

NEW PUBLIC LIBRARY'S NOVEL MECHANICAL DEVICES

Electrical Plant There Is as Large as That Used to Light the City of Stockholm--Special Appliances in Every Department of the Building.

THE Building Superintendent of the New York Public Library was in a great hurry, but he let fall this remark:

"The electric plant that has been installed in the library is as large as that in use in the City of Stockholm, Sweden."

He was too busy to answer many questions, but so interesting a matter had to be followed up. What is the New York library doing with an electric plant as big as Stockholm's? That city may not be a world metropolis, but it would seem as if it ought to have more use for electricity than a building which, after all, is only two blocks long by a block wide.

Later on a vast amount of technical information was gathered in regard to the electric plant of the new library. That is, it was information, if such a term may be applied to what was most imperfectly understood. But a few general facts stood out in a most interesting manner.

Ask library people about the electric equipment of the new library and they will answer that it is wonderful, a thing most unusual. Ask one of the firm who are responsible for its installation, and he will tell you that there is nothing wonderful about it. On investigation, this means that there is no new device applied, but all the old knowledge of electricity has been brought together and used in such a fashion as to make the building perhaps the most convenient in the world to-day.

The New York Public Library stands quite alone among the buildings of its character. Sometimes, when a great new structure is to be made, it is possible to look over the various buildings of the sort already existing and choose from each the most useful and convenient features. But with the public library new ground was struck. This is an age of electricity. None of the great libraries has been built so recently as to make it possible to utilize all of the scientific knowledge we have now.

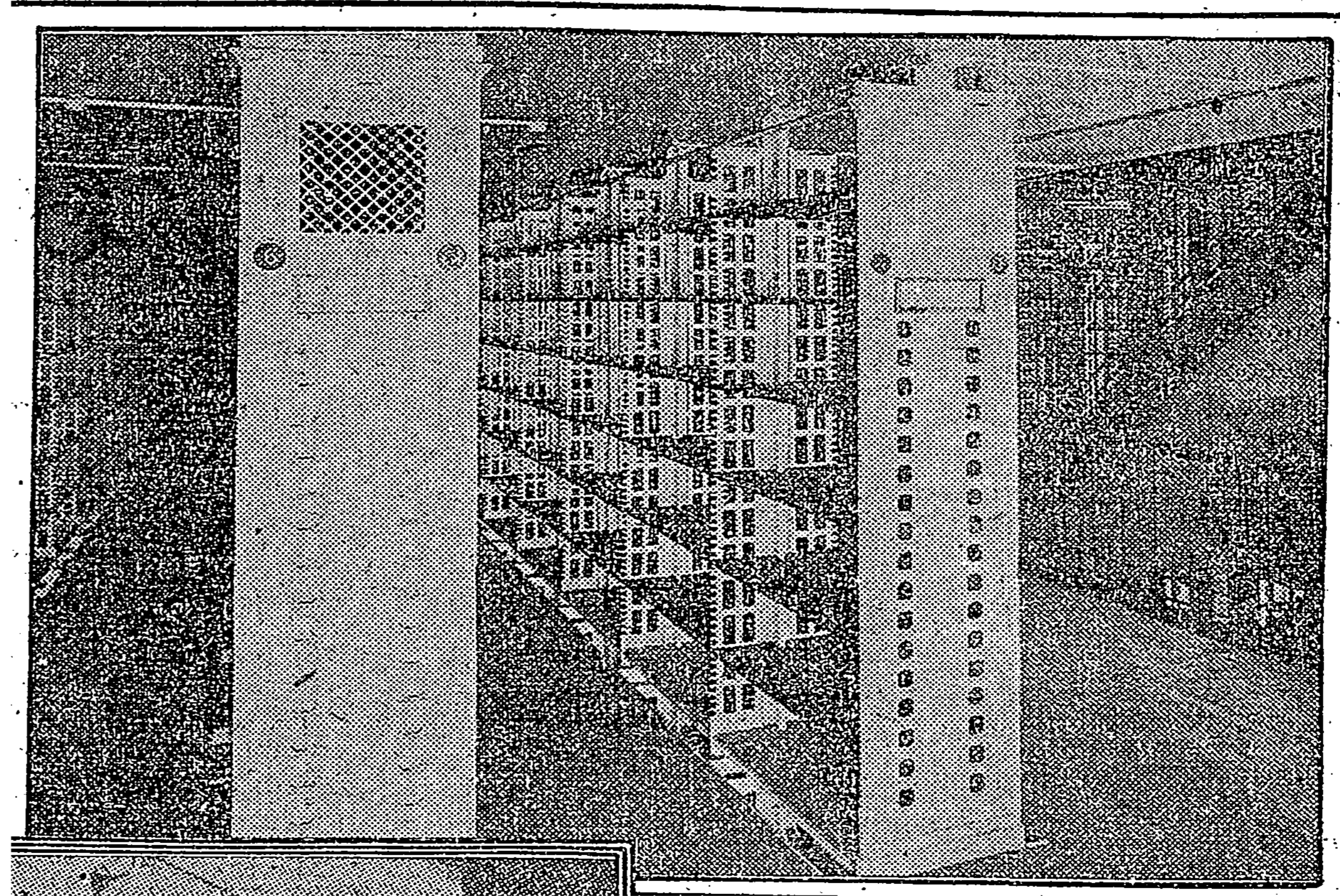
It was a brand new problem to be worked out in a brand new way. Architecturally, the library is original, too, but here comparison may be made with other buildings. The main reading room is certainly one of the most beautiful rooms in the world, but there are others in Europe and even in this country which suggest it. There is no library existing, however, with which the mechanical perfection of our new building can be compared.

The general electrical plan was laid down and the work begun in 1897, but there is nothing out of date about the building. Nobody will deny that there has been plenty of time for the contractors to seek with a magnifying glass for every known device. To get the money for some of the absolutely necessary work certain of the contractors had to wait seven years.

However, the result is pretty fine. If you want to know in a few well-chosen scientific words what the electric plant consists of it might be stated at the outset that it is a 240-volt two-wire direct-current system, with storage battery float on a line, supplying both lamps and motors from the same bus. In case you do



Telephone switchboard. There are 615 hundred telephones communicating with the city.



One of the seven stack room floors.

not happen to be of a technical turn of mind and shy at this sort of language it may be well to use words less learned and beautiful.

The building is run by electricity to a greater extent, perhaps, than any building hitherto constructed. There are as yet no currents run through the reading room to inspire the minds of the seekers after knowledge, but short of that you find the mysterious power at every turn.

The building has its own electric installation, of course, and besides running the books up and down and making the pneumatic tubes workable and doing vacuum cleaning and such odd jobs the plant runs 20,000 lights and 7,000 horse power in motors. Electricity shovels coal and weighs it, does the printing for the establishment, and pretty nearly all the binding. It lets you know when your book is ready at the delivery desk, and it keeps a sharp watch on the stackroom boys to see that they play no tricks in sending up the desired volumes.

The fashion in which the library is designed has already been described. One feature, however, has not been dwelt on as strongly as should be the case, and it might well be emphasized before details are considered. The stackroom, which is behind that long space at the back of the library where there are no windows, stands on its own foundation. That means it has no connection, so far as construction goes, with the rest of the building.

Should there be a fire, (there won't be, if modern science can prevent it; but not even in these days of enlightenment have

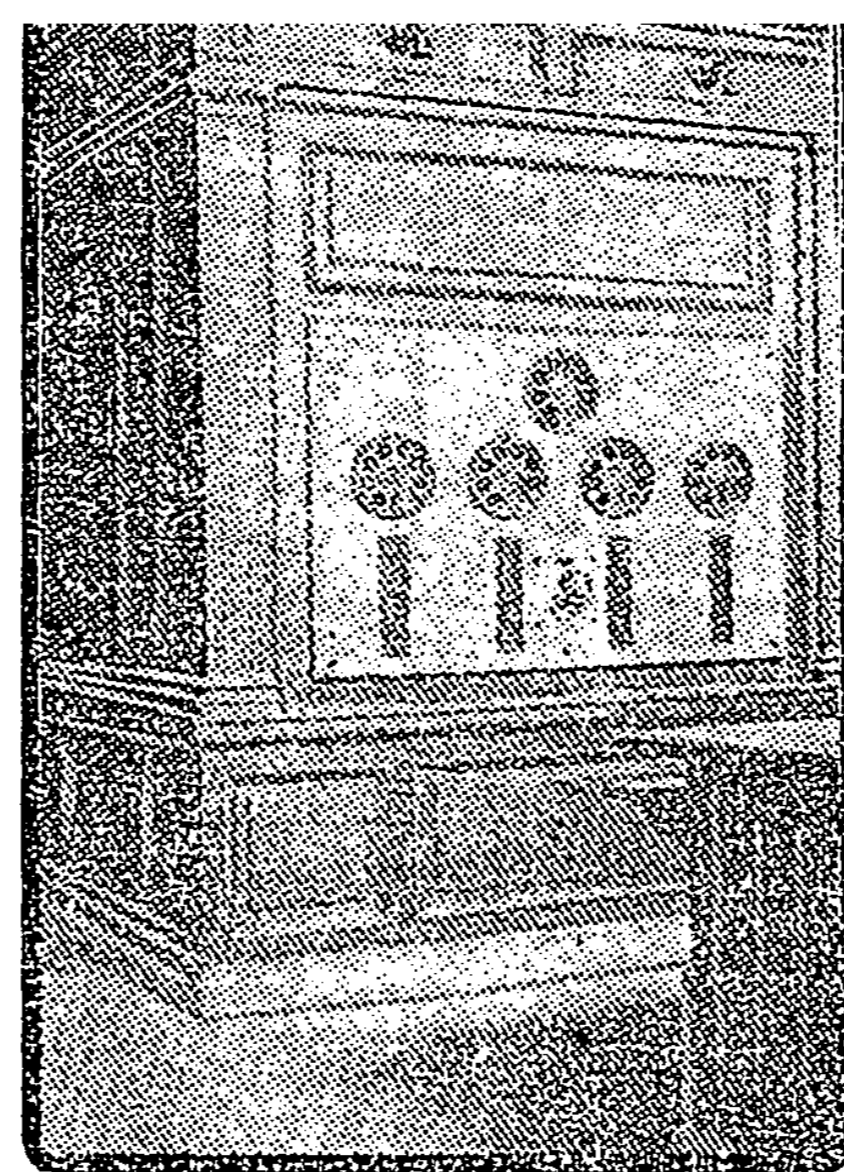


Marble switchboard which controls the electrical appliances of the building.

we absolute control over the elements,) the stackroom would continue to stand. Its supports go down into the ground, and the building might fall about it without disturbing it in any way.

It will readily be seen how much this fact does away with the danger of fire. Tightly pressed paper does not burn readily, so that books stacked on the shelves protect one another pretty thoroughly from any blaze. The danger comes when the stackrooms are broken down and the paper is scattered. It will be remembered that many of the valuable books in Albany were found still readable, though injured, in spite of the fire and water through which they had passed.

It is calculated, therefore, that if all the safety devices applied to the public library should fail, the stackroom might still escape in case of a blaze. Nothing is built over it but the long reading room,



Electric buttons which govern the book-lifts and signal the readers number.

and it is as far as possible isolated from the other rooms of the building.

To return to the subject of the electrical equipment, in this stackroom there are various remarkable devices. Orders for books are presented at the delivery desk at the centre of the main reading room. These are shot through pneumatic tubes worked by electricity and are received on the floor of the stackroom where the books belong. The attendant who receives an order gives it to one of the boys, who sees at a glance which section the book belongs in, and before he goes to the section he presses a button to turn on the light there. After that he has nothing to do but go and find the volume and put it on one of the lifts.

These lifts are somewhat peculiarly devised. There are seven stackroom floors. There are six big lifts capable of carrying 250 pounds at the rate of 150 feet per

minute. Now, from below these lifts, which are operated by push buttons, can be sent only to the delivery desk, so nobody can stop a lift en route and delay the arrival of the volume. On the other hand, from the delivery desk they can be sent down and stopped anywhere that may be necessary.

The four centre lifts are arranged so that they may be operated from the switchboard independent of other control. Five other big lifts of the same capacity are placed in different parts of the building and controlled by push buttons.

There is a horizontal book conveyor, which shoots a book 18 inches by 14 inches by 5 inches, weighing 50 pounds, at a speed of 150 to 250 feet per minutes. This connects one of the document rooms with the sixth floor of the stackroom. A similar conveyor connects the same room with one of the special reading rooms.

The electricians made the pithy remark that the library was the home for books, and that everything was done to make it a comfortable home for books. There are only three passenger elevators in the whole building. People, they say, can walk. Books can't.

People will have to walk in one respect a little more than was the case in the old Astor Library. Books will not be brought by boys and delivered at your desk in the main reading room except perhaps in the case of heavy books, and feeble persons. But this is offset by another consideration. There will not be many heavy books sent to the main reading room for the reason that admission to the stacks themselves is very easy to obtain, and students will have the privilege, long since discontinued in the old Astor Library, of going among the books and choosing their material as they see fit.

The public library numbers its readers. You are not John Smith for the time being, but No. 217. This is not an affront, but a convenience. You give the name of the book you want, and are told your number. Then, with a care-free mind, you

sit in the reading room and meditate or read some of the reference books around the shelves until such time as, looking up, you see your number blazing in electric light on the enunciator at the desk. Then you rise and get your book.

"With all this electricity," the anxious taxpayer may ask at this juncture, "what has been done to prevent fire? How about defective wires and other foes of the insurance companies? Slower than a forest has the library risen to its present grandeur, and to have the building burned down in a year or two would certainly be the last straw upon our patience."

After the Albany fire a good many people began to get nervous about this matter, and the question was widely debated whether we might not have such a tragedy right here at home. The wooden ceilings of the building were given a special amount of advertising.

As a matter of fact, there are exactly four wooden ceilings in the whole building, and as to the wires setting the thing afire, that is not a very likely thing to happen, considering that absolutely every wire is sheathed in an iron conduit. This is true not only of the wiring of the building itself, but of every piece of furniture as well, so the library would seem to be about as safe as modern science can make it.

The engine room has been rather neglected because of the more artistic and romantic features of horizontal book conveyers and push-button lifts, but it is here, of course, that really remarkable work has been done. A great deal of money has been saved through that 240-volt plant that works so hard. In addition to its 20,000 lights and 7,000 horse power in motors and other things that have been told about, it runs a crane down in the engine room that has a span of thirty-one feet and lifts fifteen tons.

Again it hoists the coal, for which there is a total storage capacity of one thousand tons. The same bucket that takes the coal up may be used for clearing the ash hopper of each boiler, sending the ashes either to the storage bin or to the street.

One little detail of the engine room is rather picturesque. The oil is carried from the central oil tank, is used, filtered and used again and again as long as there is any life in it.

The central wonder of the whole thing is the white marble switchboard. It contains all the usual switches; one hundred and twenty feeders for light and power and a section for separate feeders containing one hundred and forty-one cells, with capacity for one hundred and twenty amperes for eight hours.

There is a pump room, too, which pumps the waste matter up to the level of the street sewers, which are above the drainage wells of the building, and a dozen other devices, which are very curious to see, but too technical to be described.

The telephone equipment of the library consists of a 2-position switchboard (that is operated by 2 girls) the contract with the public library allowing for ten lines to the Central Office and eighty-eight telephones throughout the library.

Twelve telephone booths will take care of the public use of the telephones in the library. These are all arranged in one bank, being located in a small room off the hall-way.

All departments are connected by telephones and the management of the library expects to depend upon the telephone considerably in locating and delivering books.

They will all be running soon, these devices. For, like the sound of a woodpecker in Summer forest, there came the noise of a gentle, insistent tapping in one of the rooms. Glancing within what should be seen but a shoe maker happily plying his trade in a corner. It was an unexpected vision. The visitor plunged in thought, then gave it up and asked for enlightenment.

"Why," said the attendant, "he's putting on rubber heels for the whole lot of us."