

JUST A FEW OF THE MANY PICTURESQUE AND COSTLY OPERATIONS IN THE BUILDING AND CONSTRUCTION

SPENDING MILLIONS.

Great Construction Enterprises Seem Normal to Gotham.

There is always some building operation going forward in New York which commands the attention of engineers or contractors in all parts of the world, but just at present there appear to be more of these enterprises under way at one and the same time than is usual even for bustling Gotham.

The tower of the Singer Building, in lower Broadway, for instance, already is drawing the eyes of the curious from many quarters as it begins to rise above all the surrounding buildings on its way to its final and all commanding eminence of 612 feet 1 inch. Last week the steel framework had attained an altitude of 489 feet above the sidewalk, and was beginning to make such of its neighbors as formerly were considered skyscrapers look stunted.

"How high is it?" "How much further will it go?" are two questions that one hears asked continually among the curious crowd that gathers daily to watch the workmen upon their dizzy perch high up in the heavens.

Workmen were last week engaged upon what is called the thirty-eighth tier, or story. Eight more have to be added to complete the framework, and these eight tiers will add 132 feet more in height, making the completed elevation 612 feet from the sidewalk, or 421 feet above the roof of the main Singer Building.

There will be in all forty-one stories in the main tower, and six more in the lantern, or cupola, which will surmount the structure. From the sidewalk the foundations extend downward to a depth of ninety-two feet.

The new structure when completed will be, it is declared, the tallest office building in the world. The elevators will run as high as the forty-first story, from where a small shuttle lift will be provided to take sightseers to the observatory upon the forty-seventh floor in the top of the cupola.

Quietly but effectively there has been going on in the Borough of The Bronx for more than a year one of the most important works in the history of that part of the city, a work that means much for the increasing value of property and the practical reclamation of hundreds of acres of ground heretofore threatened with flooding after every heavy storm—the building of the Bronx tunnel relief sewer.

Of the 5,700 feet of tunnelling necessary for this important project 50 per cent has already been completed, and the even more difficult work of lining the excavation with concrete has just been started. This work offers many difficulties, and is the first of the kind to be attempted, for heretofore underground sewers of this length have been constructed of brick or other material, but not of concrete, and the work will be watched not only by local engineers but also by the engineers of the reclamation service at Washington.

When, thirty years ago, the Brook avenue outlet sewer was built to drain the 2,300 acres from the Bronx Kills to Woodlawn Cemetery the ultimate growth of that part of New York was not dreamed of. Since then waste land has

become overcrowded tenement house blocks, property has increased in value tenfold or more, asphalt pavements have succeeded cowpaths, and, with the almost magic springing up of improvements, the district itself is subject to frequent floods, for rain will not percolate through cemented streets, and the inrush of an army of homeseekers has changed conditions. The old sewer, an engineering triumph in its day, is now inadequate, and relief is demanded.

A relief sewer 6,900 feet in length, tapping the old sewer at Webster avenue near Wendover avenue and emptying into the Harlem River 239 feet north of Highbridge, was planned—a concrete tunnel that should carry off 1,350 cubic feet of sewage a second, with a velocity of ten feet a second, at an estimated cost of \$700,000. The sewer has a fall of two feet in a thousand, and so great are the variations in the elevation of the land through which it runs that 1,200 feet of the big drain will be in part at least above the surface.

The excavation, much of which has presented many difficult problems because of the variety of the ground to be cut through, is made six-



WORKMAN ON THE UNFINISHED SINGER TOWER LOOKING DOWN ON THE PARK ROW AND BROADWAY SKYSCRAPERS.



TEMPORARY WEIR ON ESOPUS CREEK.

This weir was used to measure the volume of the flow of the water of the creek. It was built to enable Engineer P. C. Barney to prepare plans and specifications for the Ashokan Dam. The weir is of concrete. The gap in the centre was purposely made after the volume of the flow had been ascertained. The top of the highest tree in the picture will be covered by the water pent up by the Ashokan Dam.



THE UNFINISHED SINGER TOWER IN LOWER BROADWAY. It has now reached a height of 489 feet.



DRAINING OFF THE WATERS OF ESOPUS CREEK.

Immense pipes laid upon strongly constructed piers for the water to flow through while the huge Ashokan Dam is being constructed.



WEBSTER AVENUE PORTAL OF THE ASHOKAN DAM.