THE NEW TERMINALS OF THE BROOKLYN BRIDGE.

Nothing shows more impressively the rapid growth of the metropolis than the continual and imperative demands for means of transportation for the hundreds of thousands of people whose business is located in New York and whose homes are in the adjacent towns. Brooklyn is the greatest of these cities of residence, and, although means have been multiplied for transporting the people, still the demand for greater facilities increases.

Since the opening of the Bridge Railway on September 24, 1883, the railway has had a carrying capacity of over 200,000 passengers per day, the largest number for one day being 223,625, which was October 12, 1892. Since the opening of the railway there have been numerous alterations and improvements to facilitate the handling of passengers to the fullest extent under the existing system. In ten years the facilities proved totally inadequate, and greater capacity being imperatively demanded, the present new system of operation was devised and the construction of the terminal stations, which are now partly finished, was begun.

The Brooklyn station, although still incomplete, is farther advanced than that at the New York end.

We give an engraving of the interior of the New York terminal station as it will be when finished, the view being taken from the City Hall or western end of the building. The structures at the opposite ends of the bridge are practically alike, except that the Brooklyn station is constructed to accommodate elevated railroads at either end and at the side and is provided with galleries to permit of passing over the cars and tracks, giving access to the passages which lead to the elevated railroad platforms. The bridge station of the Brooklyn Elevated Railroad is integral with the bridge station, and is built by the bridge and leased by the elevated railroad. The Kings County Elevated Railroad is provided with structures of its own outside of the bridge station.

The system of tracks, by means of which the capacity of the bridge railway is to be practically doubled, is illustrated in the view of the New York station. The tracks on opposite sides of the bridge are double, each being composed of two pairs of rails, one pair of rails on one side of the bridge leading to the right of one platform, the other pair of rails leading to the right of the other platform. The rails of the track on the other side of the bridge are arranged in a similar way, one pair leading to the left of one platform, the other leading to the left of the other platform. Arranged in this way, each train comes in on a track which is contiguous to the platform, there being no switching.

It will thus be seen that the movements of the train are positive and that there can be no mishap due to misplaced switches. The only switches used are those employed for shifting the empty trains from the incoming tracks to the outgoing tracks. These switches are to be operated by a man in the elevated gallery shown in the left of the illustration. At present steam locomotives are employed in the switching, but an experiment looking to the application of electric locomotives for this purpose is soon to be tried, it being desirous to abolish the smoke and noise of the steam. At present the trains are operated under a headway of one and a half minutes; under the new system the headway is to be cut down to forty-five seconds. It has been observed that the platform is cleared of passengers in thirty seconds on an average, and it is believed that when the new system is in complete working order, with the number of trains doubled, the congestion at the stations will be completely obviated and the capacity of the stations will be ample for many years to come.

The City Hall station at the New York end will cover the site of the old station and extend beyond it, the railway having been changed already so far as possible, to adapt it to the new system. This station is rectangular, 521 feet long and 87 feet 6 inches wide. There will be two floors. On the upper floor will be the tracks and two elevated platforms, as shown in the illustration, and there will be an intermediate floor on which will be located the toilet rooms and the ticket sellers' boxes. There will be six stairways from the first floor to the platforms, and communication with Rose and William Streets by means of stairways and elevators.

The Brooklyn terminal station, which is already well along toward completion, is 357 feet in length and 90 feet wide. The arrangement of platforms and stairways is substantially the same as that of the New York station.

In the construction of the Brooklyn station 420,000 pounds of cast iron have been used and 3,400,000 pounds of steel. The work of erecting these structures at the ends of the bridge has been carried on without serious interruption of traffic, the old buildings having been torn down and the new ones built up while the thousands of passengers have surged back and forth as usual.

THE highest chimney in the world is at Glasgow. Height, 474 feet.

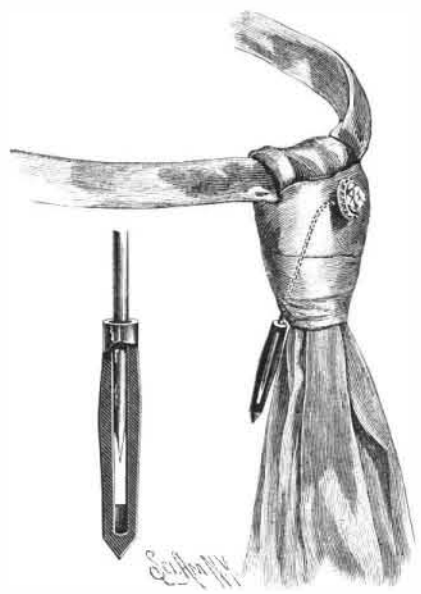
His Dream Was Worth Millions.

Elias Howe almost beggared himself before he discovered where the eye of the needle of a sewing machine should be located. His original idea was to follow the model of the eye at the heel. It never occurred to him that it should be placed near the point, and he might have failed altogether if he had not dreamed he was building a sewing machine for a savage king in a strange country. Just as in his actual working experience, he was rather perplexed about the needle's eye. He thought the king gave him twenty-four hours to complete a machine and make it sew. If not finished in that time, death was to be the punishment. Howe worked and worked and puzzled and puzzled, and finally gave it up. Then he thought he was taken out to be executed. He noticed that the warriors carried spears that were pierced near the head. Instantly came a solution of the difficulty, and while the inventor was begging for time he awoke. It was four o'clock in the morning. He jumped out of bed, ran to his workshop, and by nine o'clock a needle with an eye at the point had been rudely modeled.

[The Philadelphia Times, we believe, is responsible for the above story. It is so well told we give it place, but we have doubts about the eye-pointed needle being invented in just the way the article states it to have been.—ED.]

A SCARF PIN LOCKING DEVICE.

To securely lock a scarf pin in place, preventing its being lost or stolen, the device shown in the accompanying illustration has been devised and patented by Robert E. Lutters, Tenth Street, between Fourth and Fifth Avenues, College Point, L. I., N. Y. It consists of a sleeve adapted to engage and form a spring clamp upon the shank of the pin near its point, after the pin has been inserted in the scarf, as shown in the larger view. The sleeve, as better shown in the small view, is longitudinally slotted, and the insertion therein of



LUTTERS' SCARF PIN LOCKING DEVICE.

the shank of the pin spreads the body of the sleeve, and causes it to take a sufficiently firm frictional hold upon the pin to secure the latter from removal or displacement. The safety locking device is preferably made of hard rubber.

Three Good Business Hints.

Lloyds Commercial Guide gives the following advice to its readers. Never sign a paper without reading it; and if, after reading, you do not understand it, have it thoroughly explained before you put a signature to it. It is best to get some third person, who is not interested in the matter at all, to explain the meaning of what is not clear, or to point out words that may have two meanings in the document.

Always make a memorandum in your little book of any contract you undertake for money or any agreement to work. It saves much trouble to keep a memorandum book and put down the dates when you either pay or receive money. Whenever money passes on account, set it down. If any money or thing of value goes through your hands, give a receipt for it and make a memorandum. Your receipt settles the amount that passes, and that cannot be disputed. When you pass it to a third party, get a receipt and keep it. This form is as important in the transfer of income, trust money, or valuables among your own family as with other persons.

Never allow a person to do any service for you without first agreeing upon the cost to you. This rule, strictly adhered to, will save you many annoyances.

That Mammoth Potato.

The photo. picture of the mammoth potato we published on page 199 proves to be a gross fraud, being a contrivance of the photographer who imposed upon us as well as others. An artist who lends himself to such methods of deception may be ranked as a thoroughbred knave, to be shunned by everybody.

Average Wages of British Workmen.

There has been issued from the Board of Trade an elaborate report dealing with the average wages paid in several trades throughout the United Kingdom. The report has been prepared by Sir Richard Giffen, and accuracy is thus abundantly established. It is, says Engineering, a monument of great labor, for there are 500 closely printed pages of figures.

The average wage, according to the returns made, is 24s. 7d. per week, equal to £64 (or $320) per annum, quite a satisfactory figure, especially when it is remembered that the summation includes several industries which are not highly skilled, and includes also in all trades the helpers and laborers engaged in each. The average wage for women is 12s. 8d., which again is satisfactory, for many dressmakers, milliners, etc., are included, who only receive a nominal wage while learning their art. Lads and boys get 9s. 2d., and girls, where also the "improver" tends to reduce the average result, 6s. 5d. These average results are arrived at by an analysis of returns of wages actually paid for 1885, and of the wage paid for a stipulated day or week in 1886, with the maxima and minima paid in one week. Nearly a million workers were brought under this census, after all doubtful cases had been eliminated. As the trades were representative of all classes and districts, the return may not err on the side of the maximum. As reflecting on the minimum wage question again, the fact that only 2·5 per cent of men are paid less than 15s. is significant, while only one-fourth of all men workers have less than £1 a week. One-third of the men engaged have 20s. to 25s.; and 24·2 per cent between 25s. and 30s. This is what one would expect—that 58 per cent of workmen come within the class of 20s. to 30s. a week—limits which certainly afford a fair competency. Between 30s. and 35s. there are 11·6 per cent, and only 4·2 per cent between the latter figure and 40s., while this rate is exceeded by 2·4 per cent. Only one in a thousand gets less than 10s., and be it remembered the classification includes helpers in all the trades. As to women, 26 per cent have less than 10s., 50 per cent between 10s. and 15s., and 18·5 per cent between 15s. and 20s., while 5·5 per cent have more.

Another interesting point is the relation of the average wages in England, Scotland, and Ireland. It is not altogether surprising to learn that wages are lower in Scotland than in England by about 10 per cent, and that in Ireland they are still lower, the difference, as compared with England, being from 16 to 20 per cent, and more in those trades where the proportion of unskilled to skilled workers is greatest, for the report shows that skilled labor is paid about the same as in England, while mere muscular labor is very cheap. That is a condition which is easily understood. Some of the figures from the report may be quoted:

AVERAGE ANNUAL WAGE.

Trades.	England.	Scotland.	Ireland.	United Kingdom.
	£ s.	£ s.	£ s.	£ s.
Engineering	58 14	54 9	45 18	56 19
Metal work	59 12	54 15	51 2	57 19
Sawmills	57 15	52 9	49 13	55 14
Coachbuilding	57 8	53 4	52 18	56 6
Breweries	61 17	54 17	50 13	60 15
Distilleries	64 9	52 5	47 4	52 12
Chemical works	58 12	50 0	47 0	55 18
Printing—large works	55 9	47 0	44 3	52 11
" —small "	44 1	41 19	36 17	43 8
Building trades	72 0	63 0	61 0	—

These figures are based on the assumption that the men work full time.

Moving a Large Factory.

In the work of track elevation on the Providence division of the New York, New Haven and Hartford, it became necessary to move one of the largest factory buildings of the Sturtevant Blower Works at Jamaica Plain. This building is 50 × 350 feet, about half the length of which has three and the other half two stories. The three-story portion was moved about 50 feet east and 300 feet south, and the other portion was moved 50 feet east from its former location. The work in the three-story section, except upon the lower floor, was carried on all of the time during the removal, power being supplied by a 20 horse power electric motor belted from the second floor of the building to the main line of shafting. Provision was made for moving the motor away from the generator, which was situated in the engine room, by placing a reel containing the conducting wire upon the floor of the moving building, which allowed the wire to unwind and made it possible to keep the motor running while the building was upon the rollers. The moving was carried out in the usual way by means of capstans worked by horse power, which were connected to the building by ropes and blocks. The building was thoroughly tied in both directions by heavy iron rods before the moving was commenced, and though the walls of the first story are 20 inches thick, and of the second story 16 inches thick, the work was done without injury to the structure, in spite of the fact that the latter part of the journey was over filled ground.—The Boston Herald.

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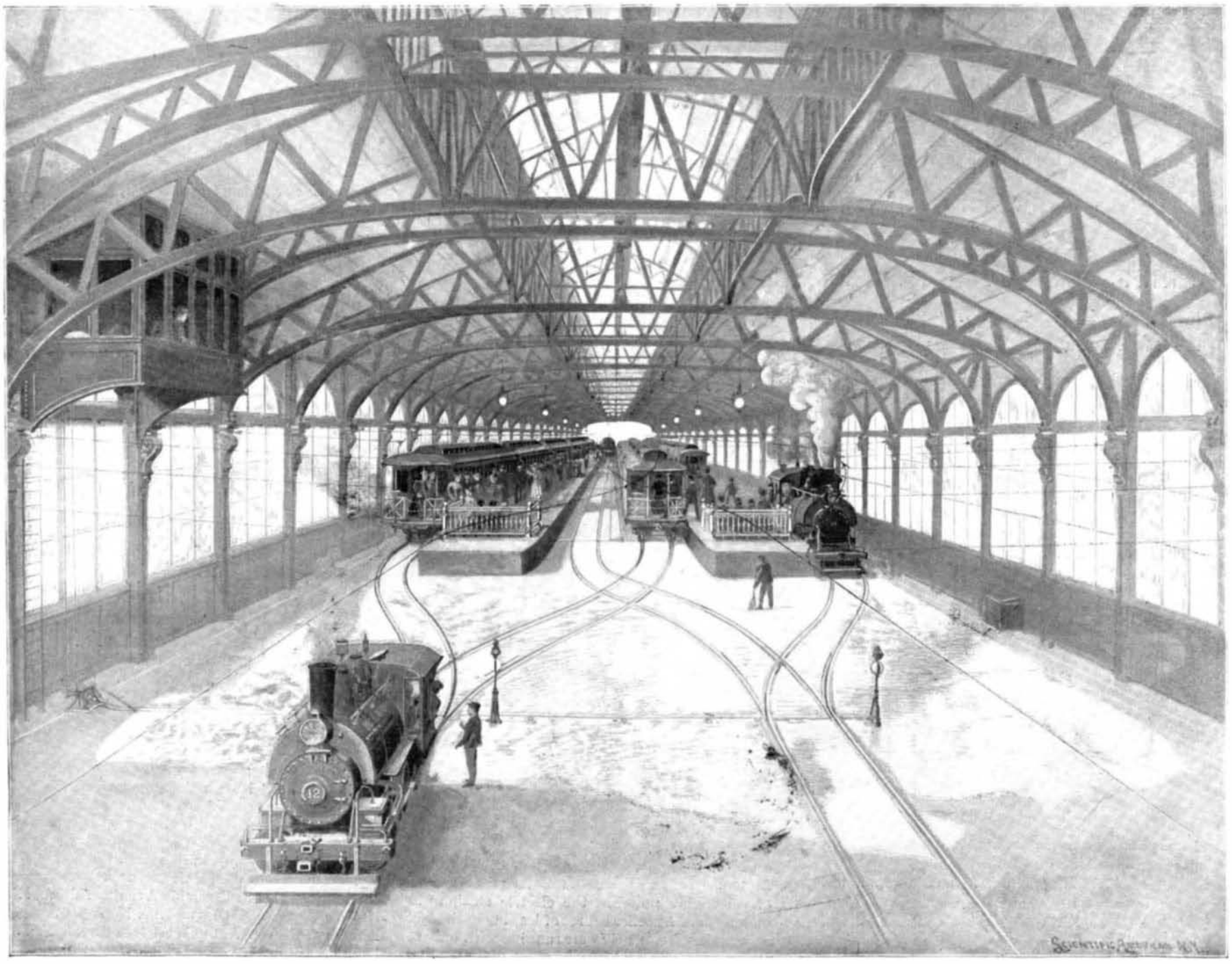
PRESENT APPEARANCE OF THE NEW YORK TERMINAL.

EASTERN END OF BROOKLYN STATION, SHOWING THE BROOKLYN ELEVATED RAILWAY STATION.



NEW YORK AND BROOKLYN BRIDGE—INTERIOR OF THE NEW YORK TERMINAL STATION AS IT WILL APPEAR —[See page 246.]