newcastle, Pa.

J. E. Roddy, the Manhattan athlete, who broke down while in England, has begun training for the fall meetings.

Bob Ferguson, Chicago stock yard-giant, and Pat Killen are reported matched for a finish go next October.

Editor Charles A. Dana is 70 years old, yet no man walks up Broadway with a jaunter air than he.

# A CRADLE SONG.

Tell me what shall we do, baby bye,  
You and I,  
On some bright sunny day  
Let us sail far away,  
Far away in the sky, blue and high.

Tell me what we will see, baby bye,  
You and I,  
All around we will go  
On a pretty rainbow,  
Far away in the sky, blue and high.

We will hide in the clouds, baby bye,  
You and I,  
We will laugh at the sun,  
And away he will run,  
Till his face disappears from the sky.

O! the man in the moon, baby bye,  
You and I,  
We will worry and tease  
Till we get him to sneeze  
Just to look at the crack in his eye.

We will say, "Mr. Moon," baby bye,  
You and I,  
'Tis true, if you please,  
You are made of green cheese!  
Do they nibble you up in the sky?"

With the dear little stars, baby bye,  
You and I,  
As they twinkle and peek,  
We will play hide-and-seek  
Till we chase them all out of the sky.

### Belief in the Moon's Influence.

Men are not superstitious nowadays, Oh, no! but some of them kill their hogs only in the light of the moon, and plant their potatoes when it is full. One of our citizens relates a remarkable instance in proof of Luna's effects upon mundane affairs. He says that in Pennsylvania, before he left that state, two men put new roofs upon their houses. One house was roofed while the moon was new, and the other while it was either dark or full. Before he came away the roof of the former house had drawn up till a full story had to be put underneath, while the roof of the latter had pressed the building down till the lower story was under ground.—American Magazine.

### Chinese Shoes and Shoemaking.

Shoemaking, shoe mending and shoe selling are distinct branches of business in China. Chinese shoes exhibit great variety of shape. Except in the hob-nailed shoe for wet weather, there is little leather used—the materials being principally calico, silk, satin, velvet and felt. Children's summer shoes are made of fine open mesh work, with bright lining. Ladies' shoes are made and mended by their weavers. From childhood the girls of the upper classes have their feet tightly bound, and they are thus, at the cost of years of suffering, enabled to wear shoes about three inches long. The Chinese cobbler goes from house to house, and announces his presence with a peculiar rattle.—Philadelphia Times.

### Something About "Zante Currants."

The word currant is said to be a corruption of Corinth, a city from which once came all the Greek currants. The currants, commonly called zante, are really raisins, produced from a grape that grows no larger than peas, like the American wild or fox grapes, and hangs in bunches only three inches long. These grapes are dried in the sun, and then stored in bulk, where the sugar that exudes from them makes them into masses so compact that they have to be dug apart by force when wanted. They are prepared for shipment by being put into casks and packed into a solid mass by being trodden by the feet of the natives.—New York Sun.

### Duration of Infection Stages.

The duration of the infection stages of various diseases is thus given by Dr. T. F. Pearce, an English physician. Measles from the second day of the disease, for three weeks; smallpox from the first day, for four weeks; scarlet fever from the fourth day, for seven weeks; mumps from the second day, for three weeks; diphtheria from the first day, for three weeks. The incubation periods, or intervals occurring between exposure to infection and the first symptoms, are as follows: Whooping cough, fourteen days; mumps, eighteen days; measles, ten days; smallpox, twelve days; scarlet fever, three days; diphtheria, fourteen days.—Herald of Health.

### Made Her Feet at Home.

A lady from Nebraska was the guest of a Pittsburg family. As the thermometer only touched zero once during the winter the fair stranger would have been homesick but for the thoughtfulness of her host. By an ingenious arrangement a powerful fan drove snow dust in her face every time she opened the front door. The snow was banked against the windows of her room and her meals let down the chimney with a string. Another device imitated the roar of a blizzard, and so soothed her to gentle slumber—wherein she dreamed of her native state. These little attentions deeply touched the fair guest.—Pittsburg Bulletin.

### Florida's Opium Industry.

Florida promises to become a large producer of opium. The poppy grows there very readily, and larger than anywhere else in the United States. Sixteen plants will produce an ounce of opium, and an acre should give a profit of \$1,000. As the plants will thrive among trees, the land on which are young and non-bearing orange orchards can be utilized while the trees are reaching maturity.—New York Sun.

### Consumption of Tobacco.

M. Paul Leroy-Benjamin gives figures showing the quantity of tobacco consumed in the different countries of Europe. The rate per 100 inhabitants is, according to him, as follows: Spain, 110 pounds; Italy, 128 pounds; Great Britain, 138 pounds; Russia, 182 pounds; Denmark, 224 pounds; Norway, 239 pounds; Austria, 273 pounds.—Chicago News.