

endless hands running over rollers or cable lines can be fitted along the gangways, to carry the books from the attendants in the book stores to the delivery desk.

To calculate how many books can be shelved in a bookcase, it is usual to allow ten volumes to each foot of shelving for ordinary octavos, and six for folios and quartos. The average over the whole shelving of an ordinary collection of books will probably be eight and one-half volumes to the foot. If it is wanted to know how many books a room will hold if fitted with cases 7 feet 6 inches high, the method of calculation is a little different. Let us suppose that the case is 16 inches deep, and has books on each side; that the width of passageway between it and the next case is the minimum of 32 inches; and that each shelf is 36 inches in length. The floor-space that one division of one side of the case will take is half the width of the case (8 inches), plus half the width of passageway (16 inches), multiplied by the length of the shelf (36 inches), which gives a result of 6 square feet. If the average number of shelves in the division is 9, and there are eight and one-half books to the foot, the capacity of the division is 230 volumes, or an average of thirty-eight books to the square foot of floor area. In this calculation no account has been taken of the stairs, windows, doors or cross gangway, and only a minimum width of passageways has been allowed. If space for these are taken into consideration, a conservative estimate of the shelving capacity of a room will work out at twenty-five volumes to the square foot. A book store, therefore, 50 feet by 40 in area, with cases 7 feet 6 inches in height, will shelve 50,000 volumes; and if the room be 35 feet high, and four tiers of book-cases are erected in it, its capacity is increased fourfold, to 200,000 volumes.

THE LOUISIANA PURCHASE EXPOSITION OF 1903.

THE letting of contracts aggregating about \$11,000,000 for construction work on the buildings and grounds of the World's Fair at St. Louis, Missouri, commemorating the Louisiana Purchase, will begin about December 1. It is planned to apply about \$7,000,000 of this amount on the buildings and about \$4,000,000 on the grounds. The letting will begin with the contracts for four big exhibit buildings which, with their surroundings, will, it is estimated, cost about \$4,000,000.

The site has been selected to embrace the unfinished half of Forest Park. The part of the park to be used contains 668 acres, and about 300 acres of surrounding property will be added to bring the entire area of the site up to about 1,000 acres.

The ground plans of the exposition have been drawn up by a Commission of Architects in which every section of the country was represented. Isaac S. Taylor, of St. Louis, was its chairman. The other St. Louis members are Eames & Young; Barnett, Haynes & Barnett; Widmann, Walsh & Boisselier, and Theodore C. Link. New York was represented by Carrère & Hastings, and by Cass Gilbert, of New York and St. Paul; Boston by C. Howard Walker; Kansas City by Van Brunt & Howe; Omaha by Thomas R. Kimball. The Commission of Architects had the advantage of the advice of a board composed of a sculptor, Mr. F. W. Ruckstuhl, of New York; a landscape engineer, Mr. Julius Pitzmann, of St. Louis, and a landscape architect, Mr. George E. Kessler, of Kansas City.

The details of the general arrangement have been worked out by Mr. E. L. Masqueray, of New York, as Chief Designer. Mr. Masqueray, who received his early training in architecture at the Ecole des Beaux-Arts, Paris, has for the past five years conducted an atelier in New York.

The site has been surveyed and the lines of buildings and avenues staked off.

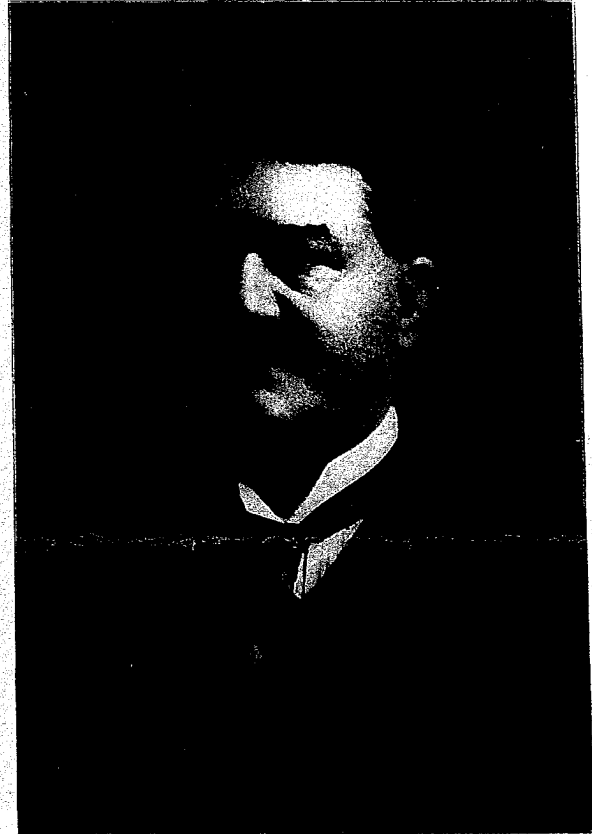
The designs for the separate buildings, assigned to the individual members of the Commission of Architects, will be submitted to scale drawings by the middle of October, and the working drawings of the main buildings to be let first will be ready by November 1. The lettings will be advertised for about three weeks in the leading technical journals throughout the world. There will be no geographical restriction on bidders. The main stipulation will be that the buildings be ready for occupancy at a date sufficiently far ahead of April 30, 1903, the date fixed for the opening of the exposition, to allow exhibitors time to prepare their displays for the opening. To secure the completion of the buildings by this time, a sufficient bond will be required of the successful bidders. Materials will be employed in the construction work and conditions will be so adjusted that contractors may fulfill their contracts.

All this work will be in direct charge of Mr. Isaac S. Taylor, of St. Louis, who is at the same time chairman of the Commission of Architects, and Director of Construction and Maintenance for the Louisiana Purchase Exposition. Over him will be only the unsalaried officials and directors of the Louisiana Purchase Exposition Company. It has been decided to do away entirely with the position of Director-General, who, in most former important expositions, was at the head of the salaried forces and controlled practically all the departments, supervising the Department of Works, of Exhibits, of Publicity and Promotion, of Accounts and of Concessions.

Mr. Taylor, Director of Construction and Maintenance, reports to the Committee on Grounds and Buildings, a committee of seven members, and through them to the Executive Committee and the Board of Directors.

The St. Louis World's Fair is the first at which the same man was Chairman of the Commission of Architects as well as Director of Construction and Maintenance. This is the first great exposition in which the same man who led the planning of the exposition had the chieftancy in carrying out the construction. The arrangement adopted in St. Louis is pronounced the ideal one by every person who has had a part in the construction of former expositions. Mr. Taylor had a large voice in the selection of the Commission of Architects and presided at their meetings from the beginning. On a trip to the East he engaged the Chief Designer, Mr. E. L. Masqueray, in New York.

The plan which will be pursued in the construction of a building at the St. Louis Exposition will be to let the entire building



ISAAC S. TAYLOR, ARCHITECT.

Director-General of Construction and Maintenance, World's Fair, 1903.

under a single contract, the contractor to have control of all the sub-contractors. "This plan is by far the most satisfactory," says Mr. Isaac S. Taylor. "Where the exposition company lets sub-contracts itself each sub-contractor must be watched, and it is difficult to fix responsibility for faulty work. For this reason in former expositions the company had to pay extra for reconstruction of faulty work, and the cost of the extra swelled the total cost of construction immensely."

Mr. Isaac S. Taylor has been in St. Louis all his working life. He was born in 1851 in Nashville, Tennessee. He was graduated from the St. Louis University with class honors in 1868. After studying for six years under the preceptorship of Architect George I. Barnett, of St. Louis, he was taken into partnership, and the business was then conducted under the firm name of Barnett & Taylor. The Southern Hotel, the first fireproof hotel in St. Louis, and still one of the finest hotels in the city, was erected by this firm.

In 1879 Mr. Taylor severed his connection with George I. Barnett and since then has been in business for himself in St. Louis. He has erected some of the biggest and best buildings in the city and has done much work in Illinois and Texas.

The competition for the \$1,000,000 city hall at Newark, New Jersey, in which sixty architects competed, has been rejected by the commissioners. The plans submitted by five architects were awarded \$1,000 each and the designers requested to prepare plans in another close competition. These five firms are: O'Rourke & Dubois, of New York; Jeremiah O'Rourke & Sons, of Newark; John H. and Wilson C. Ely, of Newark; Ackerman & Ross, of New York; and William B. Tubby & Brother, of New York.